LYON COUNTY BOARD OF COUNTY COMMISSIONERS
THURSDAY, MARCH 5, 2026
9:00 AM
LYON COUNTY ADMINISTRATIVE COMPLEX
27 S. MAIN STREET
YERINGTON, NV 89447

Join Zoom Meeting:
https://us02web.zoom.us/j/83368686463?pwd=ZlVGaWFOT3pGUjJPWWV0VmZRQ0N5dz09
Meeting ID: 833 6868 6463 / Passcode: 896135
Mobile: 1-253-215-8782 / 1-346-248-7799

County Commission meetings are open to the public and may be attended in person or via virtual Zoom, if available. Virtual public comment may be given if you are attending the virtual Zoom meeting by raising your hand. This can occur in several ways, including by dialing *9 from your phone to raise your hand and request to speak for public comment. Then to unmute yourself, dial *6.

Written public comments may be mailed to the Lyon County Manager's Office at 27 S. Main Street, Yerington, Nevada 89447, or emailed to countyclerks@lyon-county.org, be sure to type, PUBLIC COMMENT in the subject line. Comments must be received the day prior to the date of the meeting by 4:00 P.M. for the comments to be included in the meeting. Any written public comments received after the aforementioned time will be compiled and added as supplemental materials to the County's website and distributed to the Board of Commissioners within 24 hours after the meeting.

BOARD OF COMMISSIONERS CONVENING AS OTHER BOARDS - *Members of the Board of County Commissioners also serve as the Liquor Board, Central Lyon Vector Control District Board, Mason Valley Mosquito Abatement District Board, Walker River Weed Control District Board, Willowcreek General Improvement District Board, the Silver Springs General Improvement District Board, and during this meeting may convene as any of those boards as indicated on this or a separately posted agenda.*

NOTE: THIS MEETING MAY BREAK BETWEEN 11:30 - 1:30 FOR LUNCH

1. Roll Call

2. Invocation - *given by Travis Walker of Smith Valley Baptist Church*

3. Pledge of Allegiance

4. Public Participation (no action will be taken on any item until it is properly agendized) - *It is anticipated that public participation will be held at this time, though it may be returned to at any time during the agenda. Citizens wishing to speak during public participation are asked to state their name for the record and will be*

limited to 3 minutes. The Board will conduct public comment after discussion of each agenda action item, but before the Board takes any action.

4.a For Report Only: Public Comment
- Public Comment
- Public Comment

5. For Possible Action: Review and adoption of agenda

6. Time Certain

6.a Time Certain at 9:00 A.M.: For Presentation Only: Presentation from Milt Stewart, Chief Executive Officer, from Nevadaworks on programs and services. (Requested by Comm. Jacobson)
- Nevadaworks Lyon BCC

6.b Time Certain at 9:05 A.M.: For Presentation Only: Presentation from Don Smit with Project One/Lucas Homes & Development, LLC on the Traditions Development in Dayton.

6.c Time Certain at 9:10 A.M.: For Presentation Only: A presentation from Daniel South, President of the Dayton Main Street Committee, with information about the organization, current projects and future goals of the organization.
- Dayton Main Street LCC Mtg

7. Commissioners/County Manager reports

8. Elected Official's reports

9. Appointed Official's reports

10. Advisory Board reports

11. CONSENT AGENDA (Action Will be Taken on All Items) - *All matters listed under the consent agenda are considered routine, and may be acted upon by the Board of County Commissioners with one action, and without an extensive hearing. Any member of the Board or any citizen may request that an item be taken from the consent agenda, discussed, and acted upon separately during this meeting.*

11.a For Possible Action: Review and accept claims and financial reports.
- Claims Report 2-1-26 to 2-15-26
- Cash Report 2-15-26

11.b For Possible Action: Review and accept travel claims.
- Travel Report 2-1-26 to 2-15-26

11.c For Possible Action: Approve the changes on Assessor's tax roll due to correction in assessments and review of tax roll changes
- Secured Factual Corrections
- Unsecured Factual Corrections

11.d For Possible Action: Approve the February 19, 2026 minutes.
- 02.19.2026 BOCC Minutes

11.e For Possible Action: Accept a donation of $27,000 from the Lyon County Library Foundation for a new circulation desk at the Yerington Branch Library
- Grapevine Woodworks estimate

11.f For Possible Action: Accept a grant award from the Nevada State Library, Archives and Public Records

in the amount of $4,000 for PLA 2026 - LSTA Continuing Education Grant for Libraries
- Library PLA 2026 Travel Grant award letter

11.g For Possible Action: Review and approve the Smith Valley Friends of the Library proposal to sponsor a student worker up to $3,300 beginning June of 2026 at the Smith Valley Branch Library
- Smith Valley Library Aide proposal

REGULAR AGENDA - *(Action will be taken on all items unless otherwise noted)*

12. Assessor

12.a For Possible Action: Approve Application for Open Space/Historic Use Assessment submitted by Javelin Ventures LLC for Odeon Hall, located at 65 Pike Street, Dayton (APN 006-055-12). Approval will result in a 0.74 factor being applied to the taxable value of the parcel. (Chief Deputy Assessor, Erin Singley)
- Application for Historic Use & Supporting Documents Submission to BOCC

13. Utilities

13.a For Possible Action: Approve Amendment No. 1 to the contract with HDR for the Rose Peak Water Main Replacement Project in an amount to not exceed $249,927. This amendment expands the scope of services to include completion of the 100% design, preparation of the bid document package, bidding assistance, and project permitting. Funding will be provided through the Dayton Water Fund and is eligible for reimbursement under the Environmental Protection Agency Community Grant Program. (Utilities Engineer, Kishora Panda)
- Amendment 1 - Rose Peak Water Main Project

13.b For Possible Action: Approve Property Access License Agreement between Calvary Baptist Church and Lyon County to allow the contractor for the Rose Peak Water Main Replacement Project to use the property for a construction and staging area and to allow Lyon County to conduct a Cultural Resources Field Survey which is required by the grant application. (Utilities Engineer, Kishora Panda)
- Rose Peak Water Project Property License Access Agreement between Lyon County and Calvary Baptist Church

14. Public Hearing on Planning Items

14.a For Possible Action: To approve the request from Winston FC Solar, LLC, for a Planned Unit Development for the Winston Solar Project. The Project consists of a 400-megawatt photovoltaic solar energy facility with approximately 780,000 solar panels, a battery energy storage system, an electrical substation, high voltage power lines, and an operations and maintenance building on 11 parcels totaling approximately 2,374-acres in Mason Valley subject to Heavy Industrial-Suburban (HI-S) and Rural Residential, 20-acre minimum (RR-20) zoning (APNs 014-091-[13, 15, 16, 17, 22], 014-201-[14, 17, 18, 32, 33, 35); PLZ-2025-084. (Senior Planner Louis Cariola)
- Staff Report
- PUD Handbook
- TIS REPORT
- NDOT TIS Response Letter
- Applicant PUD Justification
- Public Comment

14.b For Possible Action: To approve the request from GDA Degree Inc. for a Zoning Map Amendment to amend the Zoning Map split-zoned designations from the Title 10 districts of Limited Commercial District (C-1) and Fifth Rural Residential District (20 Acres) (RR-5) to the Title 15 district of Rural Residential, 20 Acre Minimum (RR-20), for an 18.00-acre parcel located at 20 Hoye Canyon Road in Smith Valley (APN 010-631-32), PLZ-2025-102. (Senior Planner Lisa Nash)

- Staff Report
- Backup

14.c For Possible Action: To approve the request from Microsoft Corporation for a Conditional Use Permit to construct a 345/120-kilovolt electrical substation, two high voltage power lines, and other associated infrastructure for the Nighthawk Substation over approximately 32.59 acres of five parcels with Neighborhood Commercial (NC) zoning located north of US Highway 50 in Silver Springs at 1200 W US Highway 50 (Portion of APN 015-141-13 and 018-551-03, 018-551-04, 018-552-01, 018-552-02); PLZ-2025-109. (Senior Planner Louis Cariola)

- Staff Report
- Project Description
- Site Photos
- Public Comment

14.d For Possible Action: To approve the request from Microsoft Corporation for a Conditional Use Permit to construct a 120-kilovolt electrical substation and other associated infrastructure over approximately 18.70 acres of two parcels with Neighborhood Commercial (NC) zoning located north of US Highway 50 in Silver Springs at 1200 W US Highway 50 (Portion of APN 015-141-13 and 015-141-04); PLZ-2025-110. (Senior Planner Louis Cariola)

- Staff Report
- Project Description
- Site Photos
- Public Comment

14.e For Possible Action: To approve the request from Lux Solar Center, LLC for a Major Variance application to allow for a reduction in setbacks for an expansion to the existing Lux Solar Project approved in 2023, to construct and operate a photovoltaic (PV) solar energy facility, on land subject to Rural Residential, 20 Acre Minimum (RR-20) zoning located in the northern portion of the parcel at 55 Butte Way in Wabuska, Mason Valley on an approximately 280-acre portion of a 1,593-acre parcel (APN 014-091-20); PLZ-2025-096. (Senior Planner Lisa Nash)

- Staff Report
- Backup

14.f For Possible Action: To approve the request from Lux Solar Center, LLC for a Conditional Use Permit for an expansion to the existing Lux Solar Project approved in 2023, to construct and operate a photovoltaic (PV) solar energy facility, on land subject to Rural Residential, 20 Acre Minimum (RR-20) zoning located in the northern portion of the parcel at 55 Butte Way in Wabuska, Mason Valley on an approximately 280-acre portion of a 1,593-acre parcel (APN 014-091-20); PLZ-2025-085. (Senior Planner Lisa Nash)

- Staff Report
- Backup

14.g For Possible Action: To approve the request from Traditions North LLC for a Zoning Map Amendment to amend the Zoning Map split-zoned designations from the Title 10 districts of First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), Single-Family Nonrural Residential District (NR-1), and General Commercial District (C-2), to the Title 15 district of Planned Unit Development (PUD), generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 230.76-acre parcel (APN 016-406-07), PLZ-2025-093. (Senior Planner Lisa Nash)

- Staff Report
- Backup
- Public Comment

14.h For Possible Action: To approve the request from Traditions North LLC for a Planned Unit

Development (PUD) for the Traditions North Residential Development. The project consists of 415 single-family residential units, open space, a neighborhood park, and pocket parks and is generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 230.76-acre parcel (APN 016-406-07), PLZ-2025-094. (Senior Planner Lisa Nash)

- Staff Report
- Backup
- Public Comment

14.i For Possible Action: To approve the request from Traditions North LLC for a Tentative Subdivision Map. The request is for 358 detached single-family residential units, including 116-acres of common area open space, parks, and trails, and is generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 230.76-acre parcel (APN 016-406-07), PLZ-2025-095. (Senior Planner Lisa Nash)

- Project Narrative
- Plan Set
- Traffic, Drainage, H&H Studies
- Geotechnical Report
- Preliminary Sewer Report
- Landscape, Streets
- Trails, Parks
- Draft PUD Handbook
- Street Name Request Form
- Public Comment
- Letter of Continuance

14.j For Possible Action: To approve the request from Traditions North LLC to Reserve Street Names for the Traditions North Residential Development for the proposed roadways to be generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 230.76-acre parcel (APN 016-406-07), PLZ-2025-098. (Senior Planner Lisa Nash)

- Staff Report
- Backup
- Public Comment

15. County Manager

15.a For Possible Action: Approve letters of support on behalf of the Board of Commissioners for Community Project Funding Requests.

- Lift Station 4 Rehabilitation Project Letter
- Rolling A to South Plant Effluent Pumping Improvements Letter
- Water Main Addition - Eldorado Zone Loop Project Letter

RECESS TO CONVENE AS BOARD OF HEALTH

16. Public Participation (no action will be taken on any item until it is properly agendized) *- It is anticipated that public participation will be held at this time, though it may be returned to at any time during the agenda. Citizens wishing to speak during public participation are asked to state their name for the record and will be limited to 3 minutes. The Board will conduct public comment after discussion of each agenda action item, but before the Board takes any action.*

17. Time Certain at 1:00 P.M.: Call to Order, roll call and Opening Comments given by Dr. Robin Titus, Lyon County Health Officer.

18. Regular Agenda

18.a For Presentation Only: Presentation on University of Nevada, Reno's Rural Outreach Clinic efforts in Lyon County (Lea Pope, Rural Health Education Coordinator, University of Nevada, Reno).

18.b For Presentation Only: Presentation on Empowered Go, a mobile Opioid Misuse treatment option for child-bearing aged women (Shannon Lepe, Director of Clinical Operations, Empowered Northern Nevada).

18.c For Possible Action: Information on the Rural Health Transformation Program and discussion on possible County projects and collaborations (Shayla Holmes, Director Lyon County Human Services).

18.d For Discussion and Possible Action: Future agenda items and Board of Health meeting date, June 4th or June 18th. (Shayla Holmes, Director, Lyon County Human Services).

19. Public Participation (no action will be taken on any item until it is properly agendized) - *It is anticipated that public participation will be held at this time, though it may be returned to at any time during the agenda. Citizens wishing to speak during public participation are asked to state their name for the record and will be limited to 3 minutes. The Board will conduct public comment after discussion of each agenda action item, but before the Board takes any action.*

ADJOURN TO RECONVENE AS THE LYON COUNTY BOARD OF COMMISSIONERS

20. Agenda Requests - *Administrative Policies and Procedures 1.05, A Commission Member or elected/appointed department head may request an item be considered on a future agenda either by making an oral request at a County Commission meeting or submitting the request in writing to the County Manager at least 30 days prior to the meeting for which the item is requested to be placed on the agenda.*

21. Commissioner Comments

22. Public Participation (no action will be taken on any item until it is properly agendized) - *It is anticipated that public participation will be held at this time, though it may be returned to at any time during the agenda. Citizens wishing to speak during public participation are asked to state their name for the record and will be limited to 3 minutes. The Board will conduct public comment after discussion of each agenda action item, but before the Board takes any action.*

23. Closed Session pursuant to NRS 241.015(3)(b)(2) - *To receive information from the District Attorney or counsel regarding potential or existing litigation involving a matter over which the Board has supervision, control, jurisdiction or advisory power, and to deliberate toward a decision on the matter, and pursuant to NRS 288.220, to receive a report on the status of ongoing labor negotiations; and direct staff accordingly.*

24. Adjourn

Pursuant to NRS 241.020, the agenda has been posted at the following locations: Lyon County Administrative Complex (27 S. Main Street, Yerington, NV), the Lyon County Website: https://www.lyon-county.org, and the State Website: https://notice.nv.gov. Supporting documentation for the items on the agenda is available to members of the public at the County Manager's Office (27 S. Main Street, Yerington, NV), by phone (775)463-6531, or by email requests to countyclerks@lyon-county.org.

Lyon County recognizes the needs and civil rights of all persons regardless of age, race, color, religion, sex, handicap, family status, or national origin. In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted

or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternate means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible agency or USDA's TARGET Center at (202) 720-2600 (voice and T) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found on-line at http://www.ascr.usda.gov/complaint_filing_cust.html and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) Mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410; Fax: (202) 690-7442; or Email: program.intake@usda.gov

T.D.D. services available through 463-2301 or 463-6620 or 911 (emergency services) notice to persons with disabilities: members of the public who are disabled and require special assistance or accommodations at the meeting are requested to notify the Commissioners'/Manager's office in writing at 27 S. Main Street, Yerington, NV 89447, or by calling (775) 463-6531 at least 24 hours in advance.

Lyon County is an equal opportunity provider.

Agenda and Backup Material is Available at www.lyon-county.org

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
4.a

Subject:
For Report Only: Public Comment

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Public Comment
- Public Comment

Gmail

Martha Tapia <mtapia@lyon-county.org>

Fwd: Data Centers and Solar Project

Brandi Lathrop <blathrop@lyon-county.org> Mon, Feb 9, 2026 at 3:28 PM
To: Martha Tapia <mtapia@lyon-county.org>

Hi Martha,

Not sure if you had received this or not. It doesn't appear to pertain to a specific project.

---------- Forwarded message ---------
From: **Scott Lommori** <slommori@gmail.com>
Date: Mon, Jan 26, 2026 at 1:59 PM
Subject: Data Centers and Solar Project
To: <planning@lyon-county.org>

To the Honorable Lyon County Commissioners,

My name is Scott Lommori, and as a resident of Yerington, I am writing to express my deep concern about the economic and social sustainability of our community. It has become increasingly clear that we are in dire need of a sustainable business operation to stabilize and grow our local economy.

Yerington's median household income is roughly $42,000–$45,000, which is significantly lower than the median income for Lyon County overall. Many of our existing businesses are struggling to stay viable, and we're seeing fewer new operations opening their doors. This economic stagnation is taking a visible toll on our schools and families. The high school is currently relying on multiple substitute teachers, and our elementary school faces similar shortages, while school enrollment continues to decline as families choose not to move here or leave in search of better opportunities.

I recognize that discussions around data centers and large-scale solar developments can be controversial across the country. However, I truly believe that our unique regional conditions make Yerington an ideal location for a balanced and responsible project of this kind. We have proximity to reliable power generation through the nearby NV Energy Fort Churchill Generating Station and associated solar resources, underused agricultural land with low yields that could be repurposed, and a strong community looking for the right kind of investment — one that creates sustainable jobs and supports the local tax base without displacing our way of life.

Nevada's voters have already shown support for a strong transition to renewable energy through initiatives like Question 6, which advanced a 50 percent renewable portfolio standard by 2030. Bringing in a forward-looking enterprise such as a data center powered by solar energy would align with these statewide goals while directly benefiting Yerington. It would strengthen our schools, support local businesses, and provide new opportunities for our youth — giving them a reason to stay and build their lives right here.

I have included an attachment with this email that contains supporting data on Nevada's renewable energy goals and the voter outcomes on Question 6, which further reinforce the case for locating a data center and solar project in our area. I am also including a link to a PBS segment that highlights the economic and community impacts of large data centers in rural areas, and I respectfully ask that you take a few minutes to review it as additional context.

I urge the commission to prioritize and support efforts that bring sustainable, well-planned industries into our area. With the right vision and leadership, Yerington can move from surviving to thriving.

Thank you for your time and dedication to our community.

Sincerely,
Scott Lommori

--
Thank You
Brandi Lathrop

Administrative Assistant
(775) 463-6592 x1481
blathrop@lyon-county.org

Board of commissioners.docx
16K

January 28, 2026

Dear Lyon County Commissioners:

Lyon County stands at a defining moment in its economic and environmental development. Our region—home to **five distinct communities, including Yerington and Smith Valley,** which are experiencing the dual pressures of rising farm input costs and limited local employment opportunities. To preserve our rural character while ensuring long-term prosperity, it is essential that we embrace projects that provide stable jobs, expand the county's tax base, and align with Nevada's renewable-energy commitments.

The development of **multiple data centers within Lyon County** presents exactly this kind of opportunity. Each site would bring considerable benefits, but the **proposed data center near Yerington** is especially well positioned for success. Located near the **NV Energy switchyard and existing NV Energy power plant**, it would tie seamlessly into the county's growing renewable-energy network. This proximity ensures efficient energy distribution, low transmission losses, and integration into a broader clean-power ecosystem that includes the **two proposed 400-plus-megawatt solar projects** now before county review.

The Yerington data center alone could bring **150 to 200 full-time, well-paying jobs**, with an estimated **six-times multiplier effect** generating secondary employment across construction, maintenance, retail, and local services. Collectively, these projects would provide substantial economic diversification for all Lyon County communities—strengthening schools, emergency response, and public infrastructure through consistent tax revenue without raising costs for existing residents.

In terms of **water stewardship**, our community has already demonstrated leadership. The **Walker Basin Conservancy in Yerington** has undertaken extensive efforts to restore **Walker Lake** by redirecting and conserving water resources. Any data center development would follow that same responsible model, employing advanced low-water cooling systems and sustainable operational practices.

This initiative also aligns with Nevada's broader vision. In **2018** and again in **2020**, nearly **60 percent of Nevada voters** approved **Question 6**, committing our state to producing **50 percent of its electricity from renewable sources**. Establishing data centers powered by clean, local solar energy directly fulfills that directive while ensuring that economic progress benefits all five communities within our county.

For those seeking additional context on the role of data centers in sustainable local economies, **PBS's *Season 7, Episode 2* special report on data centers** (https://www.pbs.org/video/data-centers-ppqzck/) offers valuable insight into how such projects integrate with renewable-energy systems and strengthen communities much like ours.

For these reasons, I respectfully urge the Commission to consider and support this initiative as part of a balanced, forward-thinking energy and economic strategy for Lyon County—one that positions our region as a leader in innovation, sustainability, and rural revitalization.

Respectfully,
Scott Lommori

02-23-26

Shayna Rose
28 Smoke Tree Lane
Yerington, NV.
89447

Dear Lyon County Commissioners,

This letter is in a protest against the Monarch Data Center. Yerington, Nevada's land should always be designated farm land. In the future, America, will need more food as the population grows. I do not want my children or my children's children to go hungry. I do not support changing the land designation and I do not support the Monarch Data Center.

Sincerely,
Shayna Rose

Shayna Rose

02-23-26

Kim Neuhauser
604 Sandy Ave
Yerington NV
89447

Dear Lyon County Commissioners,

This letter is in a protest against the Monarch Data Center. Yerington, Nevada's land should always be designated farm land. In the future, America, will need more food as the population grows. I do not want my children or my children's children to go hungry. I do not support changing the land designation and I do not support the Monarch Data Center.

Sincerely,

Kim Neuhauser

Kim Neuhauser

02-23-26

Robin M. Johnson
26 Pebble Beach Dr.
Yerington, NV.
89447

Dear Lyon County Commissioners,

This letter is in a protest against the Monarch Data Center. Yerington, Nevada's land should always be designated farm land. In the future, America, will need more food as the population grows. I do not want my children or my children's children to go hungry. I do not support changing the land designation and I do not support the Monarch Data Center.

Sincerely,

ROBIN M. JOHNSON
Robin M. Johnson

02-23-26

Sandra Ostler
507 South Apt C
Yerington, Nv

Dear Lyon County Commissioners,

This letter is in a protest against the Monarch Data Center. Yerington, Nevada's land should always be designated farm land. In the future, America, will need more food as the population grows. I do not want my children or my children's children to go hungry. I do not support changing the land designation and I do not support the Monarch Data Center.

Sincerely, Sandra Ostler
Sandra J. Ostler

02-23-26

Dear Lyon County Commissioners,

This letter is in a protest against the Monarch Data Center. Yerington, Nevada's land should always be designated farm land. In the future, America, will need more food as the population grows. I do not want my children or my children's children to go hungry. I do not support changing the land designation and I do not support the Monarch Data Center.

Sincerely,

Melody Forster

530-545-3292

I am a resident of Lyon County.

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
6.a

Subject:
Time Certain at 9:00 A.M.: For Presentation Only: Presentation from Milt Stewart, Chief Executive Officer, from Nevadaworks on programs and services. (Requested by Comm. Jacobson)

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Nevadaworks Lyon BCC

nevadaworks

Bringing Nevada job seekers and employers together

Nevadaworks' Mission

Provide the best workforce solutions fulfilling needs of employers and job seekers.

We are here to help.

Job Seekers' Needs

- Increased stability
- Better earning potential
- Maximization of job success and career pathways

Employers' Needs

- A skilled, productive workforce
- A competitive edge in the marketplace
- Business success

Serving Northern & Central Nevada

- Carson City
- Churchill
- Douglas
- Elko
- Eureka
- Humboldt
- Lander
- Lyon
- Mineral
- Pershing
- Storey
- Washoe
- White Pine

Our Approach

Implement

a workforce development system that meets employer talent needs and improves employment, retention, and earnings for Nevada workers.

Integrate

workforce development programs with private-sector needs through coordinated and aligned initiatives.

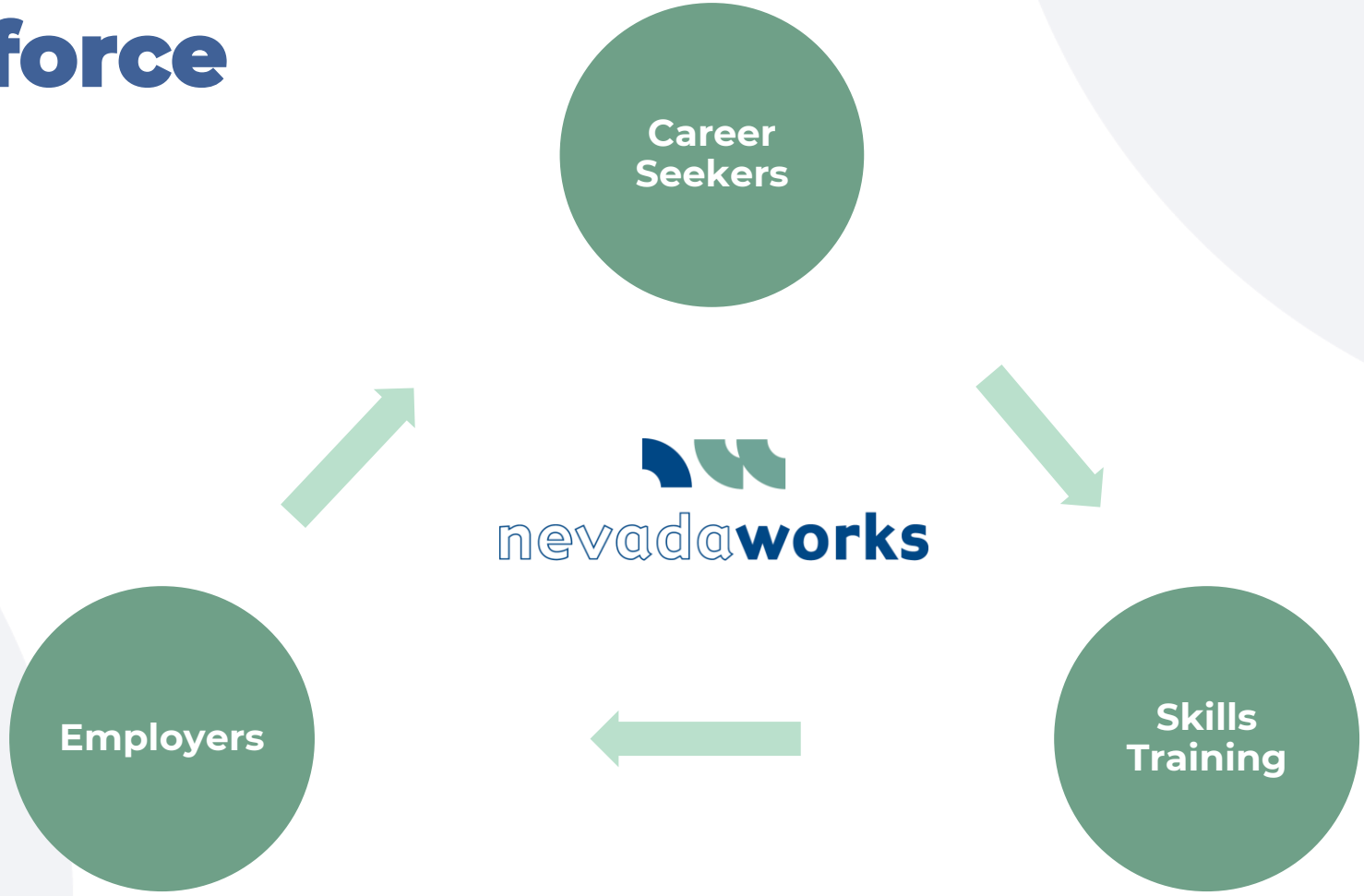
Strengthen

the local economy by creating a world class talent pipeline

Leverage

and align resources by strengthening coordination and collaboration to expand services and maximize effectiveness.

The Hub of Northern Nevada's Workforce Development Ecosystem



Creation of a World-Class Talent Pipeline

Identify and target Talent Pools

- Individuals with barriers to employment
- Low-income individuals
- Veterans
- Dislocated Workers
- Young adults

Provide Career Development

- Occupational Skills Training
- Work-based learning
- Employability skills
- Case Management Support

Alignment with Industry

- Manufacturing & Logistics
- Digital Technology
- Healthcare
- Tourism & Hospitality
- Lithium Lifecycle

EmployNV BUSINESS HUB
An AmericanJobCenter of Nevada

EmployNV CAREER HUB
An AmericanJobCenter of Nevada

In-Person and Virtual Support for:

- Job and Career Seekers
- Skills Training
- Employers

EmployNV Business/Career Hub Locations

- Carson City
- Elko
- Ely
- Fallon
- Fernley
- Reno
- Sparks
- Winnemucca

Job and Career Seeker Resources

EmployNV

CAREER HUB

An AmericanJobCenter of Nevada

The Career Hub is a place where jobseekers can come to look for employment opportunities, find training programs to learn new skills or upgrade skills, and access assistance related to building a future career.

EmployNV
CAREER HUB
An AmericanJobCenter of Nevada

The Resource Center

- Computers with Internet Access
- Wi-fi
- Fax Machine
- Copier
- Phones
- Employment and community resource information

EmployNV
CAREER HUB
An AmericanJobCenter of Nevada

Employer Resources

EmployNV

BUSINESS HUB

An AmericanJobCenter of Nevada

The EmployNV Business Hub provides a full array of business solutions including...

Recruiting and pre-screening candidates from the largest database in the state,

Coordinating hiring events and job fairs,

Providing Labor Market Information to maintain a competitive edge,

and training and upskilling your current and future staff to advance in your company.

Conference rooms,
computer labs, and offices

are available for interviews, orientations, and training classes.

cost
The best part is our services are no cost to you!

Nevadaworks' Strategic Approach

- Identification of regional workforce needs based on collaborative input
- Convene workforce development stakeholders to ensure strategic alignment
- Source funding streams to support the mission
- Invest in innovative workforce solutions
- Continuous improvement
- Human Centered Design

nevadaworks

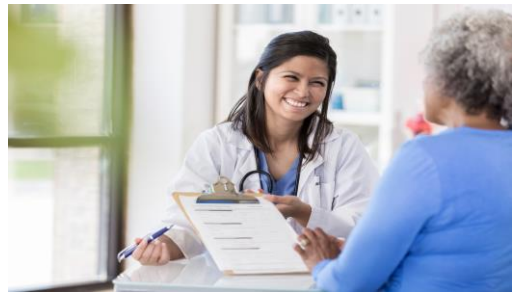
Good Jobs Northern Nevada

- At least 650 Job Placements:
  - Healthcare
  - Information Technology
  - Logistics
  - Manufacturing

- Creation of Industry Sector Partnerships to inform training needs

Good Jobs Northern Nevada

- Nevadaworks selected from pool of 509 applicants that resulted in 32 awards
- $14.9M to help develop talent pipelines with an emphasis on distressed, rural & tribal communities
- Provide education, training and supports for successful skills acquisition
- Engage employers, labor leaders, local government, public & higher education, and tribal leaders



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Disconnected Youth

- One of Nevada's most critical workforce opportunities is engaging young adults ages 16–24 who are not in school or working

- Nevadaworks delivers targeted programs that remove barriers and connect these young adults to careers, training, and local employers

Nevada Tech Hub

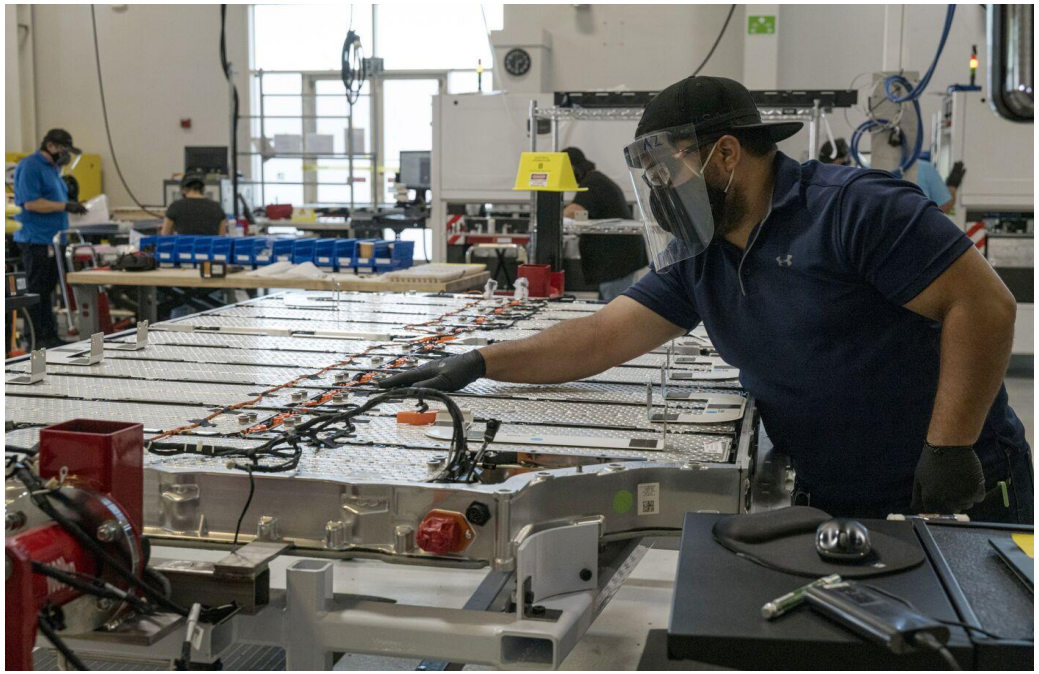
- **Partnership with the University of Nevada, Reno's Nevada Tech Hub to support workforce development for the lithium battery and electrification supply chain**
- **Working with community colleges, state agencies, industry, and labor, Nevadaworks engages employers to align education, training, and supportive services with workforce demand**
- **Nevadaworks supports effective recruitment strategies to ensure broad participation**

Battery Workforce Initiative

- Positions Nevadaworks as a strategic partner for the Lithium Batteries & EV Materials Loop workforce development
- Aligns Nevadaworks' workforce efforts with UNR's EDA Tech Hub to drive job creation and economic resilience
- Creation of an Industry Sector Partnership to ensure northern Nevada residents are prepared for high-quality, in-demand careers

Project Clean Energy Jobs Academy

- **Project CEJA (Clean Energy Jobs Academy) is a partnership between Nevadaworks and OWINN, supported by a U.S. Department of Labor Building Pathways to Infrastructure Jobs grant**
- **Builds a regional, worker-focused sector strategy to support Nevada's clean energy economy, including lithium-ion battery production**
- **Aligns Nevadaworks' efforts through the Nevada Tech Hub and Industry Sector Partnerships to deliver a coordinated approach to meeting workforce needs in Northern Nevada's lithium loop**



High Sierra Area Health Education Center

- Nevadaworks partnership with High Sierra AHEC and DETR to address critical healthcare workforce shortages across northern Nevada
- Strengthens workforce pipelines through targeted training, recruitment, and tuition reimbursement to attract and retain healthcare professionals
- Expands access to quality care while supporting long-term workforce sustainability and regional economic growth

Up Next Nevada Workforce

- **Nevadaworks partnership with the Nevada Alliance of Boys & Girls Clubs and DETR to strengthen Nevada's youth development workforce**

- **Provides paid, quality job experiences in childcare and afterschool programs, building essential skills, mentorship, and clear career pathways**

- **Supports long-term workforce stability while expanding opportunities for young Nevadans**

Quality Jobs, Equity, Strategy and Training

- QUEST (Quality Jobs, Equity, Strategy and Training) supports individuals impacted by the COVID-19 pandemic in entering, returning to, or advancing in high-quality jobs
- Focus is on key sectors including infrastructure, hospitality, logistics, and healthcare
- Prioritizes workers facing employment barriers, helping strengthen workforce participation and economic stability statewide

Apprenticeship Building America Grant

- **Expands registered apprenticeship opportunities across Nevada through paid, work-based training**
- **Supports employer-driven apprenticeship development aligned with regional industry demand, helping businesses build skilled and reliable talent pipelines**
- **Strengthens long-term workforce sustainability by creating clear pathways into high-quality jobs while supporting economic growth**

How to Work With Us

Nevadaworks Office

9390 Gateway Dr, Suite 105

Reno, NV 89521

775.337.8600

www.nevadaworks.com

nevadaworks

Questions?

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
6.b

Subject:
Time Certain at 9:05 A.M.: For Presentation Only: Presentation from Don Smit with Project One/Lucas Homes & Development, LLC on the Traditions Development in Dayton.

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
6.c

Subject:
Time Certain at 9:10 A.M.: For Presentation Only: A presentation from Daniel South, President of the Dayton Main Street Committee, with information about the organization, current projects and future goals of the organization.

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Dayton Main Street LCC Mtg

Dayton Main Street
Old Town Cleanup
Sunday, March 22nd, ‘26

Dayton Main Street Board

- Dan South – President
- Joanna Fife – Vice President
- Lynne Ballatore – Treasurer
- Katie Hasbrouck – Secretary

Acknowledgements

- Dayton Community Center
- Main Street America
- Governors Office of Economic Development (GOED)
- America 250/Nevada Gives
- Paladins Bakery
- Northern Nevada Ghost Hunters
- Historical Society of Dayton Valley

Dayton Main Street

- Main Street America & Nevada Main Street
- Dayton Main Street is a 501(c)3 Non-Profit
- Why does Dayton need a Main Street Program?
  - Revitalization of the Dayton Area while retaining the historic character
  - Create a thriving downtown district for businesses, locals, and tourism
  - Creating a more inviting atmosphere in downtown Dayton

America 250 Nevada Gives Project

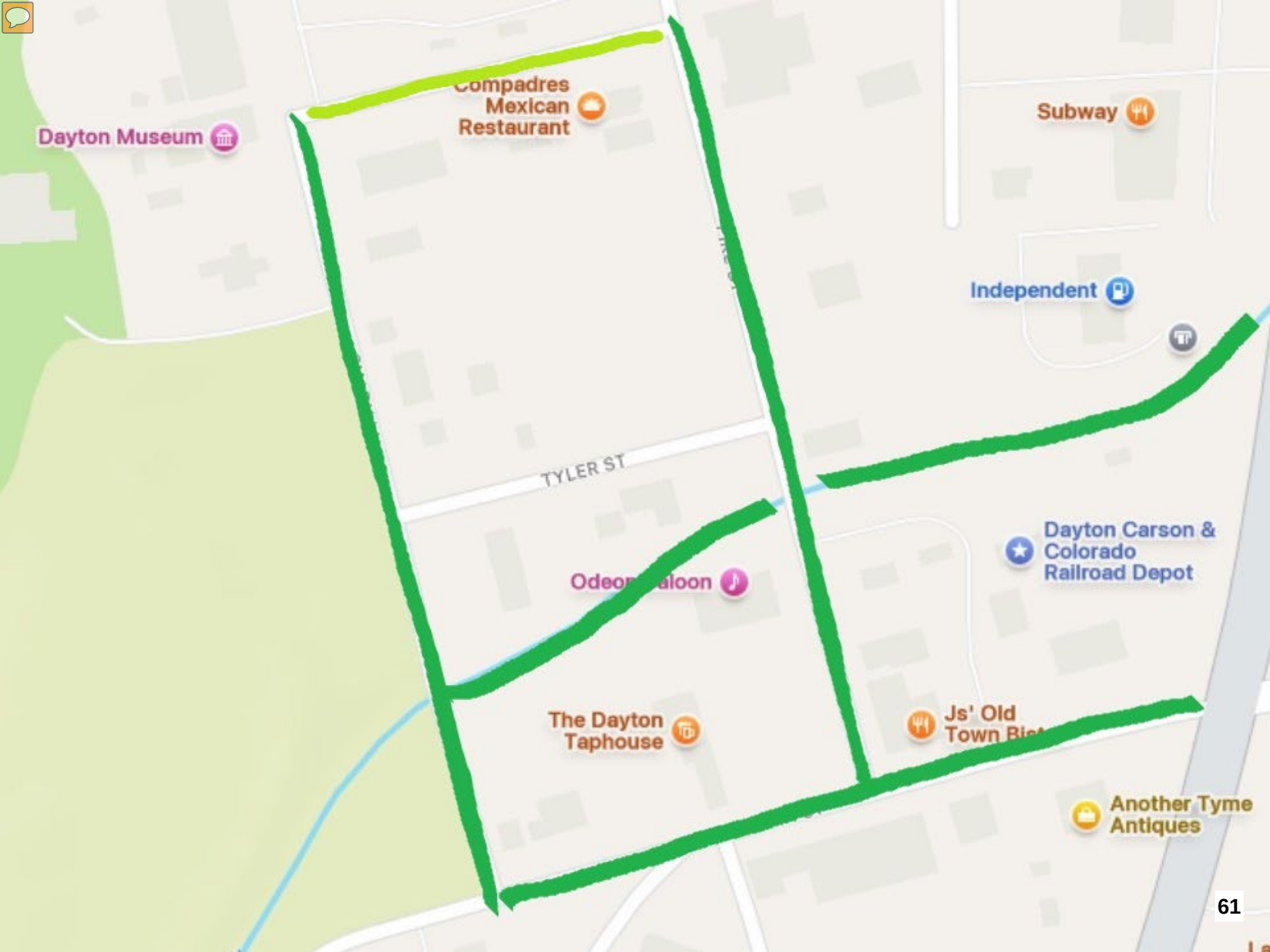
- Purpose: Support community-based projects that promote civic engagement, volunteerism, and service as part of the America 250 commemoration in Nevada.
- Nevada Gives Project Requirements:
  - Include meaningful service activities that address a clearly identified community need.
  - Recruit community as volunteers for a minimum of three (3) hours of service.
  - Must uphold the values of respect, inclusion, and equal opportunity.

Old Town Dayton Cleanup

- Dayton Main Street was granted $1000 from America 250/Nevada Gives
- The grant money will be used to purchase PPE, supplies, & tools for the clean up project
- America 250 Nevada Gives will provide t-shirts and pizza on the day of the event

Project Areas

- Primary Areas
  - Main Street, from Shady Lane to Hwy 50
  - Pike Street, from Main St. to Second Ave.
  - North side of Firehouse Jail
  - Gold Creek, from Shady Lane to Hwy 50
- Secondary Areas
  - Shady Lane from Main St. to Logan Alley
  - Logan Alley from Shady Lane to Pike Street
- Goal:
  - Remove unwanted debris and vegetation


Compadres Mexican Restaurant
Dayton Museum
Subway
Independent
TYLER ST
Dayton Carson & Colorado Railroad Depot
The Dayton Taphouse
Another Tyme Antiques

North side of Firehouse Jail

Taphouse Fence on Pike St.

Shady Lane looking South from Tyler

Gold Creek looking west
from Ziller

Logan Alley looking
east from Shady Lane

Current Organizations Involved

- Volunteers & Property Owners
- Central Lyon County Fire Department
- Dayton Conservation District
- Dayton High School Boosters
- Kiwanis Club
- Carson Demolition, LLC / Odeon Saloon
- Cassinelli Landscaping
- Historical Society of Dayton Valley

Tools & Equipment Needed

- Leather Gloves
- Shovel, Rakes
- Cutters, Pruners
- Tarps
- Heavy Duty Trash Bags
- Wheel Barrows
- Power Saws
- Ability to transfer trash to dumpsters
- Mechanism for hauling debris out of Gold Creek

DAYTON NEVADA
MAIN STREET
GATEWAY TO THE COMSTOCK

OLD TOWN DAYTON CLEANUP DAY!

Help Dayton Main Street restore, revitalize, and beautify Dayton's historic downtown to preserve our rich history!

Sunday, March 22
10 am - 2 pm
Meet at 170 Pike St, Dayton

Volunteer shirts and lunch provided

For details and volunteer signup, use the QR code or contact Dayton Main Street at:
DaytonNVMainSt@gmail.com
775-461-9723

Community Survey

- Let’s hear from you!

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
11.a

Subject:
For Possible Action: Review and accept claims and financial reports.

Summary:
Under NRS 244, the Comptroller approves bills for payment and the Board reviews the claims report.

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Claims Report 2-1-26 to 2-15-26
- Cash Report 2-15-26

CLAIMS REPORT
FEBRUARY 1 THROUGH FEBRUARY 15, 2026

LYON COUNTY	BILLS	PAYROLL
Governmental Funds		
General	366,252.85	1,583,974.14
Employee Benefits		
Park Construction Tax		
Co-Op Extension	1,203.35	
Unemployment		
Room Tax	647.66	
Aid to Domestic Violence		
Vehicle Acquisition		
Fair and Rodeo	775.45	
Capital Improvements	63,536.25	
Justice Court Special Assessment	3,713.68	433.89
District Court Restricted Fees		
Juvenile Probation Special Assessment		1,190.75
County Library Gift		
911 Surcharge	14,230.39	
Mining Claim Map		
Road	9,095.72	77,029.19
R T C		
Road Improvement	3,443.48	
Opioid Settlement		
General Indigent	19,172.71	108,498.06
Medical Indigent	13,330.10	7,958.59
Senior Services	18,475.10	75,544.59
Senior Services Donations	286.27	
Animal Control Donations		
Enterprise Funds		
Dayton Water Utility	158,530.16	76,064.21
Dayton Sewer Utility	47,047.08	69,774.43
Component Unit Funds		
Mason Valley Mosquito Control District	22.46	5,476.75
Central Lyon Vector Control District		
Walker River Weed Control District		
Silver Springs General Improvement District	5,474.04	
Willowcreek General Improvement District	1,497.35	
Subtotal	**726,734.10**	**2,005,944.60**

TRUST AND AGENCY	BILLS	PAYROLL
DNA Testing	1,278.00	
Western Regional Youth Facility	13,219.50	78,871.06
Mason Valley Swimming Pool District	5,823.54	
Silver Springs/Stagecoach Hospital	5,939.03	4,164.44
Fernley Swimming Pool	43,060.79	31,599.59
City of Fernley	916,033.62	
Mason Valley Fire Protection District	9,248.49	50,327.56
North Lyon County Fire Protection District	1,049,691.94	
Smith Valley Fire Protection District	3,399.65	8,395.06
Stagecoach General Improvement District		
South Lyon Hospital District	324,412.36	
State of Nevada	189,956.74	
City of Yerington	63,514.10	
Fish and Game		
Walker River Irrigation District	271,481.89	
Range Improvement		
Lyon County Bond		
Coroner Estate Proceeds		
County Trust Property		
Social Security Payee Program	10,476.37	
Central Lyon County Fire Protection District	1,501,610.96	
Carson Water Sub-Conservancy District		
Dayton Valley Ground Water		
Smith Valley Artesia		
Mason Valley Artesia		
Churchill Valley Ground Water		
Truckee Carson Irrigation District	70,206.65	
Fernley Ground Water		
Brady Hot Springs Ground Water		
Lyon County School District	4,788,288.12	
Subtotal	**9,267,641.75**	**173,357.71**

SUMMARY		
Lyon County	726,734.10	2,005,944.60
Trust & Agency	9,267,641.75	173,357.71
TOTAL	**9,994,375.85**	**2,179,302.31**

CASH REPORT

February 15, 2026

LYON COUNTY	BALANCE
Governmental Funds	
General	11,734,181.49
Park Construction Tax	1,186,771.44
Cooperative Extension	659,513.29
Unemployment	392,289.73
Room Tax	48,812.63
County Stabilization	3,450,000.00
Aid to Domestic Violence	-
Vehicle Acquisition	324,364.83
Fair and Rodeo	322,121.44
Justice Court Special Assessment	1,085,058.56
District Court Restricted Fees	906,554.04
Juvenile Probation Special Assessment	169,006.36
Library Gift	10,033.86
Mining Claim Map	31,719.07
911 Surcharge	698,957.14
Animal Control Donations	189,158.15
Road	1,275,931.07
R T C	17,883,427.05
Road Improvement	827,888.68
Opioid Settlement	1,291,424.18
General Indigent	1,104,894.45
Medical Indigent	5,457,644.17
Senior Services	1,031,147.23
Senior Services Donations	227,453.63
Capital Improvements	25,069,231.44
Subtotal Governmental Funds	**75,377,583.93**
Enterprise Funds	
Dayton Water Utility	19,092,750.72
Dayton Sewer Utility	22,040,448.93
Subtotal Enterprise Funds	**41,133,199.65**
Component Unit Funds	
Mason Valley Mosquito Control District	1,121,524.83
Central Lyon County Vector Control District	832,885.60
Walker River Weed Control District	377,907.05
Silver Springs General Improvement District	5,407,645.39
Willowcreek General Improvement District	1,109,498.00
Subtotal Component Unit Funds	**8,849,460.87**
Total Lyon County	**125,360,244.45**

CUSTODIAL FUNDS	BALANCE
DNA Testing	1,140.00
Western Nevada Regional Youth Center	1,874,091.80
Mason Valley Swimming Pool District	3,952,710.73
Silver Springs/Stagecoach Hospital	2,332,846.28
Fernley Swimming Pool District	3,216,901.96
City of Fernley	52,085.50
Mason Valley Fire Protection District	.
General Fund	2,111,014.06
Ambulance Fund	2,107,942.66
Acquisition Fund	699,891.28
Emergency Fund	18,201.17
North Lyon County Fire Protection District	26,582.57
Smith Valley Fire Protection District	
General Fund	511,169.04
Emergency Fund	426,692.59
Acquisition Fund	1,698,684.71
Stagecoach General Improvement District	15,187.15
South Lyon Hospital District	1,380,879.71
State of Nevada	758,614.08
City of Yerington	3,640.86
Fish and Game	7,013.19
Walker River Irrigation District	15,488.68
Range Improvement	446.45
Lyon County Bond	564,524.21
Coroner Estate Proceeds	60,351.08
County Trust Property & Inmate Trust	1,024,937.35
Social Security Payees/Public Guardianships	577,317.83
Central Lyon County Fire Protection District	
General Fund	58,102.06
Ambulance Fund	4,703.35
Carson Water Sub-Conservancy District	47,467.28
Dayton Valley Ground Water	3,649.90
Smith Valley Artesia	8,598.76
Mason Valley Artesia	22,579.31
Churchill Valley Ground Water	1,126.28
Truckee Carson Irrigation District	2,184.21
Brady Hot Springs Ground Water	-
Fernley Ground Water	1,528.84
Lyon County School District	
General Fund	146,254.39
Debt Service Fund	105,853.10
Total Custodial Funds	**23,840,402.42**

SUMMARY	
Lyon County	125,360,244.45
Custodial Funds	23,840,402.42
Unallocated Cash	
Unapportioned Purchase Cards	(13,206.74)
Unapportioned Interest	35,441.65
TOTAL	**149,222,881.78**

BANK ACCOUNTS AND PETTY CASH	
Wells Fargo Bank Checking	6,537,669.43
US Bank Investment	84,502,380.04
Local Government Investment Pool	58,156,361.47
Inmate Trust	17,870.84
Fernley Swimming Pool Imprest	300.00
Dayton Utilities Imprest	500.00
Silver Springs GID Imprest	500.00
Petty Cash	7,300.00
TOTAL	**149,222,881.78**

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
11.b

Subject:
For Possible Action: Review and accept travel claims.

Summary:
The Board of Commissioners has requested to have the travel report presented to them. It is not required by statute.

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Travel Report 2-1-26 to 2-15-26

LYON COUNTY TRAVEL REPORT

February 1-15, 2026

Department / Name	Description	Amount
Sheriff		
Tyrell Joyner	Homicide Investigations Training Reno, NV 02/24-02/26/2026 - Per Diem, Registration	461.00
Erik Kusmerz	Homicide Investigations Training Reno, NV 02/24-02/26/2026 - Per Diem	461.00
Kathleen Clanton	Background Drop off Reno, NV 02/04/2026 - Mileage	101.21
Matthew Galvin	Next Level Leadership Reno, NV 02/26-02/28/2026 - Per Diem	66.00
Brianne True	Peer to Peer Support Reno, NV 02/24/2026 - Per Diem	22.00
Anthony Cupp	Peer to Peer Support Reno, NV 02/24/2026 - Per Diem	22.00
Melody Holland	Peer to Peer Support Reno, NV 02/24/2026 - Per Diem	22.00
Zachary Westbrook	Peer to Peer Support Reno, NV 02/24/2026 - Per Diem	22.00
Benjamin Beck	Peer to Peer Support Reno, NV 02/24/2026 - Per Diem	22.00
Sara Celedon	Peer to Peer Support Reno, NV 02/24/2026 - Per Diem	22.00
Jefreey Miller	Grant Management Training Carson City, NV 02/11-01/12/2026 - Registration	625.00
Eric Engelman	ECC Meeting Las Vegas, NV 03/17-03/20/2026 - Lodging	95.24
Jessie Cornett	Glock Armorer Carson City, NV 04/23/2025 - Registration	300.00
District Court		
Lindsey McCabe	Fernley Juvenile Court 01/29/2026 - Mileage	68.15
Sara Glover	Fernley Juvenile Court 01/08 & 01/29/2026 - Mileage	136.30
Sara Glover	Dayton Juvenile Court 01/15/2026 - Mileage	75.40
County Manager		
Andrew Haskin	2026 NACO Conference Washington DC 02/20-02/24/2026 - Registration, Airfare	1,626.70
Commissioners		
Scott Keller	2026 NACO Conference Washington DC 02/20-02/24/2026 - Registration, Airfare	1,626.70
Tammy Hendrix	2026 NACO Conference Washington DC 02/20-02/24/2026 - Registration, Airfare	1,626.70
Robert Jacobson	Travel Nov-Dec 2025 - Mileage	263.20
Robert Jacobson	Travel Jan-Feb 2026 - Mileage	204.45
Juvenile Probation		
Rona Walker	Yerington Juvenile Master Court 02/03/2026 - Mileage	45.53
Brian Kirkley	POST Background Investigator Course Carson City, NV 01/21-01/22/2026 - Per Diem	70.00
Leandra Blake	Transport Minor Fallon, NV 02/02/2026 - Per Diem	22.00
Abram Minnitte	Transport Minor Fallon, NV 02/02/2026 - Per Diem	22.00
Abram Minnitte	Transport Minor Las Vegas, NV 02/04/2026 - Per Diem	45.00
Eleazar Hernandez	Transport Minor Las Vegas, NV 02/04/2026 - Per Diem	45.00
Kevin Montgomery	ASP Instructor Training Carson City, NV 02/03-02/05/2026 - Per Diem	161.00
Eleazar Hernandez	Transport Minor Cedar City, UT 02/10/2026 - Per Diem	63.00
Steve Albertson	Transport Minor Cedar City, UT 02/10/2026 - Per Diem	63.00
Library		
Wynne Prindle	2026 PLA Conference Minneapolis, MN 04/01-04/03/2026 - Registration	434.00
JenNifer Schardt	2026 PLA Conference Minneapolis, MN 04/01-04/03/2026 - Registration	280.00

Public Guardian		
Debby Stevens	Visit Client Pahrump, NV 01/23/2026 - Airfare, Rental Car	359.30
Planning		
Loretta Sell	Planning Commission Meeting 02/10/2026 - Mileage	47.85
Mark Jones	Planning Commission Meeting 02/10/2026 - Mileage	42.20
Wendy Loomis	Planning Commission Meeting 02/10/2026 - Mileage	42.20
Andrew Merritt	Planning Commission Meeting 02/10/2026 - Mileage	55.39
Kathryn Baker	Planning Commission Meeting 02/10/2026 - Mileage	25.96
Audrey Allen	Planning Commission Meeting 02/10/2026 - Mileage	69.17
Utilities		
Brody DeForest	2026 P3S Conference and Expo Riverside, CA 02/09-02/12/2026 - Registration	1,206.00
Stephanie Kapfenstein	NWEA Annual Conference Las Vegas, NV 02/22-02/27/2026 - Per Diem	382.00
Andrew Gatlin	NWEA Annual Conference Las Vegas, NV 02/22-02/27/2026 - Per Diem	382.00
Walker River Justice Court		
Pete Spinuzzi	NJLJ Winter Conference Las Vegas, NV 01/26-01/30/2026 - Per Diem, Lodging	230.00
		11,961.65

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
11.c

Subject:
For Possible Action: Approve the changes on Assessor's tax roll due to correction in assessments and review of tax roll changes

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Secured Factual Corrections
- Unsecured Factual Corrections

		Meeting:	3/5/2025		
	LYON COUNTY				
The Assessor's Office deems the following Secured Property accounts to be factual corrections:					
			Tax	Tax.	Tax
Acct #	Name/Owner	Reason for Deletion	Dist.	Year.	Amount
018-563-08	ADCOCK, ROBERT	APPLY DV EXEMPT	8.2	2025-2026	$211.02
014-631-11	ADCOCK, ROBERT	APPLY DV EXEMPT	2.1	2025-2026	539.31
016-252-05	CARMONA, ESLY	APPLY EXEMPT	8.7	2025-2026	$122.04
020-571-16	WATSON, SKYLAR	APPLY DV EXEMPT	6.0	2025-2026	$1,294.90
029-175-05	HALLERT, MICHAEL	APPLY DV EXEMPT	8.8	2025-2026	$159.45
022-162-02	BEAVER, JAMES	APPLY DV EXEMPT	6.0	2025-2026	$512.98
					$2,839.70

		Meeting:	3/5/2026		
		LYON COUNTY			
The Assessor's Office deems the following Unsecured Property accounts to be <u>factual corrections</u>:					
			Tax	**Tax.**	**Tax**
Acct #	**Name/Owner**	**Reason for Deletion**	**Dist.**	**Year.**	**Amount**
AP000846	GOODIN, DAVID	REFUND- PLANE WAS BILLED IN CA 2025	1.0	2025-2026	-$931.54
MH006282	TOWNER, TERRY	MH DESTROYED	8.2	2024-2025	$26.08
MH006282	TOWNER, TERRY	MH DESTROYED	8.2	2025-2026	$26.84
TOTAL:					**-$878.62**

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
11.d

Subject:
For Possible Action: Approve the February 19, 2026 minutes.

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- 02.19.2026 BOCC Minutes

Board of County Commissioners
Lyon County, Nevada

The Honorable Board of Lyon County Commissioners met this day, Thursday, February 19, 2025, at 9:00 A.M. in the LYON COUNTY ADMINISTRATIVE COMPLEX, 27 S. MAIN STREET, YERINGTON, NV 89447.

1. Roll Call

Present: Chairman Scott Keller, Vice-Chair Tammy Hendrix, Commissioner Robert Jacobson, Commissioner John Cassinelli, and Commissioner David Hockaday

Staff Present: County Manager Andrew Haskin, District Attorney Steve Rye, Deputy Clerk Melissa Colocho

2. Invocation given by Garry Leist of Calvary Chapel Dayton Valley

No invocation was given.

3. Pledge of Allegiance

4. Public Participation

Chair Keller asked for public comment.

Jim DeChambeau commented he is waiting for something to be done in front of his house, such as speed bumps, rumble strips, or signs, and there has been no communication.

Robin Biggs commented that the County is using Pandemic guidelines instead of Post-Pandemic Guidelines. She stated County Manager, Andrew Haskin advised her that the DA would be reaching out to the Attorney General's Office to clarify if incorrect Open Meeting Laws are posted.

5. For Possible Action: Review and Adoption of Agenda

Chair Keller asked for public comment, and there was none at this time.

County Manager Andrew Haskin stated items 11.h. and 11.i. needed to be removed from the agenda.

Commissioner Jacobson requested 11.e. be pulled for discussion.

Comm. Jacobson moved to approve the agenda, with item 11.e. to be pulled from the consent agenda for discussion, and items 11.h. and 11i. to be pulled from the consent agenda; Comm. Cassinelli seconded, and the motion passed 5-0.

6. Time Certain

6.a. Time Certain 9:00am: For Presentation Only: A presentation by Kim Fleming from Waste Management of Nevada, Inc on the the progress of the Silver Springs Transfer Station and other matters properly related thereto.

Per Commissioner Hendrix' request, Kim Fleming, with Waste Management, gave a presentation with updates on the current progress, scheduled adjustments, and steps completed to accelerate completion of the Silver Springs Transfer Station. She reported the permit to break ground was granted in January, Waste Management is now a member of the Silver Springs Area Chamber of Commerce, a ribbon cutting ceremony is being planned, and Waste Management has been asked by the Chamber of Commerce to speak at the next quarterly membership meeting. Ms. Fleming emphasized Waste Management's commitment to actively pursuing options to bring the facility online sooner if safe and feasible.

Comm. Jacobson thanked the Waste Management team for services provided to Lyon County residents.

Comm. Hendrix thanked Ms. Fleming for presenting at the Advisory Board.

Comm. Cassinelli asked if there will be recycling bins at the Silver Springs facility, and Ms. Fleming confirmed there will be bins available for people to bring their recycling in at no additional cost.

Comm. Hockaday and Chair Keller thanked Ms. Fleming.

7. Commissioners/County Manager Reports

Comm. Hockaday attended the Walker River Irrigation District meeting and discussed the capacity at Topaz and Bridgeport (currently about 79%), attended the Planning Commission meeting by Zoom, the Smith Valley Historical Society meeting, the Smith Valley Cemetery Association meeting, and the Mason Valley Conservation District meeting.

Comm. Cassinelli had a meeting with the developer of the Legacy 49 project in Dayton for discussion on what's pending there. He also met with Jeff Sutich and Dru Simerson of the Nevada Builders Alliance, in hopes of getting them involved with a future workshop currently being worked on. Comm. Cassinelli attended the Lincoln Day Dinner, and had an opportunity to thank Congressman Amodei for his service, congratulating him on his retirement. He also met with a representative of Arevia Power along with Commissioner Keller and County Manager Haskin, attended the first three and a half hours or so of the Planning Commission meeting on Zoom, met with representatives of Winston Energy along with Commissioner Jacobson, attended the CAMPO Board meeting for a presentation on the 2024 Annual Highway Safety Improvement Report, attended the Silver City CAB meeting and met with the representatives of the Silver City Volunteer Fire Department, met with Bill Snyder of the North Lyon County Fire District, and attended the NNDA board meeting.

Comm. Hendrix attended the Lincoln Day Dinner, met with Arevia Power, attended the Planning Commission meeting, met with Dr. Shayla Holmes, and attended the Carson Water Subconservancy District Board meeting. Comm. Hendrix has participated in the NACo Rural Energy Academy a couple of times; Lyon County was accepted, and was able to add some team members for a 12-week intensive training. Comm. Keller, Community Development Director Gavin Henderson, and consultant Drew Jeremy, of RCI, will be participating, as well.

Comm. Jacobson attended the Regional Boys and Girls Club meeting with the Northern Nevada clubs, met with Winston Solar, met with Arevia Power, and met with the city of Fernley, North Lyon County Fire and the County Manager. He also attended the Nevada Works meeting, toured TMCC and visited some of their workforce ready programs, and attended the Fernley City Council meeting. Comm. Jacobson wished good luck to the Smith Valley girls and boys, Yerington girls, and the Fernley boys and girls as they march toward the State tournament titles this weekend. He also reported watching North Lyon County Fire trucks escorting the teams safely through town (Fernley) to I-80 with sirens blaring and lights flashing; Comm. Jacobson thanked North Lyon Fire for going above and beyond in making memories for the kids.

Chair Keller attended four Lincoln Day events, the Planning Commission meeting, the Silver Springs Advisory Board meeting, the Fernley City Council meeting. He reported that he already has meetings set with Senators Cortez Masto and Rosen, as well as Congressman Amodei's office. Chair Keller also met with Arevia Power, is looking forward to the privilege of attending the Rural Energy Academy, and is getting ready for the NACo Conference.

County Manager Andrew Haskin reported on progress being made at the Dayton Government Complex, and that the Fernley Justice Complex is nearing completion. He also met with the City of Fernley and North Lyon County Fire, and will be leaving for the NACo Conference.

8. Elected Officials' Reports

Clerk-Treasurer Staci Lindberg reported she might have misstated the filing periods at the last meeting. She clarified the filing period is March 2nd through March 13th. She advised the mock election will be held in Carson City with all 17 Nevada counties; it is open to the public with Legislators in attendance on Thursday, February 26, 2026, from 2-4 P.M.

Ms. Lindberg also stated the Aurora filing system at is up and running, can be found in the 2026 Election and Candidate Filing section of nvsos.gov, and filings can be put into draft mode until March 2nd, when they can be printed and submitted at the Clerk-Treasurer's office.

9. Appointed Officials Reports

Facilities Director Doug Homestead reported holding off the opening of the Fernley Justice Complex until 4/1 to ensure there are no issues with contractors working while court is in session. He gave an update on Dressler Park and ongoing improvements, advised Kay Winters Park in Dayton will be closing March 4th or 5th for tree maintenance, and drainage area in Santa Maria Park has been having weekly weed burning, weather permitting. Mr. Homestead had ordered 20 chairs for the Silver Springs Senior Center meeting rooms, and some have arrived and some are delayed. He reported that the City of Yerington will be holding a pesticide applicator's class in March or April and nine employees from the Facilities Department and some from the Roads Department will be attending.

10. Advisory Board Reports

There were none at this time.

11. CONSENT AGENDA

Chair Keller asked for public comment, and there was none at this time.

Item 11.e. was pulled for discussion.

Comm. Hendrix moved to approve the consent agenda items 11.a. through 11.d. and 11.f. through 11.g.; Comm. Cassinelli seconded, and the motion passed 5-0.

11.a. For Possible Action: Review and accept travel claims.

Travel claims total was $5,467.44.

11.b. For Possible Action: Review and accept claims and financial reports.

County claims totaled $3,578,909.15 and payroll totaled $1,480,047.37. The cash balance was $ 126,758,316.68.

11.c. For Possible Action: Approve the changes on Assessor's tax roll due to correction in assessments and review of tax roll changes.

The secured factual corrections totaled $3,652.62. The unsecured factual corrections totaled $310.43.

11.d. For Possible Action: Approve the February 5, 2026 minutes.

11.e. For Possible Action: Approve a Grant Agreement with the William N. Pennington Foundation in the amount of $185,434.00 to assist the Lyon County Sheriff's Office with the purchase to equip 2 (two) Emergency Response Vehicles.

The Board and Emergency Management and Government Affairs Director, Taylor Allison discussed finding a way to provide recognition to the Pennington Foundation in appreciation of their generosity with this grant, as well as funding toward the Dayton Boys and Girls Club Early Learning Center, and the Silver Springs Boys and Girls Club and possibly the Early Learning Center.

Comm. Jacobson moved to approve a Grant Agreement with the William N. Pennington Foundation in the amount of $185,434.00 to assist the Lyon County Sheriff's Office with the purchase to equip 2 (two) Emergency Response Vehicles; Comm. Cassinelli seconded, and the motion passed 5-0

11.f. For Possible Action: Approve the change order to purchase lidars in the amount of $3,500 with the Office of Traffic Safety grant from the Nevada Department of Public Safety.

11.g. For Possible Action: Approve a contract for services with Something to Believe in Counseling for the Lyon County Sheriff's Office Peer Support Team.

11.h. For Possible action: Approve a contract for Ledezma-Aguilar Garden Services for the amount of $800 per month for the maintenance of the medians on Dayton Valley Road.

This item was removed.

11.i. For Possible Action: Approve a contract with Ledezma-Aguilar Garden Services for the amount of $800 per month for the maintenance of the north sidewalk on Dayton Valley Road.

This item was removed.

****END OF CONSENT AGENDA****

REGULAR AGENDA

12. Facilities

12.a. For Possible Action: Accept the donation of 228 tons of DG material and the delivery of it valued at $6,270 from Cinderlite for the Dressler Park new Little League field. The Smith Valley

Park and Recreation Board recommended at their February 2, 2026 meeting that the BOCC accept this donation. (Facilities Director, Doug Homestead)

Facilities Director Doug Homestead acknowledged CinderLite for their donation.

Comm. Hockaday showed appreciation for the donation to get the baseball field ready for the season.

Chair Keller asked for public comment and there was none.

Comm. Hockaday moved to accept the donation of 228 tons of DG material and the delivery of it valued at $6,270 from Cinderlite for the Dressler Park new Little League field. The Smith Valley Park and Recreation Board recommended at their February 2, 2026 meeting that the BOCC accept this donation; Comm. Cassinelli seconded, and the motion passed 5-0

13. Advisory Board

13.a For Possible Action: Approve a change of meeting date for the Dayton Regional Citizen Advisory Board from the first Wednesday of each month to the second Wednesday of each month beginning April 8, 2026. (County Manager, Andrew Haskin)

County Manager Andrew Haskin stated he received a request for this item from the Dayton CAB.

The Dayton CAB's Chairman, Jim Davis, was present via Zoom, but there were no questions.

Chair Keller asked for public comment and there was none.

Comm. Cassinelli moved to approve a change of meeting date for the Dayton Regional Citizen Advisory Board from the first Wednesday of each month to the second Wednesday of each month beginning April 8, 2026; Comm. Hockaday seconded, and the motion passed 5-0.

13.b For Possible Action: Appoint up to 2 members to the Central Lyon County Park & Recreation Board with terms expiring December 31, 2026 and December 31, 2027.

Board Liaison, Martha Tapia, advised Alberto Gonzalez was the only applicant.

Chair Keller asked for public comment and there was none.

Comm. Jacobson moved to appoint Alberto Gonzalez to the Central Lyon County Park & Recreation Board with term expiring December 31, 2027; Comm. Hockaday seconded, and the motion passed 5-0.

13.c For Possible Action: Appoint up to 1 member to the Animal Control Advisory Board with a term expiring December 31, 2029.

Board Liaison, Martha Tapia, advised Joseph Sanchez was the only applicant.

Joseph Sanchez stated he works directly with Animal Control often and noted how his experience as a Code Enforcement Officer will benefit the Animal Control Advisory Board.

Chair Keller asked for public comment and there was none.

Chair. Keller moved to appoint Joseph Sanchez to the Animal Control Advisory Board with a term expiring December 31, 2029; Comm. Hendrix seconded, and the motion passed 5-0.

14. County Manager

14.a For Possible Action: Discussion and provide direction to staff on the possible sale of parcel 008-043-07 in Silver City currently owned by the County to the Comstock Foundation for History and Culture. (County Manager,Andrew Haskin)

County Manager, Andrew Haskin, the Board, District Attorney Steve Rye, and Director & Volunteer at Comstock Foundation, Don Bergstrom, discussed the possible sale of parcel 008-043-07 to the Comstock Foundation for History and Culture, processes involved, potential uses, potential zoning changes, plans for the property, and the possibility of legally gifting it to the Foundation.

Chair Keller asked for public comment.

Jim DeChambeau commented that at 2600 sq. ft., the property ought to just be gifted.

Chair Keller moved that staff research if the property can be donated, if not check into what the associated costs would be, zoning it for what they're trying to do, make sure it's correct before they receive the property, and then bring it back for future agenda item; Comm. Cassinelli seconded, and the motion passed 5-0.

14.b For Possible Action: Approve a letter of support on behalf of the Board of Commissioners for North Lyon County Fire Protection District for federal funding assistance to acquire a replacement aerial ladder truck. (County Manager, Andrew Haskin)

County Manager, Andrew Haskin, clarified North Lyon Fire Protection District is collecting letters of support for funding applications.

Battalion Chief of North Lyon Fire District, Joe Mendoza, explained that current repair estimates are more than what the current truck would bring at auction, and the Department is looking for a letter of support for purchasing a new ladder truck with equipment.

Chair Keller asked for public comment.

Micah Triplett openly requested the Commissioners support the letter, because North Lyon Fire District definitely needs aerial platforms for the growing infrastructure.

Comm. Jacobson moved to approve a letter of support on behalf of the Board of Commissioners for North Lyon County Fire Protection District for federal funding assistance to acquire a replacement aerial ladder truck; Comm. Hendrix seconded, and the motion passed 5-0.

15. Agenda Requests

Comm. Jacobson had none.

Comm. Hendrix had none.

Comm. Cassinelli had none.

Comm. Hockaday had none.

Chair Keller requested a future item regarding the length of driveways in subdivisions.

City of Fernley Councilman and Fire Chief, Joe Mendoza, requested a future agenda item relating to having a standing committee based on Chapter 7 of the Lyon County Master Plan as amended on June 2, 2022. He stated he will submit the request in writing.

16. Commissioner Comments

Comm. Jacobson commented Lyon County School District built an incredible gym, and will host a State tournament. He wished the Smith Valley, Yerington, and Fernley teams luck.

Comm. Hendrix had none.

Comm. Cassinelli stated he may have a future agenda request and asks the Commissioners to think about roads or routes for OHV access and designated OHV routes to allow people to traverse the paved roads from home to BLM land or off-road land.

Comm. Hockaday stated the Boys & Girls Club Award Dinner will be on February 21st, 2026, and wished good luck to the teams.

Chair Keller had none.

21. Public Participation

Chair Keller asked for public comment. There was none.

22. Closed Session pursuant to NRS 241.015(3)(b)(2)

There was none.

23. Adjourn

Meeting adjourned at 10:04 A.M.

LYON COUNTY BOARD OF COMMISSIONERS

_____

SCOTT KELLER, Chairman

ATTEST

_____

STACI LINDBERG, Lyon County Clerk/Treasurer

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
11.e

Subject:
For Possible Action: Accept a donation of $27,000 from the Lyon County Library Foundation for a new circulation desk at the Yerington Branch Library

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Grapevine Woodworks estimate

The Grapevine Woodworks
314 Snyder Ave.
Yerington, Nevada 89447
775-443-7781

INVOICE

000545

DATE:

SOLD TO	SHIP TO
LIBRARY - YERINGTON 20 NEVIN WAY YERINGTON, NV 89447	

CUST. ORDER NO.	DATE SHIPPED	SHIPPED VIA	TERMS	SALESMAN	F.O.B.	OUR ORDER NO.

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
	ENTRY / P.O.S. / BOOK DROP CABINETRY WITH TOPS		
	CABINERY		$19,700 00
	TOPS		$6,000 00
			$25,700 00

INVCC-759-3
PRINTED IN U.S.A.

Thank You

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
11.f

Subject:
For Possible Action: Accept a grant award from the Nevada State Library, Archives and Public Records in the amount of $4,000 for PLA 2026 - LSTA Continuing Education Grant for Libraries

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Library PLA 2026 Travel Grant award letter

NEVADA STATE LIBRARY, ARCHIVES and PUBLIC RECORDS
Nevada Department of Administration
100 North Stewart Street
Carson City, NV 89701

Federal 2025 LSTA Continuing Education (CE) GRANT-IN-AID AWARD

CE Recipient(s): Wynne Prindle and JenNifer Stockwell-Schardt

Subgrantee Library: Lyon County Library System

Address: 20 Nevin Way Yerington, NV 89447

UEI Number: UT4JJJ9N6L69

CE Activity: Public Library Association (PLA) Conference, Minneapolis, MN

CE Dates: 3/30/26 – 4/4/26

Grant Number: 25-20-LC **P/P# or CFDA #:** 45310-25

General

I. CE funded activities are as outlined in the approved CE application. Grant funds must be used to meet NSLAPR Five Year Plan and federal LSTA goals. The approved CE application submitted by the sub-grantee becomes part of this agreement.
II. The sub-grantee may not obligate or encumber grant funds prior to July 1, 2025. Funds may not be obligated or encumbered after June 30, 2026.
III. All unexpended grant funds must be returned to the Nevada State Library, Archives and Public Records.

Grant Amounts and Reimbursement Procedures

I. Total Amount of Federal funds obligated for this project: $4,000
II. The sub-grantee must request payments as reimbursement of actual funds expended for the normal grant cycle. **Advance payments may be requested under special circumstances and must be authorized by the LSTA Coordinator and NSLAPR Administrator prior to a payment request. (see attached Amendment)**
III. The sub-grantee may not obligate or encumber grant funds prior to July 1, 2025 or after June 30, 2026.
IV. Funds for the grant project are authorized according to the final application budget; match is not required.

Request for Fiscal and/or Programmatic Changes

The sub-grantee may request a budget and/or program amendments for fiscal or programmatic changes as outlined below. Sub-grantee must submit a request for the budget or program change in writing to NSLAPR. All requests for changes must be received 30 prior to CE activity. Requests received after that date will be considered on a case by case basis. The revision must be submitted before obligating or expending grant funds.

I. Fiscal Changes must have a Budget Revision for any of the following conditions:
   a. Transfers of grant funds among budget categories that exceed ten (10) percent of a budget category:
   b. A transfer of funds into a budget category that currently equals zero ($0);
   c. A change in the items listed in the approved budget categories if an item's cost or features are substantially different from the approved grant application specifications.
II. Programmatic changes to the approved grant application must be submitted for a change in scope or objectives of the approved program, even if there is no associated budget revision. A change in scope is a substantive difference in the approach or method used to reach program objectives.

Reporting Requirements

The sub-grantee is responsible for submitting periodic reports that reflect the sub-grantee's level of performance for the approved grant application.

Reports will be due on the following

Reporting period	Report Due date
Final Report	06/05/2026 (2 months after CE end date)

Assurances and Conditions

I. The sub-grantee will complete and sign all required certifications and assurances.
II. The sub-grantee agrees to maintain all financial and programmatic records, supporting documents and other records relating to this grant award for three (3) years after the last State Program Report for the Nevada LSTA State Plan 2023 - 2027, to be submitted on January 31, 2029. The sub-grantee will maintain their records through January 31, 2032.
III. The sub-grantee accepts that any duly authorized representative of NSLAPR, the Nevada Division of Audits, the Legislative Counsel Bureau and the Institute of Museum and Library Services shall have access to any books, documents, papers and all records of information determined to be necessary to conduct an audit for funds expended under the terms and conditions of this sub-grant.
IV. This sub-grant may be terminated by written notice and mutual agreement of both parties.
V. Termination for Non-Appropriation: The continuation of this sub-grant is subject to and contingent upon sufficient funds being appropriated, budgeted, and otherwise made available by federal sources. Reservation of funds based upon budget reductions is included herein. The granting authority may reduce or terminate this sub-grant, and the sub-grantee waives any and all claim(s) for damages, effective immediately upon receipt of written notice (or any date specified therein) if for any reason the granting agency's funding from federal sources is not appropriated or is withdrawn, limited, or impaired.

Name of Federal awarding agency: Institute of Museum and Library Services	
Name of recipient: Nevada State Library, Archives and Public Records, Nevada Department of Administration	
Recipient Unique Entity Identifier: CS7KXL4DQMN5	
CFDA Name: LSTA Grants to States	CFDA Number: 45.310
Federal Award ID Number (FAIN): LS-259191-OLS-25	Federal Award Date: April 21, 2025
Total Amount of Federal Award: $ 2,218,492.00	Research & Development: No
Period of Performance Start Date: Oct. 1, 2024 Period of Performance End Date: Sept. 30, 2026	Indirect Cost Rate: 0.0

LSTA Contact Information
Questions or concerns about an LSTA project should be directed to:

Alyssa Ericksen/LSTA Coordinator
Nevada State Library, Archives and Public Records
(702)486-3760 / Fax (775) 684-3311
E-mail: aericksen@admin.nv.gov or nslaprlsta@admin.nv.gov

Required Signatures:

State Library, Archives & Public Records Administrator, Mike Strom — Date

Sub-grantee Authorized Official — Date

Printed Name and Title

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
11.g

Subject:
For Possible Action: Review and approve the Smith Valley Friends of the Library proposal to sponsor a student worker up to $3,300 beginning June of 2026 at the Smith Valley Branch Library

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Smith Valley Library Aide proposal

February 27, 2026

To: Trustees of Lyon County Library System

From: Jan Schardt, President, Smith Valley Friends of the Library

Re: Proposal for Part Time Student Library Aide for Smith Valley Library in 2026-2027

The Friends of Smith Valley Library would like to continue the position of Library Aide at Smith Valley Library for a Smith Valley High School student during the 2026-2027 school year. A grant of $3,300 from Smith Valley Friends of the Library to Lyon County is proposed pay for this part-time temporary employee, pending approval by the Trustees of the Lyon County Library System, and the Lyon County Board of County Commissioners. We would like the new position to begin on or about June 15, 2026, and to continue through the summer and during the school year, ending in May 2027.

1. Employer would be Lyon County. Student would have to apply for the county position, and be hired through a formal interview process. There would be no benefits (e.g. retirement, paid vacation, etc.).
2. Tasks would involve: shelving books, RFID tagging and encoding, sorting and shelving book donations, operating the disk cleaning machine to clean and restore CDs and DVDs, and assisting the librarians with special programs (e.g. Story time, Summer Reading Program, craft programs) and other tasks as needed. Summer duties may also include light custodial duties (vacuuming, dusting, trash, bathrooms).
3. Position would be funded by Smith Valley Friends of the Library through a grant paid to Lyon County. We are proposing a grant for a total of $3300. This will cover salary for 40 hours during the 8-week summer period plus 200 hours during the 10-month school year (240 hours @ $12/hour = $2880), plus required employer expenses of approximately $400 for social security, workman's compensation, etc.
4. The pay scale would be $12 per hour.
5. Student would be supervised by Nancy Nuti (School Library Tech) and/or Marci Reyes (Lyon County Library Branch Manager at Smith Valley branch).
6. The work schedule will be flexible to accommodate possible after-school sports and activities, and special events at the library. However, at least one hour per week would have to be during public library hours. The student's supervisor(s) would need to be present during his/her working hours and sign a time sheet reporting the student's hours worked.

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
12.a

Subject:
For Possible Action: Approve Application for Open Space/Historic Use Assessment submitted by Javelin Ventures LLC for Odeon Hall, located at 65 Pike Street, Dayton (APN 006-055-12). Approval will result in a 0.74 factor being applied to the taxable value of the parcel. (Chief Deputy Assessor, Erin Singley)

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Application for Historic Use & Supporting Documents Submission to BOCC

APN (Assessor's Parcel Number)

006-055-12

Return this application to:
Lyon County Assessor
27 S. Main St.
Yerington, NV 89447

This space for Recorder's Use Only

Application for Open Space/Historic Use Assessment

Return this application to the County Assessor's Office at the address shown above no later than June 1st. If this application is approved, it will be recorded and become a public record.

IF MORE SPACE IS NEEDED, PLEASE ATTACH ADDITIONAL SHEETS TO THIS APPLICATION.

Please type in the following information for each owner of record or his representative.

Owner:	Javelin Ventures LLC	Representative:	Ashton Taylor
Address:	65 Pike St	Address:	136 Ridge St
City, State, Zip:	Dayton NV 89403	City, State, Zip:	Reno NV 89501

This property is 0.29 acres in size and the current use of this property is (i.e. grazing, recreation, residential, etc.) Commercial

For what reasons do you feel the above-described property should be classified as open space/historic:
It is Historic under the Comstock Historic District and the Preservation Office in Carson City, State of Nevada.

Is the property available and accessible to the general public? Yes

If not, explain: _____

If open space real property classification is sought on the basis of the property being designated by law as ***historic***, please answer the following questions:

1) The historic name of the property is Odeon Hall and Saloon

2) The address of the property is 65 Pike St, Dayton NV 89403

3) The improvements were constructed in 1890 (Indicate year, estimate if unknown)

(I) (We) hereby certify that the foregoing information submitted is true, accurate and complete to the best of (my) (our) knowledge. (I) (We) understand that if this application is approved, this property may be subject to liens for undetermined amounts. (Each owner of record or his authorized representative must sign. Representative must indicate for whom he is signing, in what capacity and under what authority.) Please print name under each signature.

Ashton Taylor 136 Ridge St, Reno NV 89501 6/2/2025
Signature of Applicant or Agent – Address and Phone Number Date

Same 6.2.2025
Signature of Applicant or Agent – Address and Phone Number Date

Signature of Applicant or Agent – Address and Phone Number Date

FOR USE BY THE COUNTY ASSESSOR OR DEPARTMENT OF TAXATION

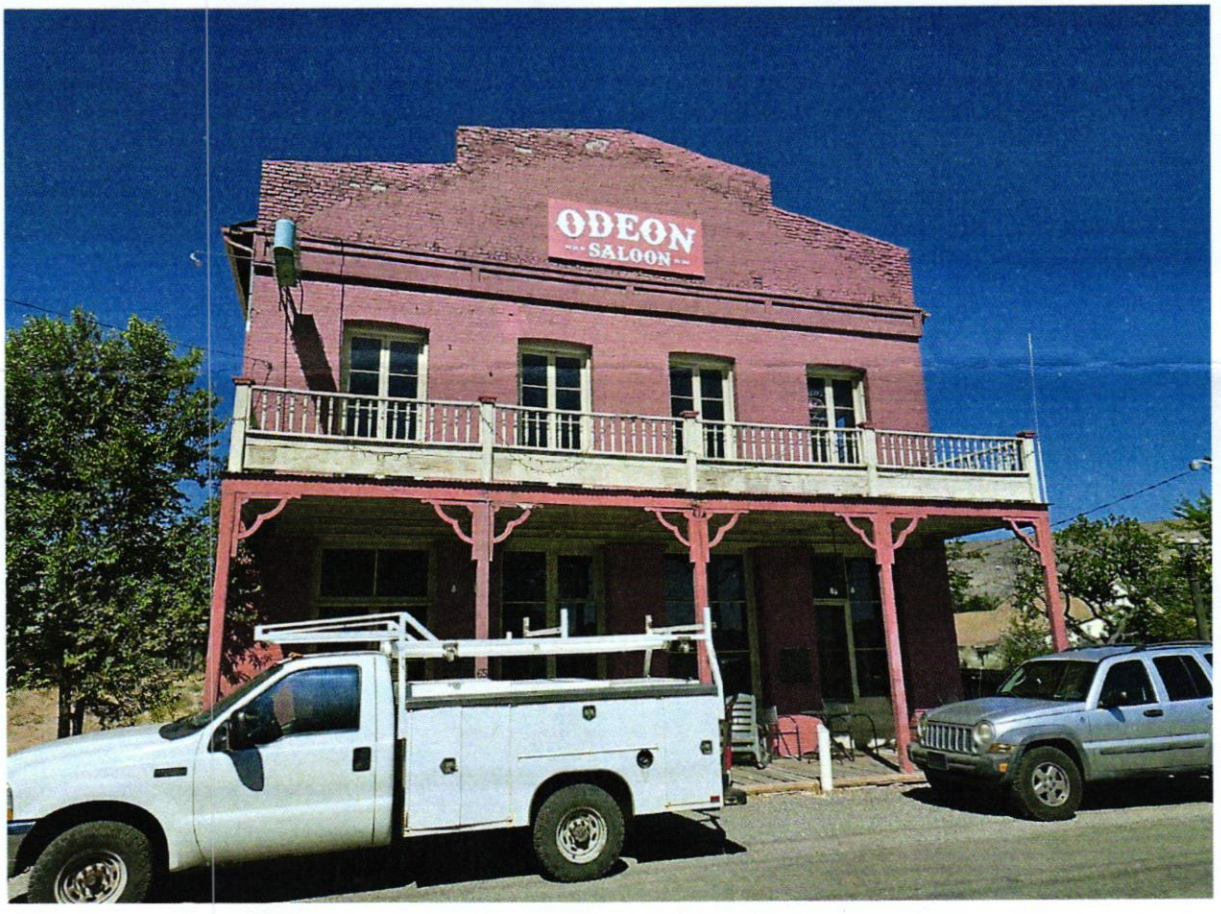
☒	Application Received	6/9/25 Date	Ea Initial
☐	Property Inspected	Date	Initial
☐	Income Records Inspected (If applicable)	Date	Initial
☐	County Commission Action	Date	Initial
☐	Written Notice of Approval or Denial Sent to Applicant	Date	Initial

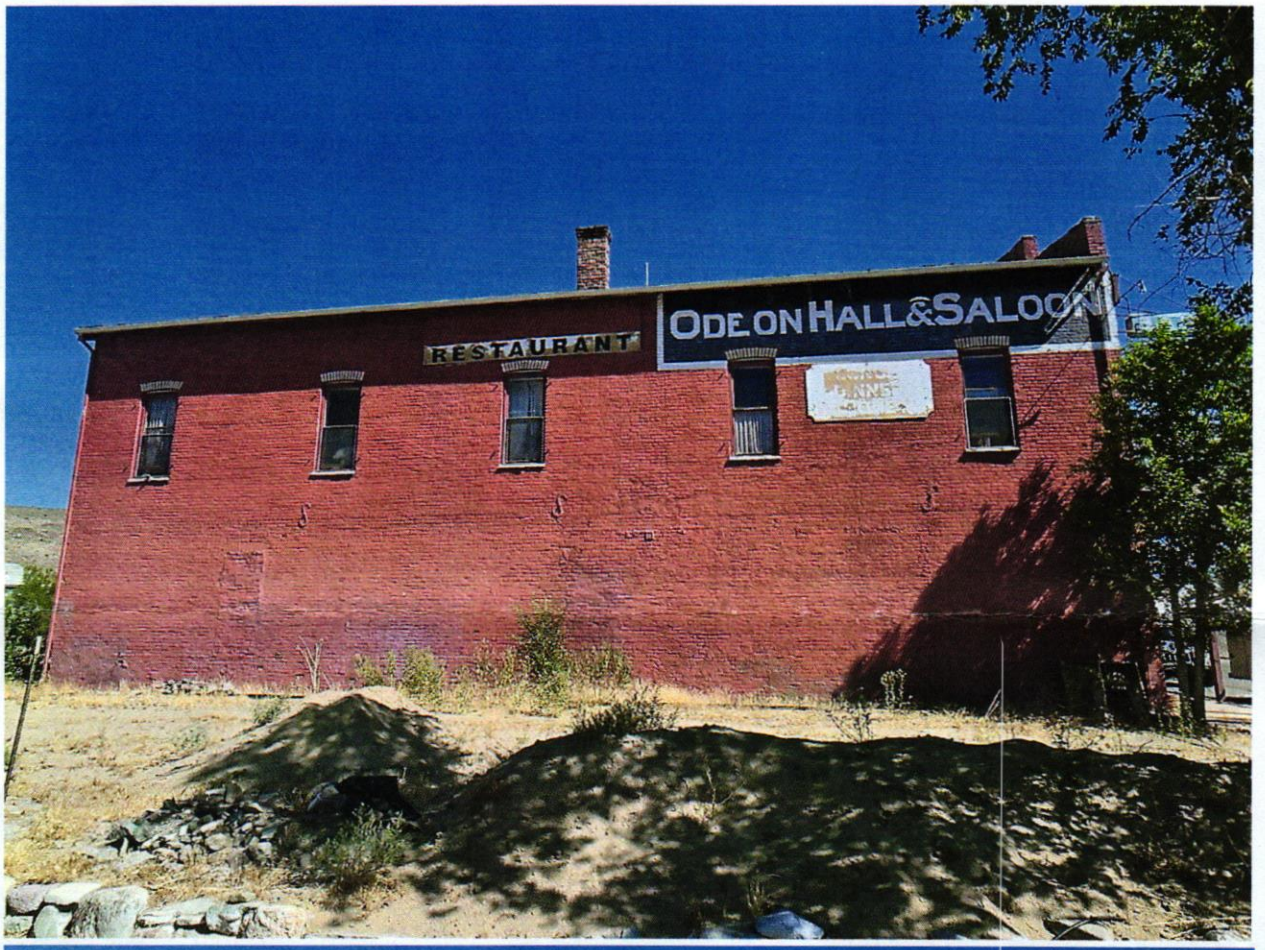
Reasons for Approval or Denial and Other Pertinent Comments:

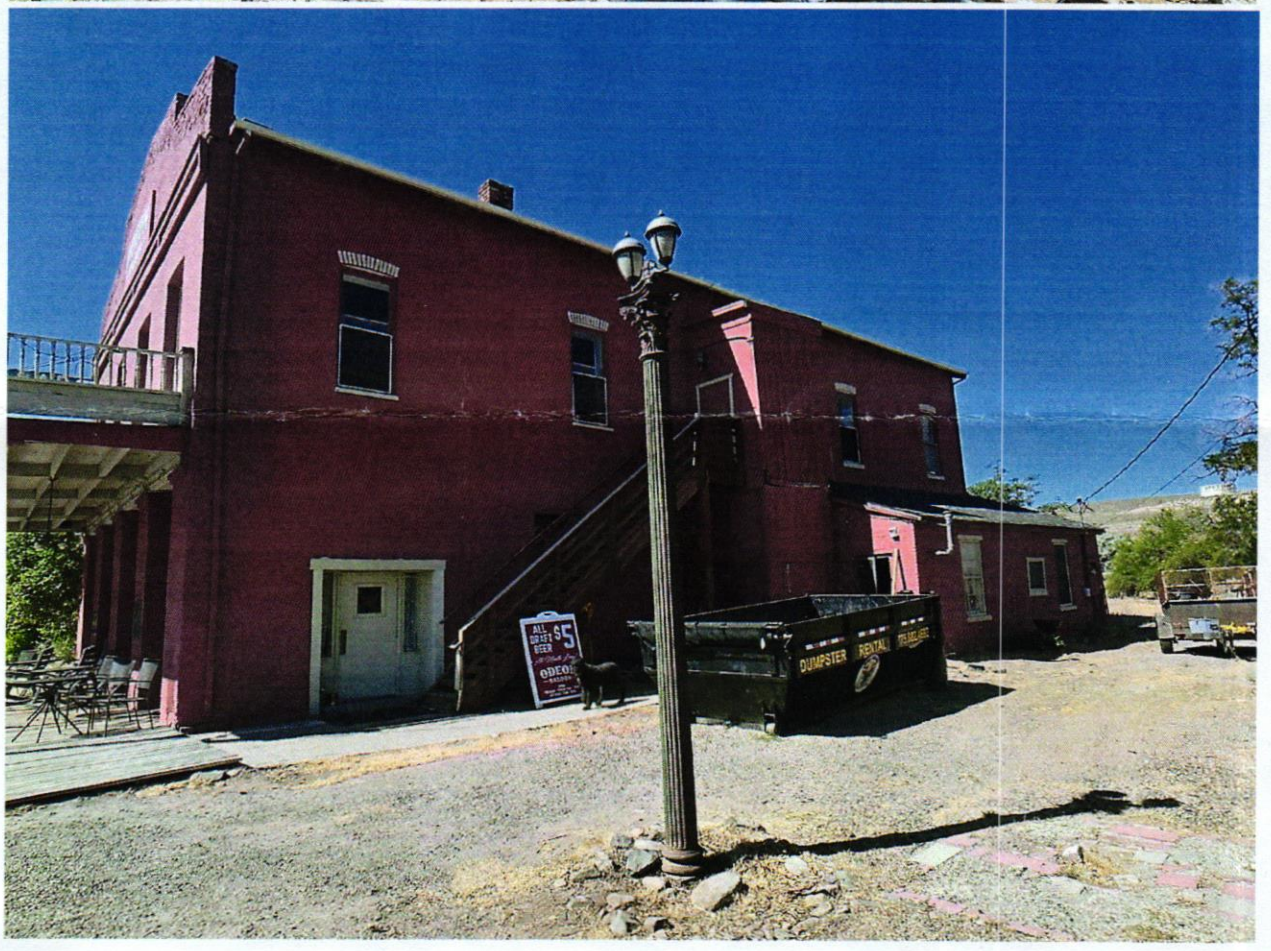
Signature of Official Processing Application Title Date

Top : Pictures of the Odeon Hall and Saloon taken 5/29/25

Bottom : Pictures taken 6/25/25




RESTAURANT
ODEON HALL & SALOON


ALL DRAFT BEER $5
DUMPSTER RENTAL

NEVADA
STATE HISTORIC PRESERVATION OFFICE

STATE OF NEVADA
Department of Conservation and Natural Resources

Joe Lombardo, *Governor*
James A. Settelmeyer, *Director*
Arthur Krupicz, *Administrator*

September 5, 2025

Ms. Erin M. Singley
Lyon County Assessor
27 S. Main Street
Yerington, NV 89447

Re: Open Space Assessment for Odeon Hall, 65 Pike Street, Dayton, Lyon County, Nevada
APN 006-055-12

Dear Ms. Singley:

In response to your request for the State Historic Preservation Office's (SHPO) opinion regarding whether the above-mentioned property may be considered "historic" pursuant to NRS 361A, please note the following:

Odeon Hall is a contributing resource to the National Register listed Virginia City Historic District, listed as a National Historic Landmark in 1961.

Odeon Hall is also a contributing resource to the locally designated Comstock Historic District.

The building continues to retain a high level of integrity on the exterior as several character defining features are largely intact.

Therefore, it is the opinion of the SHPO that this property satisfies the requirements of NRS 361A.050.

Sincerely,

Robin K. Reed
Deputy State Historic Preservation Officer

901 S. Stewart Street, Suite 3002 ✦ Carson City, Nevada 89701 ✦ Phone: 775.684.3448

shpo.nv.gov

CHAPTER 4

HISTORIC AND LAND PRESERVATION

SECTION:

4.04.01: Definitions

4.04.02: Procedure And Purpose

4.04.03: Criteria For Determining Open Space Assessment

4.04.01: DEFINITIONS:
The following words or terms shall have the meanings given herein:

HISTORIC, ARCHAEOLOGICAL AND CULTURAL SITES: An area of land associated with history, tradition, archaeological findings or the cultural heritage of Lyon County.

PRIMITIVE AREAS: An area of undisturbed natural environment which may be considered as wilderness area with limited recreational use.

SCENIC RESOURCES: A natural setting in combination with certain undisturbed physical qualities such as streams, rivers, rock outcroppings, vegetation or outstanding service features.

WATERSHEDS: An area of land separated from other land by a ridge or highland and serving as a drainage area by stream or river. (1973 Code §§3.04.010, 3.04.020, 3.04.030, 3.04.040 and 3.04.050)

4.04.02: PROCEDURE AND PURPOSE:
Applications pursuant to this chapter shall be received by the Lyon County Assessor from owners of real property and shall be in conformance with State law and shall be for the purpose of the preservation of land to conserve and enhance natural and scenic resources, historic, archaeological and cultural sites, primitive areas and watersheds. The additional purpose of this chapter is to allow applicants to qualify for property taxation pursuant to Nevada Revised Statutes chapter 361. (1973 Code §3.04.060)

4.04.03: CRITERIA FOR DETERMINING OPEN SPACE ASSESSMENT:
The following criteria shall be used in considering all applications for open space assessment pursuant to Nevada Revised Statutes:

A. The minimum size of the parcel of land that is the subject of the application shall be five (5) acres. There shall be no maximum size. (1973 Code §3.04.070)

B. The land shall be zoned RR-5, RR-10 or RR-20 as provided by title 15 of this Code and be privately owned. (1973 Code §3.04.070; amd. Ord. 603, 11-1-2018)

C. The subject land shall be open to use by the general public. Access to the subject property shall be provided to the general public and designated on the property.

D. The applicant shall allow the general public access to the subject property for walking or hiking but not for camping, cooking, campfires, whether artificial or natural, or overnight use, unless the applicant consents thereto. (1973 Code §3.04.070)

NRS 361A.050 "Open-space use" defined. "Open-space use" means the current employment of land, the preservation of which use would conserve and enhance natural or scenic resources, protect streams and water supplies, maintain natural features which enhance control of floods or preserve sites designated as historic by the Office of Historic Preservation of the State Department of Conservation and Natural Resources. The use of real property and the improvements on that real property as a golf course shall be deemed to be an open-space use of the land. The use of land to lease surface water rights appurtenant to the property to a political subdivision of this State for a municipal use shall be deemed to be an open-space use of the land, if the land was agricultural real property at the time the lease was granted.

(Added to NRS by 1975, 1756; A 1979, 208; 1987, 432; 1993, 1576; 2001, 940; 2005, 2664; 2009, 1229; 2011, 2975)

NRS 361A.170 Designations or classifications of property for open-space use; procedures and criteria.

1. Property used as a golf course is hereby designated and classified as open-space real property and must be assessed as an open-space use.

2. Land regarding which the owner has granted and has outstanding a lease of surface water rights appurtenant to the property to a political subdivision of this State for a municipal use, if the land was agricultural real property at the time the lease was granted, is hereby designated and classified as open-space real property and must be assessed as an open-space use.

3. In addition to the designation and classification of property as open-space real property pursuant to subsections 1 and 2, the governing body of each city or county shall, from time to time, specify by resolution additional designations or classifications under its master plan that are designed to promote the conservation of open space, the maintenance of natural features for control of floods and the protection of other natural and scenic resources from unreasonable impairment.

4. The board of county commissioners shall, from time to time, adopt by ordinance procedures and criteria which must be used in considering an application for open-space use assessment based on a designation or classification adopted pursuant to subsection 3. The criteria may include requirements respecting public access to and the minimum size of the property.

(Added to NRS by 1975, 1757; A 1987, 432, 677; 2005, 2665; 2009, 1229)

NRS 361A.180 Application by owner. Any owner of real property may apply to the county assessor for open-space use assessment based on a designation or classification adopted pursuant to subsection 3 of NRS 361A.170 and the payment of taxes on such property as provided in this chapter.

(Added to NRS by 1975, 1759; A 2005, 2665; 2009, 1230)

NRS 361A.190 Filing, contents and execution of application.

1. Any application for open-space use assessment must be filed on or before June 1 of any year with the county assessor of each county in which the property is located. A new application to continue that assessment is required on or before June 1 following any change in ownership or from approved open-space use of any portion of the property. If the property is divided, an owner who retains a portion of the property must file a new application in order to continue open-space use assessment on the portion retained.

2. The application must be made on forms prepared by the Department and supplied by the county assessor and must include a description of the property, its current use and such other information as may be required to determine the entitlement of the applicant to open-space use assessment. Each application must contain an affidavit or affirmation by the applicant that the statements contained therein are true.

3. The application may be signed by:

(a) The owner of the open-space real property, including tenants in common or joint tenants.

(b) Any person, of lawful age, authorized by a duly executed power of attorney to sign an application on behalf of any person described in paragraph (a).

(c) The guardian or conservator of an owner or the executor or administrator of an owner's estate.

4. The county assessor shall not accept an application unless the application is signed by each owner of record or his or her representative as specified in subsection 3. The assessor may require such additional information of the applicant as is necessary to evaluate his or her application.

(Added to NRS by 1975, 1759; A 1979, 277; 1993, 179)

NRS 361A.200 Action on application by governing bodies of county and city: Procedure.

1. The county assessor shall refer each application for open-space use assessment to the board of county commissioners, and if any part of the property is located within an incorporated city to the governing body of the city, within 10 days after its filing.

2. The governing body of the city shall consider the application in a public hearing. The governing body shall use the applicable procedures and criteria adopted pursuant to NRS 361A.170 and recommend its approval or denial to the board of county commissioners no later than 90 days after receipt of the application.

3. The board of county commissioners shall consider the application in a public hearing. The board shall use the applicable procedures and criteria adopted pursuant to NRS 361A.170 and weigh the benefits to the general welfare of preserving the current use of the property against the potential loss in revenue which may result from approving the application. The board may set such conditions as it reasonably may require upon its approval of the application.

4. At least 10 days' notice of the time and place of any public hearing held pursuant to this section shall be published in a newspaper of general circulation in the county.

5. The board may approve the application with respect to only part of the property, but if any part of the application is denied, the applicant may withdraw the entire application.

6. The board shall approve or deny an application no later than March 31 of each year. An application on which action by the board is not completed by March 31 is approved.

(Added to NRS by 1975, 1759)

NRS 361A.210 Orders of approval or denial by board of county commissioners.

1. Within 10 days after the board approves an application for open-space use assessment, it shall:

(a) Send copies of the order of approval to the county assessor and the applicant.

(b) Record the order of approval with the county recorder.

2. When the board denies an application, it shall, within 10 days after denial, send an order of denial to the applicant listing its reasons for denial.

(Added to NRS by 1975, 1760)

ASSESSMENT OF OPEN-SPACE REAL PROPERTY

Procedures

NRS 361A.170 requires the governing bodies of every city or county to establish and promote the conservation, maintenance, and protection of open-space property as part of their master plans. Any property designated as open-space becomes eligible for an open-space use assessment and tax deferment.

Property owners file open-space use applications with the county assessor who then forwards their applications to the county commission or city governing body. The county commission or governing body evaluates open-space use assessment applications and acts on them based on procedures adopted by ordinance.

Pursuant to NRS 361A.220(2), assessors must maintain records of open-space use assessments and make these records available to any person upon request. They must notify property owners of their open-space use assessments in the same manner used to notify property owners of their taxable value assessments. The notice must contain the following statement:

Deferred taxes will become due on this parcel if it is converted to a higher use.

Pursuant to NRS 361A.050, historic sites that satisfy the following conditions may also qualify for open-space use assessment.

- The Department of Cultural Affairs, State Historic Preservation Office must designate the site as historic.
- In addition, an historic site must meet the requirements of NRS 361A.170 through 361A.210.

In addition, pursuant to NRS 361A.170, property used as a golf course is classified as open-space real property and must be assessed as an open-space use. The methods used to value open-space golf course property are contained in permanent regulations adopted by the Tax Commission and effective October 1, 2007. The regulations are in the Appendix of this Bulletin.

Valuation Methodology

Upon approval of the application, the assessor calculates the open-space use assessed value for open space other than golf courses, by discounting the property's equalized taxable value. The Nevada Tax Commission adopted a formula that grants open-space use assessments a discount of 9 percent for a term of 3-1/2 years, which yields a discount factor of 0.74.

Open space value thus equals taxable value of the open-space property times a factor of 0.74. The assessed value equals 35 percent of the open-space use value. For open-space historic sites with both land and improvements, apply the 0.74 factor to the equalized taxable value of both land and improvements.

Example

The subject property, a 19th century Pony Express station on a one-acre site, qualifies as open-space land. The equalized full cash value of comparable land nearby, which is not open space, equals $10,000 per acre. The taxable value (RCNLD) of the subject improvements equals $40,000.

Land	$10,000 x 0.74	=	$ 7,400 x 35%	=	$ 2,590
Improvements	$40,000 x 0.74	=	$29,600 x 35%	=	$10,360
Total open-space use assessed value				=	$12,950

For tax deferral purposes the assessor should record the following:

Land	$10,000 x 35%	=	$ 3,500
Improvements	$40,000 x 35%	=	$14,000
Total Assessed Value		=	$17,500

Equalize the taxable value of open-space property with the taxable value of comparable surrounding properties. Reappraise open-space property with other property during the normal reappraisal cycle or apply land and improvement factors in intervening years. If the taxable value increases or decreases through reappraisal or factoring, make the appropriate adjustments to the open-space use valuation.

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
13.a

Subject:
For Possible Action: Approve Amendment No. 1 to the contract with HDR for the Rose Peak Water Main Replacement Project in an amount to not exceed $249,927. This amendment expands the scope of services to include completion of the 100% design, preparation of the bid document package, bidding assistance, and project permitting. Funding will be provided through the Dayton Water Fund and is eligible for reimbursement under the Environmental Protection Agency Community Grant Program. (Utilities Engineer, Kishora Panda)

Summary:
The scope of Amendment No. 1 to the contract with HDR increases the contract budget by an amount not to exceed $249,927 to provide additional services. These services include advancing the project design from 30% to 100% completion, preparing the bid document package, providing bidding assistance, and securing project permits. The original contract was approved by the Board of County Commissioners on June 5, 2025, in an amount not to exceed $289,929 for grant funding application support, National Environmental Policy Act (NEPA) services, and development of the project design to the 30% completion stage. Amendment No. 1 increases the total contract amount to an amount not to exceed $539,856 and extends the contract term through February 28, 2027.

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Amendment 1 - Rose Peak Water Main Project

AMENDMENT No.1 TO THE CONTRACT
Rose Peak Water Main Replacement Project

The Effective Date of this Amendment is: ***March 5, 2026***

Background Data

Effective Date of Contract: **June 5, 2025**

Owner: ***Lyon County Utilities***

Engineer: ***HDR***

Project: ***Rose Peak Water Main Replacement Project***

Nature of Amendment:

Amendment to the contract for additional services for completing the 100% design, preparing the bid document package, bidding assistance, and permitting.

Description of Modifications:

See Exhibit A – Scope of Work

Agreement Summary:

Original agreement amount:	***$289,929***
Net change for prior amendments:	***$0.00***
This amendment amount:	***$249,927***
Adjusted Agreement amount:	***$539,856***

Change in time for services (days or date, as applicable):

Original agreement term ending on:	***March 31, 2026***
Amendment 1 term ending on:	***February 28, 2027***

Owner and Engineer hereby agree to modify the above-referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous Amendments remain in effect.

OWNER:	Lyon County	ENGINEER:	HDR Engineering, Inc.
Signature:		Signature:	
Name:	Scott Keller	Name:	Craig Smart, P.E.
Title:	Chairman - Lyon County Board of County Commissioners	Title:	Vice President
Date Signed:		Date Signed:	

Address for giving notices:
Lyon County
34 Lakes Boulevard
Dayton, NV 89403

Address for giving notices:
HDR Engineering, Inc.
10615 Professional Circle, Suite 200
Reno, NV 89521

EXHIBIT A

SCOPE OF SERVICES

AMENDMENT 1

Lyon County Utilities

Rose Peak Water Main Replacement Project

INTRODUCTION

This amendment is for final design, permitting, bid assistance, and County directed services. HDR Engineering, Inc. (HDR's) will provide additional services including the following:

- Task 1 - Project Management & QA/QC
- Task 5 – 30%-100% Design and Bid/ Construction Documents
- Task 6 – County Directed Services
- Task 7 - Permitting
- Task 8 – Bidding Services

TASK 1 – PROJECT MANAGEMENT & QA/QC

Subtask 1.2 – Project Management & Review

This task includes preparation and management review of Amendment 1. This task also includes coordination of the design disciplines needed to complete the work. This task assumes a duration of 11 months, April 2026 to February 2027.

TASK 4 – SURVEYING

Subtask 4.2 – Supplemental Pothole Survey

Lyon County Utilities will pothole and backfill 13 locations, provided by HDR, to better understand the location of the existing water main that was not traceable during the utilities location.

HDR's subconsultant will survey the pothole locations, and provide the requisite CAD files with the locations and depth of the waterline. HDR will update the location of the existing waterline on the drawings, based on the survey information.

TASK 5 – DESIGN AND BID/CONSTRUCTION DOCUMENTS

Subtasks 5.3 – 90% Design Plans and Agency Approval Documents

HDR will submit 90% design plans, to the County and applicable utility companies for review.

- At a minimum, the 90% design plans will include the 30% plan sheets (as revised to address the County's review comments).
- All waterline connection details.
- HDR will prepare an engineering estimate of probable construction cost.
- The 90% design plans will address comments generated from the 30% design plan review and include a draft copy of the contract documents and technical specifications.
- HDR will be responsible for delivering design documents to the following permitting agencies:
    - NDEP Bureau of Safe Drinking Water
    - Central Lyon County Fire
- HDR will conduct one (1) meeting with the County to review the design and discuss design comments. The meeting will be conducted on Teams.
- HDR will conduct one (1) meeting with Central Lyon County Fire to review the design and discuss design comments.
- HDR will distribute the permit set plans to the permitting agencies and solicit their comments. The County will pay all permit application fees. NDEP documents will be submitted electronically.

Deliverables:

Four (4) sets of plans on 11″x17″ size sheets (half size) plus the PDFs

Draft specifications – PDFs only

Subtasks 5.4 – Final Bid Documents

HDR will address comments from the 90% submittal review and prepare final bid documents including the following:

- Incorporate or address review comments and finalize the design. There will be no County review of the Final design documents.
- Prepare the final opinion of probable construction cost.
- Deliver the final bid documents for bid advertisement based on the County's standards and requirements.
- The final plans and specifications will be signed and sealed by a Nevada Registered Professional Civil Engineer in responsible charge.
- Provide the County with the final signed and sealed plans and specifications in PDF format (plans and specifications) and MS Word (specifications only).

Deliverables:

Electronic (PDFs) of contract documents, including stamped/signed plans, specifications, and opinion of probable construction cost.

TASK 6 – COUNTY DIRECTED SERVICES

County Directed Services will cover the costs of unforeseen work items that may arise. Labor efforts will be charged on a time and materials basis (per HDR's standard fee schedule as shown in Exhibit B to this budget only) when authorized in writing by the County.

TASK 7 – PERMITTING

HDR will prepare and submit permit applications and 90% design documents for the water main improvements to NDEP Bureau of Safe Drinking Water and Central Lyon County Fire. HDR will review and respond to agency comments in writing, and prepare resubmittal drawings and specifications to address agency comments.

Assumptions:

- All permit fees will be paid by the County.
- This task assumes up to one resubmittal of drawings/specifications to obtain agency approval.
- Other project construction permits will be the Contractor's responsibility.

Deliverables:

- NDEP Permit application.
- Signed and sealed drawings and specifications for agency approval.
- Up to one resubmittal set of drawings and specifications.

TASK 8 – BIDDING SERVICES

HDR will assist the County with the bid advertisement, bid evaluation, bid selection, and award of the construction contract. Activities under this task will include the following elements:

- Bidding will commence once all permits are obtained.
- Coordinate with the Lyon County News Leader and the Reno Gazette-Journal for the publication of the bid advertisement. The advertisement will be published twice over the minimum bid duration of 4 weeks.
- HDR will distribute the bid sets electronically and maintain a plan holder's list.
- Attend one pre-bid meeting at the project site (Dayton, NV), including preparation of an agenda and meeting minutes.
- Answer questions from bidders and prepare addenda. Assuming a total of up to two addenda.
- Receive bids in the HDR office in Reno and conduct bid opening.
- Review bids received, evaluate and summarize the bids, and prepare a letter of recommendation for award of the construction contract.
- Prepare Notice of Award and agreement for Board's approval.
- After signature of the agreement and receipt of contractor's bonds and insurance, distribute Conformed Construction Documents.

Assumptions:

- All Bid documents and Conformed for Construction documents will be distributed electronically except for the four (4) 11″x17″ (half size) sets for the County.
- The County will pay for all bid advertisements.
- Up to two (2) addenda may be issued.

Deliverables:

Work products will include:

- Bid advertisements and proof of advertisements in the Lyon County News Leader and the Reno Gazette-Journal.
- Pre-bid meeting agenda and minutes
- Addenda (Up to 2)
- Bid summary and recommendation letter for construction contract award.
- Notice of award and agreement
- Original contract and stamped plan set for the county records.
- Four (4) sets of 11″x17″ Conformed Construction Documents (plans & specs) for the County.
- Electronic copies (PDF) of all the documents including the proof of the Ads, PDFs of all the bids received, and conformed sets.

SCHEDULE

The anticipated completion of the work scope is February 28, 2027.

FEE

HDR Engineering, Inc. will perform the Scope of Work described herein as an amendment to the June 5, 2025 contract. The work will be performed on a time and materials basis for an amendment in the amount of $249,927 and a total budget not to exceed $539,856 (Table 1).

HDR will not exceed this fee without prior authorization from the County, and billing would be made on a time and expense basis, not to exceed the authorized amounts, in accordance with the rate table in Exhibit B of this proposal. HDR reserves the right to transfer funds between tasks as project developments require, as long as the total effort

dollar limit is not exceeded. HDR will provide written notice to the County to transfer funds.

Table 1 - Budget Amendment

Task	Original Budget	Amendment 1	Revised Budget
1 – Project Management	$30,135	$23,495	$53,630
2 – EPA Grant Funding	$27,589	-	$27,589
3 – NEPA Process	$32,768	-	$32,768
4 - Surveying	$39,870	$10,139	$50,009
5 – Design & Bid/Construction Documents	$124,732	$113,738	$238,470
6 – County Directed Services	$34,835	$50,000	$84,835
7 - Permitting	-	$21,248	$21,248
8 – Bidding Services	-	$31,307	$31,307
Total Budget	$289,929	$249,927	$539,856

EXHIBIT B

Lyon County Utilities
Standard Rate Schedule
2026*

Rose Peak Waterline Replacement

Position Title	Hourly Rates Range		
Project Principal	$360.00	to	$400.00
Project Manager/Sr Engineer	$320.00	to	$360.00
Technical Advisor/ QC	$240.00	to	$270.00
Deputy PM/ RE	$160.00	to	$180.00
Civil Engr	$150.00	to	$170.00
Structural Engineer	$220.00	to	$250.00
Sr. Biologist	$310.00	to	$350.00
Biologist	$180.00	to	$200.00
Sr Cultural Resources	$240.00	to	$270.00
Cultural Resources	$200.00	to	$220.00
Sr EPA Funding	$280.00	to	$320.00
EPA Funding	$150.00	to	$170.00
CAD Designer	$160.00	to	$190.00
CAD Tech	$150.00	to	$170.00
Technical Editor	$190.00	to	$210.00
Project Accountant	$110.00	to	$130.00
Project Admin/Coordinator	$110.00	to	$130.00

*Rates are for 2026; subject to change in 2027.

EXPENSES:
Vehicle Mileage (Per Mile) FTR Federal
Reproduction, Shipping, and other ODC's at cost
Subconsultants Markup 5%

ENGINEERING SERVICES AGREEMENT

This Agreement made and entered into this **5th** day of **June, 2025**, by and between LYON COUNTY, hereinafter referred to as the "COUNTY" and **HDR Engineering, Inc.**, hereinafter referred to as "CONSULTANT":

WITNESSETH:

WHEREAS, COUNTY desires to obtain consulting services for **EPA grant funding application assistance, National Environmental Policy Act (NEPA) Services, and 30% design of the Rose Peak water main replacement project** for Lyon County Utilities in Dayton, Nevada, referred to as "Project;"

WHEREAS, it is deemed that the services of **HDR Engineering, Inc.** are both necessary and in the best interests of the County; and

NOW, THEREFORE, COUNTY and, for the considerations hereinafter set forth, mutually agree as follows:

ARTICLE I - SERVICES

A. COUNTY agrees to retain and does hereby retain CONSULTANT to perform the professional services hereinafter more particularly described, with such services to commence on the date of the execution of this Agreement and to continue until the completion of the work provided for herein.

B. CONSULTANT hereby agrees to perform the professional services as set forth herein and to furnish or procure the use of incidental services, equipment, and facilities necessary for the completion of said services.

C. CONSULTANT has the status of an independent contractor and shall not be entitled to any of the rights, privileges, benefits, and emoluments of either an officer or employee of COUNTY. CONSULTANT shall undertake performance of services as independent contractor and shall be wholly responsible for the methods of performance and for their performance. CONSULTANT is associated with the COUNTY only for the purposes and to the extent specified in this Agreement, and in respect to performance of the contracted services pursuant to this Agreement, CONSULTANT is and shall be an independent contractor and, subject only to the terms of this Agreement, shall have the sole right to supervise, manage, operate, control, and direct performance of the details incident to its duties under this Agreement. Nothing contained in this Agreement shall be deemed or construed to create a partnership or joint venture, to create relationships of an employer-employee or principal-agent, or to otherwise create any liability for the COUNTY whatsoever with respect to the indebtedness, liabilities, and obligations of CONSULTANT or any other party. CONSULTANT shall be solely responsible for, and the COUNTY shall have no obligation with respect to: (1) withholding of income taxes, FICA or any other taxes or fees; (2) industrial insurance coverage; (3) participation in any insurance plans available to employees of the City; (4) participation or contributions by either CONSULTANT or the Public Employees Retirement System; (5)

accumulation of vacation leave or sick leave; or (6) unemployment compensation coverage provided by the COUNTY. CONSULTANT shall indemnify and hold the COUNTY harmless from, and defend the COUNTY against, any and all losses, damages, claims, costs, penalties, liabilities, and expenses arising or incurred because of, incident to, or otherwise with respect to any such taxes or fees. Neither CONSULTANT nor its employees, agents, or representatives shall be considered employees, agents, or representatives of the COUNTY.

ARTICLE II - SCOPE OF SERVICES

A. The Scope of Services is set forth in **Exhibit A** as attached hereto and incorporated herein by this reference.

B. CONSULTANT represents that it is duly qualified and licensed in the State of Nevada for the purposes of performing the services.

C. CONSULTANT represents that it and/or the persons it may employ will provide all services, deliverables, and work products under this Agreement that are consistent with industry standards under similar conditions. ("Standard of Care").

D. Before commencing with the performance of any work under this Agreement, CONSULTANT shall obtain all necessary permits and licenses as may be necessary. Before and during the progress of work under this Agreement, CONSULTANT shall give all notice and comply with all the laws, ordinances, rules and regulations of every kind and nature now or hereafter in effect promulgated by any Federal, State, County, or other Governmental Authority, relating to the performance of work under this Agreement. If CONSULTANT performs any work that is contrary to any such law, ordinance, rule or regulation, it shall bear all the costs arising therefrom.

ARTICLE III - COMPENSATION

A. Payment for the services hereinabove set forth shall be made by the COUNTY to the CONSULTANT and shall be considered as full compensation for all personnel, materials, supplies, and equipment used in carrying out the work.

B. Compensation to the CONSULTANT are as set forth in the Rate scheduled attached as **Exhibit B**. Any expenses or costs not listed in Exhibit B will not be paid.

C Payments shall be made by the COUNTY based on itemized invoices from the CONSULTANT which lists costs and expenses. Such payments shall be for the invoice amount.

C. COUNTY shall pay CONSULTANT within thirty (30) days of receipt by COUNTY of CONSULTANT's invoice. If COUNTY disputes only portions of an invoice, COUNTY agrees to pay for undisputed items on that invoice within the time provided herein. Payment by COUNTY of invoices or request for payment shall not constitute acceptance by COUNTY of work performed under the Agreement by the CONSULTANT.

E. The not-to-exceed budget for the services authorized by this Agreement is the sum of **$289,929** and shall not be exceeded without written authorization of the COUNTY. The budget

may be increased by amendment hereto if necessitated by a change in the scope of services which increases the cost of providing the services. CONSULTANT is not authorized to provide any additional services beyond the scope of work without having authorized funding pursuant to a written amendment hereto signed by the authorized representative of the governing body.

ARTICLE IV – TERM AND SCHEDULE OF WORK

A. This Agreement shall be effective for a period of **Ten (10) Months** from **Jun 5, 2025** until **March 31, 2026**, and subject to appropriate, shall remain in full force and effect until the services are completed, unless terminated pursuant to Article XVII - Termination of Work.

B. CONSULTANT will commence the services as described immediately following the approval of the Agreement by COUNTY and CONSULTANT will proceed with such services in a diligent manner.

ARTICLE V - ASSIGNMENT OF AGREEMENT

A. The CONSULTANT shall not assign this Agreement or any portion of the work without prior written approval of the COUNTY which may be withheld for any reason whatsoever.

ARTICLE VI- OWNER'S RESPONSIBILITY

A. COUNTY shall provide any information in its possession that is requested by CONSULTANT and is necessary to complete the Project. COUNTY shall assist CONSULTANT in obtaining access to public and private lands to allow the CONSULTANT to perform the work under this Agreement. COUNTY shall examine all studies, reports, sketches, estimates, specifications, drawings, proposals, and other documents presented by the CONSULTANT and shall render decisions pertaining thereto within a reasonable time so as not to delay the work of the CONSULTANT. CONSULTANT may reasonably rely on the technical accuracy of documents and information furnished by the COUNTY.

ARTICLE VII - NONDISCLOSURE OF PROPRIETARY INFORMATION

A. CONSULTANT shall consider all information provided by COUNTY to be proprietary unless such information is available from public sources. CONSULTANT shall not publish or disclose proprietary information for any purpose other than the performance of the Services without the prior written authorization of COUNTY or in response to legal process or as required by the regulations of public entities.

ARTICLE VIII - NOTICE

A. Any notice, demand, or request required by or made pursuant to this Agreement shall be deemed properly made if personally delivered in writing or deposited in the United States mail, postage prepaid, to the address specified below:

To CONSULTANT:
Name: Craig Smart, Vice President
Address: 6750 Via Austi Pkwy Ste 350
Las Vegas, NV 89119
E-mail: craig.smart@hdrinc.com

To COUNTY:
Lyon County Utilities
David Bruketta, Director
30 Lakes Blvd.
Dayton, NV 89403
E-mail: dbruketta@lyon-county.org

B. Nothing contained in this Article shall be construed to restrict the transmission of routine communications between representatives of CONSULTANT and COUNTY.

ARTICLE IX – FORCE MAJUERE / UNCONTROLLED FORCES

A. Neither COUNTY nor CONSULTANT shall be considered to be in default of this Agreement, if delays in or failure of performance shall be due to uncontrollable forces the effect of which, by the exercise of reasonable diligence, the non-performing party could not avoid and is not reasonably foreseeable at the time of entering into this Agreement. The term "uncontrollable forces" shall mean any event which results in the prevention or delay of performance by a party of its obligations under this Agreement and which is beyond the control of the non-performing party. It includes, but is not limited to, fire, flood, earthquakes, storms, lightning, epidemic, war, riot, civil disturbance, sabotage, inability to procure permits, licenses, or authorizations from any state, local, or federal agency or personal for any of the supplies, material, accesses, or services required to be provided by either COUNTY or CONSULTANT under this Agreement, strikes, work slowdowns or other labor disturbances, and judicial restraint. CONSULTANT shall be paid for services performed prior to the delay.

B. Neither party shall, however, be excused from performance if nonperformance is due to uncontrollable forces, which are removable. The provisions of this Article shall not be interpreted or construed to require CONSULTANT or COUNTY to prevent, settle, or otherwise avoid a strike, work slowdown, or other labor action. The non-performing party shall upon being prevented or delayed from performance by an uncontrollable force immediately give written notice to the other party describing the circumstances and uncontrollable forces preventing continued performance of the obligation of this Agreement.

ARTICLE X- GOVERNING LAW

A. This Agreement shall be governed by and construed pursuant to the laws of the State of Nevada. In the event suit is commenced hereunder and in accordance with the Dispute Resolution Procedures of Article XXII, the suit shall be brought in the appropriate court in Lyon County, State of Nevada. In the event of an arbitration or mediation pursuant to Article XXII, such arbitration or mediation shall be held in Reno, Carson City or Lyon County, Nevada.

ARTICLE XI - SUCCESSORS AND ASSIGNS

A. COUNTY and CONSULTANT each binds itself and their successors, and assigns to the other party to this Agreement and to the successors, and assigns of such other party, in respect to all covenants, agreements and obligations or this Agreement.

ARTICLE XII - INDEMNIFICATION

A. CONSULTANT shall defend, indemnify and hold harmless COUNTY and its officers, employees (collectively "Indemnitee") from liabilities, damages, losses, , and expenses, including, without limitation, reasonable attorneys' fees, to the extent caused by the negligent or willful acts or omissions of the CONSULTANT or employees or agents of the CONSULTANT in the performance of this Agreement.

B. CONSULTANT assumes no liability for the negligence or willful misconduct of any Indemnitee or other consultants of Indemnitee.

ARTICLE XIII - INTELLECTUAL PROPERTY INDEMNITY

A. CONSULTANT shall defend, hold harmless, and indemnify COUNTY from liability, loss, claims, demands, suits, costs, fees and reasonable expenses (including actual fees and expenses of attorneys, expert witnesses, and other consultants), , for infringement of patent rights, copyrights, or other intellectual property rights, except with respect to designs, processes or products of a particular manufacturer expressly required by COUNTY in writing. If CONSULTANT has reason to believe the use of a required design, process or product is an infringement of a patent, CONSULTANT shall be responsible for such loss unless such information is promptly given to COUNTY. This Indemnity Covenant shall survive the termination of this Agreement.

ARTICLE XIV – LIMITED LIABILITY

The County will not waive and intends to assert available NRS chapter 41 liability limitations in all cases. Contract liability of both Parties shall not be subject to punitive damages. Liquidated damages shall not apply unless otherwise specified in the incorporated attachments. Damages for any County breach shall never exceed the amount of funds appropriated for payment under this Contract but not yet paid to Consultant for the fiscal year budget in existence at the time of the breach. Damages for any Consultant breach shall not exceed 150% of the contract's maximum "not to exceed" value. Consultant's tort liability shall not be limited.

ARTICLE XV – PAYMENT OF TAXES

A. Any and all Federal, State and local taxes, charges, fees, or contributions required by law to be paid with respect to CONSULTANT'S performance of this Agreement including, without limitation, state and local taxes, unemployment insurance, social security, and income taxes.

ARTICLE XVI - INSURANCE

A. GENERAL REQUIREMENTS.

1. The COUNTY requires that CONSULTANT purchase Industrial Insurance, General Liability, and CONSULTANT's Errors and Omissions Liability Insurance as described below against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the CONSULTANT, its agents, representatives, employees or subconsultants. The cost of such insurance shall be borne by CONSULTANT unless otherwise agreed.

B. INDUSTRIAL INSURANCE (WORKERS' COMPENSATION & EMPLOYER'S LIABILITY).

1. It is understood and agreed that there shall be no Industrial Insurance coverage provided for CONSULTANT or any Subconsultant by the COUNTY and in view of NRS 616B.627 and 617.210 requiring that CONSULTANT complies with the provisions of Chapters 616A to 616D, inclusive and 617 of NRS, CONSULTANT shall, before commencing work under the provision of this Agreement, furnish to the COUNTY a certificate of insurance from the Worker's Compensation Insurer certifying that the CONSULTANT and each Subconsultant have compiled with the provisions of the Nevada Industrial Insurance Act, by providing coverage for each and every employee, subconsultants, and independent contractors. Should the CONSULTANT be self-insured for Industrial Insurance, the CONSULTANT shall so notify the COUNTY and COUNTY may approve in writing of such self-insurance prior to the signing of a Contract. The COUNTY reserves the right to accept or reject a self-insured CONSULTANT and to approve the amount(s) of any self- insured retentions. The CONSULTANT agrees that the COUNTY is entitled to obtain additional documentation, financial or otherwise, for review prior to entering into a Contract with the CONSULTANT.

2. Consultant waives all rights against COUNTY and its agents, officers, directors, and employees for recovery of damages to the extent these damages are covered by the workers' compensation insurance or commercial umbrella insurance obtained by CONSULTANT pursuant to this Agreement. Consultant shall obtain an endorsement equivalent to WC 00 03 13 to affect this waiver.

C. MINIMUM SCOPE OF LIABILITY INSURANCE. Coverage shall be at least as broad as:

1. Commercial General Liability at least as broad as Insurance Services Office Commercial General Liability Coverage "occurrence" form CG OO O1 04 13 and ISO CG 20 37 04 13, or equivalent forms. The Comprehensive General Liability Coverage shall include, but is not limited to, liability coverage arising from premises, operations, independent contractors, products and completed operations, personal and advertising, injury, blanket contractual liability and broad form property damage. There shall be no endorsement or modification of the CGL limiting the scope of coverage for liability under a contract. Consultant waives all rights against COUNTY and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the commercial general liability or commercial umbrella liability insurance maintained pursuant to this Agreement. The Insurer shall endorse the CGL policy as required to waive subrogation against County with respect to any loss paid under the policy.

The CONSULTANT shall maintain limits of no less than **$1,000,000** each occurrence,

$2,000,000 general aggregate, and **$2,000,000** products and completed operations aggregate.

2. Automobile Coverage at least as broad as Insurance Services Office Business Auto Coverage form CA OO 01, CA 00 05, CA 00 25 or an equivalent form covering Automobile Liability Symbol 1 "Any Auto". In lieu of a separate Business Auto Liability Policy, the COUNTY may agree to accept Auto Liability covered in the General Liability Policy, if nonowned and hired auto liability are included.

The CONSULTANT shall maintain limits of no less than **$1,000,000** or the amount customarily carried by the CONSULTANT, whichever is greater, combined single limit per accident for bodily injury and property damage. No aggregate limit may apply.

CONSULTANT waives all rights against COUNTY and its agents, officers, directors and employees for recovery of damages to the extent these damages are covered by the automobile liability or other liability insurance obtained by CONSULTANT pursuant to this Agreement.

3. Professional Errors and Omissions Liability applying to all activities performed under this Agreement in a form acceptable to COUNTY. CONSULTANT will maintain professional liability insurance during the term of this Agreement and for a period of six (6) years from the date of substantial completion of the project unless waived by the COUNTY. In the event the CONSULTANT goes out of business during the term of this Agreement or the six (6) year period described above, CONSULTANT shall purchase Extended Reporting coverage for claims arising out of CONSULTANT's negligence acts, errors and omissions committed during the term of the Professional Liability Policy.

The CONSULTANT shall maintain professional liability insurance for all services performed under this Agreement with limits of no less than **$1,000,000** and **$2,000,000** in the aggregate.

D. DEDUCTIBLES OR SELF-INSURED RETENTIONS

1. Any deductibles or self-insured retentions must be declared to and approved by the Risk Manager. The COUNTY reserves the right to request additional documentation, financial or otherwise prior to giving its approval of the deductibles or self-insured retention. Any changes to the deductible or self-insured retention made during the term of this Agreement or during the term of any policy, must be approved by the Lyon County Risk Manager.

E. OTHER INSURANCE PROVISIONS

1. Except for professional liability and workers' compensation policies, the COUNTY, its officers, officials and employees are to be covered as additional insureds as respects: liability arising out of activities performed by or on behalf of the CONSULTANT including the insured's general supervision of the CONSULTANT; products and completed operations of the CONSULTANT; or premises owned, occupied or used by the CONSULTANT. The coverage shall contain no special limitations on the scope of protection afforded to the COUNTY, its officers, officials or employees.

2. The CONSULTANT's insurance coverage shall be primary insurance as respects the COUNTY, its officers, officials, and employees. Any insurance or self-insurance maintained by

the COUNTY, its officers, officials or employees shall be excess of the CONSULTANT's insurance and shall not contribute with it in any way.

3. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the COUNTY, its officers, officials, or employees.

4. Each liability insurance policy, except for professional liability and workers' compensation, shall contain a waiver of subrogation in favor COUNTY.

5. The CONSULTANT's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

6. Endorsements for General Liability, Auto, and Excess/Umbrella Liability listing all additional insureds are required. The endorsement for Excess/Umbrella Liability can be accomplished by the CONSULTANT'S production of a letter from the insurance company stating that Excess/Umbrella Liability will "follow form."

7. The CONSULTANT'S insurance coverage shall be endorsed to state that coverage shall not be canceled or non-renewed by either party, except after at least thirty (30) days prior written notice for reasons other than non-payment of premium and at least ten (10) days for non-payment of premium mail has been given to the COUNTY. CONSULTANT shall notify COUNTY if its insurance is reduced in coverage or in limits.

F. ACCEPTABILITY OF INSURERS

1. Insurance is to be placed with an A.M. Best and Company rating level of A - Class VII or better authorized to do business in the State of Nevada or eligible surplus lines under federal and Nevada law and having agents in Nevada upon whom service of process may be made, or insurance providers otherwise approved in writing by the COUNTY in its sole discretion. COUNTY reserves the right to require that CONSULTANT'S insurer be a licensed and admitted insurer in the State of Nevada, or on the Insurance Commissioner's approved but not admitted lists.

G. VERIFICATION OF COVERAGE

1. CONSULTANT shall furnish the COUNTY with certificates of insurance, including but not limited to the Certificate of Compliance in NRS 616B.627 and with original endorsements affecting coverage required by this article. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf and must be countersigned by a duly appointed and licensed agent in this state. All approved deductibles and self-insured retentions shall be shown on the certificate. The certificates are to be on forms approved by the COUNTY. All certificate and endorsements are to be received and approved by the COUNTY before work commences. The COUNTY reserves the right to require complete, certified copies of all required insurance policies, at any time.

H. SUBCONSULTANTS

1. CONSULTANTS shall require all subconsultants to be insured on their own or

under its policies and shall furnish separate certificates and endorsement for each subconsultant. Coverages for subconsultants shall be subjected to all of the requirements stated herein unless otherwise modified by either the Lyon County Risk Manager or County Attorney.

I. MISCELLANEOUS CONDITIONS

1. If the CONSULTANT or any Subconsultant fails to maintain any of the insurance coverages required, the COUNTY may terminate this Agreement for cause.

2. Nothing herein contained shall be construed as limiting in any way to the extent to which the CONSULTANT may be held responsible for payment for damages to persons or property resulting from her operations or the operations of any subconsultant under her.

3. If CONSULTANT's failure to maintain the required insurance coverage results in a breach of this Agreement, COUNTY may purchase the required coverage, and without further notice to CONSULTANT, deduct from sums due to CONSULTANT any premium cost advanced by COUNTY for such insurance.

ARTICLE XVII – PUBLIC RECORDS

A. Pursuant to Chapter 239 of the Nevada Revised Statutes, information or documents received from CONSULTANT may be open to public inspection and copying. COUNTY will have the duty to disclose unless a particular record is made confidential by law or a common law balancing of interests. CONSULTANT may clearly label specific parts of an individual document as a "trade secret" or "confidential" in accordance with NRS 332.061, provided that CONSULTANT thereby agrees to indemnify and defend COUNTY for honoring such a designation. The failure to so label any document that is released by COUNTY shall constitute a complete waiver of any and all claims for damages caused by any release of the records.

ARTICLE XVIII - TERMINATION OF WORK

A. Either party to this Agreement may terminate the Agreement for cause upon giving the other party thirty (30) days prior written notice. Cause may include, failure to perform through no fault of the party initiating the termination. In addition, COUNTY may terminate the Agreement for any one of the following causes: performance by CONSULTANT which fails to provide or satisfactorily perform any of the conditions, work, deliverables, goods, or services called for by this Agreement within the time requirements specified in this Agreement or within any granted extension of those time requirements; and COUNTY's lack of funds to complete the work. Cause for CONSULTANT may include, failure of COUNTY to make timely payment to CONSULTANT without good cause, following a demand for payment.

B. In addition, COUNTY may terminate any or all of the work covered by this Agreement by notifying CONSULTANT in writing. In the event such termination occurs at the conclusion of services pursuant to an executed task order, then CONSULTANT shall be entitled to receive compensation for all work satisfactorily completed and performed through the conclusion of that task order. No other changes or costs incurred for services or materials other than pursuant to an executed task order shall be reimbursed by COUNTY pursuant to this Agreement. In the event such termination occurs during the performance of services pursuant to an authorized task order,

then CONSULTANT and COUNTY shall need to determine what, if any additional services should be performed by CONSULTANT in order to close out the work in progress and provide any such unfinished materials to COUNTY. CONSULTANT and COUNTY shall agree upon the additional amount of work to be performed following the termination notice and the amount payable by COUNTY for such work. In the event that the parties cannot otherwise agree on the amount to be paid pursuant to this provision, then the matter may be referred to the Dispute Resolution Procedure in ARTICLE XXII.

C. In the event the Agreement is terminated by COUNTY for cause, including performance deemed unsatisfactory by COUNTY, or CONSULTANT failure to perform, or other cause created by CONSULTANT, COUNTY may withhold and offset against any payments otherwise due and/or seek recovery from CONSULTANT for amounts already paid, including without limitation: amounts paid for unsatisfactory work or work not done in accordance with this Agreement; value of COUNTY's time spent in correcting the work or problem; any increase in cost resulting from the problem or work; and any other costs which result from such termination. Subject to the terms herein, CONSULTANT will be paid for services performed prior to termination.

D. CONSULTANT expressly agrees that this Agreement shall be terminated immediately if for any reason local, federal and/or State Legislature funding ability to satisfy this Agreement is withdrawn, limited, or impaired.

ARTICLE XIX - PROFESSIONAL SERVICES

A. CONSULTANT shall be responsible for the professional quality and technical accuracy of all services furnished by CONSULTANT and their subconsultants under this Agreement. Without limiting the effect of any other provision of this Agreement and in addition to any other provision contained herein, CONSULTANT shall, without additional compensation, correct or revise any errors or omissions in their services.

B. CONSULTANT and their subconsultants retained pursuant to this Agreement are considered by COUNTY to be skilled in their profession to a degree necessary to perform the services and duties contained in this Agreement, and COUNTY hereby relies upon those skills and the knowledge of CONSULTANT and their subconsultants. CONSULTANT and their subconsultants shall perform such professional services and duties as contained in this Agreement in conformance to and consistent with the standards generally recognized as being employed by professionals of their caliber in the State of Nevada and under similar conditions. CONSULTANT shall be responsible for the professional quality and technical accuracy of all services furnished by CONSULTANT to COUNTY.

C. Neither COUNTYS' review, approval, or acceptance of nor payment for any of the professional services or work required under this Agreement shall be construed to operate as a waiver of any of COUNTYS' rights under of this Agreement. The rights and remedies of COUNTY provided for under this Agreement are in addition to any other rights and remedies provided by law.

D. CONSULTANT represents that neither the execution of this Agreement nor the rendering of services by CONSULTANT hereunder will violate the provisions of or constitute

a default under any other contract or agreement to which CONSULTANT is a party or by which CONSULTANT is bound, or which would preclude CONSULTANT from performing the SERVICES required of CONSULTANT hereunder, or which would impose any liability or obligation upon COUNTY for accepting such SERVICES.

E. Project information including, but not limited to reports, written correspondence, and verbal reports will be prepared for the use of the COUNTY. The observations, findings, conclusions and recommendation made represent the opinions of the CONSULTANT. Reports, records, and information prepared by others will be used in the preparation of the report. The CONSULTANT has relied on the same to be accurate and does not make any assurances, representations, or warranties pertaining to the records or work of others, except for its subconsultants, nor does the CONSULTANT make any certifications or assurances except as explicitly provided in writing. No responsibility is assumed by the CONSULTANT for use of reports for purposes of facility design by others.

ARTICLE XX – PROPERTY: COPYRIGHTS

A. The CONSULTANT shall furnish to the COUNTY all field notes, reports, data, and electronic or magnetic media, and original tracings of all drawings and plans, maps, photographs, and other materials (including, if requested by the Director, design computations, design sketches and review drawings) prepared pursuant to this Agreement (hereinafter collectively referred to as "Documents"). The originals of such Documents shall be and remain the property of the COUNTY.

B. All of such Documents shall be deemed to be "works made for hire" prepared for the COUNTY. The ownership of all copyrights and all rights embodied in the copyrights in or to such Documents shall rest in the COUNTY when any such is subject to copyright. The CONSULTANT agrees that it, nor any of its employees, shall have any right to copyright any of such Documents. The CONSULTANT further agrees that neither it nor any of its employees shall exercise any of the rights embodied in the copyrights in or to such Documents, unless authorized to do so by the Lyon County Board of County Commissioners. The CONSULTANT shall place a conspicuous notation upon each Document which indicates that the copyright thereto is owned by the COUNTY.

C. Should it be finally determined, by a court or to her tribunal of competent jurisdiction, that any of such Documents is not a "works made for hire," it is agreed that the provisions of this section shall be termed an assignment, sale, and transfer of the copyright in or to such Documents to the COUNTY for the longest term allowed by law. Notwithstanding the foregoing, the CONSULTANT may retain copies of such Documents and such copies shall remain the property of the CONSULTANT. The CONSULTANT shall have the right to use such copies as it may desire, but the CONSULTANT may not sell, license, or otherwise market such Documents.

D. Documents, including drawings and specification prepared by CONSULTANT pursuant to this Agreement, are not intended or represented to be suitable for reuse by COUNTY or others on extensions of the services provided for the Project or any other project. Any use of completed Documents for other projects and/or any use of uncompleted Documents without specific written authorization from CONSULTANT will be at the COUNTY's sole risk without liability or legal exposure to CONSULTANT.

ARTICLE XXI - RIGHTS OF CONSULTANTS AND EMPLOYEES

A. No personnel employed by CONSULTANT shall acquire any rights or status in the COUNTY services and CONSULTANT shall be responsible in full for payment of its employees, including taxes, insurance, deductions, and benefits.

ARTICLE XXII - SERVICES BY COUNTY

A. It is understood and agreed that the COUNTY shall, to the extent reasonable and practicable, assist and cooperate with the CONSULTANT in the performance of CONSULTANT's services hereunder. Such assistance and cooperation shall include, but not necessarily be limited to, environmental approval, right of access to work sites; providing material available from the COUNTY's files such as maps, As-Built drawings, records, and operation and maintenance information; serving all notices, holding all hearings, and fulfilling legal requirements in connection therewith; and rendering assistance in determining the location of existing facilities and improvements which may be affected by the project.

ARTICLE XXIII - DISPUTE RESOLUTION PROCEDURE

A. If disputes arise under this Agreement, the parties agree to attempt to resolve such disputes through direct negotiations or if such negotiations are not successful, by non-binding mediation conducted in accordance with the rules and procedures to be agreed upon by the parties.

B. Unless otherwise provided for herein, each party shall bear its own attorney's fees and court costs regardless of the outcome of any proceeding brought to enforce or interpret this Agreement. In no event shall any prevailing party be entitled to an award of attorney's fees.

ARTICLE XXIV - NO UNFAIR EMPLOYMENT PRACTICES

A. In connection with the performance of work under this Agreement, CONSULTANT agrees not to discriminate against any employee or applicant for employment because of race, creed, color, religion, national origin, age, sex, sexual orientation, gender identity, gender expression, veteran status, or any other protected class status applicable under federal, state or local law, rule or regulation.

B. Any violation of these provisions by CONSULTANT shall constitute a material breach of contract.

ARTICLE XXV - AMERICANS WITH DISABILITIES ACT

A. CONSULTANT and its subconsultants shall comply with the terms, conditions, and requirements of the Americans with Disabilities Act of 1990 (P.L. 101-136), 42 U.S.C. 12101, as amended, and regulations adopted thereunder contained in 28 C.F.R. 26.101-36.999, inclusive, and any relevant program-specific regulations.

ARTICLE XXVI - GENERAL PROVISIONS

A. Integration. This Agreement, including the Exhibits and the Recitals, all of which are true and correct and are incorporated by reference as a part of this Agreement, constitutes the complete and integrated Agreement between the parties with respect to the matters recited herein, and supersedes any prior or contemporaneous written or oral agreements or understandings with respect thereto.

B. Limited Liability. Contract liability of both parties shall not be subject to punitive damages. Liquidated damages shall not apply. COUNTY retains and asserts any available governmental immunity liability under Nevada or federal law.

C. Federal Funding: In the event federal funds are used for payment of all or part of this Agreement:

1. CONSULTANT certifies, by signing this Agreement, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency. This certification is made pursuant to the regulations implementing Executive Order 12549, Debarment and Suspension, 28 C.F.R. pt. 67, § 67.510, as published as pt. VII of the May 26, 1988, Federal Register (pp. 19160-19211), and any relevant program specific regulations. This provision shall be required of every subcontractor receiving any payment in whole or in part from federal funds.
2. CONSULTANT and its subcontractors shall comply with all terms, conditions, and requirements of the Americans with Disabilities Act of 1990 (P.L. 101-136), 42 U.S.C. 12101, as amended, and regulations adopted thereunder contained in 28 C.F.R. 26.101-36.999, inclusive, and any relevant program specific regulations.
3. CONSULTANT and its subcontractors shall comply with the requirements of the Civil Rights Act of 1964, as amended, the Rehabilitation Act of 1973, P.L. 93-112, as amended, and any relevant program-specific regulations, and shall not discriminate against any employee or offer for employment because of race, national origin, creed, color, sex, religion, age, disability or handicap condition (including AIDS and AIDS-related conditions.)

D. Lobbying: The parties agree, whether expressly prohibited by federal, state or local law, or otherwise, that no funding associated with this Agreement will be used for any purpose associated with or related to lobbying or influencing or attempting to lobby or influence any of the following: (a) any federal, state, county or local agency, legislature, commission, council or board; (b) any federal, state, county or local legislator, commission member, council member, board member, or other elected official; or (c) any officer or employee of any federal, state, county or local agency; legislature, commission, council or board.

E. Certification Required by NRS 332.065: By signing this Agreement, the CONSULTANT provides a written certification, as a material part of this Agreement, that the CONSULTANT is not currently engaged in, and during the Term shall not engage in, a boycott of Israel. The term "boycott of Israel" has the meaning ascribed to that term in Section

3 of Nevada Senate Bill 26 (2017). The CONSULTANT shall be responsible for fines, penalties, and repayment of any State of Nevada or federal funds that may arise (including those that the CITY pays, becomes liable to pay, or becomes liable to repay) as a direct result of the CONSULTANT's non-compliance with this Section. If, at any time during the formation or duration of this Agreement, CONSUTLANT is engaged or engages in a boycott of Israel, it will constitute a material breach of this Agreement.

F. Severability. The legality of any provision or portion of this Agreement shall not affect the validity of the remainder.

G. Amendment. This Agreement shall not be modified, amended, rescinded, canceled, or waived, in whole or in part, except by written amendment signed by duly authorized representatives of the parties.

H. No Third Party Benefit. This Agreement is a contract between COUNTY and CONSULTANT and nothing herein is intended to create any third party benefit.

I. Governing Law and Jurisdiction. This Agreement shall be administered and interpreted under the laws of the State of Nevada. Any action at law, suit in equity or judicial proceeding for the enforcement of this Agreement or any provision thereof shall be instituted only in the district courts of the State of Nevada, County of Lyon.

ARTICLE XXVII - DUE AUTHORIZATION

A. Each party represents that all required authorizations have been obtained to execute this Agreement and for the compliance with each and every term hereof. Each person signing this Agreement warrants and represents to the other party that he or she has actual authority to execute this Agreement on behalf of the party for whom he or she is signing. An electronic or facsimile signature on this Agreement shall be treated for all purposes as an original signature.

B. Duplicate originals. This Agreement is executed in one duplicate original for each party hereto, and is binding on a party only when all parties have signed and received a duplicate original.

-Signature Page Follows-

IN WITNESS WHEREOF, COUNTY has caused this Agreement to be executed by the LYON COUNTY and CONSULTANT have caused this Agreement to be executed, all as of the day and year first above written.

CONSULTANT

By:_____
Craig Smart, PE
Vice President

LYON COUNTY

By:_____
SCOTT KELLER, Chairman
Lyon County Board of County Commissioners

ATTEST:

By:_____
Staci Lindberg, Lyon County Clerk
By: Deputy Clerk

APPROVED AS TO FORM:

By:_____
Lyon County District Attorney

EXHIBIT A

SCOPE OF SERVICES

Lyon County Utilities Department

Rose Peak Water Main Replacement Project

HDR Engineering, Inc., (HDR) is pleased to submit this proposal to Lyon County Utilities Department (County) to provide funding application assistance, National Environmental Policy Act (NEPA) Services, and 30% design for the Environmental Protection Agency (EPA) funded Rose Peak water main replacement project.

Project Understanding

The project includes removal and replacement of the existing about 6,800 LF of water main with 8" C900 PVC pipes on Grosh Avenue between Flowery Avenue and Halite Avenue in Dayton, Nevada. The project is funded through a grant of $2,584,000 from the EPA's Community Project Funding.

HDR will assist the County with the EPA funding application and preparing environmental coordination records pursuant to 24 CFR 50.4, 58.5 and 58.6 for the EPA for the Rose Peak Water Main Replacement Project ("Project"). We assume the project will fall under a Categorical Exclusion (CATEX) and Extraordinary Circumstances Checklist pursuant to EPA's Environmental Review Procedures per 40 CFR 6.204, which is necessary to secure the community grant from EPA. In order to determine the level of NEPA details, the County and HDR will share the details of the Project in the kick-off meeting with EPA.

Lyon County Utilities has selected HDR, Inc. through a competitive selection based on the Statement of Qualifications and requested to develop a scope of services to assist the county with the following:

1) Meeting the funding agency (EPA) grant requirement and submitting a grant application.
2) Performing the NEPA review processes and determining and applying for an appropriate categorical exclusion for the project.
3) Designing the water main replacement (up to 30%).

The following scope of work has been identified to assist the County with these efforts:

Task 1: Project Management & Quality Control

Objectives

- Provide coordination and management of HDR services to meet project objectives.

- Provide for quality assurance/quality control (QA/QC) reviews of technical recommendations and project deliverables.

HDR Services

- Manage and coordinate HDR services described herein.
- Conduct and document QC reviews on deliverables.
- Prepare monthly project status and budget tracking reports and invoices.
- Assist with contract changes.
- Notify County of budget or schedule issues, or out-of-scope requirements in the monthly status report.
- Work collaboratively with the County during the design process.

County Responsibilities

- Review and pay monthly invoices.
- Work with the HDR project manager to review and negotiate scope changes.
- Participate in the review of the deliverables.
- Provide review comments and feedback as requested by the project design team. It is assumed that the County will return review comments within 10 working days from submittal.

Assumptions

- The project duration is anticipated from June 2025 through March 2026 (10 months), as shown in the attached schedule.

Deliverables:

- Monthly invoices and status reports over anticipated project duration of (10) months.

Task 2: EPA Grant Funding

Task 2.1 Initiate Funding Application

HDR will initiate the funding application by reviewing the application and basic procurement requirements with EPA Region 9. The following items will be specifically included in the application preparation process:

- Kickoff meeting with County to develop agreement on approach including a review of grant process and requirements.
    - Review project description and continuity with grant descriptions with respect to need for possible technical corrections to grant authorization.
    - Review general approach for environmental documentation.
    - Review federal procurement requirements including the possibility of utilizing Nevada State Revolving Fund process for procurement of Engineering, and

Surveying Services.

- HDR project manager and up to 3 team members will attend the meeting. Local HDR staff will attend in person and remote staff on MS Teams.
- Site visit along the waterline alignment.
- Collect data from the County.

- Kick off meeting with EPA
  - Seek an understanding from EPA on the required environmental document to further refine the scope under Task 2. HDR will review potential extraordinary circumstances using online resources prior as part discussion on environmental document. Agency scoping and coordination will also be included.
  - Review need for technical corrections to grant.
  - Review federal procurement and other grant conditions (as needed).

Deliverables:

- Kick off meeting with County and HDR.
- Meeting minutes to document approach.
- Kick off meeting with EPA grants staff, County and HDR to review approach with respect to need for technical corrections, environmental documentation, and grant conditions.
- EPA Grant Workplan

Assumptions:

- The County submits the funding application through Grants.Gov. HDR provides assistance including the environmental document.

Task 2.2 Grant Process Summary

Based on the grant's general terms and conditions, information gathered from EPA under Task 2.1, initial environmental scoping, and input from the County, HDR will provide a Technical Memorandum (TM) outlining the grant process and suggestions to refine Task 2 or add additional tasks to assist the County in meeting grant requirements.

Deliverables:

- Memorandum providing HDR's understanding of EPA requirements and process to initiate funding application and recommendations to refined scope in subsequent tasks (as needed).

Assumptions:

- Funding agency information on process and requirements are available.
- Standard Terms and Conditions are available.

- HDR will meet virtually with the funding program.
- County has required written federal procurement procedures that comply with 2 CFR Part 200. HDR will not review existing procedures.
- County will administer procurement process.

Task 3: NEPA Process

Task 3.1 Agency Scoping and Coordination

Scoping letters will be sent to the following federal agencies; State Historic Preservation Office (SHPO), Tribal Nations (Northern Paiute), and U.S. Fish and Wildlife (USFWS). As part of Task 3, HDR will meet with County and EPA, the lead agency for the NEPA review, to further define the scoping process and determine resource evaluation expectations.

The ECOS IPaC (Environmental Conservation Online System, Information for Planning and Consultation) USFWS determination key, "Clearance to Proceed with Federally-Insured Loan and Grant Projects Request" may be completed for this project and will satisfy USFWS consultation. The SHPO scoping letter will be sent unless the County has a Programmatic Agreement (PA) with SHPO to review locally. The typical review and response time for agency letters is 30-60 days.

HDR expects a site visit will be conducted to document existing conditions in support of the assumed CATEX.

Deliverables:

- Draft and Final agency scoping letters to SHPO, Tribal Nations, USFWS and any others identified agencies during meeting with EPA.
- Consultation/consistency return letters for the administrative record from the four agencies.

Assumptions:

- County to provide preliminary reports, maps and any existing documentation of project.
- Internal scoping meeting with County (1 hour).
- The project scoping meeting with EPA will be virtual (1 hour).
- HDR will submit the agency scoping letters electronically (hard copy via certified mail will be sent to Tribal Nations).
- It is assumed there will be informal consultation with all agencies. Additional scope and fee will need to be determined if formal consultation is needed for any agency.
- Coordination with USFWS beyond the Information for Planning and Consultation (IPaC) consultation or preparation of a biological assessment is not included in the

scope of services but can be provided by HDR under an amendment if required.

- One round of edits on the draft scoping letters will be processed by HDR.
- Species-specific field work for this project is not included in this scope and would be accomplished during specific times associated with any known species, if necessary, and can be provided by HDR under an amendment if required.
- This scope of services does not include the completion of any cultural resources documentation for SHPO submittal, but those services can be provided by HDR under an amendment if required.

Task 3.2 Biological Resources Memo

As part of the supplemental information to support the CATEX, HDR will prepare a Biological Resources Memo.

Desktop Analysis

Prior to fieldwork, HDR shall review the Information for Planning and Consultation (IPaC) tool and compile online database lists of special status species and other known sensitive biological resources in the area prior to the reconnaissance level survey.

Reconnaissance Level Biological Survey

HDR shall conduct a reconnaissance level survey of the project area and a buffer of the surrounding land cover within 300 feet to assess the suitability of habitat for special-status plant and wildlife species. This survey will take one 8-hour day, for two biological staff.

The objective of this survey will be to ground-truth and refine data collected during the desktop analysis. Data collected during the field surveys will aid in the description and mapping of land use patterns on and adjacent to the project, and in determining the suitability of those land uses for utilization by special-status species.

Biological Resources Memo

The results of the desktop analysis and reconnaissance level survey will be summarized in a biological resources memorandum. The draft version of the memorandum will be submitted electronically to the client for review and comment. Comments and edits will be addressed, and the final version of the memo will be prepared and submitted to the client as well as included in the Notice of Exemption (NOE) and supplemental information package.

Deliverables:

- Draft and Final Biological Resources Memo in Microsoft Word and PDF format.

Assumptions:

- Field work for the Reconnaissance Level Biological Survey assumes two people and no more than one trip, over one 8-hour day (including travel).
- Access to the entire project area will be granted such that the biologists can complete the requisite field work in one day. No other field work or coordination will be required to complete this task.

- All areas to be disturbed by project work would be provided to HDR prior to surveys.
- One, one-hour web/teleconference with the client and project team in support of the Biological Resources Memo is included in the fee estimate.
- Includes one round of revisions based on comments from the client.
- Tree removal is not anticipated; therefore, this scope does not include an arborist report.

Task 4 – Surveying

The objective of this task is to provide topographic survey of the streets and right-of-way listed in the Project Understanding which encompass the extents of the water line replacements, as well as survey existing utilities as marked by Comstock Inspections.

HDR's sub-consultant RCI will provide utility location markings and survey of the streets and utilities within the project area. Survey will include the following:

- Provide two-foot elevation contours based on NAVD 88 datum.
- Provide GIS based right-of-way boundary for the streets listed in the Project Understanding.
- Survey all utility markings.
- Survey valve boxes, fire hydrants, drain inlets, manholes, and utility boxes in the right-of-way including invert elevations of sewer and storm drain, depth to valve nuts, and lid elevations.

HDR will sub-contract with Comstock Inspections for utility markings in the project area.

Deliverables:

- Electronic AutoCAD and PDF copies of survey.

Task 5 – 30% Design Documents

Under this design task, HDR will submit 30% design plans for the County's review. Final design documents, if requested, will be completed under Phase 2 scope of work. Site survey used to generate the drawing base files is covered under Task 4.

Task 5.1 Base Mapping

From the survey and right of way information provided in Task 4, HDR will prepare the base mapping including the following information:

- Existing GIS parcel base with owner names and addresses, rights-of way, existing conditions, existing utilities, service laterals, proposed vertical and horizontal water main alignments and appurtenances, and surface restoration. All drawings will utilize the County's drawing border.

Task 5.2 30% Design Plans

HDR will submit 30% design plans to the County for review including the following items:

- Overall site plan and key plan.
- Demolition plan.
- Waterline plan and profile drawings at 1-inch equals 20-ft scale.
- County standard details
- HDR will submit the 30% design submittal and allow staff a minimum of two (2) weeks for review and submitting comments.
- HDR will conduct one (1) meeting with the County following receipt of staff comments and discuss the design and staff comments. The meeting will be conducted virtually on Teams, and is assumed to be up to 2 hours.
- HDR assumes the 30% drawing set will contain the sheets in Table 1 at the 30% design level.

Table 1– Preliminary List of Drawings		
No.	**Sheet No.**	**Sheet Name**
General		
1	G001	Cover Sheet, Vicinity Map, Index
2	G002	General Abbreviations
3	G003	General Symbols
4	G004	County Standard Details - 1
5	G005	County Standard Details - 2
6	G006	County Standard Details - 3
Demolition		
8	X100	Demolition Plan
Civil		
9	C001	Key Plan and General Notes - 1
10	C002	Key Plan and General Notes - 2
11	C100	Plan & Profile - 1
12	C101	Plan & Profile - 2
13	C102	Plan & Profile - 3
14	C103	Plan & Profile - 4
15	C104	Plan & Profile - 5
16	C105	Plan & Profile - 6
17	C106	Plan & Profile - 7
18	C107	Plan & Profile - 8
19	C108	Plan & Profile - 9
20	C109	Plan & Profile - 10
21	C110	Plan & Profile - 11
22	C111	Plan & Profile - 12
23	C112	Plan & Profile - 13
24	C113	Plan & Profile - 14
25	C114	Plan & Profile - 15
26	C115	Plan & Profile - 16
27	C116	Plan & Profile - 17

Assumptions:

The County will provide the following information for use in preparing the design plans:

- GIS parcel base with right of way. HDR will assume the right of way is accurate for use in designing the project.
- Record drawings for the project area showing existing utilities.
- Any CAD drawings for the project area that show existing utilities, right of way, and topography.
- Any geotechnical reports for the project area.
- Any aerial photographs for the project area.
- County waterline design standards and standard details.
- Review meetings will be conducted virtually on Teams.
- No water system modeling is required to size the mainline replacement.

HDR shall be entitled to reasonably rely upon the information and data provided by the County or obtained from generally accepted sources within the industry without independent verification except to the extent such verification is expressly included in the Scope of Services.

Deliverables:

- Draft 30% Design (pdf files)
- Final 30% Design (pdf and CAD files)

Task 6 – County Directed Services

County Directed Services will cover the costs of unforeseen work items that may arise. Labor efforts will be charged on a time and materials basis (per HDR's standard fee schedule as shown in Exhibit A to this budget only) when authorized in writing by the County.

Schedule

The following table presents the anticipated project milestones. The schedule is based on an assumed notice to proceed date of June 5, 2025.

Task No.	Task	Start	End	Waiting Periods
1	Notice to Proceed (NTP)	June 5, 2025		
1	Internal kick-off with County	1 week after NTP		
2	EPA kick-off meeting	2 weeks after NTP		
2	Grant funding memorandum	Early July 2025	Early August 2025	
3	Field Visits (Site Assessment, Species Review USFWS)	June 2025	June 2025	Needs to occur in Spring when vegetation is identifiable
3	Draft Scoping Letters to Federal Agencies	July 2025	August 2025	
3	Agency concurrence letters from SHPO, Tribal Nations, USFWS	Late August 2025	Late October 2025	30-60 days for agencies to comment
4	Utility Marking, Site Survey, & Base Mapping	June 2025	August 2025	
4	30% Design	August 2025	March 2026	

Fees

The fees estimated for the above services are $289,929. HDR Engineering, Inc. will not exceed this fee without prior authorization from the County. A breakdown of the estimated fee is shown below, and billing will be made on a time and expense basis, not to exceed the authorized amounts, in accordance with the standard rate schedule. HDR Engineering, Inc. reserves the right to transfer funds between tasks as project developments require, as long as the total effort limit is not exceeded.

Task	Amount
1 – Project Management & QC	$30,135
2 – EPA Grant Funding	$27,589
3 – NEPA Process	$32,768
4 – Surveying	$39,870
5 – 30% Design	$124,732
6 – County Directed Services	$34,835
Total	$289,929

EXHIBIT B

Lyon County Utilities
Standard Rate Schedule
2025*

Rose Peak Waterline Replacement

Position Title	Hourly Rates Range
Project Principal	$350.00 to $390.00
Project Manager/Sr Engineer	$320.00 to $360.00
Technical Advisor/ QC	$240.00 to $280.00
Deputy PM/ RE	$145.00 to $175.00
Civil Engr	$145.00 to $155.00
Structural Engineer	$200.00 to $240.00
Sr. Biologist	$195.00 to $225.00
Biologist	$95.00 to $135.00
Sr Cultural Resources	$220.00 to $250.00
Cultural Resources	$170.00 to $200.00
Sr EPA Funding	$280.00 to $320.00
EPA Funding	$145.00 to $175.00
CAD Designer	$160.00 to $190.00
CAD Tech	$150.00 to $180.00
Technical Editor	$180.00 to $210.00
Project Accountant	$120.00 to $150.00
Project Admin/Coordinator	$110.00 to $130.00

*Rates are for 2025; subject to change in 2026.

EXPENSES:
Vehicle Mileage (Per Mile) FTR Federal
Reproduction, Shipping, and other ODC's at cost
Subconsultants Markup 5%

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
13.b

Subject:
For Possible Action: Approve Property Access License Agreement between Calvary Baptist Church and Lyon County to allow the contractor for the Rose Peak Water Main Replacement Project to use the property for a construction and staging area and to allow Lyon County to conduct a Cultural Resources Field Survey which is required by the grant application. (Utilities Engineer, Kishora Panda)

Summary:
This is an agreement with the Calvary Baptist Church in Dayton to authorize Lyon County and the contractor to use the church property as a construction staging area for the Rose Peak Water Project. This site will go through a cultural resource study and will be tied to the Rose Peak Water project NEPA process. The cultural resource study is required as part of the grant application and this site cannot be changed once the grant is approved.

Financial Department Comments:
Included in the Rose Peak project cost.

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Rose Peak Water Project Property License Access Agreement between Lyon County and Calvary Baptist Church

PROPERTY ACCESS LICENSE AGREEMENT

THIS PROPERTY ACCESS LICENSE AGREEMENT (herein called this "Agreement") is made and entered into as of February 19, 2026 (THE "Effective Date"), by Calvary Baptist Church, (herein called "Grantor") and Lyon County, a political subdivision of the State of Nevada (herein called "Grantee").

WITNESSETH:

WHEREAS, Grantor is the owner of the real property identified as APN 019-531-01, 4 Flowery Avenue, Dayton, NV (herein called the "Property").

WHEREAS, Grantee has requested the right of entry upon and access to the Property to use the site for a staging by the Grantee's Contractor for the construction of Rose Peak Water Main Replacement Project and conducting a Cultural Resource Field Survey by Grantee's Consultant as part of the Grant application requirement when the site is planned to be used as a staging area by the contractor (herein collectively called the ("Rose Peak Water Project Activities").

WHEREAS, the Grantor has agreed to grant the Grantee, and Grantee has agreed to accept from Grantor, a non-exclusive, revocable license to enter upon the Property to perform the Rose Peak Water Project Activities in accordance with the terms and provision of this Agreement and any subsequent amendments hereto.

WHEREAS, Grantor and Grantee desire to execute and enter into the Agreement for the purpose of setting forth their agreement with respect to the Rose Peak Water Project Activities and Grantee's and their Consultant and Contractor entry upon the Property.

NOW, THEREFORE, in consideration of the mutual covenants and agreements hereinafter set forth, the Grantor and Grantee agree as follows:

1. Access by Grantee.

(a). Subject to Grantee's compliance with the terms and provisions of this Agreement, Grantee and Grantee's agents, employees, contractors, representatives, and other designees (herein collectively called "Grantee's Designees") shall have the right to enter and work upon the Property for the purpose of conducting the Rose Peak Water Project Activities.

(b). Grantee expressly agrees as follows: (i) any activities by or on behalf of Grantee, including, without limitation, the entry by Grantee or Grantees Designees onto the Property in connection with the Rose Peak Water Project Activities shall generally return the property to the condition it was in before any work was performed prior to the expiration of the Agreement; (ii) Grantee shall indemnify, defend and hold Grantor harmless from and against any and all claims, liabilities, general damages (but not any special or consequential damages), losses, costs, and expenses of any kind or nature whatsoever (including, without limitation, attorneys' fees and expenses and court costs) actually suffered, incurred or sustained by Grantor as a result of, by reason of, and/or caused by the negligence of the Grantee in connection with the Rose Peak Water Project Activities or the entry by Grantee or Grantee's Designees onto the Property.

2. Lien Waivers. Upon written request from the Grantor, Grantee will provide lien waiver and release, pursuant to NRS 108.2457, following completion of the Rose Peak Water Project Activities from each and every contractor, engineer, and surveyor who might have lien rights against Grantor's Property. Grantee shall be bound by the same indemnification, defense, and hold harmless obligation as specified above with respect to any claims or demands for payment or any liens or lien claims made against Grantor of the Property and/or the Property itself, arising out of the Rose Peak Water Project Activities.

3. Insurance. Grantee shall maintain its membership and coverage with the Nevada Public Agency Insurance Pool covering each of the Rose Peak Water Project Activities with a single limit of liability (per occurrence and aggregate) of not less than $1,000,000 and shall cause all of Grantee's Designees performing the Rose Peak Water Project Activities to maintain general liability insurance with a company licensed to do business in Nevada with limits of liability the same as above. Such insurance shall be maintained in force throughout the term of this Agreement.

4. Notices: All notices, demands, and other communication shall be given in writing and shall be addressed as provided below, by both mail and e-mail, for the respective party:

Grantor: Calvary Baptist Church
Name -
P.O. Box 398
Dayton, NV 89403
Email -

Grantee: Lyon County
Sean Sinclair
34 Lakes Blvd

Dayton, NV 89403
ssinclair@lyon-county.org

5. Term. Agreement shall expire eighteen (18) months from the date the Agreement is approved by Grantee, unless extended by agreement in writing and executed by both parties.

IN WITNESS WHEREOF, Grantor and Grantee have caused this Agreement to be executed and sealed, all the day and year first written above.

Grantor: Calvary Baptist Church

By: _____

Name:

Title: _____(Authorized Signer)

Date:_____

Grantee: Lyon County

By: _____

Name: Scott Keller

Title: Chair, Board of County Commissioners

Date:_____

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
14.a

Subject:
For Possible Action: To approve the request from Winston FC Solar, LLC, for a Planned Unit Development for the Winston Solar Project. The Project consists of a 400-megawatt photovoltaic solar energy facility with approximately 780,000 solar panels, a battery energy storage system, an electrical substation, high voltage power lines, and an operations and maintenance building on 11 parcels totaling approximately 2,374-acres in Mason Valley subject to Heavy Industrial-Suburban (HI-S) and Rural Residential, 20-acre minimum (RR-20) zoning (APNs 014-091-[13, 15, 16, 17, 22], 014-201-[14, 17, 18, 32, 33, 35); PLZ-2025-084. (Senior Planner Louis Cariola)

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Staff Report
- PUD Handbook
- TIS REPORT
- NDOT TIS Response Letter
- Applicant PUD Justification
- Public Comment

LYON COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING * DEVELOPMENT ENGINEERING * PLANNING
CODE ENFORCEMENT * ECONOMIC DEVELOPMENT
27 SOUTH MAIN STREET, YERINGTON, NV 89447
PHONE: 775-463-6592 FAX: 775-463-5305
WEBSITE: www.lyon-county.org

BOARD OF COUNTY COMMISSIONERS

PLZ-2025-084

Proposed Action	Tentative Planned Unit Development
Meeting Date	March 5, 2026 (Continued from January 5, 2026)
Property Owners	Masini Investments LLC, L&M Family Limited Partnership, Dan and Tara Morose, Stephen Palmer
Applicant	Winston FC Solar, LLC
Representative	Energy Project Solutions
Community	Mason Valley
Location	East of US Highway 95A and south and north of Sierra Way
Addresses	Multiple
Parcel Numbers	014-091-[13, 15, 16, 17, 22], 014-201-[14, 17, 18, 32, 33, 35]
Parcel Size	2,374 acres in total (approximately)
Master Plan	Agriculture and Industrial
Applicable Zoning	RR-20 (Rural Residential - 20 acre minimum) and HI-S (Heavy Industrial – Suburban)
Flood Zone(s)	X-Unshaded per FIRM 32019CO710E and FIRM 32019CO550E
Case Planner	Louis Cariola

REQUEST

The Applicant requests approval of a Tentative Planned Unit Development (PUD) for a 400-megawatt photovoltaic solar energy facility with approximately 780,000 solar panels, a battery energy storage system, an electrical substation, high voltage power lines, and an operations and maintenance building on 11 parcels totaling approximately 2,374 acres in Mason Valley.

PLANNING COMMISSION RECOMMENDATION

The Planning Commission heard presentations from staff and the applicants on December 9, 2025 and voted 6-1 (Commissioner Ceresola – nay) to forward a recommendation of approval to the Board of County Commissioners. At that time, staff made a recommendation of denial based upon the lack of review comments from the Nevada Department of Transportation (NDOT) on the required Traffic Impact Study (TIS) and insufficient rationale and justification for proposed deviations from standards related to setbacks for a SECS (Solar Energy Conversion System) project. Since that time, the applicant has worked closely with staff to propose increased setbacks and enhanced

screening elements (as outlined later in this report). Additionally, the applicant has since received approval of the scope of the TIS by NDOT, received, and agreed to comply with, review comments from NDOT with recommended improvements, and also has expanded their commitment to off-site improvements to NDOT and local roadways. Specific improvements would include construction of permanent acceleration and deacceleration lanes at multiple locations including the intersection of US Hwy 95A and Sierra Way. Additional improvements at the Ramsey Weeks Cutoff intersections with US Hwy 50 and US Hwy 95A are also recommended by NDOT. The Ramsey Weeks intersections are approximately 20 miles north of the project, but NDOT identified them as impacted by construction phase traffic. Discussion of construction of a new "passing lane" on Highway 95A, heading north and up-grade of the project area is also expected to be necessary, with payment being coordinated with other regional projects (Copia/Monarch Data Center) that will also have significant impacts to regional roadways in Wabuska. The final determination on improvements would occur as part of the Final PUD process in coordination with the applicant, Lyon County, and NDOT. The County will require improvements to be constructed prior to the construction phase of the project, or as otherwise provided in a reimbursement or development agreement approved the Board of County Commissioners to be distributed between the projects generating traffic impact. The County shall be a party to such agreement for purposes of acknowledgment and administration, but shall not assume any financial responsibility or obligation for the reimbursement.

PREVIOUS BOARD OF COUNTY COMMISSIONERS HEARING

On January 5, 2026, the Board of County Commissioners heard presentations from staff and the applicants regarding the request for approval of the Tentative PUD. The item was continued for a maximum of 90 days. The Board acknowledged staff's concerns with the setbacks from US Highway 95A, which were proposed to be 300' when the Code standard is 2,640' per Lyon County Code (LCC) 15.336.09.E.2., although per the same Code section, when the SECS is part of a PUD the Board has the authority to grant reduced setbacks. The Board also acknowledged that staff had not been granted enough time to review the TIS after NDOT's review in order to determine if the proposed development makes adequate provisions for public services or provides sufficient control over vehicular traffic, as required under Finding D of LCC 15.349.10.

MOTION FOR APPROVAL

If the Board of County Commissioners determines that they will approve the request, then the Commission may want to consider a motion similar to the following.

The Lyon County Board of County Commissioners finds that:

A. In what respects the plan is or is not consistent with the statement of objectives of this chapter;

B. The extent to which the plan departs from zoning and planned unit development regulations otherwise applicable to the property, including but not limited to density, size and use, and the reasons such departures are or are not deemed to be in the public interest;

C. The purpose, location and amount of the open space in the planned unit development, the reliability of the proposals for maintenance and conservation of the open space and the adequacy or inadequacy of the amount and purpose of the open space as related to the proposed density and type of residential development;

D. A physical design of the plan and in the manner in which such design does or does not make adequate provision for public services, provide adequate control over vehicular traffic, parking requirements, and further the amenities of light and air, recreation and visual enjoyment;

E. The relationship, beneficial or adverse, of the proposed planned unit development to the neighborhood in which it is proposed; and

F. In the case of a plan which proposes a development over a period of years, the sufficiency of the terms and conditions intended to protect the interest of the public and the residents of the planned unit development in the integrity of the plan.

Based on the ability to make the aforementioned Findings, I move that the Board of County Commissioners approve the request from Winston FC Solar, LLC, for a Planned Unit Development for the Winston Solar Project. The project consists of a 400-megawatt photovoltaic solar energy facility with approximately 780,000 solar panels, a battery energy storage system, an electrical substation, high voltage power lines, and an operations and maintenance building on 11 parcels totaling approximately 2,374-acres in Mason Valley subject to Heavy Industrial-Suburban (HI-S) and Rural Residential, 20-acre minimum (RR-20) zoning (APNs 014-091-[13, 15, 16, 17, 22], 014-201-[14, 17, 18, 32, 33, 35); PLZ-2025-084.

ALTERNATIVES TO MOTION FOR APPROVAL

Alternative Motion for Continuance

If the Board of County Commissioners determines that additional information, discussion and public review are necessary for a more thorough review of the proposed conditional use permit; the Commission should make appropriate findings and move to continue the Public Hearing with a specific time period for the applicant to provide additional specific information necessary for the analysis of the request. The Commission may wish to consider a motion similar to the following:

The Board of County Commissioners finds that:

A. Additional information, discussion and public review are necessary for a more thorough review of the proposed Planned Unit Development.

Based on the aforementioned finding, and with the applicant's concurrence, the Board of County Commissioners continues the request from Winston FC Solar, LLC, for a Planned Unit Development for the Winston Solar Project. The Project consists of a 400-megawatt photovoltaic solar energy facility with approximately 780,000 solar panels, a battery energy storage system, an electrical substation, high voltage power lines, and an operations and maintenance building on 11 parcels totaling approximately 2,374-acres in Mason Valley subject to Heavy Industrial-Suburban (HI-S) and Rural Residential, 20-acre minimum (RR-20) zoning (APNs 014-091-[13, 15, 16, 17, 22], 014-201-[14, 17, 18, 32, 33, 35); PLZ-2025-084 ___ days.

Alternative Motion for Denial

If the Board of County Commissioners determines that they should deny the request, then they need to make findings supporting a recommendation of denial. The Commissioners may wish to consider a motion similar to the following:

The Lyon County Board of County Commissioners has considered:

15.349.10: FINDINGS:

When making an approval, modification or denial of an amendment to the master plan land use map or text, the commission shall, at a minimum, consider each of the following and base approval on the combined weight of the findings. Each finding shall be supported by a statement of evidence, facts and conclusions.

A. In what respects the plan is or is not consistent with the statement of objectives of this chapter;

B. The extent to which the plan departs from zoning and planned unit development regulations otherwise applicable to the property, including but not limited to density, size and use, and the reasons such departures are or are not deemed to be in the public interest;

C. The purpose, location and amount of the open space in the planned unit development, the reliability of the proposals for maintenance and conservation of the open space and the adequacy or inadequacy of the amount and purpose of the open space as related to the proposed density and type of residential development;

D. A physical design of the plan and in the manner in which such design does or does not make adequate provision for public services, provide adequate control over vehicular traffic, parking requirements, and further the amenities of light and air, recreation and visual enjoyment;

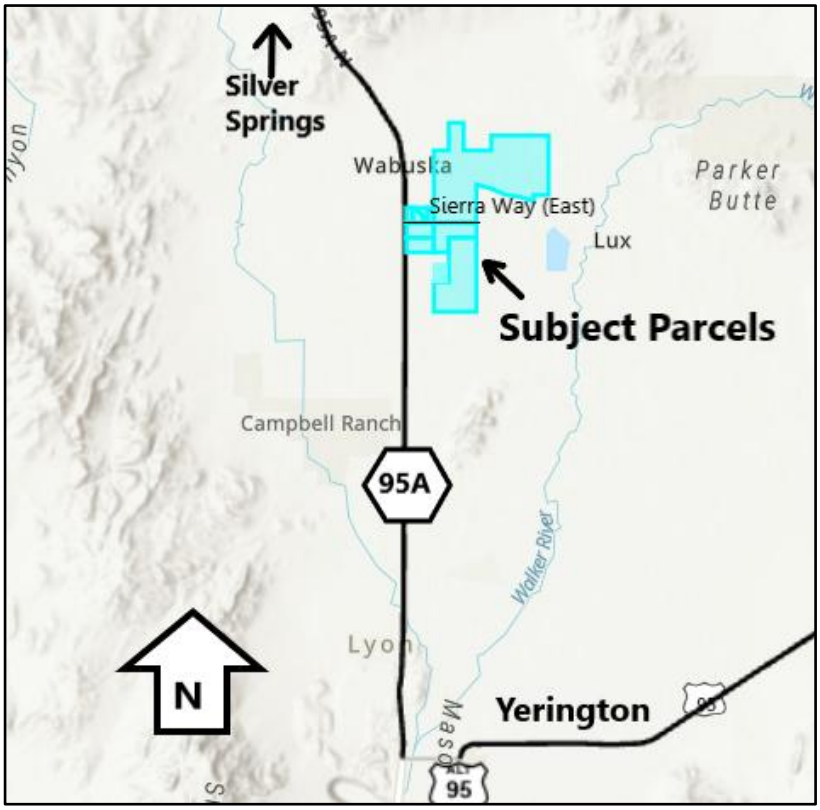
E. The relationship, beneficial or adverse, of the proposed planned unit development to the neighborhood in which it is proposed; and

F. In the case of a plan which proposes a development over a period of years, the sufficiency of the terms and conditions intended to protect the interest of the public and the residents of the planned unit development in the integrity of the plan.

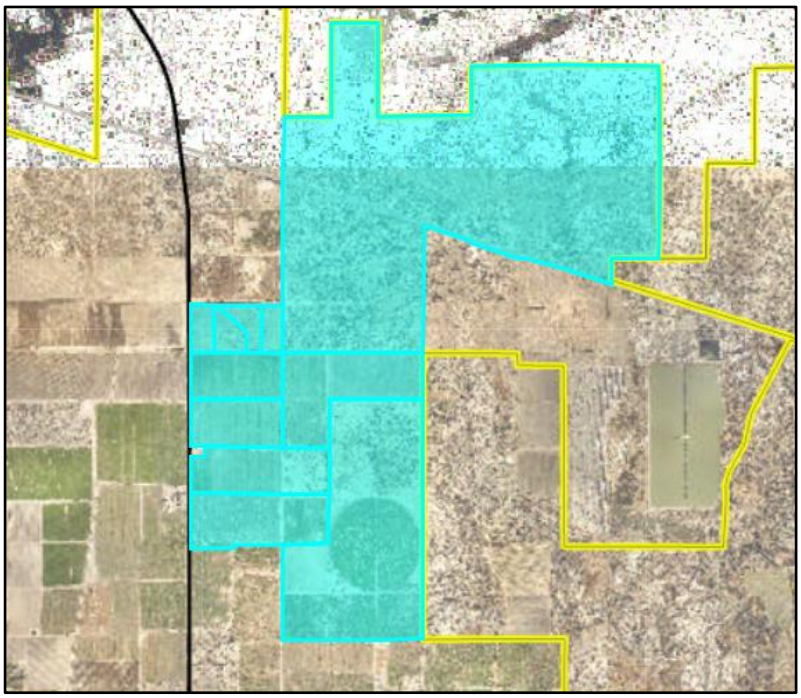
After consideration of the above-listed Findings, the Board of County Commissioners <u>denies</u> the request from Winston FC Solar, LLC, for a Planned Unit Development for the Winston Solar Project. The Project consists of a 400-megawatt photovoltaic solar energy facility with approximately 780,000 solar panels, a battery energy storage system, an electrical substation, high voltage power lines, and an operations and maintenance building on 11 parcels totaling approximately 2,374-acres in Mason Valley subject to Heavy Industrial-Suburban (HI-S) and Rural Residential, 20-acre minimum (RR-20) zoning (APNs 014-091-[13, 15, 16, 17, 22], 014-201-[14, 17, 18, 32, 33, 35); PLZ-2025-084.

BACKGROUND INFORMATION

The project area is located in Mason Valley in Wabuska, east of US Highway 95A, west of the Walker River, and accessed by US Highway 95A and Sierra Lane. The subject parcels are depicted below, located approximately 8 miles north of Yerington and approximately 20 miles south of Silver Springs.



Subject Parcels – two south west parcels are only partially included in the project area currently.



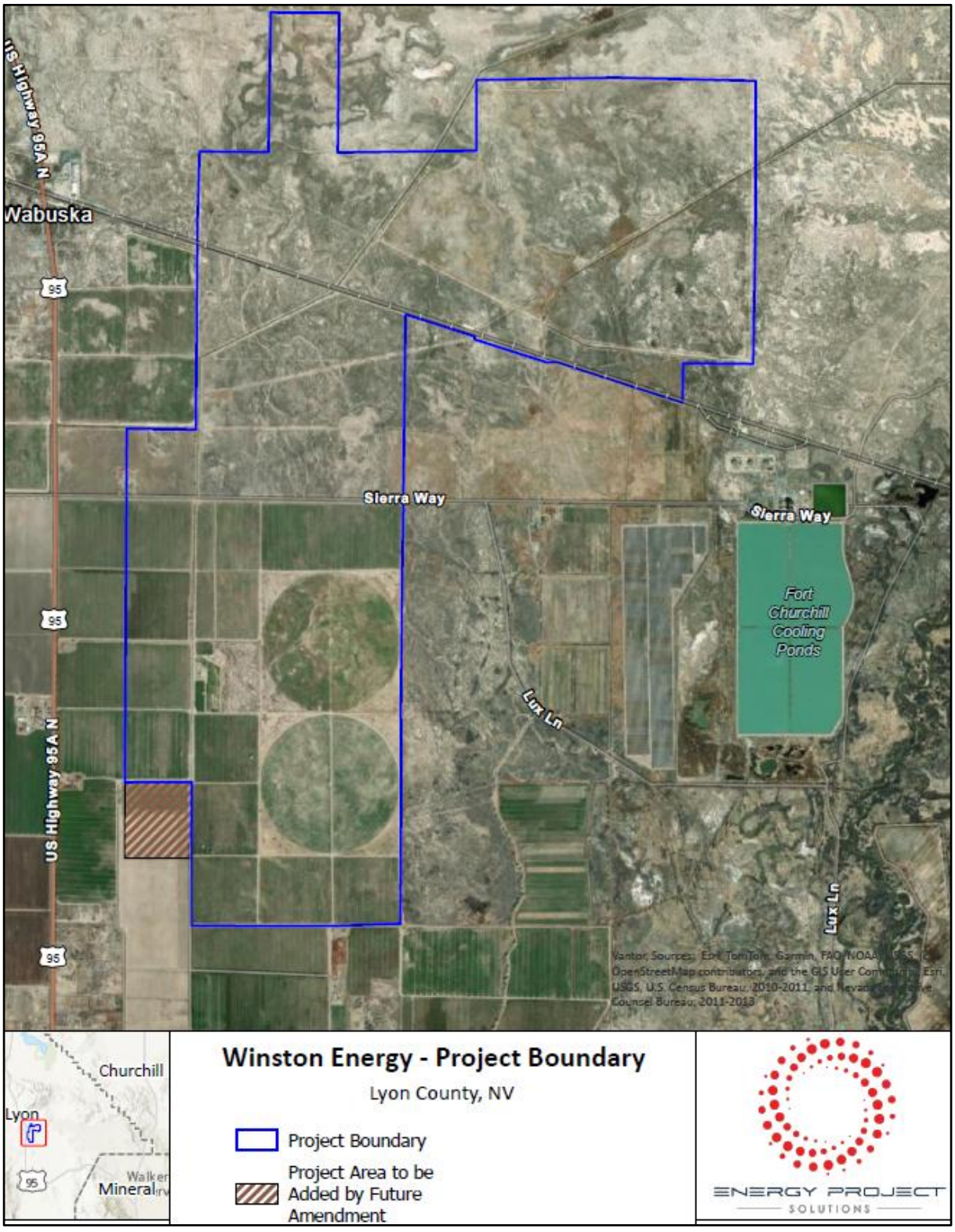
Size

The project area is over 11 parcels and approximately 2,374 acres in total. The subject parcels are listed below in an excerpt of the application materials. Only portions of APNs 014-201-33 and 014-201-14 (located at the south west of the project) are part of the total project area and are modified in this iteration of the project boundary, although the square footage is approximately the same. If approved, a mapping exercise would establish the PUD boundaries prior to approval of the Final PUD.

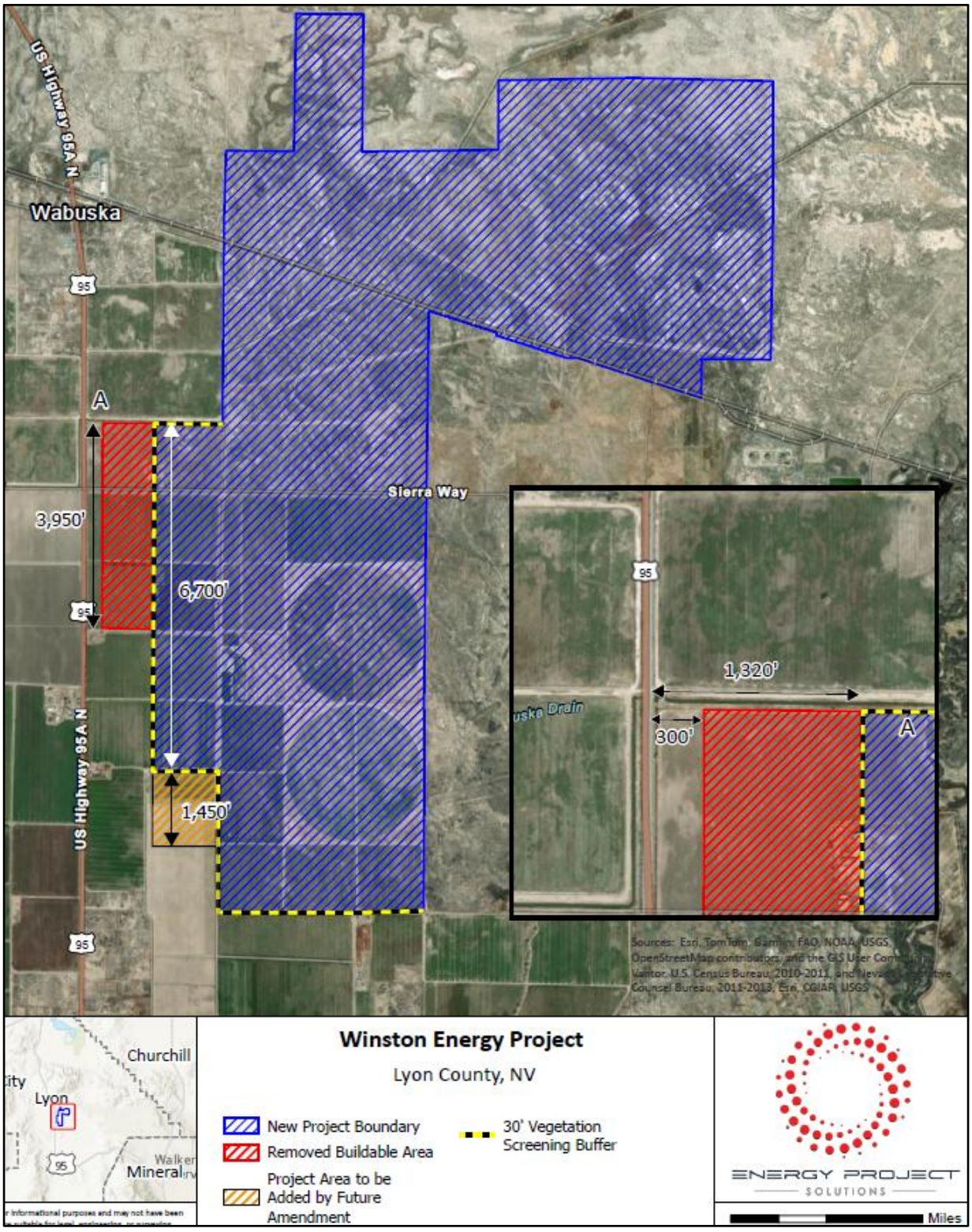
The applicant expects to bring portions of two additional parcels, also on the south west of the project area, into the boundary for the Final PUD. Staff has advised the applicant that this will require amendment to the Tentative PUD (were this item to be approved). This is necessary in order to maintain project area for the solar array due to a proposed increase in setbacks from Highway 95A as described later in this report.

APN	Owner	Acres Use	Assessor Total Parcel Acreage	Notes
014-091-13	L & M Family Ltd Partnership	18.8	18.8	We recognize that there is a minor discrepancy between the total project acreage listed on the assessor's site and the acreage used for the project. The project acreage is based on the most recent ALTA survey conducted and submitted with this PUD application.
014-091-15	L & M Family Ltd Partnership	20.2	19.78	
014-091-16	L & M Family Ltd Partnership	20.9	19.56	
014-091-17	L & M Family Ltd Partnership	20.3	19.67	
014-091-22	Morose, Dan C & Morose, Tara L	1,423.6	1446.57	
014-201-14	L & M Family Ltd Partnership	38.8	122	
014-201-17	Palmer, Stephen Marshall	80.6	78	
014-201-18	Masini Investments	491.4	485.58	
014-201-32	L & M Family Ltd Partnership	157.3	160	
014-201-33	Masini Investments LLC	19.5	115	
014-201-35	L & M Family Ltd Partnership	80.8	78.71	

The image below depicts the APNs and the project area as currently proposed. The hatched area at the south west depicts an expansion area that was not part of this Tentative PUD submittal and is instead proposed for addition to the total project area through a future amendment. The additonal area would be approximately 42 acres. Approval of the additional area and parcels would have to be approved by the Board prior to approval of the Final PUD.

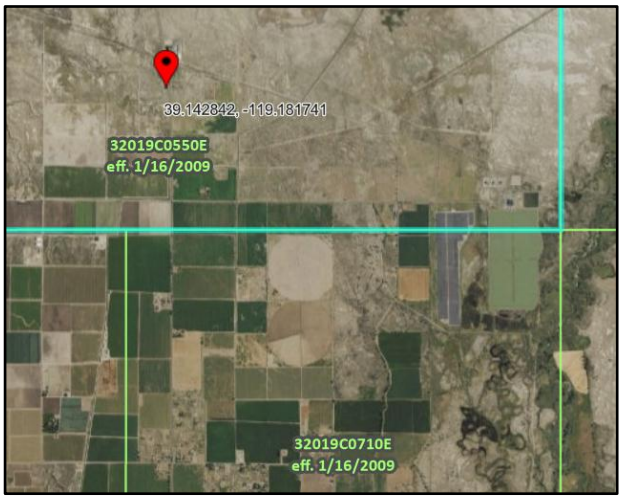


The images below are from the applicant's site plans and depict setbacks along a 6,700' boundary facing Highway 95A with a 1,320' setback relative to the now-replaced and shorter 300' setback area originally proposed. The area proposed for a future amendment is also shown, representing an additional length of Highway frontage of 1,450'.



Topography/Federal Emergency Management Agency (FEMA) designation

The site is relatively flat, with a slight slope from west to east, averaging less than 1 percent. The site is not in a FEMA-designated Special Flood Hazard Area.



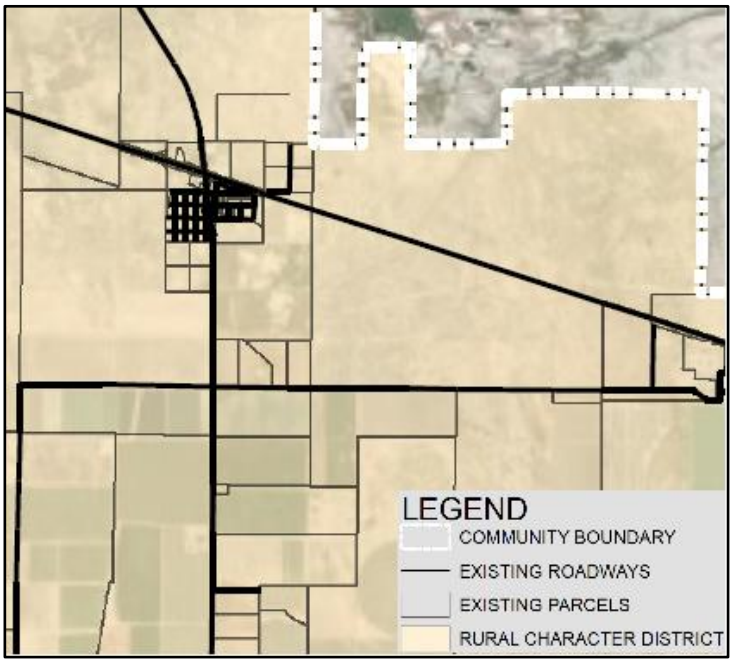
Current Development and Uses

The project area has been historically used for field crops and animal pastures and the subject parcels are traversed by irrigation ditches under the jurisdiction of the Walker River Irrigation District (WRID). The project area is bisected on the northern side by a Union Pacific rail line.

MASTER PLAN AND ZONING

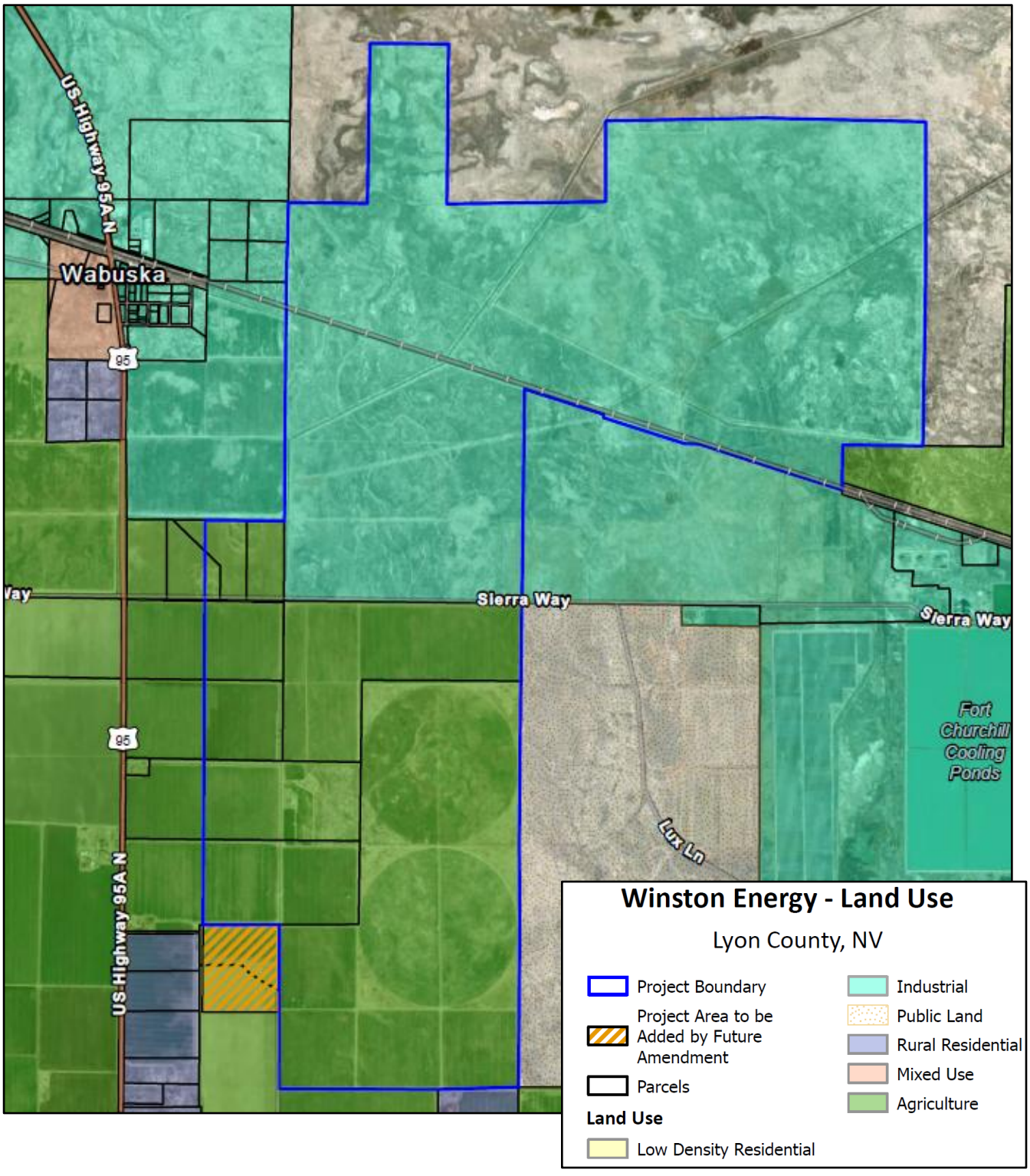
Character District

The project area is within a Rural Character District per the 2020 Master Plan. Rural Character parcels do not typically have connection or adjacency to public utilities and are often not located on publicly-maintained roadways, although this site does have existing vehicular access via US Highway 95A's connection to Sierra Way and smaller roadways.



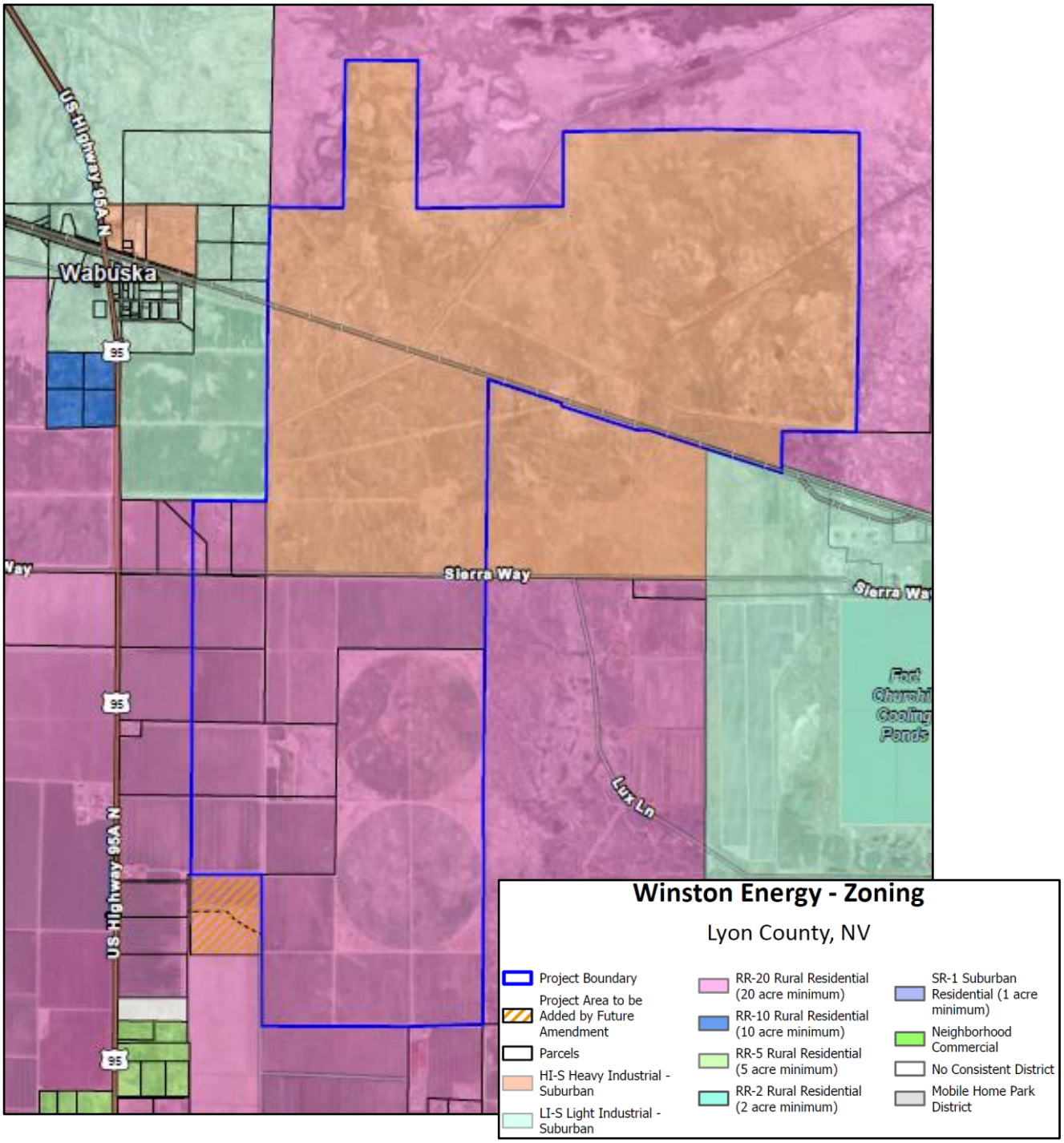
Master Plan

The current Master Plan designations for the project area are Agriculture and Industrial, as depicted in the Mason Valley Master Plan map from the 2020 Lyon County Master Plan.



Zoning

With the adoption of the current development code, Title 15, the Zoning Consistency Matrix was also adopted as Appendix A. The Matrix "converts" expired districts to the current districts. In this case, the applicable names for the project parcels are Rural Residential 20-acre minimum (RR-20) and HI-S (Heavy Industrial-Suburban). The images that follow depict zoning for the subject parcels and surrounding parcels after conversion through the Matrix. Surrounding properties are subject to the same zoning of RR-20 and HI-S in addition to LI-S (Light Industrial-Suburban).



PROJECT DESCRIPTION

The description and images that follow were selected from Attachment 1; the Planned Unit Development document submitted by the applicant.

In summary, the project proposes a 400-megawatt photovoltaic solar energy facility with approximately 780,000 solar panels, a battery energy storage system, an electrical substation, high voltage power lines, and an operations and maintenance building over 2,374 acres.

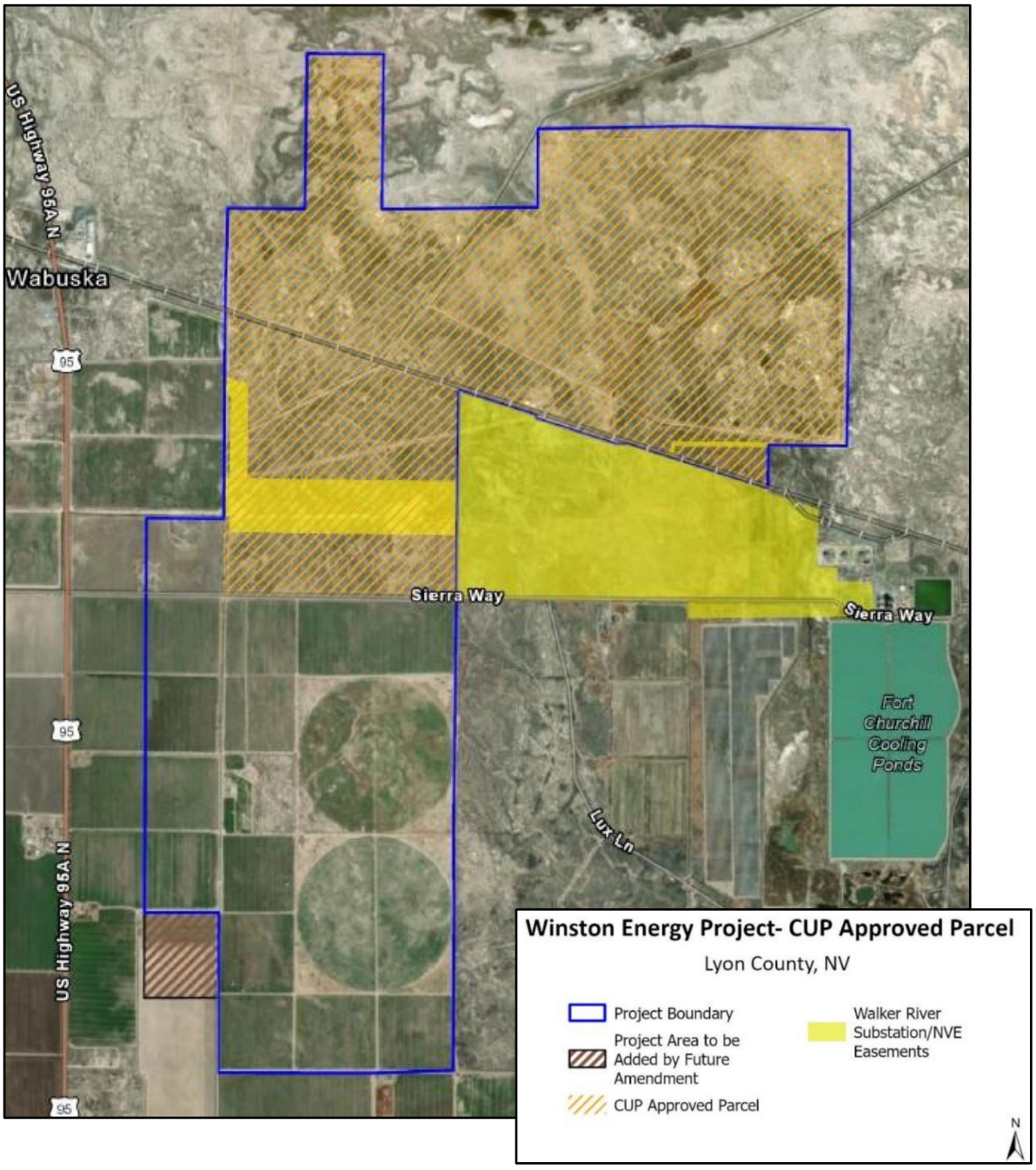
Excerpt from Attachment 1: PUD Handbook for Winston Energy

Winston FC Solar, LLC is pursuing approval to construct the Winston Energy Project (Project), a 400-megawatt (MW) photovoltaic (PV) solar energy facility (facility) with a Battery Energy Storage System (BESS) located entirely on 2,374.3 acres of privately owned land in Lyon County, Nevada. The Project site is located just east of U.S. Alt Highway 95 (U.S. Hwy 95A), approximately 15 miles northeast of the City of Yerington, and adjacent to the Walker River Substation (f.k.a. Fort Churchill Substation). Ancillary facilities include a substation, collection lines, an operations and maintenance building, and site access roads. Electricity generated by the Project would be connected to NV Energy's transmission system via a newly constructed 4,800 foot 230-kilovolt (kV) generation tie (gen-tie) line to the Walker River Substation, which is adjacent to the Project site.

Image from PUD Handbook of a solar array

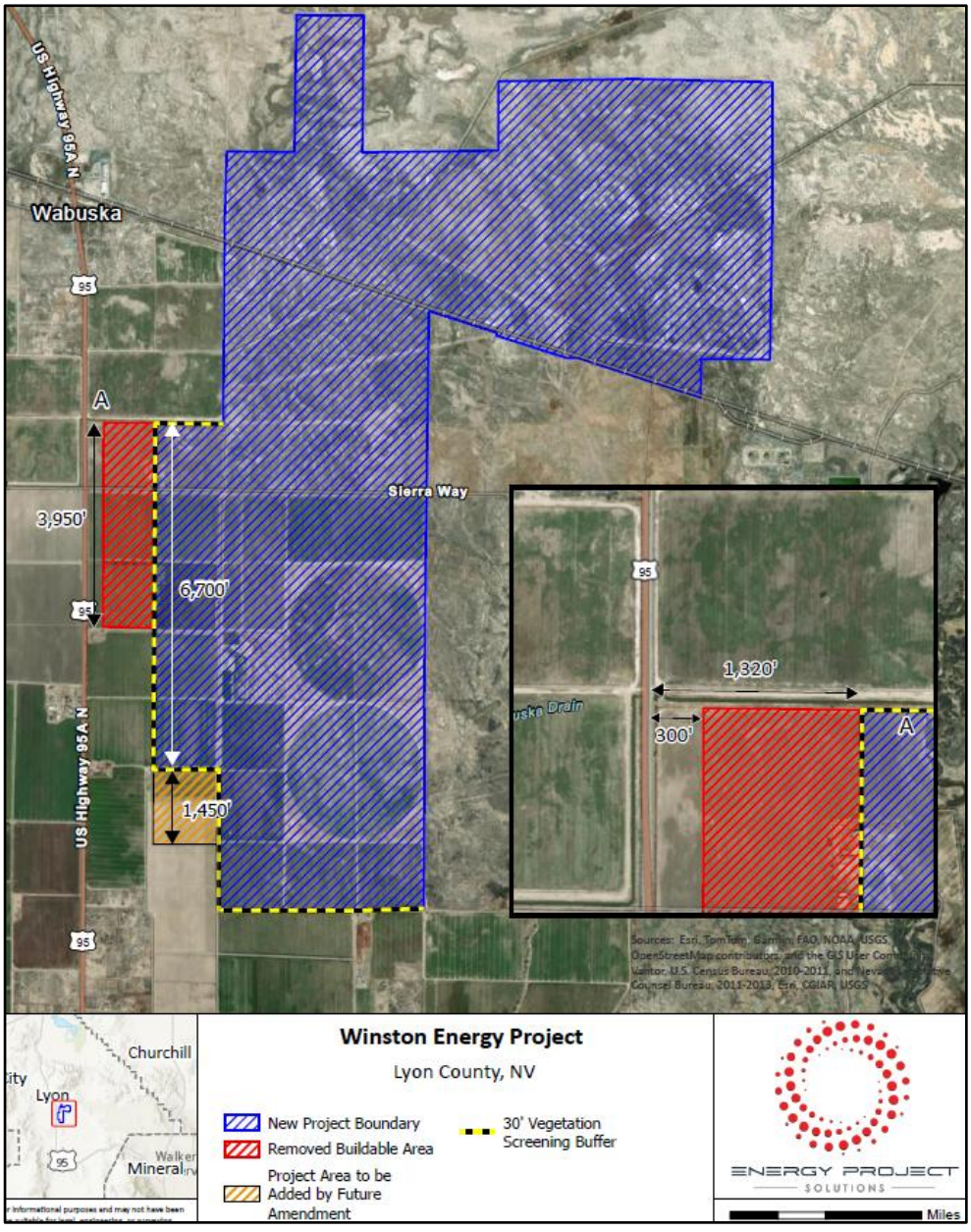
The image that follows depicts the overall project area and an area that was approved for another project named the *Winston Solar FC* project. It was approved for a Conditional Use Permit (CUP) via file number PLZ-2022-067 on September 1, 2022 by the Board of County Commissioners for approximately 1,713 acres. The project was approved for a commercial SECS over the acreage, but since that time, no construction has occurred. Rather, hundreds of acres of land have been pulled out of the original CUP area for NV Energy's Walker River Substation project and easements.

The hatched area below displays the CUP approval (PLZ-2022-167) and the yellow area shows the "NV Energy areas". The proposed PUD would include the "remaining area" of the previous CUP and the new area (prior to amendment). At the south west corner is another hatched area that represents additional area that is proposed for addition to the Tentative PUD through a future amendment process. The additional area is necessary after the solar array area is reduced through the application of the increased setback areas from the Highway.



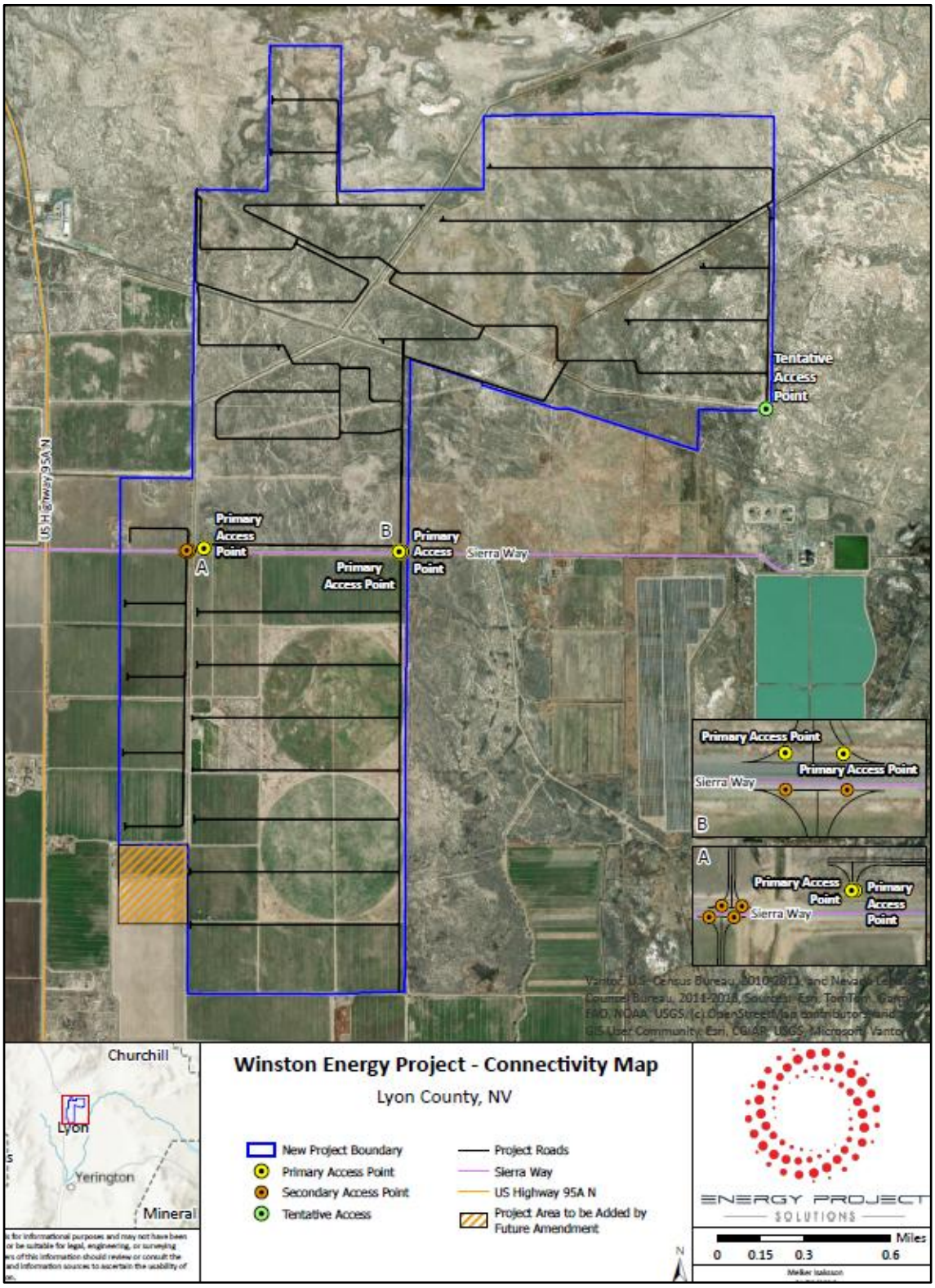
Setbacks and Landscape Buffer

As mentioned previously in this report, the Tentative PUD was continued by the BOCC on January 5, 2026 in part because of concerns with the proposed setback from Highway 95A of 300' when LCC section 15.336.09.E.2 requires 2,640' for projects that are not part of a PUD. The Board has authority to grant reduced setbacks when a project is part of a PUD, but staff did not feel that appropriate justification had been provided. Since the continuance, the applicant worked closely with staff and now proposes a setback of 1,320' with a 30' wide landscape buffer along an 1.27 mile (6,700') boundary along the Highway. The landscape buffer would extend even further around the north and south boundaries and would be used to address the LCC standard for visual buffering of solar arrays adjacent to residential uses and zoning. The standard states that from a point 16' above the boundary, one would not see the array from the residential site. The residential uses/zoning adjacent to the project are located on the south west side of the project and the proposed 30' wide landscaping buffer is the proposed mitigation measure. These proposed buffering measures through the PUD process are recognized by staff as more appropriate than the previously proposed methods.



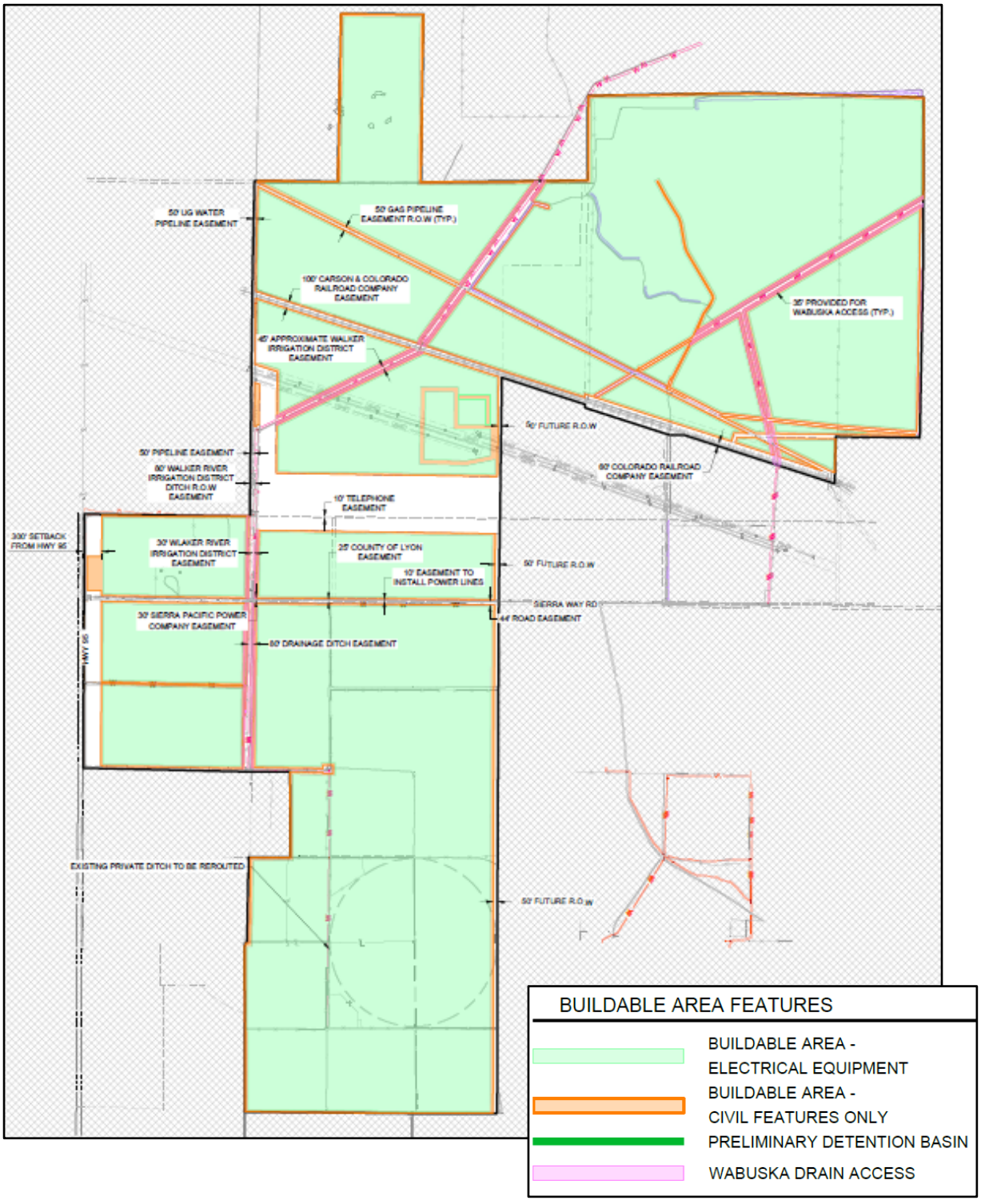
Access

Primary access is Sierra Way for both construction and operational phases. Gravel and dirt roads are proposed internally. Improvements to Sierra Way intersection with Highway 95A will be required and the image below depicts access points that will require approvals from NDOT and the Lyon County Roads Department.

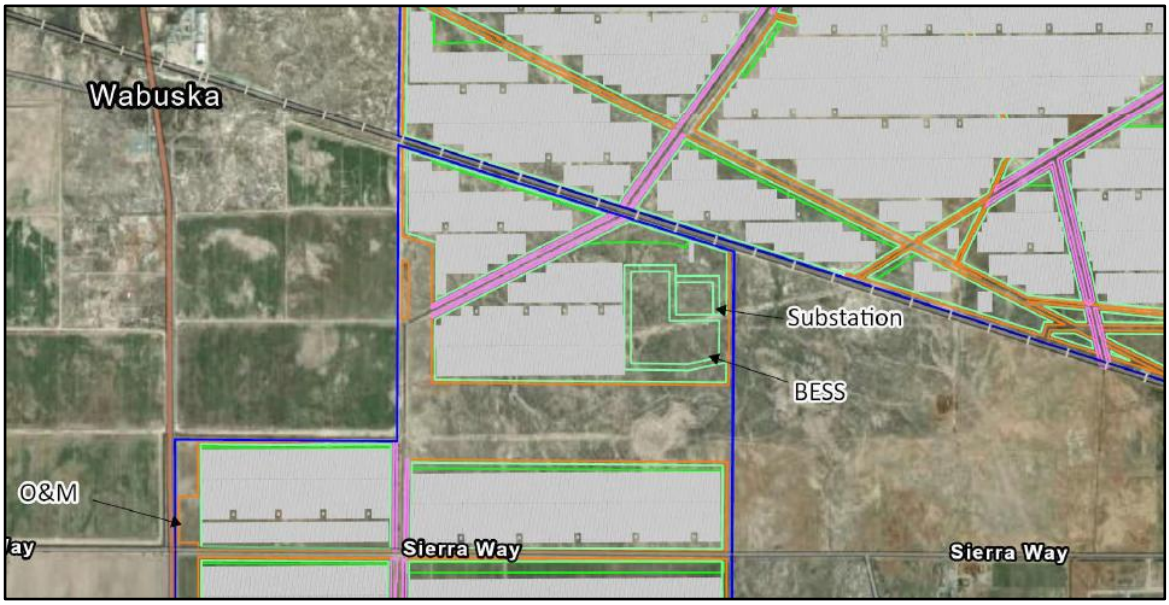


Other Site Plans

The image below shows the "Buildable Area Features" exhibit before amendment to the project area, with WRID ditch easements traversing the site in addition to gas line easements, power line easements, utility easements, and rail line easements. This site plan demonstrates the applicant's acknowledgement of the WRID ditches and the expectation that conveyances will be maintained through the project site with legal access for maintenance. The Final PUD process would determine the project area after an expected request for amendment.



The proposed Substation and BESS are located north of Sierra Way. The Operations and Maintenance building is proposed to the west, at the north east of the Sierra Way and Hwy 95A intersection.



Operations and Maintenance (O&M) Building

The proposed 3,600 square feet O&M building would be a 25' high metal building to be used for the operations base of a competed project. Were the PUD to be approved, laydown yards would be part of the construction plan, but temporary. The O&M building would need approval from the Lyon County Building and Planning Departments as well as Mason Valley Fire Protection District. The example below is from the PUD Handbook.

BESS (Battery Energy Storage System)

A lithium ion BESS is proposed to cover approximately 25 fenced acres of the project area. A BESS stores power collected from the solar array, allowing for transfer of power to the electrical grid via high voltage power lines. The images that follow are from the PUD Handbook and display the appearance of a BESS. If approved, the BESS would require review by Lyon County Building Department, Planning Department, and the Mason Valley Fire Protection District. The Handbook includes a full section on the Fire Protection Plan and emergency response plans, which would all require additional review and approval were the PUD to be approved.

Substation

An on-site electrical substation would connect to the Walker River Substation complex via 230-kilowatt high voltage lines. The construction would require approvals by the State, Lyon County, and the Mason Valley Fire Protection District. The area for the substation would be approximately 7 acres and fenced.

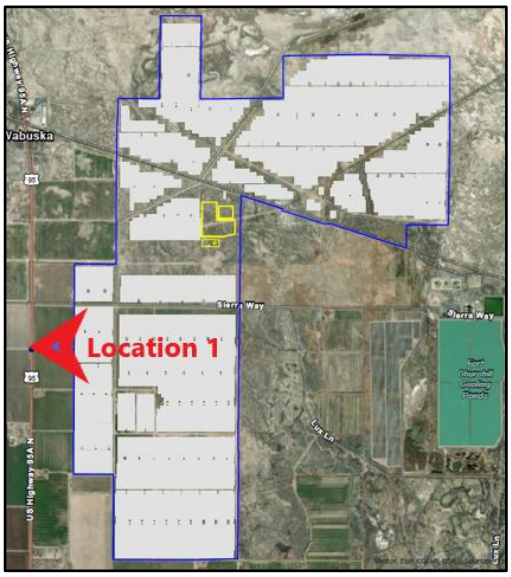
Construction and Operation

The projected construction period is estimated to be between 18 and 24 months, with between 350 and 450 personnel during peak season, usually about 6 months. During the operations phase, approximately 12 people are expected to be sufficient to operate the facility.

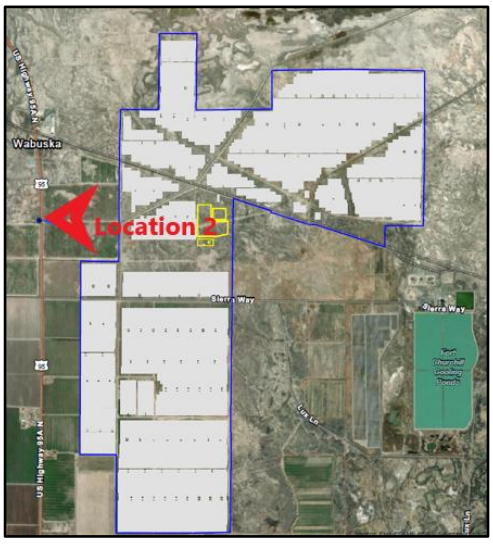
Visual Impact Renderings

The images that follow depict existing views from Highway 95A followed by renderings of the same picture with the project simulated in the image. The simulations depict the enhanced 1,320 setback and 30' landscape strip on the horizon of the rendered images.

Visual Impact Location 1, south of Sierra Way, looking east (as labeled by staff)



Location 2, north of Sierra Way, looking east (as labeled by staff)



Decommissioning

Per the PUD Handbook, the lifespan of the project is approximately 40 years. Regular maintenance and replacement schedules are expected for equipment and buildings. The Handbook states that at that time, it is possible that the project operators could seek extension of permits, but it is more likely that the site will require removal of the materials and re-establishment of the surface. Were the PUD to be approved, the County, the State, and other entities will require submittal of full decommissioning plans as part of the site improvement, grading, and building permit authorizations.

STAFF REVIEW AND COMMENTS

PUDs are governed by Chapter 15.349 of LCC. This staff report includes the required findings for a PUD, but after the January 5, 2026 continuance by the Board, the applicant has provided additional findings in response to the meeting comments and their amended submittal. The following are "Appendix A" of the applicant's new Handbook. The PUD Handbook is Attachment 1 of this report: all of Appendix A is copied on the pages that follow in this report, after which the County's PUD findings are listed.

FINDINGS PREPARED BY THE APPLICANT AFTER THE JANUARY 5, 2026 CONTINUANCE

Introduction:

The following findings document the Lyon County Commission's evaluation of this application in the context of prior approvals, existing development conditions, and comparable discretionary decisions affecting similarly situated properties. This context supports a consistent and reasoned application of the Planned Unit Development framework in accordance with the Lyon County Code and Master Plan.

Findings:

1. ***Code Authorization to Reduce Setbacks:*** *LCC 15.336.09 permits the County Commission to reduce otherwise applicable setback distances for a commercial SECS where the SECS is part of a PUD. LCC 15.349.01 authorizes flexibility through the PUD process to promote efficient use of land, reduce development and maintenance costs, and encourage design consistent with the County Master Plan.*

2. ***Project Commitments Regarding Setbacks and Buffers:*** *In addition to the proposed setbacks of one-quarter (1/4) mile (1,320 feet) from US 95 for all SECS facilities the applicant proposes a 30-foot landscaped buffer along the southern, western, and northern property edges, thus mitigating the potential visual impact to the community.*

3. ***Master Plan Consistency:*** *The Project, including the reduced SECS setbacks within the PUD, the 1/4-mile setback from US 95, and the 30-foot Buffer, is consistent with Lyon County Master Plan goals and policies promoting economic diversification, cost-effective siting of industry and business, renewable energy development, protection of transportation corridors, and directing development to areas served by existing or planned infrastructure (e.g., Master Plan Policies LU 3.1, LU 3.2, LU 5.1, NR 5.1).*

4. ***Community Character:*** *The Project along with the proposed setbacks would not significantly modify the existing community character, the project area is already traversed by utilities (transmission lines and railway), present industry includes geothermal plant, natural gas power plant, a solar facility, an electrical substation/switching yard, and a tank manufacturing facility, moreover there are additional multiple proposed and approved project that are being developed in the area, such as Data Centers, Transmission Lines and Solar Projects.*

5. ***Site Suitability and Compatibility:*** *The Project site is zoned and physically suitable for a commercial SECS. The 1/4-mile setback from US 95 and the 30-foot Buffer materially reduce visual, glare, and other potential conflicts with the highway corridor and adjacent properties, improving compatibility with surrounding transportation functions and future adjacent development.*

6. ***Substantial Evidence of Need for Reduced Setbacks in PUD Context:*** *The record contains substantial evidence—site plans, economic feasibility information, engineering reports, and prior discretionary approvals (CUP No. PLZ-*

2022-167 for a portion of the Project)—demonstrating that otherwise-applicable standard setbacks (absent PUD flexibility) would materially impair the Project's functional layout and result in an inefficient use of land by leaving hundreds of acres unusable. The reduced setbacks approved in this PUD, when combined with the 1/4-mile US 95 setback and vegetative buffer support of the Master Plan's goals and objectives (Master Plan Policies LU 3.1 and 3.2) and will advance the County's stated policy to "encourage private efforts to develop and use renewable energy resources."

7. ***Reliance and Consistency:*** *A portion of the Project has been lawfully entitled and developed pursuant to prior discretionary approvals and code standards, resulting in established site conditions, infrastructure investments, and operational characteristics that inform the review of the remaining project area. The following findings reflect the Lyon County Commission's evaluation of this application in the context of development activities conducted under prior code standards, including the Winston Solar CUP and the adjacent Lux Solar project, both of which established on-the-ground conditions and planning expectations prior to the adoption and July 2025 effective date of the County's solar and renewable energy ordinance. This context supports regulatory consistency and a reasoned application of the Planned Unit Development framework, recognizing established site conditions, prior approvals, and the surrounding renewable energy corridor in accordance with the Lyon County Code and Master Plan.*

8. ***Public Benefits:*** *Transportation, Economic, Environmental, and Fiscal*
   - ***Transportation Infrastructure Improvements****. As part of the Project approvals and mitigation commitments, the Applicant will fund and construct significant roadway improvements along and connecting to US 95 that total in the millions of dollars (the "Roadway Improvements"). The Roadway Improvements will provide long-term improvements to county transportation infrastructure, including enhanced roadway capacity, improved ingress/egress for industrial parcels, upgraded turn lanes and intersection geometry, and durable pavement that reduces future maintenance costs borne by the County. These improvements will serve the Project and materially benefit the traveling public safety and future development on adjacent parcels by enabling safer and more efficient access to US 95 and nearby employment zones.*
   - ***Appropriate Sited Economic Development and Fiscal Benefits****. The Project will promote economic diversification and support future high-employment, power-intensive uses (e.g., data centers, manufacturing, logistics) by providing local power generation and improved transportation infrastructure in an area of the community where it makes the most sense. The combined effect of the Project and Roadway Improvements is expected to encourage additional private investment on adjacent lands, broaden the County's tax base, and create both short-term construction jobs and long-term operations-related economic activity. Limiting the amount of area that can be used in this area put additional development pressure on other areas of the County that may be less desirable for this type of development, thus supporting Master Plan Policy LU 3.1, promoting economic diversification, which includes a stated goal of "encouraging production efficiencies." (MP, Policy LU 3.1, at 3.28).*
   - ***Environmental/Public Health Benefits****. The Project advances Master Plan renewable-energy goals by supplying utility-scale clean power generation, contributes to improved air quality, and integrates sustainable land-use patterns. The 30-foot Buffer and 1/4-mile setback from US 95 reduce potential visual and glare impacts to motorists and neighboring properties and support vegetative screening that can provide ancillary environmental benefits (dust control, erosion reduction, habitat-friendly plantings).*

   - ***Net Public Benefit****. The combined commitments (1/4-mile setback from US 95, 30-foot Buffer, Roadway Improvements, decommissioning assurances, and other mitigation) produce quantifiable and long-term*

public benefits that materially advance the Master Plan's objectives for orderly growth, infrastructure efficiency, environmental protection, and economic opportunity.

9. ***Protection of Health, Safety and Welfare with Conditions:*** *With the conditions imposed as part of this PUD approval (including, without limitation, confirmed fire access, glare mitigation, drainage controls, noise measures, decommissioning and financial assurance, and the recorded covenant), the Project will not create unreasonable hazard, nuisance, or public-safety impacts to surrounding properties or the traveling public on US 95.*

10. ***Discretionary Nature and Required Findings:*** *The Commission recognizes that LCC 15.336.09 vests the Commission with discretion to reduce SECS setbacks as part of a PUD, but that discretion must be exercised with articulated findings based on substantial evidence. The foregoing Findings supply the evidentiary basis for the Commission's exercise of such discretion*.

Staff Comment on Additional Findings

The applicant's additional findings provide justification for the proposed quarter mile setback from US Highway 95A for the SECS and quote appropriate LCC sections. Staff has reviewed the revised language and finds it to be in general conformance with the applicable code sections referenced.

FINDINGS FOR REVIEWING A PLANNED UNIT DEVELOPMENT

Proposed PUDs are first reviewed by staff, who make a report to the Planning Commission (PC) in conjunction with presentation(s) by the applicant. The PC then make a recommendation to the Board. The Board hears reports from staff and the applicant and makes the final decision on whether or not to approve the request.

Chapter 15.349.10 of LCC, *"APPROVAL OR DENIAL OF APPLICATION",* states that the

> *"…approval or denial of a tentative planned unit development plan shall be by minute action and shall set forth the reasons for the approval or for the denial..".*

It further states that the:

> *"…minutes shall also set forth with particularity in what respects the plan would or would not be in the public interest, including but not limited to, the following findings:".*

There are 6 Findings for PUDs, which are listed below with the applicant's response in italics and a staff comment.

> **NOTE:** since the January 5, 2026 continuance, the applicant has updated the PUD findings and re-submitted them to staff. The responses below are from that update. The applicant's updated PUD Findings in their entirety are included as Attachment 4 of this report**.**

Finding A: In what respects the plan is or is not consistent with the statement of objectives of this chapter;

Applicant's Response

NOTE: the Applicant's Response to Finding A is approximately 4 pages and includes the applicant's responses to LCC 15.349.01: Purpose [of PUDs]

15.349.01 Purpose

A Planned Unit Development (PUD) is a land use designation designed to provide an overall planning and design approach for a single use development or a development incorporating a mix of uses. A PUD allows for deviation from a strict application of dimensional and use limitations of the zoning district or districts in order to provide flexibility for landowners to creatively plan for the overall development of their land to achieve a

more desirable environment than would be possible through strict application of the standard requirements of the zoning district.

While not to be considered as the explicit standards to be applied when evaluating a PUD, the general purpose or purposes for establishing a PUD may include one or more of the following:

1. Permit the integration rather than separation of uses so that necessary commercial, recreation, and educational facilities are conveniently located to housing;

***Applicant Response:** Not applicable.*

2. Establish land use patterns that promote and expand opportunities for public transportation and for efficient, compact, networks of streets and utilities that lower development and maintenance costs and conserve energy;

***Applicant Response:** Not applicable.*

3. Help preserve valued environmental resource lands and avoid development of natural hazard areas;

***Applicant Response:** The Winston Energy site has been intentionally developed exclusively on private land, rather than incorporating development on adjacent BLM land. This approach supports Lyon County's desire to maintain public land for recreational and resource-oriented purposes. This siting decision also consistent with broader environmental goals by avoiding development on lands that may contain sensitive ecological resources or be subject to natural hazards. Public lands often encompass critical wildlife habitat, riparian corridors, and areas with unique geological or hydrological features that warrant protection. By focusing development on private land that has been evaluated for suitability and low environmental risk, the project minimizes potential impacts to valued resource lands and avoids areas prone to flooding, erosion, or other natural hazards.*

4. Help maintain and enhance surface and ground water quality and quantity, and to maintain air quality;

***Applicant Response:** The Winston Energy Project will have a very small water demand during Project operations and will not release any water-borne or liquid pollutants into surrounding surface and groundwater resource. This supports the goal to maintain and enhance water quality and quantity by minimizing pollutant discharge into natural hydrologic systems. Additionally, solar energy production emits no air pollutants or greenhouse gases during operation, directly contributing to improved air quality and climate change mitigation.*

5. Help improve and enhance the County's trail and park system and maintain access to public lands;

***Applicant Response:** Not applicable.*

6. Help protect and maintain critical wildlife habitat and migration corridors;

***Applicant Response:** Not applicable.*

7. Establish incentives for applicants to assure that long term affordable housing will be developed;

***Applicant Response:** Not applicable.*

8. Help provide for well-located, clean, safe, and pleasant industrial sites involving a minimum of strain on transportation facilities;

***Applicant Response**: The Winston Energy Project site is located in an established industrial area, adjacent to the Walker River Substation (f.k.a. Fort Churchill Substation) and existing railroad infrastructure. Solar facilities are good neighbors, producing very little noise, no emissions, and requiring minimal maintenance, which helps preserve the safety and character of surrounding areas. The facility's clean and quiet operation also contributes to a safe and pleasant industrial environment, free from emissions, noise, or hazardous materials typically associated with traditional industrial activities. The project will not impact local traffic or roadways during operation, and existing infrastructure is sufficient to accommodate temporary construction traffic without affecting residential access.*

9. Encourage innovations in residential, commercial and industrial development and renewal so that the growing demands of the population may be met by greater variety in type, design, and layout of buildings, and by the conservation and more efficient use of open space ancillary to the built environment;

***Applicant Response:** The Winston Energy Project will introduce an innovative and sustainable form of industrial development that complements the County's broader goals for land use diversity and resource conservation. By utilizing private land for renewable energy generation and storage, the Project avoids encroachment on public lands and preserves open space for recreational and resource-oriented uses. The facility's modular design and low-impact footprint demonstrate flexibility in layout and land use, allowing for efficient integration into the surrounding landscape without disrupting the existing community character.*

10. Minimize the burden of traffic on roads and highways;

***Applicant Response:** The Winston Energy Project will support Lyon County's transportation goals by proposing a use that requires minimal operational traffic on local roadways. The nature of the Winston Energy project limits on-site vehicle visits to infrequent, scheduled maintenance and emergency response only. Other industrial uses that may be sited in the proposed Project area would likely require heavy truck and passenger vehicle traffic to maintain daily operations. Through the Project's planning and design process, the Applicant has been proactively addressing potential transportation impacts and has ensured the Project is compatible with surrounding transportation infrastructure. Additionally, throughout the engineering and construction phases of the Project, the Applicant will regularly engage with the Nevada Department of Transportation (NDOT), Lyon County Public Works, local emergency management services, and adjacent property owners to ensure that that the Project does not have undue impacts to regional traffic, local access, or existing road infrastructure.*

11. Help ensure that the purposes, goals, objectives and policies of applicable Lyon County Comprehensive Master Plans and maps are achieved. (Ord. 603, 11-1-2018)

***Applicant Response:** The Lyon County Master Plan's Land Use Policy No. LU 3.2 provides that Lyon County "encourages industrial development to locate in designated locations show on the Land Use Plan, where public facilities exist or are planned to accommodate such development cost-effectively [and] to coordinate industrial land use designation to avoid conflicting land uses". The Winston Energy Project supports Lyon County's commitment to ensuring industrial uses are located consistent with the future Land Use Plan in the following ways:*

- *The Winston Energy Project is located within an established industrial zone identified in the Land Use Plan, ensuring compatibility with surrounding uses.*

- *The Winston Energy Project is located directly adjacent to the Walker River Substation (f.k.a. Fort Churchill Substation), reducing the infrastructural demand, resources impacts, and visual contrast associated with transmission infrastructure.*
- *The facility's clean and quiet operation avoids conflicts with nearby land uses and contributes to a safe, orderly industrial environment.*

Lyon County Master Plan's Land Use Policy No. LU 5.1 provides that Lyon County "will encourage development that incorporates…sustainable design and that reduces energy and resource consumption by minimizing resource consumption, energy use, and water use, [and] using renewable energy sources." The Winston Energy Project supports Lyon County's commitment to sustainable design and resource-conscious development in the following ways:

- *The development of a 400 MW solar energy facility 400-megawatt (MW) photovoltaic (PV) solar energy facility (facility) and Battery Energy Storage System (BESS) will provide sustainable renewable energy resources to NV Energy's transmission system, serving both Lyon County residents, and residents throughout the state.*
- *The development of renewable energy resources in the region will contribute to the long-term resilience of Nevada's energy infrastructure by diversifying the state's energy resources.*
- *The Winston Energy Project is located directly adjacent to the Walker River Substation (f.k.a. Fort Churchill Substation), reducing the infrastructural demand, resources impacts, and visual contrast associated with transmission infrastructure.*
- *Unlike fossil fuel development, solar PV facilities require minimal water for operation. Water conservation is especially critical in Lyon County, where water resources are scarce, and better utilized for agricultural purposes.*
- *The proposed solar arrays will be installed in a manner that allows for the preservation of native vegetation and maintenance of existing soil integrity.*

The Lyon County Master Plan's Natural Resources Policy No. NR 3.1 provides that Lyon County "will protect the water supply and encourage efficient use of water resources." The Winston Energy Project supports this policy in the following ways:

- *The Project will have low water demand during Project operations.*
- *The Project will not produce waterborne pollutants, protecting surface and groundwater resources, and supports water quality goals.*

The Lyon County Master Plan's Natural Resources and Environmental Policy No. 4.1 provides that Lyon County will continue to maintain and work to improve air quality [and] encourage development of low pollution energy resources." The Winston Energy Project supports this policy through the following strategies:

- *By generating electricity from sunlight, solar facilities produce no air pollutants or greenhouse gases during operation, offering a clean alternative to fossil fuels. Their success demonstrates the viability of renewable energy, attracting investment, supporting policy goals, and encouraging broader adoption of low-emission technologies across the energy sector.*

The Lyon County Master Plan's Natural Resources and Environment Policy No. NR 5.1 further provides that Lyon County will encourage the utilization of available renewable energy resources, such as solar radiation, and that the County will identify sites with significant solar resources that may be suitable for future utility-scale development" while considering measures to encourage alternative energy development on these sites. The Winston Energy Project supports Lyon County's commitment to identifying sites with significant solar resources that may be suitable for future utility-scale development in the following ways:

- *The Project is located in a compatible industrial zoning district, consistent with Lyon County Land Use designations that support utility-scale energy development.*
- *The site offers strong solar irradiance, making it ideal for renewable energy generation.*

Lyon County Master Plan's Natural Resources and Environmental Policy No. NR 8.2 states that Lyon County "will minimize light pollution while allowing for adequate lighting for safety and security… [and] implement lighting standards for… industrial properties to address issues such as avoiding light instruction onto neigh properties". The Winston Energy Project supports Lyon County's commitment to minimizing light pollution in the following ways:

- *The Winston Energy Project operations require minimal nighttime lighting, and all light fixtures will be shielded and use downward-facing fixtures to prevent light pollution. Since solar energy is generated during daylight hours, the site remains largely inactive at night, preserving the natural night environment and reducing impacts on nearby communities and wildlife.*

Staff Comment

The applicant's response to Finding A is found by staff to be generally consistent in its characterization of the proposed PUD relative to the language in the "Purpose" section of LCC for PUDs (15.349.01). The Code section is generally focused on residential development, but the applicant's quoted Policies from the Master Plan are applicable for the development proposed. Specifically, the following Policies are noted.

Policy LU 3.1, Diverse Economic Base

Policy LU 3.2, Business and Industry Locations that are Consistent with Future Land Use Plan

Policy LU 5.1, Encourage Resource-Sensitive Growth and Sustainable Design

Policy NR 3.1, Water Supply and Quality

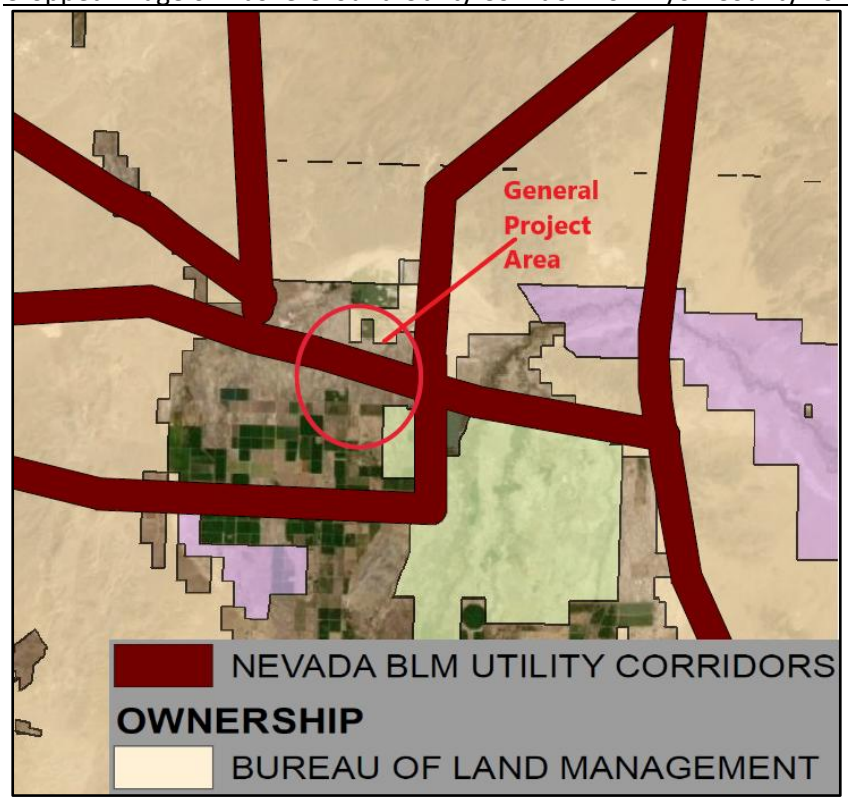
Policy NR 4.1, Clean Air

Policy NR 5.1, Geothermal, Solar and Wind

Policy NR 8.2, Dark Skies

The Project's location in Mason Valley, including its proximity to the Above Ground Utility Corridors identified in the 2020 Master Plan, reflects that the County has contemplated this general area for commercial and industrial development associated with expanded electrical infrastructure. The identified corridors are approximately two-thirds of a mile in width and represent areas where Title 15 does not require a Conditional Use Permit for high-voltage transmission lines. These corridors are intended to identify potential connections to the statewide NV Energy Greenlink project and the Walker River Substation expansion, both of which are located adjacent to or traverse the project area. The proposed SECS at this location would allow for a more compact development pattern by minimizing the distance required for transmission line connections between solar facilities and substations. Based on the materials submitted, the completed project is not anticipated to require significant water rights, generate substantial air emissions, or materially impact dark sky conditions.

Cropped image of Above Ground Utility Corridor from Lyon County 2020 Master Plan



Finding B: The extent to which the plan departs from zoning and planned unit development regulations otherwise applicable to the property, including but not limited to density, size and use, and the reasons such departures are or are not deemed to be in the public interest;

Applicant's Response

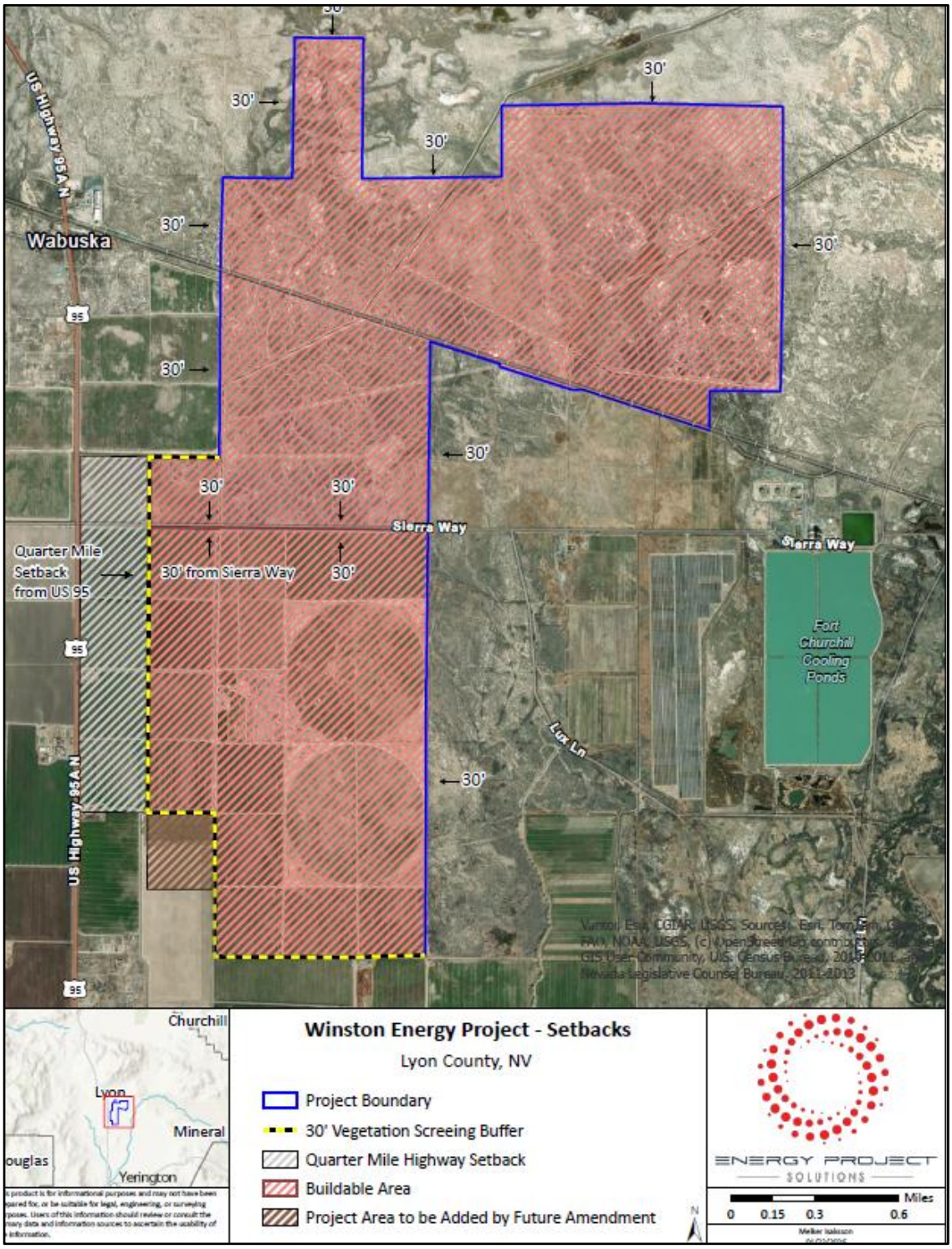
Per table 15.320-1 and table 15.320.-4 of the Lyon county code, solar power generating facility (commercial) and Energy Storage System require a conditional use permit under both zone HI-S and RR-20. The project has received a conditional use permit for a portion of the project site but portions of the original 2022 CUP site were lost to the NV Energy Walker River Substation project, requiring the acquisition of additional lands in 2023 and 2024—well before Lyon County adopted the one-mile setback requirement in July 2025. After coordination with the planning department PUD was determined to be the best way to move forward with the project as sufficient setbacks to the highway will be incorporated to ensure that public interests are satisfied. Reference justification letter with Standards and Criteria.

Staff Comment

The applicant has submitted a PUD instead of a CUP for the SECS, BESS, and high voltage transmission lines as a path forward, in accordance with available pathways provided to applicant by Lyon County staff. Part of the reasoning would appear to be the multiple project components as part of a PUD and the need for flexibility in the development standards.

Setbacks

The following image is the Setbacks exhibit submitted with the updated project site plans after the Board approved a continuance on January 5, 2026 (and is included as Attachment 3). The setback is a quarter mile, or 1,320'. A 30' wide landscape buffer is intended to further mitigate visual impacts, including to properties along the south west border where residential uses and zoning exist.



LCC section 15.336.09.E.2, *Setback,* states that: (underline added)

> *"…The Board of County Commissioners may, at their sole discretion, approve setbacks that are less than the setbacks outlined in this chapter <u>if the project is a part of a Planned Unit Development (PUD)."</u>*

The proposed setback to Hwy 95A to the west of the site is 1,320', a 50% reduction in a development standard requiring a 2,640 setback approved by the Board of Lyon County Commissioners on June 18, 2025 for projects that are not part of a PUD. Staff was previously unable to endorse the first iteration of the project with a 300' setback, but is satisfied with this more reasonable PUD request for the Board's review. In addition to the quarter-mile setback, a 30' wide landscape strip is also proposed along the Highway boundary (with extensions on the southern and northerly borders of the new project area).

<u>TIS and traffic</u>

The January 5, 2026 BOCC hearing that was continued included extensive discussion on the TIS for the construction phase of the project. Staff at the time was recommending denial of the Tentative PUD because of the setbacks proposed and the lack of sufficient NDOT and County review of the TIS. Since that time, the applicant has submitted a TIS with NDOT's approval of scope and has received NDOT's recommendations, included in this report as Attachment 2. Staff is satisfied with the recommendations and will/would incorporate them into a Final PUD. Attachment 3 is the NDOT response to the TIS.

The applicant has agreed to fund and construct traffic control improvements at the intersection of Sierra Way and US Highway 95A. This intersection represents a critical access point for multiple long-term projects with extended construction timelines. Of particular note, the Board of County Commissioners heard presentations from staff and the applicants for the Monarch Data Center (PLZ-2025-025, "Monarch") on December 4, 2025, a project proposing approximately 4.6 million square feet of buildings with Sierra Way as the primary access. The Board then voted to approve Monarch's Specific Plan and they will next be submitting for a Tentative PUD.

Part of the County's review of these two projects will include County-specific conditions requiring improvements to public Rights of Ways. The most notable will be construction of an additional travel lane northbound on Highway 95A starting north of Sierra Way and the Union Pacific Railway line, providing a means of mitigating the extensive truck and labor traffic during the construction phase. The Highway expansion would provide a passing lane up "Wabuska Hill" and would be a permanent improvement to the regional roadway infrastructure after (potential) construction phases for both projects are complete.

Additional improvements approximately 20 miles north at the Ramsey Weeks intersections with US Highways 95A and 50 are also contemplated by NDOT. The options under consideration would be turn lane pockets and acceleration and deacceleration lanes at both intersections. Final design would occur after Tentative PUD approval (including amendments) in coordination with NDOT.

Staff also recognizes that NV Energy's Walker River Substation project uses Sierra Way as its primary access route. The corridor of Highway 95A between Yerington and Silver Springs will/would continue to accommodate ongoing agricultural operations, as well as local residents and commuter traffic. Improvements built to accommodate construction phases would then, presumably, provide long term benefits to the community once construction is complete.

<u>WRID - General Manager Comment</u>

The PUD does propose to accommodate the WRID irrigation ditches through the project area by offering to re-route the historic conveyances. The WRID would still have opportunities to review site development plans if the PUD were to be approved. The WRID General Manager provided the following generalized comment, with an update in parenthesis from staff:

A minimum 50-foot setback and possibly larger, depending on the facility involved, shall be maintained from the [the centerline] of all irrigation district drains, canals, ditches, and laterals thereof. No grading, construction, fencing, or drainage discharge is permitted within this setback or within any irrigation district easement or within any drain, canal, or ditch located therein without prior written approval from the district having jurisdiction.

The developer shall coordinate with the irrigation district to verify facility location, maintain required access, and to ensure compliance with these requirements and that historic maintenance practices of depositing material and vegetation on the banks of such facilities are not impaired.

The General Manager's proposed setbacks and easements will have to be approved by the WRID through the site improvement, grading, and building permit processes.

Finding C: The purpose, location and amount of the open space in the planned unit development, the reliability of the proposals for maintenance and conservation of the open space and the adequacy or inadequacy of the amount and purpose of the open space as related to the proposed density and type of residential development;

Applicant's Response

Section 15.349.03.M.4. of the Lyon County Code offers the opportunity for a reduction in the minimum open space requirements outlined above. The Applicant is requesting a reduction in the minimum 20% open space requirement as the location of the Winston Energy Project is within ¼ mile walking distance of the Mason Valley Wildlife Management Area, a publicly accessible, active open space, consistent with the open space reduction requirements. Accordingly, the Winston Energy Project is proposing 281 acres of open space outside of the Project's fenced area. This open space totals approximately 11.8% of the total Project Area.

In addition to complying with the requirement to reduce the minimum open space requirement, it is important to note that the Project and the local community would not benefit from the incorporation of additional open space beyond what is proposed. The requirement for a PUD to incorporate open space is typically intended to preserve areas as residential or commercial amenities, such as community gathering spaces and opportunities for access to recreational facilities. However, a utility scale solar project, such as the Winston Energy Project, is by nature a secured, fenced, and operational energy generation site that cannot reasonably provide public recreational or residential amenity functions without compromising safety and operations. These conditions are incompatible with the public access expectations of typical open space requirements.

Additionally, the Project Area is in an already developed industrial area of Lyon County and surrounded by existing open space (i.e. BLM land and the Mason Valley Wildlife Management Area). As such, the public would not significantly benefit from additional open space in the vicinity of the Project, and such requirement would place an undue burden on the Applicant. Accordingly, this requirement should be considered not applicable to the Winston Energy Project.

Staff Comment

As stated in the Staff Comment for Finding A, the PUD section of LCC is focused on residential development proposals. The requirement of open space for PUDs is not recognized as being especially relevant for the proposed project. The WRID will maintain jurisdiction over their ditches and easement, which, if the project is approved, will necessitate modification to the site plans and create breaks in the SECS.

Finding D: a physical design of the plan and in the manner in which such design does or does not make adequate provision for public services, provide adequate control over vehicular traffic, parking requirements, and further the amenities of light and air, recreation and visual enjoyment;

Applicant's Response

Please reference the site plan with physical design of the project within the PUD application.

Staff Comment

If approved, the Operations and Maintenance Building, the substation, the BESS, and other features of the project will be required to attain an Administrative Design Review (ADR) from the Planning Department. This process will permit staff to review qualities such as required parking, pavement standards, establishment of water and sewer facilities, and other features. The PUD designates general areas for structures and setbacks, but further review would ensure that County standards are met.

Finding E: The relationship, beneficial or adverse, of the proposed planned unit development to the neighborhood in which it is proposed;

Applicant's Response

The PV and BESS facility is strategically located adjacent to the Walker River Substation, owned and operated by NV Energy. This proximity creates a significant benefit by minimizing the need for additional transmission infrastructure that would otherwise cross neighboring properties, reducing land disturbance and potential impacts on the surrounding community. By co-locating generation and storage near an existing distribution hub, the project enhances grid efficiency and reliability, ensuring that electricity can be delivered to Lyon County residents without unnecessary expansion of transmission corridors.

The facility is consistent with the underlying industrial zoning that encompasses most of the project boundary, aligning with the intended land-use pattern and avoiding conflicts with residential development. Surrounding properties are primarily agricultural with few residences, which means the project will have minimal visual and noise impacts on neighbors. Additionally, the project introduces long-term benefits such as improved energy resilience, reduced dependence on fossil fuels, and support for statewide renewable energy goals. By contributing clean, locally generated power, the facility helps stabilize energy costs and promotes environmental stewardship, all while maintaining compatibility with the existing character of the area.

Staff Comment

The placement of an SECS within this portion of the County is generally consistent with the location of the Above Ground Utility Corridors and the proximity of the Walker River Substation complex. The applicant has proposed a quarter-mile setback from US Highway 95A, together with a complementary landscape buffer. The project narrative also indicates that the property owners intend to continue utilizing the setback area for livestock grazing, which may retain elements of the area's existing character. As part of the Final PUD, the County and NDOT are anticipated to require applicable improvements to local and regional roadways, potentially secured through a Development Agreement or similar instrument. As planned, the PUD would be in general conformance with County Code and processes and outlines necessary improvements to mitigate impacts the surrounding community.

Finding F: In the case of a plan which proposes a development over a period of years, the sufficiency of the terms and conditions intended to protect the interest of the public and the residents of the planned unit development in the integrity of the plan

Applicant's Response

A solar facility developed under a multi-year PUD satisfies the ordinance by incorporating terms and conditions that ensure the integrity of the plan and protect public interests throughout its life cycle. Unlike projects with frequent operational changes, a PV solar farm is inherently stable and predictable over time. Once constructed, its physical footprint, land use, and operational characteristics remain largely unchanged for decades. This consistency minimizes disruption to surrounding properties and preserves the original intent of the PUD

Staff Comment

The proposed project, if the PUD were approved, would still require multiple approvals for site preparation and construction. During that process, the safety of residents and neighbors would be addressed via review of fire suppression plans, emergency management plans, access controls, and decommissioning plans.

WINSTON ENERGY PROJECT PLANNED UNIT DEVELOPMENT HANDBOOK

APPLICATION SUBMITTAL: PLZ-2025-084

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February 2026

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1. Introduction

Winston FC Solar, LLC is pursuing approval to construct the Winston Energy Project (Project), a 400-megawatt (MW) photovoltaic (PV) solar energy facility (facility) with a Battery Energy Storage System (BESS) located entirely on approximately 2,374.5 acres of privately owned land in Lyon County, Nevada. The Project site is located just east of U.S. Alt Highway 95 (U.S. Hwy 95A), approximately 15 miles northeast of the City of Yerington, and adjacent to the Walker River Substation (f.k.a. Fort Churchill Substation). Ancillary facilities include a substation, collection lines, an operations and maintenance building, and site access roads. Electricity generated by the Project would be connected to NV Energy's transmission system via a newly constructed 4,800 foot 230-kilovolt (kV) generation tie (gen-tie) line to the Walker River Substation, which is adjacent to the Project site.

The project has an estimated a capital investment of $1.1 billion in land, buildings and equipment, and its employees, this project would generate an estimated $100 million in net tax revenues after abatements over 40 years. It is estimated that a total of $28.7 million will be generated in sales & use taxes and $71.3 million will be generated in property tax revenues.
In 2022, the project obtained a Conditional Use Permit (PLZ-2022-167) for a PV project from Lyon County for 1712.5 acres. However, the NV Energy Greenlink project impacted that footprint requiring additional land. Lyon County regulations have also changed, which require additional approvals.

Surrounding lands are primarily private agricultural, rural, and industrial, in addition to public property administered by the Nevada Division of State Lands and Bureau of Land Management. The Project area is in the Mason Valley Character District, as defined by the 2020 Lyon County Comprehensive Master Plan. The Project located the Heavy Industrial – Suburban (HI-S) and Rural Residential 20 Acre Minimum (RR-20) zone districts.

According to the Lyon County code of regulations, the purpose of a Planned Unit Development (PUD) is to provide a flexible and creative approach to developing large parcels of land in a way that aligns with the county's master plan, while also encouraging high-quality design and a mix of amenities. PUDs allow for integrated land uses to be conveniently located, and for developers to use creative designs that can improve efficiency, reduce development costs, and help preserve open space and environmental resources. Further justification for the use of a PUD can be found in Appendix A.

This PUD Handbook serves as a governing document for the Winston Energy Project, bridging the County's Master Plan, zoning regulations, and other requirements with the specifics of the project. Implementation of the Winston Energy Project will be required to confirm with this document as approved by the Lyon County Commission.

Figure 1: Project Boundary

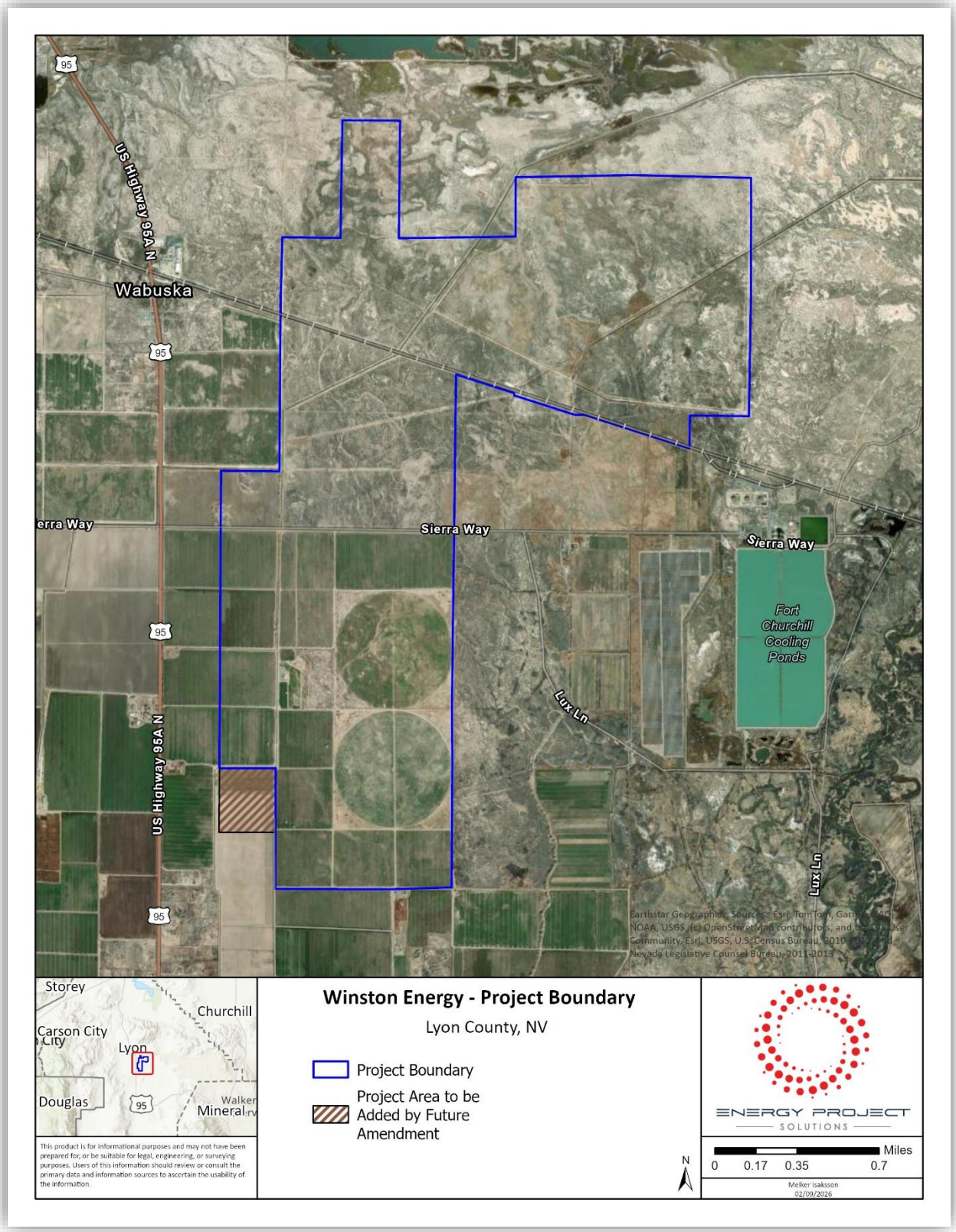


Figure 2: CUP Approval/NVE Easements

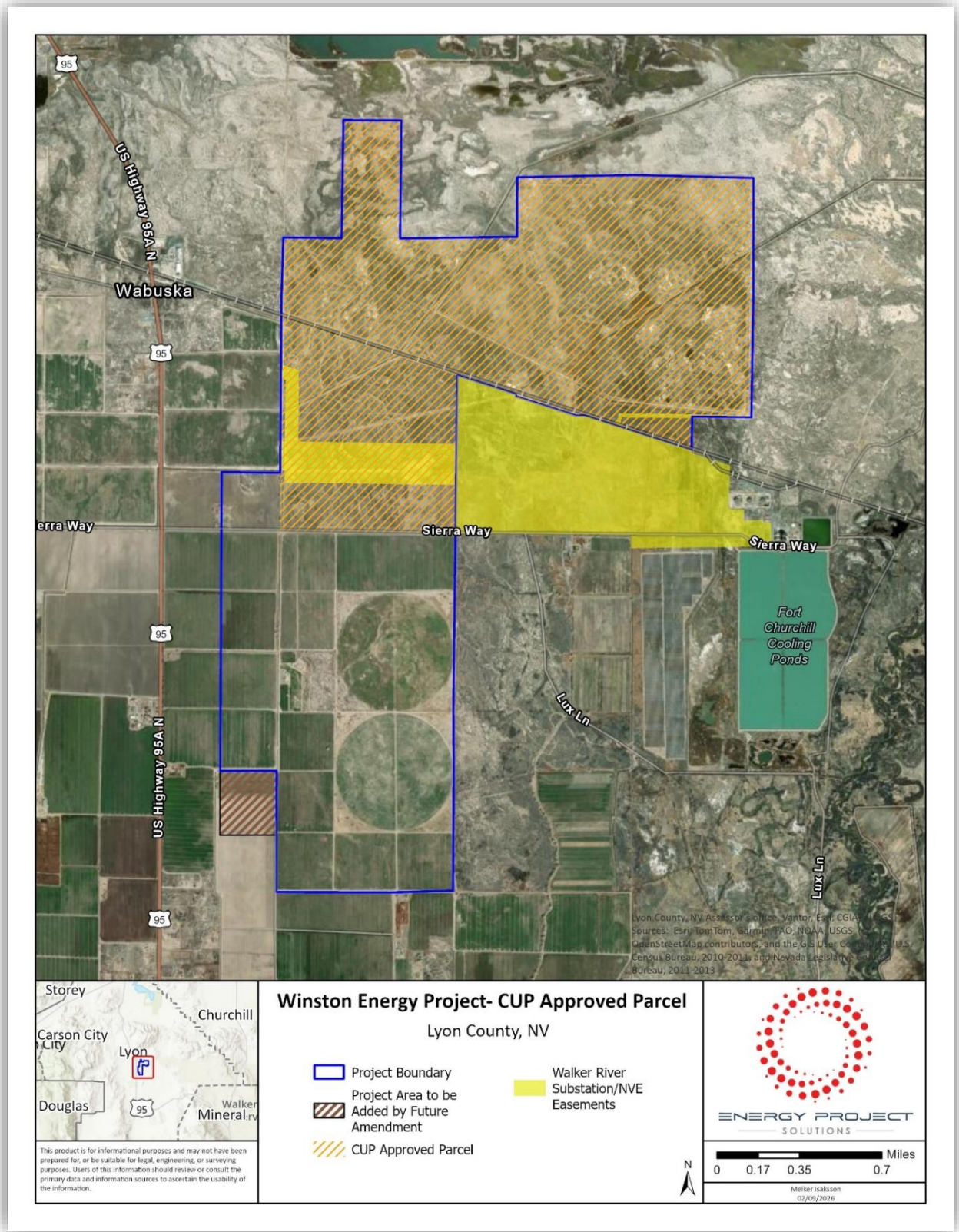


Figure 3: Land Use

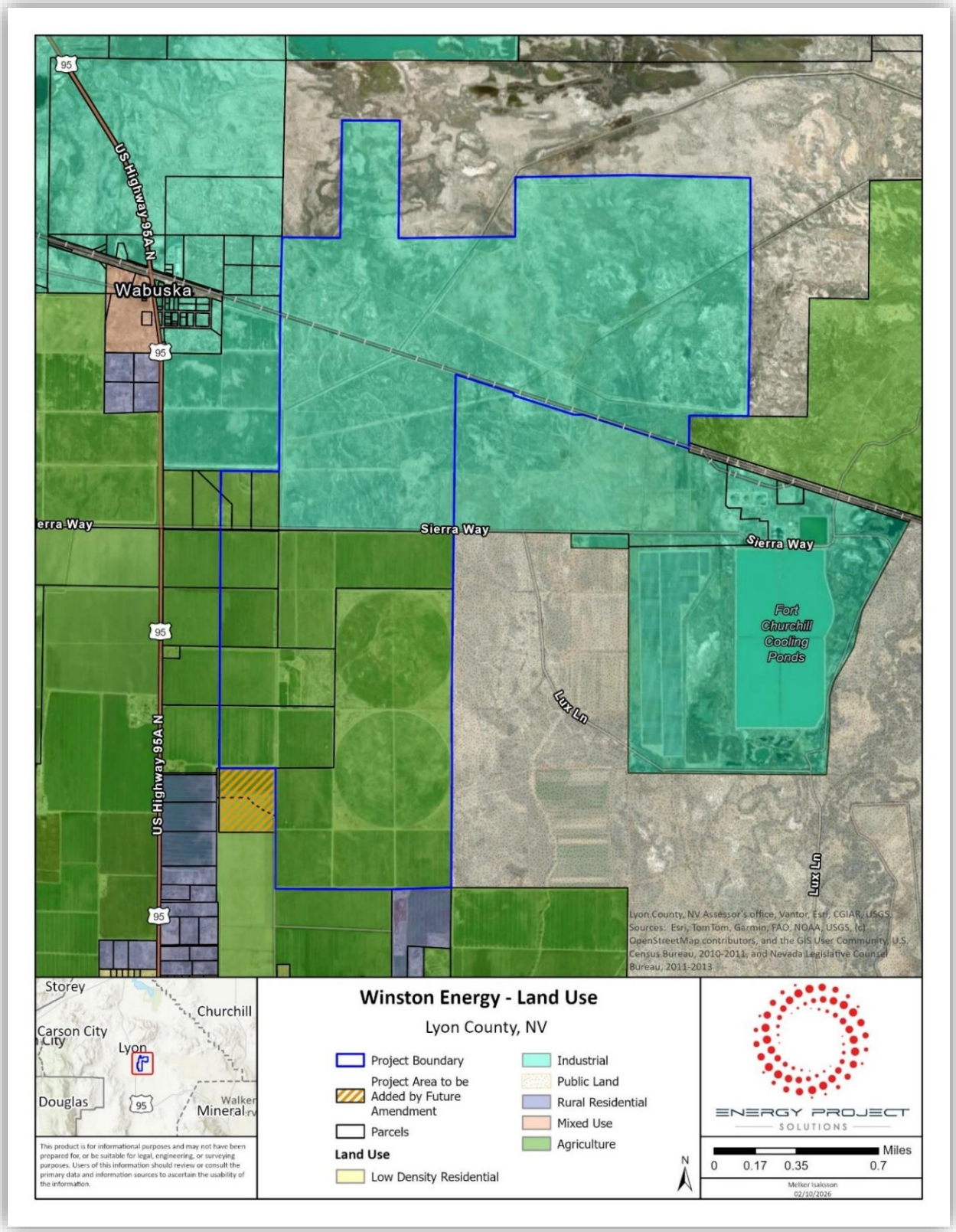
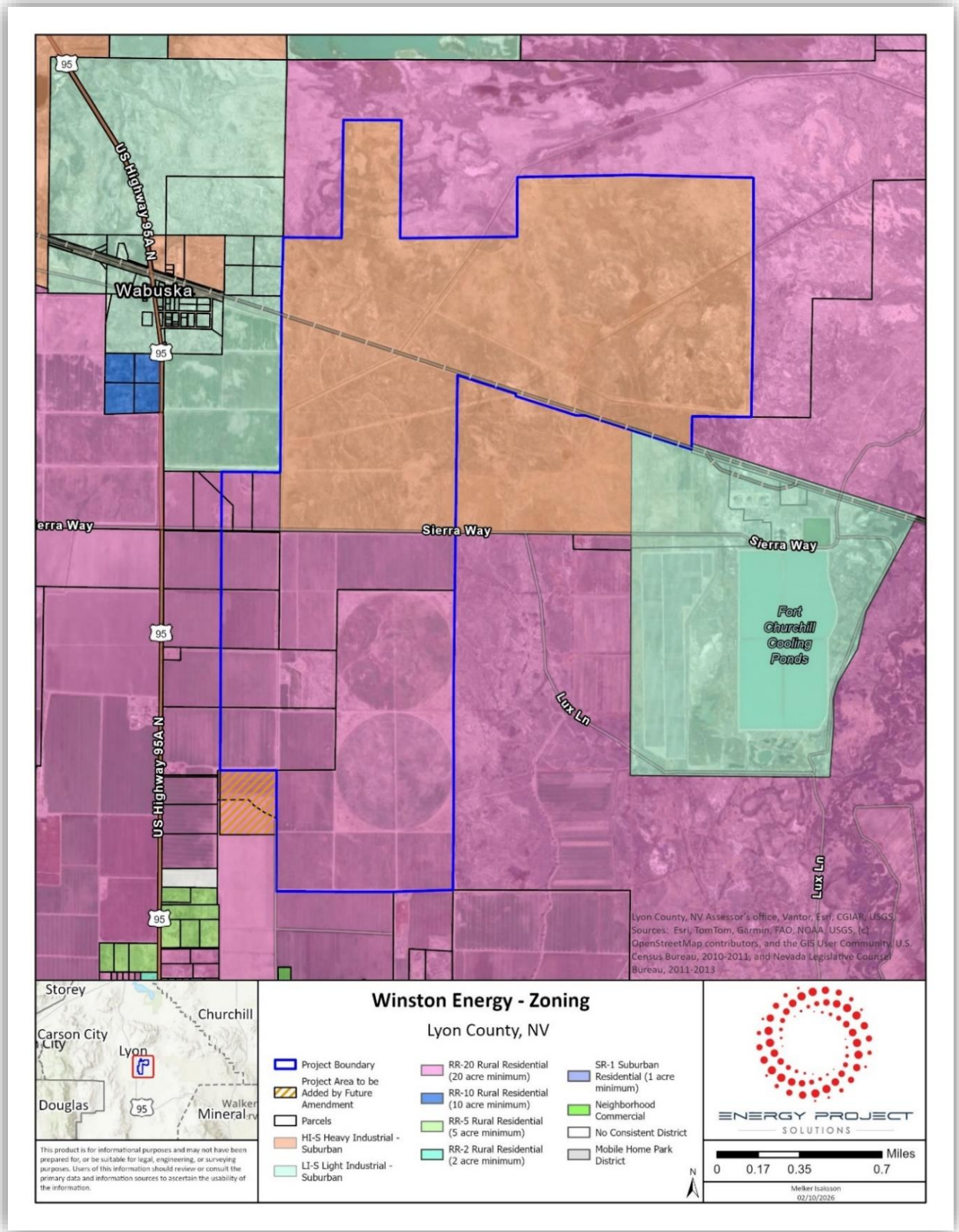


Figure 4: Zoning



2. Land Use and Design Standards

The Winston Energy Project is committed to maintaining the standards and criteria noted in Section 15.336.06, 15.336.09, 15.336.12, 15.337.03, 15.401.03 of the Lyon County code with the deviations and its rationale highlighted in Table 1 below.

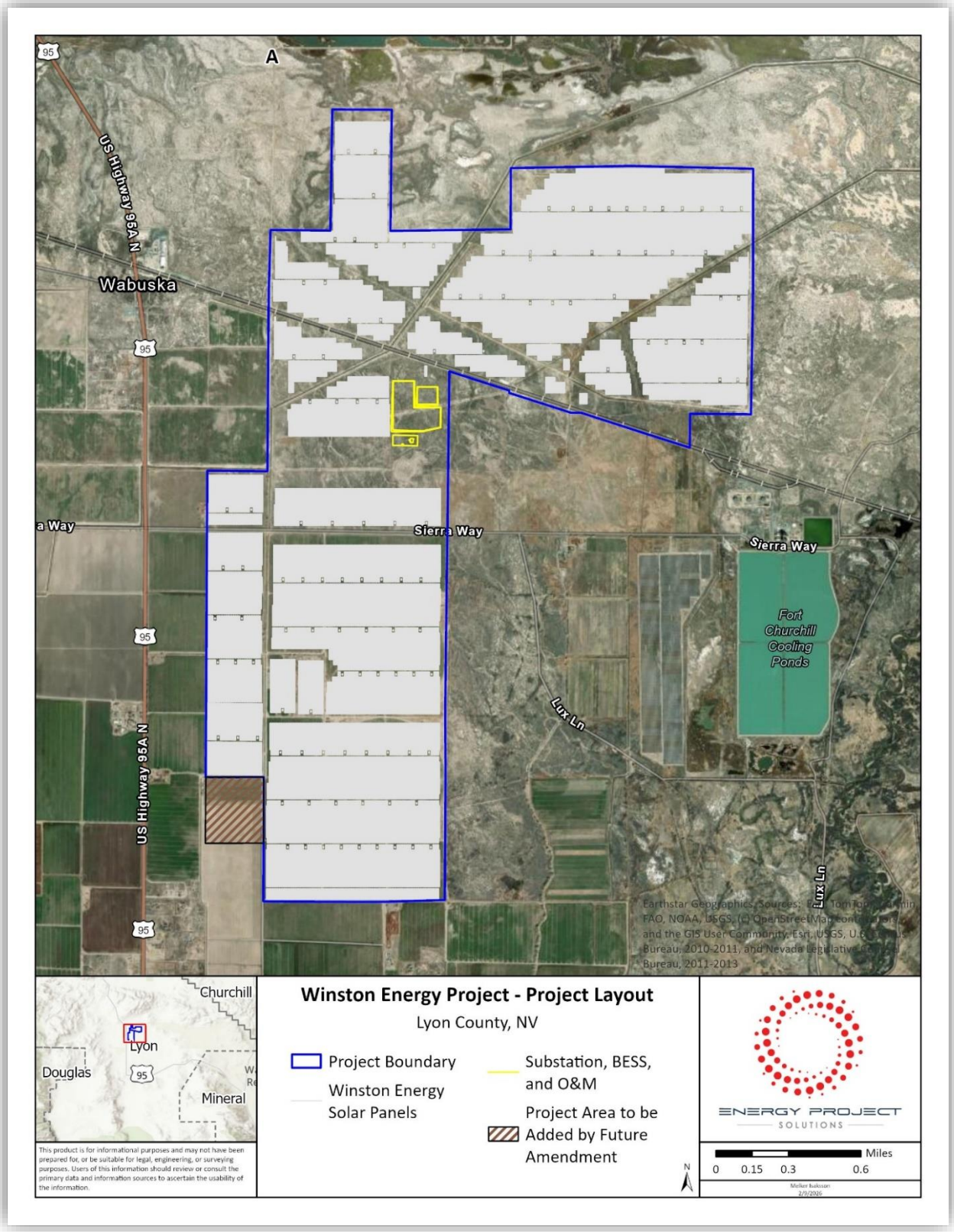
Table 1: Standards and Criteria Deviations

Standards and Criteria	Description	Deviation from Standards/Proposed PUD Standard	Rationale
15.336.09.E.2 - Setback	Each commercial SECS array must be set a minimum of one half mile (2,640 feet) from a trail easement, highway and/or adjacent properties with an existing residential use. Setback increases to one mile (5,280 feet) from an airport, river, perennial or intermittent stream, and/or lake. An SECS may be placed closer than 2,640 feet from a property with an existing residential use, trail easement, or highway if it is separated by a geologic feature or building of a height sufficient to completely obstruct views of the commercial SECS from a point sixteen (16) vertical feet above the boundary of any Residential Zoning District. The Board of County Commissioners may, at their sole discretion, approve setbacks that are less than the setbacks outlined in this chapter if the project is a part of a Planned Unit Development (PUD).	• A 1320 setback to Highway 95 and a 30-foot landscaped buffer along the southern, western, and northern property edges as seen in Figure 13	• Portions of the original 2022 CUP were lost to the NV Energy Walker River Substation project, Requiring the acquisition of additional land well before Lyon County adopted the one-mile setback requirement. • Substation and BESS system will maintain a one-mile setback from highway. • The project proposes visual screening along the southern, western and northern portions project boundary adjacent to US Highway 95 to reduce visual impacts of the project. • County Code permits the County Commission to reduce otherwise applicable

			setback distances for a commercial SECS where the SECS is part of a PUD. • The Project is consistent with Lyon County Master Plan goals and policies promoting economic diversification, cost-effective siting of industry and business, renewable energy development. • The proposed PUD supports Master Plan Policy LU 3.2, encouraging the appropriate siting of business and industry locations, the policy in emphasizes the "***accommodation of such development cost-effectively"***
15.336.06.D. 2 - Setback	Each LiBESS must be set a minimum of one mile (5,280 feet) from a trail easement, highway, river, perennial or intermittent stream, lake and/or property with an existing residential use. The Board of County Commissioners may, at their sole discretion, approve setbacks that are less than the setbacks outlined in this chapter if the project	• Half a mile setback	One residence falls within the setback, but the Battery Energy Storage System (BESS) will be positioned in a way that allows the substation to serve as a natural barrier, minimizing both visual and operational impacts. Additionally, the

	is a part of a Planned Unit Development (PUD).		property owner supports the project and has provided a letter of support

Figure 5: Detailed Layout



2.1. Photovoltaic Array

The Project's solar PV facility would be composed of PV modules (panels), support structures, inverters, collection lines, and meteorological equipment as detailed below. These features would comprise approximately 1,994 acres of the Project site. All disturbances associated with the solar PV facility would be contained to private lands.

The Project's PV modules would utilize crystalline silicon, bi-facial, or thin-film PV panels that would be mounted on single-axis trackers. The panels would be oriented in north–south rows with the panels moving to track the sun as it moves across the sky during the day, which increases the overall efficiency and reliability of the PV modules. Each PV module would be mounted to a tracker system specifically designed to withstand wind, snow, and seismic loads anticipated at the Project site.

The PV modules will be designed using non-reflective materials and coatings to significantly minimize potential glare and reduce visual impacts on surrounding properties and nearby roadways, ensuring that the project blends harmoniously with the existing landscape and

Figure 6: PV Array

mitigates any potential visibility or distraction concerns for drivers traveling along Sierra Way and US Highway 95A N.

PV technology converts sunlight directly into direct current (DC) electricity. The DC electricity generated by the solar array is then collected at inverters where it is converted to alternating current (AC). The voltage of the electricity is increased by a transformer at each inverter. Medium voltage electric lines (underground and/or overhead) are then used to collect the electricity from each transformer and transmit it to the facility substation, where the voltage is further increased by a high voltage transformer to be transmitted to the electric grid. Multiple transformers would be connected in parallel via low voltage (12.5kV or 34.5kV) collector lines to the Project substation, where the power from the Project would be stepped up for delivery to the grid via the gen-tie lines described below.

The PV modules, inverters, and transformers would be grouped into array blocks of up to 5 MW DC each occupying approximately 12.5 acres. Inverter and transformer sizes would be selected based on cost and market availability prior to construction. The PV modules deployed for use in the proposed Project would comply with industry standards and would be electrically connected to the facility's grounding system in accordance with local codes and regulations. Final PV module selection would be determined during the detailed engineering phase of development.

The PV modules would be positioned onto a single axis tracking system, allowing the modules to move through the course of the day to track the sun. The highest point on the single-axis trackers it is expected to the be 8 feet but it could reach up to a maximum of 12 feet if the site conditions such as topography or vegetation require a higher height, trackers will reach the maximum height during the morning and evening hours when the panels are tilted to face the rising or setting sun. The degree of tilt for each single-axis tracker would change over the course of each day. The PV units would be mounted on driven or pre-drilled H-pile foundations to support the panel mounting system. Site specific soil tests to validate the preliminary engineering would be performed prior to construction.

The Project's inverters and transformers would be housed in enclosures or covered by shade structures approximately 8 to 10 feet high. The Project would also include one or more small meteorological monitoring stations to track solar insulation, temperature, wind direction, and speed. These stations would have a height of approximately 8 to 13 feet and would be located within the solar PV facility boundary.

The perimeter of each continuous area of the solar PV facility would be secured with a 6 to 7-foot tall, chain link metal- fabric security fencing. If determined necessary, up to 2-foot barbed

wire or razor wire may be added to the top. Controlled access gates would be located at the site entrances to each area.

The Project's permanent lighting system would provide operation and maintenance personnel with illumination for both normal and emergency conditions near each main entrance and Fire Alarm Control Panel (FACP). Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives and would be downward facing and shielded to focus illumination on the desired areas only. There would be no lighting in the solar PV facility. Therefore, light intrusion affecting on surrounding properties, if any, would be minimal. If lighting of individual solar panels or other equipment is needed for night maintenance, portable lighting would be used.

Figure 7: Inverter

2.2 Battery Energy Storage System (BESS)

The Project includes the construction and operation of a lithium Ion BESS that would store power generated by the solar PV facility and allow for the transfer of power to the electrical grid as needed. The BESS containers would be installed in a central location on the Project site, located adjacent to the Project substation.

The BESS would consist of multiple enclosures housing batteries connected in strings and mounted on racks. AC-coupled BESS design standards typically include monitoring equipment,

cooling units, active exhaust venting, multiple fire detection units including gas/heat/smoke detectors, and fire safety systems, which adequately address fire risk associated with the unit. (Fire risk and associated design requirements are addressed further in the Fire Safety Section.) AC-coupled BESS units typically require their own inverters on their own skid.

Figure 8: BESS

However, some equipment associated with the BESS (e.g., inverters, auxiliary transformer to control the HVAC system) may be adjacent to the enclosure with appropriate spacing considered for O&M access and fire safety.

Because the size of each battery enclosure varies widely by manufacturer, the total number of enclosures to be installed would not be known until a manufacturer has been selected. Each BESS enclosure would house hundreds of battery modules. Typical BESS enclosures are approximately 24 feet long by 8 feet wide by 9.5 feet high; however, these dimensions can vary by manufacturer, the height is not expected to exceed 12 feet. Each BESS enclosure is typically capable of storing between 2 to 5 MWh of energy. The batteries would be charged directly from the PV solar energy generated by the Project. Energy stored in the BESS would then be discharged into the grid when the energy is needed, providing important electrical reliability

services to the local and regional area. The total land disturbance attributed to the BESS facilities under this scenario would be 25 acres, as detailed on the Project's Site Plan

Figure 9: BESS Yard

The perimeter of the BESS yard would be secured with a 6 to 7-foot tall, chain link metal- fabric security fencing. If determined necessary, up to 2-foot barbed wire or razor wire may be added to the top. Controlled access gates would be located at the site entrances to the yard.

2.3 Operations and Maintenance Building

The proposed O&M building would be approximately 3,600 square feet with a maximum height of approximately 25 feet. The single-story O&M building would contain administrative offices, parts storage, a maintenance shop, plant security systems, and plant monitoring equipment with 13 adjacent worker parking. The O&M building would have exterior lighting on motion sensors, fire and security alarms, and would comply with all applicable laws and regulations (including applicable Operational Safety and Health Act [OSHA] requirements).

Figure 10: O&M Building

The perimeter of the O&M lot would be secured with a 6 to 7-foot tall, chain link metal- fabric security fencing. If determined necessary, up to 2-foot barbed wire or razor wire may be added to the top. Controlled access gates would be located at the site entrances to the lot.

2.4 Substation

The Project would also include the construction and operation of an on-site substation. The substation would accommodate a 230-kV gen-tie line, discussed in section 2.5 Transmission Generation Tie-in Line below. The substation equipment would include medium voltage (34.5 kV) to high voltage (230 kV) step-up transformer(s) with mineral oil, breakers, buswork, protective relaying, supervisory control and data acquisition (SCADA).

Figure 11: Substation

The substation equipment would be located within an approximately 7-acre area. The substation would be fenced for safety and security with a 6 to 7-foot tall, chain link metal- fabric security fencing. If determined necessary, up to 2-foot barbed wire or razor wire may be added to the top and designed in accordance with codes and standards applicable to Lyon County, including but not limited to IEEE (Institute of Electrical and Electronics Engineers), ANSI (American National Standards Institute), NEC (National Electrical Code), NESC (National Electrical Safety Code) the fence would be up to 7 ft heigh. However, one or more structures may be outside the fenced area for the purpose of accessing meters and control equipment. The communication system for the substation may include above- ground fiber optic cable and/or a microwave tower. If a fiber optic line is used, it would be mounted on the gen-tie line structures as one of the shield-wires.

Switching and transformer equipment and control enclosure would also be located at the substation site with a maximum height of 30 feet. The substation equipment would be designed to accommodate necessary setbacks and spacing between pieces of equipment and would include a drainage collection area consistent with local and state regulations. Transformers would be placed within a secondary containment area according to local and state regulations to prevent pollution of soil and water in the event of a spill the estimated height of the transformers is 25 feet.

Figure 12: Substation Yard

The substation would utilize temporary task lighting as necessary to allow inspections and provide for safe movement within the substation and inside the substation fencing. Lighting would be designed to provide the minimum illumination needed to achieve safety and security objectives and would be downward facing and shielded to focus illumination on the desired areas only. All lighting would be shielded downward to minimize contributions to sky glow. Substation lighting would be designed to minimize potential impacts on wildlife and would avoid the casting of light toward surrounding wildlife habitat or surrounding properties in the vicinity of the Project area. The substation would be enclosed by fencing consistent with National Electric Code requirements.

2.5 Transmission Generation Tie-in Line

A new 4,800 foot, 230 kV gen-tie line would be constructed to connect the Project substation to the existing Walker River Substation. Approximately 500 feet of the proposed gen-tie line would be located within the Project area, and the remaining would be located within the Walker River Substation yard, where the electricity generated by the Project can be transmitted to the electrical grid. The Project would use H-frame or single steel pole structures made of self–weathering or galvanized steel. The structures would range in height from 120 feet to 170 feet.

The design, construction, operation, and maintenance of the gen-tie lines will meet requirements of the National Electrical Safety Code (NESC); U.S. Department of Labor,

Occupational Safety and Health Standards; and requirements for safety and protection of landowners and their property. Transmission line design will also be consistent with recommendations for reducing negative impacts of power lines on birds found in Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 by Edison Electric Institute and the Avian Power Line Interaction Committee (APLIC) and Reducing Avian Collisions with Power Lines by the U.S. Fish and Wildlife Service and the APLIC.

2.6 Setbacks

As shown in the Figure 13 below, the Winston Energy Project's PV array is designed to comply with Lyon County Code 15.336.09.E.3 by maintaining setbacks around the project boundary. Along the highway frontage, however, a 1320-foot setback is proposed to address potential visual and community character concerns. While Lyon County Code 15.336.09.E.2 specifies a minimum one-half mile (2640) setback from highways or residential areas, this requirement cannot be fully met in certain parts of the project. The County Code allows for PUD-specific setbacks when they support designs that enhance efficiency and address public interests, which provides a basis for the requested variance.

For the Winston Energy Project, a reduction of the one-half mile setback is necessary along the SR-95 frontage and for two adjacent participant residential properties whose owners have consented to the project. Without these reductions, a significant portion of the PV array would be impacted, making the project infeasible. Further justification for the reduced setback is provided below:

- Optimal Location for Energy Development: The site benefits from partial industrial zoning, immediate adjacency to Nevada's largest energy hub (the Walker River Substation), and proximity to compatible uses such as the Wabuska geothermal facility and the proposed Monarch Data Center.

- Site Expansion and Timing: Portions of the original 2022 CUP site were lost to the NV Energy Walker River Substation project, requiring the acquisition of additional lands in 2023 and 2024—well before Lyon County adopted the one-mile setback requirement in July 2025. The project also reserves land for continued maintenance and access for the Walker River Irrigation District facilities.

- Compliance for Major Infrastructure: The one-half mile setback will still apply to the project's Battery Energy Storage System (BESS) and substation, which are the primary infrastructure elements. Only the PV array would be located within the reduced setback, and the panels are low-profile, low-visibility, low-noise, and low-hazard.

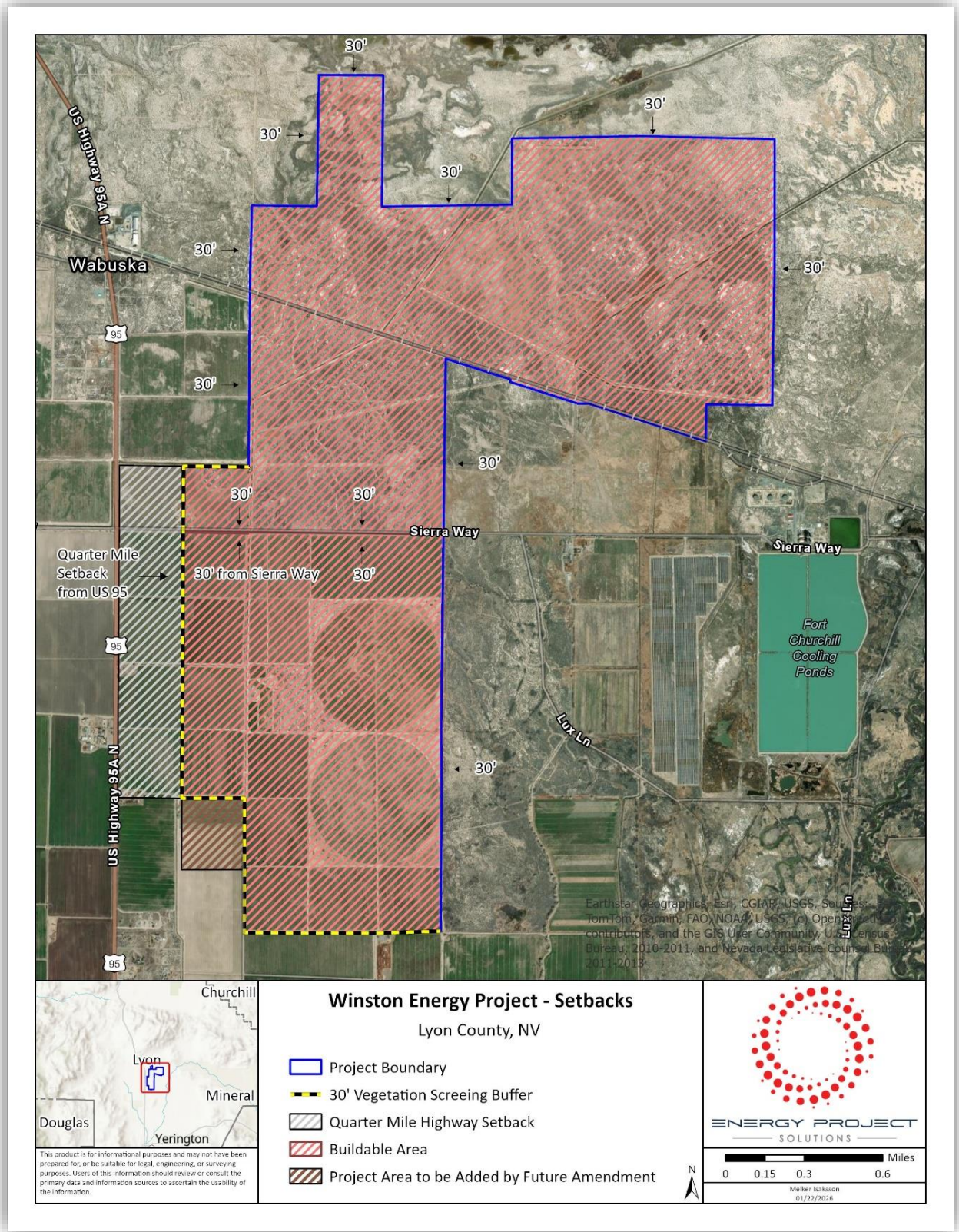
- Mitigation Measures: Along SR-95, the project proposes a 1320-foot setback enhanced with visual screening and community character improvements, and a 30-foot landscaped buffer along the southern, western, and northern property edges, thus mitigating the potential visual impact to the community.

The requested variance is critical due to the project's unique configuration, which cannot accommodate a 400 MW solar facility under the current one-half mile setback. Additional usable acreage is needed to support the full PV array, associated infrastructure, access roads, and interconnection facilities.

Non-participating residences are located immediately adjacent to the PV array, with the closest residence approximately 1,320 feet from the project boundary, moreover the project is committed to install a 30 foot vegetation screening along the south and west boundary where the residence are located, mitigating potential visual impacts.

The project aligns with the 2020 Lyon County Master Plan, which designates the area for partial industrial use, and is consistent with existing and planned utility infrastructure in the vicinity. Granting the setback variance enables a flagship energy project that enhances Lyon County's role as a hub for energy innovation, supports economic development and increased tax revenue, and promotes environmental stewardship, without setting adverse precedent or causing public harm.

Figure 13: Setbacks



3. Transportation and Circulation

3.1. Site Access

The Project would require vehicular access during construction, operation, maintenance, and decommissioning. An existing public road, Sierra Way, would be used to provide access to the Project site from SR-95. A limited number of access points along Sierra Way would be established for the project which provide entry to the site internal access road network . The access will be used to accommodate equipment deliveries, the construction workforce, and ultimately, the operational needs of the Project. Construction traffic, which primarily consists of construction workers and truck deliveries will necessitate traffic management at the intersection of SR-95 and Sierra Way.

The project has completed a Traffic Impact Study (TIS) that has been reviewed and approved by the Nevada Department of Transportation (NDOT); The study evaluated the following two scenarios:

- Scenario 1: Analyzing the traffic impact generated solely by the construction of the Winston energy Project.
- Scenario 2: Analyzing the cumulative traffic impacts from the concurrent construction of the Lux Solar project, the Monarch Data Center, and the Winston Energy project.

Both scenarios are considered highly conservative, assuming that most of the traffic will happen in the same hour and also that the cumulative effect of the projects will take place at the same date.The TIS identified mitigation measures required for the intersections analyzed, and the project has committed to make the identified improvements for the US95/Sierra Way intersection and provide it's fair share to the additional improvements analyzed in the TIS, the study has been reviewed approved by NDOT.

3.2. Internal Access

Internal gravel roadways would be developed throughout the Project area and would take access from Sierra Way. The internal roadway sections would include two travel lanes and would be approximately 20 to 24-feet wide to facility Project vehicles. The Applicant would maintain the internal roads throughout the life of the Project. The Project would require construction of approximately 24 miles of internal access roads. If necessary, water may be applied to work surfaces to aid soil compaction and for dust control. An estimated 150 to 250 acre feet of water would be needed for dust control during Project construction, which is substantially less than the water rights authorized for the properties comprising the Project area.

3.3 Access for other uses.

Access for existing and proposed infrastructure with the project site would also be maintained. This includes the Walker River Irrigation District, railroad, gas pipeline, and NV Energy facilities. As feasible and appropriate, the project will also accommodate access for other adjacent uses.

Figure 14: US-95 & Sierra Way Intersection

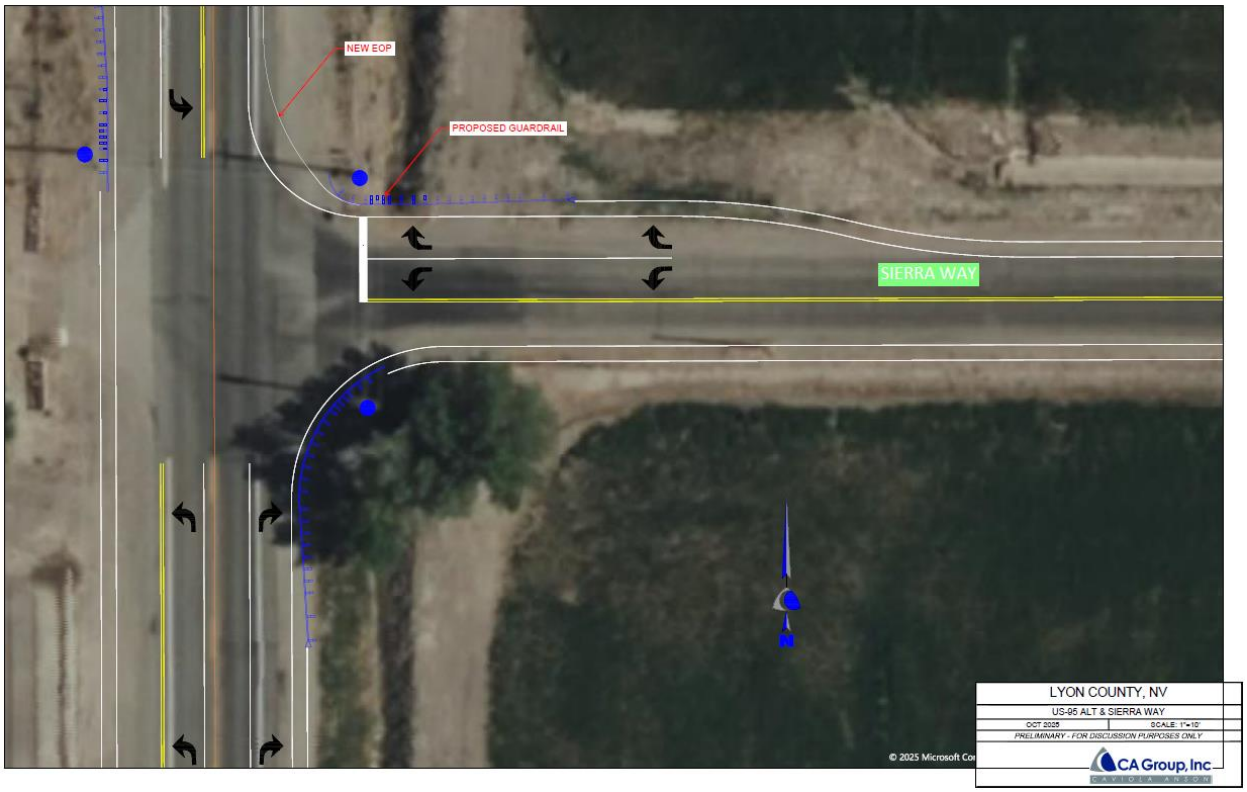
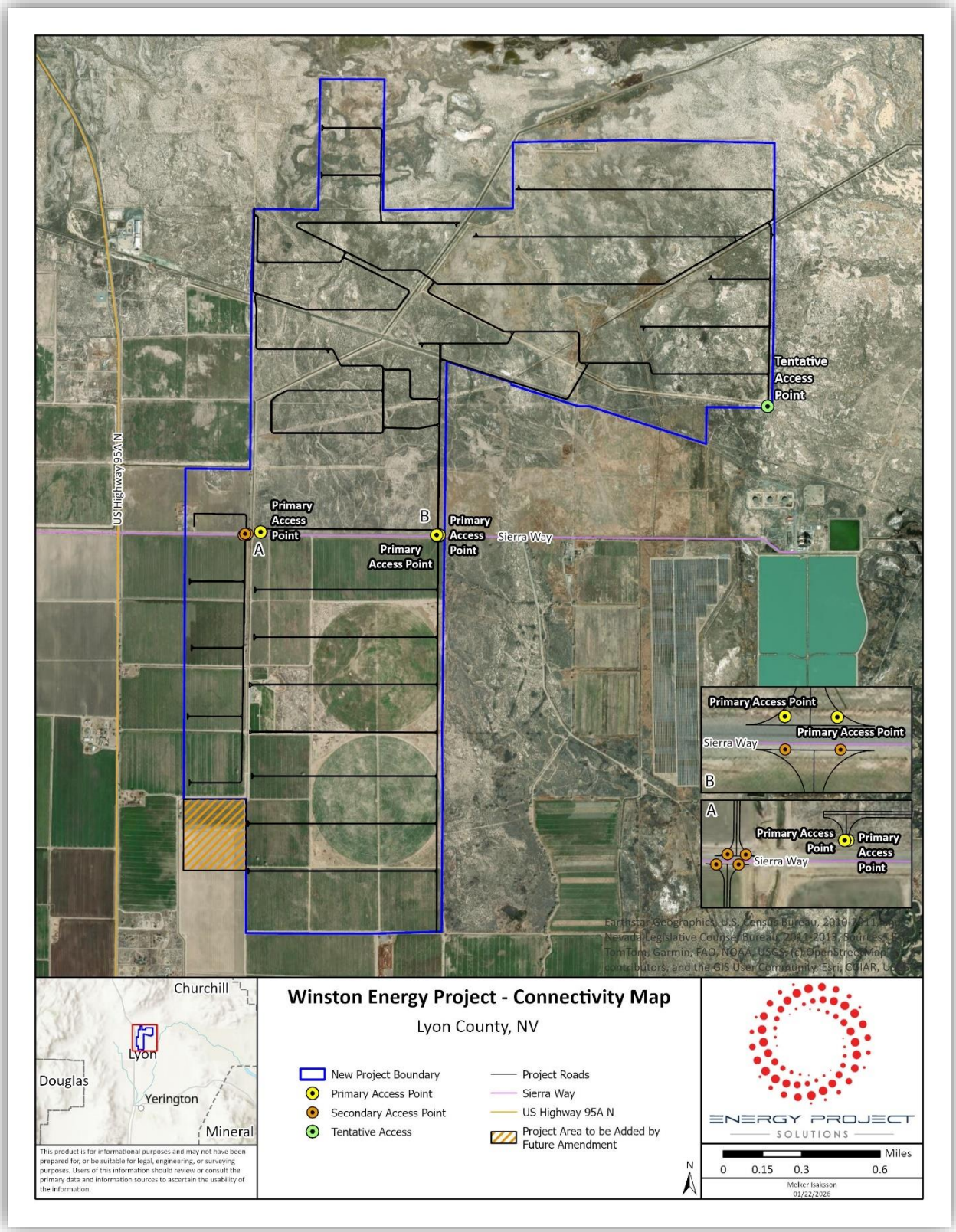


Figure 15: Connectivity Map



4. Public Safety

4.1 Project Fire Protection Planning and System

While there is limited potential for wildfire at the Project site, the Applicant would coordinate with the Mason Valley Fire Protection District and other applicable entities, as appropriate, to define measures to mitigate the risk of fire throughout the life of the Project. During Project operation, one or more aboveground water storage tank(s) would be installed on-site, if as required by the Fire Protection District. The tank(s) would be sized to meet the County requirements to supply sufficient water to contain a fire in the event of one taking place and prevent it from propagating across the site. Additional fire protection measures within the O&M building may be included based on collaboration with the Mason Valley Fire Protection District or Lyon County.

The Project's BESS would include self-contained enclosures would have its own fire detection system, which would comply with all local and federal fire code requirements. Each BESS enclosure would include multiple sensors for fire detection or an external fire detection system using infrared sensing capabilities. Additionally, the Project would have a fire alarm control panel located at the site entrance to alert local fire authorities remotely and on the panel itself of any trouble on site. The Project would use battery storage systems that are compliant with the following codes and standards:

- NFPA 855 – Standard for the Installation of Stationary Energy Storage Systems
- NFPA 70 - National Electric Code
- NFPA 72 – National Fire Alarm and Signaling Code
- UL 1973 – Standard for Safety: Batteries for Use in Stationary and Motive Auxiliary Power Applications
- UL 9540 - Standard for Safety: Energy Storage Systems and Equipment
- UL 1741 – Standard for Safety: Inverters

This includes the completion of Large Scale Fire Testing. Large Scale Fire Testing provides empirical data on the risk of fire propagation should a thermal runaway take place. To pass this test the BESS supplier must demonstrate that a fire in one enclosure will not cause thermal runaway to spread into adjacent enclosures.

The battery system will also include explosion prevention schemes, compliant with NFPA 69.

The project would adopt a multi-layered approach to incorporate fire safety into the design, implementation, and operation of energy storage assets. The following strategy will be employed:

- **Technology selection**. Conscious review and selection of energy storage technologies which minimize the risk and exposure of thermal events. The project would select the technology that is more resistant to thermal runaway and propagation from a failed battery cell to its neighbors
- **Equipment qualification and vendor selection:** All major equipment would go through an exhaustive qualification process to ensure the highest safety, manufacturing, and quality standards are utilized, including strict audits of all its suppliers to evaluate their manufacturing quality and design for safety, vendor selection would require testing due diligence from BESS suppliers to ensure safety of products and completing thorough design reviews at each level of equipment used.
- **Large Scale Fire Testing:** project would require that all BESS vendors conduct large scale fire testing to assess the thermal exposure resulting from an intense fire in a BESS unit, with the aim of understanding the risk of propagation to nearby units or other exposures and require the arrangement for testing to mirror the ultimate installation setup of the BESS, along with any ancillary equipment.
- **Site level design strategies:** Design that minimizes risk of a thermal event, restricts propagation, and supports first responders, following UL and NFPA standards.
- **Training:** Review of all processes for safe operations prior to implementation, and coordination with Mason Valley Fire Protection District as the local first responders to ensure proper training to deal with an event, should one occur.
- **Operations & Maintenance:** Strictly adhering to all maintenance requirements prescribed by equipment suppliers.

Moreover, the project will develop and implement a comprehensive Risk Assessment that would include the engagement of an independent Fire Protection Engineer, with the following deliverables:

- **Hazard Mitigation Analysis (HMA):** systematic method that would identify potential failure modes, causes and effects, and develop mitigation solutions.
- **Failure Mode and Effects Analysis (FMEA):** identifying the ways, or modes, in which something might fail where any errors or defects and studying the consequences of those failures.
- **Fire Risk Assessment (FRA):** identification of potential hazards and risks and recommendations on how to reduce or remove the identified fire risks.
- **Plume Study:** Analysis of the gases emitted from a fire should one occur and the identification of routes that such gases would follow.

4.2 Fire and Emergency Services

To ensure safety for site personnel, communities, and first responders Emergency Preparedness and Response Procedures Plans (EPRP) would be created and adapted to reflect the unique

characteristics of project such as the selected technology, specific fire risks and the local regulatory requirements of Lyon County and the Mason Valley Fire Protection District.

The development of the EPRPs will follow this strategy:

- **Coordination and project familiarization:** Project would coordinate with first responders to build familiarity with the layout, equipment, and fire risks specific to the Winston Energy Project, making sure responders understand the potential hazards of the BESS when developing effective response protocols.
- **Joint Development of Emergency Procedures:** This includes fire containment strategies, proper safety perimeters, firefighter entry limitations near energized equipment, and protocols for safely isolating battery and storage systems.
- **Pre-incident Training:** Comprehensive training tailored to the BESS facility will be provided to emergency responders as outlined in similar projects, covering key topics such as thermal runaway management and hazard identification. This ensures responders are equipped and prepared to tackle unique risks related to lithium-ion battery fires.
- **Battery Energy Storage System Safety:** The plan will incorporate fire protection systems designed specifically for the safe operation of lithium-ion batteries. This includes advanced smoke, heat, and gas detection technologies.
- **Comprehensive Emergency Procedures:** The EPRP will outline actions for onsite personnel during fire-related events, prioritizing safety, accountability measures, evacuation, and coordination with offsite responders, a copy if the EPRP will be supplied to the Mason Valley Fire Protection District,
- **Strategic Fire Response:** Emergency protocols will reflect methodologies proven effective for mitigating battery fires, including measures to minimize risks associated with thermal runaway, electrical shock hazards, and structural fire propagation.
- **Site integration and situational awareness tools**: Real-time monitoring systems such as thermal cameras, gas detection devices, and expert-driven onsite integration will be incorporated into incident management. Decision trees will be available to responders for rapid assessment and customized reactions.
- **Onboarding Fire Safety Training:** All project personnel will undergo the proper training on how to respond in the case of an incident including a safe shutdown of the plant and evacuation of the facilities.

In compliance with Lyon County's code regarding fire protection for Energy Storage Systems (ESS) and Lithium-Ion Battery Energy Storage System (LiBESS), the Winston Energy Project will establish an agreement with the Mason Valley Fire Protection District to ensure comprehensive fire protection, inspection, and emergency medical services. Prior to construction, the project will obtain the necessary approvals from the Fire Protection District and will incorporate any required firefighting equipment and training measures as stipulated. The project proponent will develop and submit an alternative plan outlining how fire protection, inspections, and emergency medical services will be delivered to ensure the safety of personnel, the community, and first responders. This plan will be integrated into the Emergency Preparedness and Response Procedures to maintain compliance and readiness.

4.3 Police Services

Law enforcement at and around the project site would be served by the Lyon County Sheriff. Energy projects have very little demand for law enforcement. Security at the site is achieve primarily through design and structural means in compliance with NERC requirements.

4.4 Spill Prevention and Control

Project construction activities would involve the use of fuels and greasers to ensure construction equipment is sufficiently maintained and operational. Such substances may be stored in temporary aboveground storage tanks or sheds located on the Project site. The fuels stored on site would be in a locked container within a fenced and secure temporary staging area.

The small quantities of substances to be stored at the Project site during construction would include fuels, oils, and chemicals required for equipment and facilities maintenance. These materials would be stored in their appropriate containers in an enclosed and secure location, such as portable outdoor hazardous materials storage cabinets equipped with secondary containment to prevent contact with rainwater. The portable chemical storage cabinets may be moved to different locations around the site as construction activity locations shift. The chemical storage area would not be located immediately adjacent to any drainage. Disposal of excess materials and waste would be performed in accordance with local, state, and federal regulations; excess materials/waste would be recycled or reused to the maximum extent practicable.

If quantities exceed regulatory thresholds, the Applicant would ensure that storage is undertaken in compliance with the Spill Prevention, Control, and Countermeasure Rule and a Hazardous Materials Business Plan, which would be developed prior to construction. The use, storage, transport, and disposal of hazardous materials used during Project construction would be carried out in accordance with federal, state, and county regulations. No extremely hazardous substances are anticipated to be produced, used, stored, transported, or disposed of during construction. Material safety data sheets for all applicable materials would be made readily available to on-site personnel. Construction materials would be sorted on site throughout construction and transported to appropriate waste management facilities. Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility.

5. Public Infrastructure, Services, and Utilities

5.1 Water Supply

Water consumption for the Project will be divided between construction and operational activities, with the highest use occurring during construction. Water for construction activities, primarily for dust control, will be sourced from an on-site well. During operations, potable water may be provided by the County (if service is available), sourced from an on-site well, or stored in a 15,000-gallon storage tank on-site.

Additionally, non-potable water storage tanks required for fire department use may also be installed on-site as per NFPA requirements. Overall, water consumption during the peak construction period will remain significantly below the total water rights authorized for the properties within the Project area. No water will be used for panel washing.

5.2 Sewer Service

The project plans to utilize an on-site septic tank to manage wastewater, providing a reliable and self-contained solution. By relying on this system, the project can ensure proper sanitation, environmental compliance, and uninterrupted operations throughout the construction period.

5.3 Walker River Irrigation District

The Project site includes irrigation canals that cross the proposed boundary. These canals are managed by the Walker River Irrigation District (WRID). The Project team has been in ongoing coordination and communication with WRID to identify the canals and understand the District's needs and requirements, including the setback the irrigation canals is 50 feet from both sides of the centerline of the ditch. Prior to applying for any mass grading or building permits, the Project will obtain WRID's approval for the development and improvement plans. These plans will ensure that the Wabuska Drain continues to fulfill its primary purpose, provides WRID with the necessary easements for maintenance access, and ensures that any proposed improvements do not interfere with WRID's infrastructure or maintenance activities.

5.4 Nevada Energy

The project has obtained a Letter of Intent to Serve from NV Energy, confirming their commitment to provide electrical service to the project site. A copy of this letter has been included in Appendix I.

5.5 Communications

The project intends to use a satellite provider to supply both internet and phone services, ensuring reliable communication capabilities even in remote or undeveloped areas where traditional infrastructure may be limited or unavailable. By relying on satellite technology, the project can maintain consistent connectivity for operations, data transmission, and coordination among team members.

6. Agency Coordination/Permitting

6.1 County

6.1.1 Conditional Use Permit (CUP)

Lyon County has previously issued a Conditional Use Permit (CUP) for the Winston Energy Project, which includes approval for a Operations & Maintenance (O&M) building, collection lines and up to 200 megawatts of photovoltaic (PV) solar panels within a 1,712-acre project boundary. From this point forward, the BESS, O&M building, collection lines, and PV solar panels will collectively be referred to as the project components. The findings from the 2022 CUP are provided below along with a summary of how the Winston Energy Project will comply with the findings.

A. The proposed use at the specified location is consistent with the policies embodied in the adopted master plan and the general purpose and intent of the applicable district regulations;

- The Winston Energy Project is located within an established Industrial and Rural Residential zone identified in the Land Use Plan, ensuring compatibility with surrounding uses.
- The Winston Energy Project is located directly adjacent to the Walker River Substation (f.k.a. Fort Churchill Substation), reducing the infrastructural demand, resources impacts, and visual contrast associated with transmission infrastructure.
- The development of project components will provide sustainable renewable energy resources to Nevada's Energy's transmission system, serving both Lyon County residents, and residents throughout the state.
- The development of renewable energy resources in the region will contribute to the long-term resilience of Nevada's energy infrastructure by diversifying the state's energy resources.
- Unlike fossil fuel development, solar PV facilities require minimal water for operation. Water conservation is especially critical in Lyon County, where water resources are scarce, and better utilized for agricultural purposes.

- The proposed solar arrays will be installed in a manner that allows for the preservation of native vegetation and maintenance of existing soil integrity.
- By generating electricity from sunlight, solar facilities produce no air pollutants or greenhouse gases during operation, offering a clean alternative to fossil fuels. Their success demonstrates the viability of renewable energy, attracting investment, supporting policy goals, and encouraging broader adoption of low-emission technologies across the energy sector.

B. The proposed use is compatible with the character and integrity of adjacent development and neighborhoods and includes improvements or modifications either on-site or within the public rights-of-way (ROW) to mitigate development related adverse impacts, such as traffic, noise, odors, visual nuisances, or other similar adverse effects to adjacent development and neighborhoods;

- The Winston Energy Project will be located within the Heavy Industrial – Suburban (HI-S) and Rural Residential 20 Acre Minimum (RR-20) zone districts, which are located in Lyon County's Suburban and Residential Character Districts, respectively.
- The BESS and Substation are located near the center of the Project area to minimize visual and noise impacts to surrounding uses.
- Existing infrastructure is sufficient to accommodate construction traffic for project components.

C. The proposed use incorporates roadway improvements, traffic control devices or mechanisms, or access restrictions to control traffic flow or divert traffic as needed to mitigate the development impacts;

- Access to the project site will be limited to Winston FC Solar, LLC personnel during construction hours.
- During the typical construction schedule of the project, no access restrictions are expected to be in place. However, when oversized loads are delivered to the site, flaggers are expected to temporarily stop/slow the traffic while assisting these vehicles in entering and exiting the site via US-95A/Sierra intersection.
- Proposed roadway improvements range from installing a southbound left turn lane on US-95A at Sierra, a northbound right turn lane on US-95A at Sierra,

installing right and left turn lanes on Sierra, and an accel lane on US-95A in the northbound direction at Sierra.

- Proposed traffic control devices range from construction signs installed on the sign posts, changeable message signs that could be installed on either side of Sierra Way on US-95A, temporary traffic signal at the intersection of US-95A and Sierra Way and flaggers that could assist during movement of oversized loads delivering equipment to the site.

D. The proposed use incorporates features to address adverse effects, including visual impacts and noise, of the proposed conditional use on adjacent properties;

- The Winston Energy Project is located directly adjacent to the Walker River Substation (f.k.a. Fort Churchill Substation), reducing the infrastructural demand, resources impacts, and visual contrast associated with transmission infrastructure.
- The Project's solar arrays are setback at least 300 feet from neighboring public ROWs including U.S. Alt 95 and Sierra Way, while larger Project components including the BESS and Substation are located near the center of the Project area to minimize visual and noise impacts to surrounding uses.
- Project's boundary, further minimizing the potential for conflicts with neighboring residents. Finally, the Project was intentionally located adjacent to other industrial uses to minimize impacts to other land use types. Neighboring industrial uses include the Walker River Substation, railroad corridor, and the Lux Solar Center.
- The Winston Energy Project operations require minimal nighttime lighting, and all light fixtures will be shielded and use downward-facing fixtures to prevent light pollution. Since solar energy is generated during daylight hours, the site remains largely inactive at night, preserving the natural night environment and reducing impacts on nearby communities and wildlife.

E. The proposed conditional use complies with all additional standards imposed on it by the particular provisions of this chapter and all other requirements of this title applicable to the proposed conditional use and uses within the applicable base zoning district, including but not limited to, the adequate public facility policies of this title; and

- The Winston Energy Project commits to complying with all standards and requirements that are imposed under this chapter, the findings of the CUP, and other standards and requirements that are included in the Planned Unit Development application and Planned Unit Development Handbook for the Project.

F. The proposed conditional use will not be materially detrimental to the public health, safety and welfare, and will not result in material damage or prejudice to other properties in the vicinity.

- The facility's clean and quiet operation avoids conflicts with nearby land uses and contributes to a safe, orderly industrial environment.
- The Project will not produce waterborne pollutants, protecting surface and groundwater resources, and supports water quality goals.
- Solar energy facilities do not emit air pollutants or greenhouse gas during operation, directly contributing to improved air quality.
- The project includes a fence around all project components ensuring public safety.
- The nearest residential structure is approximately 1,400 feet away from the southern Project's boundary, minimizing the potential for conflicts with neighboring residents.

If the project proposes additional structures such as substations transmission lines, O&M buildings, additional solar panels/generation, or expands the project boundary, a new or modified CUP and additional public hearings would be required. In addition to the CUP, the Project will also require building permits, encroachment permits for driveway cuts affecting public rights-of-way, and other applicable discretionary and non-discretionary permits.

6.2 State

6.2.1 Nevada Department of Transportation (NDOT)

To ensure that the project has minimal effects on the traffic in the area, a Traffic Impact Study was conducted and submitted to the Nevada Department of Transportation for review. This study analyzed two scenarios, (1) examined the traffic impact generated solely by the construction of the Winston Energy Project and (2) analyzed the cumulative traffic impacts from the concurrent construction of the Lux Solar project, the Monarch Data Center, and the Winston Energy project. The TIS determined that the following infrastructure improvements will be needed to mitigate any impacts from the Winston Energy Project:

1. US 95A and Sierra Way intersection
    a. Install a northbound right-turn deceleration lane per NDOT's Access Management System and Standards (AMSS).
    b. Install a southbound left-turn deceleration lane per NDOT's AMSS. Include a minimum of 100' of storage.

2. Install a right-turn pocket for the westbound Sierra Way approach.Provide WB-67 design vehicle turning templates
3. Install signing and striping per NDOT and MUTCD standards

The following additional improvements will need to be installed to mitigate the cumulative impact of the multiple developments planned on US 95A in the project vicinity:

1. US 95A and Sierra Way intersection
    a. Install a northbound left-turn deceleration lane per NDOT's AMSS. Include a minimum of 100' of storage
    b. Install a southbound right-turn deceleration lane per NDOT's AMSS
    c. Install a right-turn pocket for the eastbound Sierra Way approach
    d. Install a northbound acceleration land for the westbound and northbound right-tun movement per NDOT AMSS.
    e. Install a temporary signal
2. Us 50 and Ramsey Weeks Cutoff Intersection
    a. Install a right-turn pocket for the northbound Ramsey Weeks Cutoff approach
    b. Monitor traffic safety and operations for need of a temporary traffic signal. If delay is exacerbated beyond the LOS E identified in the study or quest become excessive, resulting in unsafe driver behavior, a traffic signal will be required
3. US 95A and Ramsey Weeks Cutoff Intersection
    a. Install an eastbound right-turn pocket
    b. Install an acceleration lane on US 95A for the eastbound Ramsey Weeks Cutoff to southbound US 95A movement.
    c. Improve the northbound US 95A left turn pocket to NDOT's AMSS requirement with a 100' minimum of storage
4. US 95A and SR 339 intersection
    a. Install a southbound left-turn lane with 50' minimum storage per NDOT AMSS
    b. Install a temporary signal
5. Provide WB-67 design vehicle turning templates
6. Install signing and striping per NDOT and MUTCD standards

Winston Energy Project is committed to making the necessary improvements to mitigate the impact of the project itself and the cumulative impacts of the projects in the area. Continued coordination with Lyon County staff and stakeholders is required to will ensure that traffic in the area is not impacted by the development and that any improvements necessary are funded by the developers on a pro rata basis where traffic impacts of each project will be determined by an approved NDOT and the County.

6.2.2 Nevada Division of Environmental Protection NDEP

The Nevada Division of Environmental Protection (NDEP), Bureau of Water Pollution Control, will require a water pollution control permit for the Project. Based on the scope of the Project, it will also require an NDEP Construction Stormwater General Permit. This permit is mandatory for projects that disturb more than one (1) acre of land during construction, among other requirements.

Before filing a Notice of Intent (NOI) with NDEP, a Stormwater Pollution Prevention Plan (SWPPP) must be prepared. The SWPPP will include, among other things, the identification of a team responsible for overseeing compliance with the permit requirements.

Additionally, the Project will likely need a Surface Area Disturbance (SAD) permit, as it is expected to disturb more than five (5) acres for purposes unrelated to agriculture.

Coordination with NDEP will be necessary to ensure the Project complies with applicable environmental standards for air, water, and land. According to the Lyon County Planning Department, NDEP approval and all required permits must be obtained and submitted during the later stages of the Project, prior to the beginning of construction.

6.2.3 Public Utilities Commission of Nevada (PUCN)

The Project falls under the scope of the Utility Environmental Protection Act (UEPA), which addresses environmental considerations related to the construction of utility facilities, administered and enforced by the PUCN.

The Project qualifies as a utility facility under UEPA because its generation component exceeds the nominal nameplate generating capacity of 70 MW. According to statute, a UEPA construction permit must be issued by the PUCN before construction can commence. The Project's application for a UEPA permit was approved on July 29, 2025.

As part of the UEPA permitting process, the Project was also required to submit a notice to the Nevada Department of Wildlife (NDOW) and provide a $10,000 deposit to conduct a NDOW site survey. This notice and deposit were submitted to NDOW on March 15, 2023, and the notice was included with the Project's UEPA application to the PUCN.

7. Phasing/Implementation

7.1 Project Approvals

7.2 Construction

Project construction is anticipated to begin in Quarter 1 of 2027, with commercial operations anticipated to commence in Quarter 4 of 2028. Construction of the Project is expected to occur over 18-24 months and would consist of several phases, including mobilization and staging, improvements to access roads, PV facility construction, BESS construction, gen-tie line construction, demobilization of equipment and staging areas, and interim site reclamation.

7.2.1 Construction Workforce

The projected construction work force discussed below includes all personnel required to complete construction of the Project including overall Project and site management, laborers, skilled craft, and startup personnel. The Project's construction workforce is expected to consist of approximately 350 to 450 personnel during peak construction activities and would include both construction workers and support personnel, such as surveyors and project managers. Up to 350 workers are expected to work on the site at its peak. This peak usually occurs during panel installation which can last up to 6 months. Prior to this peak period, there is an approximate 6 month period of site preparation when the workforce is about 50% of peak. After the peak period, the work force quickly ramps down to about 25% of the peak for the final 6 months of the project construction.

Skilled craft and laborers would be drawn from the local area, while construction management and startup functions would be provided by relocated personnel from the Applicant's designated engineering, procurement, and construction (EPC) contracting firm.

7.2.2 Site Preparation and Grading

Site-preparation activities would include surveying, vegetation clearing and grubbing, and grading. Prior to the initiation of any construction, the necessary permits would be obtained.

Vegetation clearing and grubbing for the Project would commence immediately prior to the beginning of construction activities, to minimize the potential for soil erosion. Vegetation would be permanently cleared from roadways, access ways, and at inverter equipment, substation, BESS, and O&M building locations. Within the solar PV facility, native vegetation would be left in

place to the extent practicable, with some mowing and selective trimming as needed to create a safe work environment and avoid interference with the movement of the solar panels. Prior to construction, vegetation throughout the solar array areas would be mowed to a height of 18 inches leaving the roots intact to facilitate regrowth during operations. Construction equipment may drive over and crush the vegetation during installation of the arrays.

Following initial site preparation and vegetation removal, grading would be completed with the use of standard heavy equipment, such as bulldozers. Grading activities would conform to accepted slope stability requirements and all Nevada Division of Environmental Protection (NDEP) best management practices (BMP).

The proposed improvements for the facility would be constructed at existing grade where possible. Within the Project area, some grading would be required to accommodate the substation, O&M building, BESS enclosures, internal roads, electrical equipment pads, and where the PV module support foundations are driven or drilled. A small, graded pad may be required within each solar array to accommodate the associated inverter and transformer, or they could be installed on driven piers. Additionally, excavation would be required for trenches for electrically connecting some of the equipment on site. Following construction, all underground trenches would be filled with native soils and/or imported fill and compacted.

A Fugitive Dust Control Plan to reduce fugitive dust during grading would be prepared prior to construction.

7.2.3 Construction Sequencing

Construction activities would occur over an 18-24 month period and would include the following phases and sequencing:

- **Fencing** – Permanent exterior fencing would be installed.
- **Clearing** – Vegetation removal for installation of the solar facilities would be completed only as necessary in advance of equipment installation. Clearing would be conducted to minimize the amount of disturbed ground surface at any one time.
- **Site Grading** – Because of the relatively flat topography at the site, relatively minimal volumes of soil would be moved for grading, however, minor grading activities may be required for the development of substation, O&M building, BESS enclosures, internal roads, electrical equipment pads, and other ancillary equipment
- **Parking and Laydown** – Parking areas for construction workers and laydown areas for construction materials would be prepared inside the Project area. Detailed information regarding the location of the laydown and parking areas for the Project would be developed after an EPC is hired to construct the facility.

- **Site Roads** – The internal site roads would be constructed in phases throughout the construction period. All internal access roads would be maintained throughout the life of the Project.
- **Foundation Construction** – Foundations for the substation, inverters and transformers, O&M building, and BESS enclosures would be constructed, and may require some earthen fill.
- **Solar Array Installation** – The solar arrays are installed first by driving piles (including pre-drilling if required by site soil conditions). The tracker is then attached to the piles and then the PV modules (panels) are attached to the tracker. Generally, at the same time the substation equipment, inverters, and BESS are installed. This also includes running cables between all equipment. Cables between the PV panels and inverter are commonly routed through hangers or trays. Cables from the inverters to the substation would be underground (installed by trenching, laying the cable, and backfilling).
- **BESS installation** – Grade the pad, install the foundation, set the BESS and exterior electrical equipment, run conduit and wiring between the equipment, trench to the substation, and test/commission the BESS once the grid requirements have been met.
- **Gen-tie Construction** – Structure assembly and conductor installation would be performed from the Project substation to the Point of Interconnection (POI) at Walker River Substation.
- **Testing and Commissioning** – Testing of subsystems would be conducted as they are completed. Modules would be tested once all supporting subsystems are installed and tested.
- **Site Stabilization/Reclamation** – Disturbed areas would be stabilized during construction to minimize wind and water erosion and fugitive dust by watering and/or use of dust palliatives. Cleared and graded surfaces that would not be subject to future disturbance would be restored.
- **Demobilization** – Any temporary fabrication and construction facilities would be removed from the site once construction is complete.

7.3 Operations

O&M activities would begin once Project construction is complete and the facility has been commissioned. O&M activities associated with the Project would be minimal. The Project would be expected to collectively require up to 12 personnel, including both full-time employees and contractors throughout the operational life of the Project. Maintenance and administrative staff would typically work 8-hour days, Monday through Friday. During periods when non-routine maintenance or major repairs are in progress, the maintenance force could work longer hours, and contract labor could be utilized as necessary.

Long-term maintenance schedules would be developed to include periodic maintenance and equipment replacement in accordance with manufacturer recommendations. Solar panels are designed for a 40-year Project life; however, PV modules and BESS components would be

replaced as necessary. Moving parts, such as motors and tracking module drive equipment would be serviced on a regular basis, and unscheduled maintenance would be conducted as necessary.

No heavy equipment would be used during normal plant operation. Operation and maintenance vehicles would include trucks (pickups, flatbeds, dump trucks), forklifts, and loaders for routine and unscheduled maintenance. Large heavy-haul transport equipment may be brought to the site infrequently for equipment repair or replacement.

Operation of the Project would only be expected to generate up to 10 to 15 round trips per day from maintenance and security personnel. Potable water may be supplied by the County (if service is available), a well, or could be stored on-site in a 15,000-gallon storage tank. Additional non-potable water tanks for fire department use may also be stored onsite per NFPA requirements.

O&M activities associated with the Project would require the use of standard traffic and safety signage on-site. Traffic and/or safety signs may be placed on the Project site as required to ensure safe use of the roadways and access to the facility. Traffic and safety signage would be maintained as part of the overall Project operation.

7.4 Project Decommissioning and Reclamation

The Project has an anticipated operational life of up to 40 years, after which the Project proponent may choose to update site technology and recommission, or to decommission the site and remove the systems and their components. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and in accordance with all applicable federal, state, and County regulations. At the end of the proposed Project site's operational term, the applicant may determine that the proposed Project site should be decommissioned and deconstructed, or it may seek an extension of its permits. Because the PV arrays' supporting equipment would sit on the surface of the land, the land would be largely unaltered from its natural state when the arrays are removed after the proposed Project's lifetime. The Applicant would work with the County to comply with the local regulations and requirements to ensure the decommissioning of the proposed Project site after its productive lifetime. The Project would use BMPs to ensure the collection and recycling of materials and to avoid the potential for modules and batteries to be disposed of as municipal waste.

Appendix

Appendix A – PUD Justification

Appendix B – Project Legal Description and Vesting Deed

Appendix C – Soils Report

Appendix D – Property Tax Status

Appendix E – Intent to Serve

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An Employee Owned Company
CA Group, Inc

TRAFFIC IMPACT STUDY for WINSTON ENERGY PROJECT

January 23, 2026

PREPARED FOR:

WINSTON ENERGY

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

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1. EXECUTIVE SUMMARY

The Winston Energy Project is a major proposed energy project in Lyon County, Nevada. It includes a 400 MW commercial photovoltaic (PV) solar energy facility paired with a 400 MW, four-hour Battery Energy Storage System (BESS). Located east of US 95A and along Sierra Way north of Yerington, the facility will interconnect with the grid via a new 230 kilovolt (kV) gen-tie line less than one-mile in length, connecting to the adjacent Walker River Substation.

The site's sole access is via Sierra Way, starting at US 95A. Because permanent operation of the facility will generate significantly fewer peak-hour vehicle trips than the temporary construction phase, the Traffic Impact Study (TIS) will analyze only construction-related traffic impacts to the adjacent roadway network. The study proposes to evaluate the following two scenarios:

- **Scenario 1:** This scenario analyzes traffic impacts generated solely by construction of the Winston Energy project. The peak-hour construction volume of 250 trips is based on a worker to vehicle trip ratio of 1.4:1 (see supporting documentation in Appendix C). Trip distribution is assumed to be 70% from the north and 30% from the south of the project site. Out of 70% from/to the north, 20% continued north on US 95A toward Fernley and Fallon. The other 50% will utilize Ramsey Weeks Cutoff and split evenly toward Carson City and Reno. This scenario is considered highly conservative and would only last for approximately 6 months of the project construction with the remainder of the 18-24 months generating fewer trips.
- **Scenario 2:** This scenario analyzes cumulative traffic impacts from the concurrent construction of the Lux Solar project, the Monarch Data Center, and the Winston Energy project. The peak-hour construction volumes are 1,621 trips during the AM peak and 1,768 trips during the PM peak, based on the same worker to vehicle trip ratio of 1.4:1. The trip distribution is assumed to be similar to Scenario 1. This scenario is also considered conservative and speculative since the actual trips and timing of each project is unknown.

The project limits will include the four study intersections listed below and shown in Figure 1:

1. US 50 and Ramsey Weeks Cutoff
2. US 95A and Ramsey Weeks cutoff
3. US 95A and Sierra Way
4. US 95A and SR 339.

Based on the traffic analysis, the following mitigations are required for the intersections to operate at a Level of Service D or better. Taper, acceleration, and deceleration lengths are based on NDOT's Access Management System and Standards (AMSS) guidelines.

For Scenario 1, the mitigation measures required at US 95A and Sierra Way include:

- Install a 50-foot storage and a 605-foot deceleration for the southbound left-turn lane with a 360-foot approach taper.
- Install a 605-foot deceleration for the northbound right-turn lane with a 120-foot lane taper.
- Install a 50-foot storage and a 350-foot deceleration for the westbound right-turn lane with a 120-foot lane taper.

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For Scenario 2, the following mitigation measures are required:

- At US 50 at Ramsey Weeks Cutoff
  - Install a 50-foot storage and a 350-foot deceleration for the northbound right-turn lane with a 120-foot lane taper.
  - Install a temporary signal. The intersection satisfies the signal warrant and will operate at LOS E. However, since the warrant is met only for an hour of the PM peak hour—and the analysis conservatively assumes that peak construction for all three projects will occur simultaneously—coordination with NDOT is required prior to installation to determine if a temporary signal is the most appropriate mitigation.
- At US 95A at Ramsey Weeks Cutoff
  - Install a 350-foot deceleration for the eastbound right-turn lane with a 120-foot lane taper.
  - Install a 1,410-foot acceleration lane for the southbound and a 300-foot lane-drop taper.
  - Extend the existing 250-foot northbound left-turn lane storage to 300-foot and a 710-foot deceleration lane with a 360-foot approach taper.
- At US 95A at Sierra Way
  - Install a 1,000-foot storage and a 605-foot deceleration for the southbound left-turn lane with a 360-foot approach taper. *Recognizing that installing a 1,000-foot storage for temporary condition may cause confusion for the traveling public when the full-built operation begins with much lower traffic volumes, the design team recommends installing a 100' minimum storage per Transportation Research Board (TRB) Access Management Guidelines.*
  - Install a 605-foot deceleration for the northbound right-turn lane with a 120-foot lane taper.
  - Install a 350-foot deceleration for the westbound right-turn lane with a 120-foot lane taper.
  - Install a 50-foot storage and a 605-foot deceleration for the northbound left-turn lane with a 360-foot approach taper.
  - Install a 605-foot deceleration for the southbound right-turn lane with 120-foot lane taper.
  - Install a 350-foot deceleration for the eastbound right-turn lane with a 120-foot lane taper.
  - Install a 1,200-foot acceleration lane for the northbound and a 300-foot lane-drop taper.
  - Install a temporary signal.
- At US 95A at SR 339
  - Install a 50-foot storage and a 350-foot deceleration for the southbound left-turn lane with a 180-foot approach taper.
  - Install a temporary signal.

Due to the conservative and speculative nature of the second scenario, ongoing coordination between NDOT, Lyon County, and current and future projects in Lyon County is advised to determine the timing and final design of the mitigation measure.

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2. INTRODUCTION

The Winston Energy Project is a major proposed energy project in Lyon County, Nevada. It includes a 400 MW commercial photovoltaic (PV) solar energy facility paired with a 400 MW, four-hour Battery Energy Storage System (BESS). Located east of US 95A and along Sierra Way north of Yerington, the facility will interconnect with the grid via a new 230 kilovolt (kV) gen-tie line less than one-mile in length, connecting to the adjacent Walker River Substation.

The proposed solar farm project is located on the east side of US 95A and on both sides of Sierra Way north of Yerington, in Lyon County, Nevada. The site's sole access is via Sierra Way, starting at US 95A. Because permanent operation of the facility will generate significantly fewer peak-hour vehicle trips than the temporary construction phase, the Traffic Impact Study (TIS) will analyze only construction-related traffic impacts to the adjacent roadway network. Scenario 1 only considers the Winston Energy project, while Scenario 2 considers the cumulative traffic of all three projects (Winston Energy project, Lux Solar project, and the Monarch Data Center).

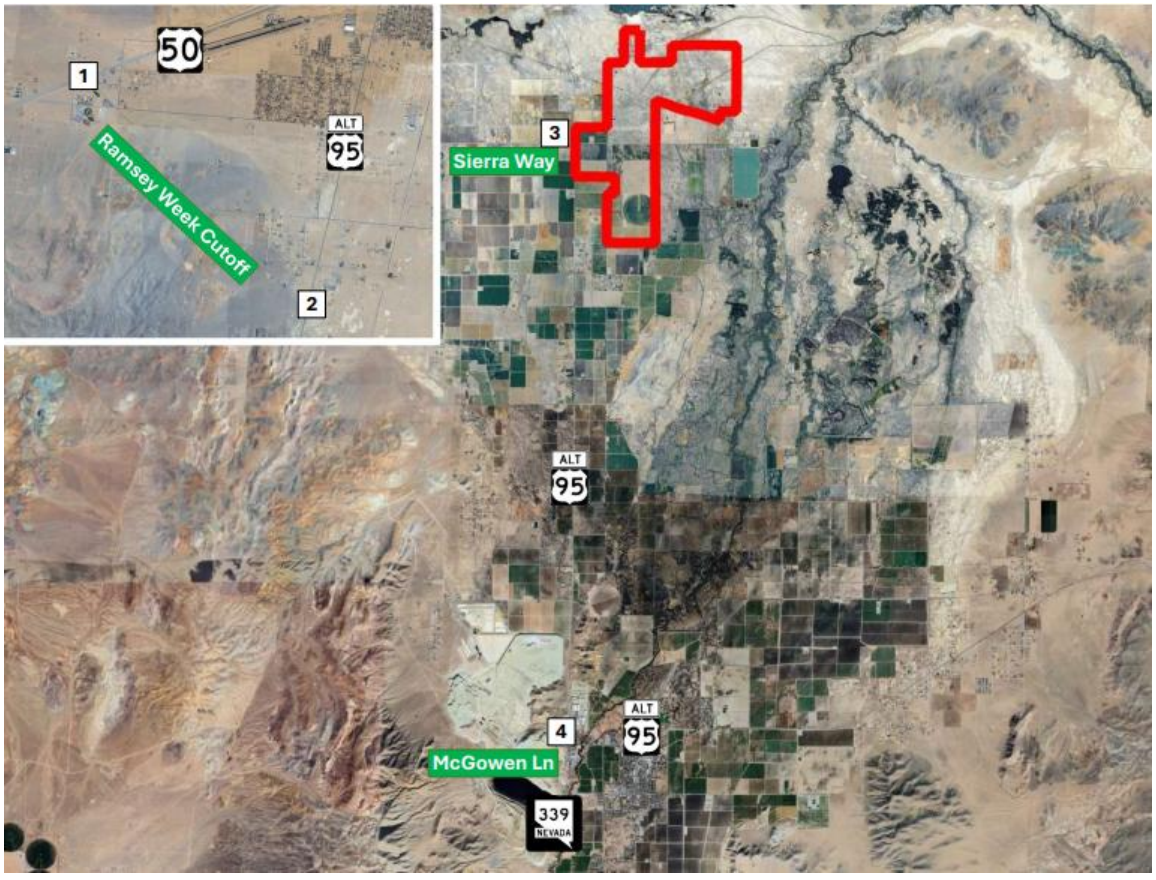

Figure 1: Project Limits for Traffic Analysis

The project limits will include the four study intersections listed below (shown in Figure 1).

1. US 50 and Ramsey Weeks Cutoff
2. US 95A and Ramsey Weeks Cutoff
3. US 95A and Sierra Way
4. US 95A and SR 339

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The only access to the Winston Energy project site is from Sierra Way, which has a posted speed limit of 45 miles per hour (mph). The surrounding area is largely open land, with the town of Silver Springs located 20 miles to the north and the town of Yerington 10 miles to the south. On US 95A, the posted speed limit is 65 mph at the Ramsey Weeks Cutoff, reducing to 60 mph near Sierra Way access, and further decreasing to 45 mph near the junction with SR 339, with other cross streets posted at various speeds as shown in Figure 2.

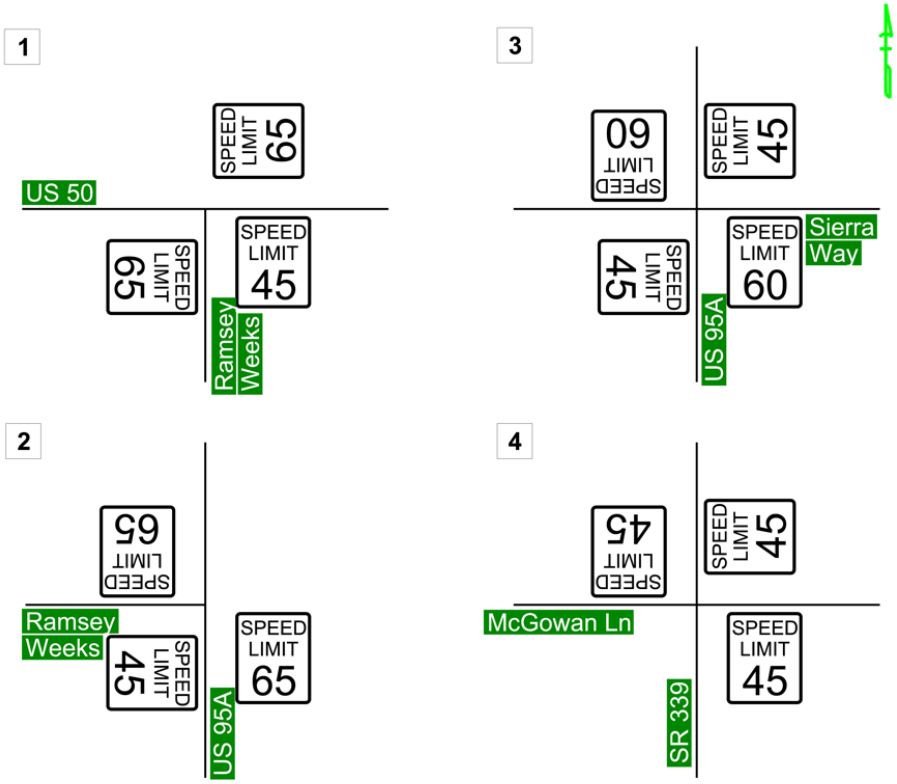

Figure 2: Roadway Posted Speed Limits

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3. TECHNICAL GUIDANCE, STANDARDS, AND TOOLS

Traffic operations analyses were performed using SYNCHRO 12 from existing topography/mapping and online resources (such as Google/Bing Maps). The various data included:

- Intersection Geometry (number of right/through/left lanes and turn pocket lengths)
- Peak-Hour Volumes (vehicle/hour)
- Roadway Segment Length
- Percent Trucks
- Peak Hour Factor (PHF)
- Speed Limit

The technical references used for the modeling analysis included:

- CORSIM Modeling Guidelines, NDOT, 2012
- Highway Capacity Manual (HCM) 7th Edition, Transportation Research Board, 2022

Traffic analysis was performed at four intersections. The measures of effectiveness (MOE) used to evaluate operations included intersection delay and level-of-service (LOS) based on the HCM (7th Edition). LOS criteria for the signalized and unsignalized intersections are shown in Tables 1 and 2, respectively. For Two-Way Stop Controlled (TWSC) intersections, LOS criteria apply only to minor street approaches and movements. Intersection LOS is not reported for TWSC intersections; instead, the delay and LOS are reported for the worst-case approach.

Table 1: LOS Criteria for Signalized Intersection (HCM 7th Edition Exhibit 19-8)

Control Delay (s/veh)	LOS by Volume-to-Capacity Ratio [a]	
	≤ 1.0	≥ 1.0
≤ 10	A	F
>10-20	B	F
>20-35	C	F
>35-55	D	F
>55-80	E	F
>80	F	F

Note: [a] For approach-based and intersection wide assessment, LOS is defined solely by control delay.

Table 2: LOS Criteria for TWSC Intersection (HCM 7th Edition Exhibit 20-2)

Control Delay (s/veh)	LOS by Volume-to-Capacity Ratio [a]	
	≤ 1.0	≥ 1.0
≤ 10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

Note: Delays and LOS provided are from the worst-case minor approach.

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4. TRAFFIC FORECASTS AND HEAVY VEHICLE

All traffic forecasts were developed following the methodology and guidance provided in the *NDOT Traffic Forecasting Guidelines* (2012). The historical traffic data from NDOT TRINA (see Appendix A) along the corridor were reviewed to determine the annual growth rate.

Table 3 lists the historical AADT from the three NDOT TRINA counters available along US 95A. Over the past 10 years (2015 to 2024), this corridor has experienced significant traffic growth. The average annual growth rates (AAGR) for 2027 were calculated based on these three traffic counters.

Table 3: NDOT TRINA AADT Data

Counter	Location	2015	2024	Annual Growth Rate	AAGR
190048	US 95A, north of Sierra Way	2,600	3,650	3.45%	3.47%
190115	US 95A, between Penrose Lane and Miller Lane	3,700	5,150	3.36%	
190051	US 95A, north of SR 339	5,200	7,400	3.59%	

The 2025 field traffic count data (see Appendix B) included information on the heavy vehicle/truck percentages, as shown in Table 4. These percentages will be applied in the analysis for Existing 2025 conditions, Future 2027 conditions, and Future 2027 with Winston Energy Construction Traffic.

Table 4: Heavy Vehicle/Truck Percentage (Existing Field Count Conditions)

Intersection	Heavy Truck %
US 50 at Ramsey Weeks Cutoff	4%
US 95A at Ramsey Weeks Cutoff	10%
US 95A at Sierra Way	13%
US 95A at SR 339	7%

The truck percentages used for the Future 2027 Plus Construction Traffic conditions are reduced because a substantially higher portion of passenger vehicles will be used for construction trips. The adjusted percentages are provided in Table 5. These values are calculated based on the weighted ratio of truck percentages from the existing field counts and a zero-truck percentage for construction traffic, applied to the total intersection traffic volumes during the AM and PM peaks.

Table 5: Heavy Vehicle/Truck Percentage (Plus Construction Traffic Conditions)

Intersection	Heavy Truck %	
	Winston Energy	Cumulative Projects
US 50 at Ramsey Weeks Cutoff	4%	2%
US 95A at Ramsey Weeks Cutoff	8%	3%
US 95A at Sierra Way	9%	4%
US 95A at SR 339	6%	4%

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5. TRIP GENERATION

The peak construction scenario consists of approximately 350 employees for the Winston Energy project and 350 employees for the Lux Solar project. The number of employees for the Monarch Data Center are unreported. Using the 1.4:1 worker to vehicle trip ratio (see supporting documentation in Appendix C), Scenario 1 will be analyzed with 250 trips to and from the Winston Energy project site. All AM trips are inbound, and all PM trips are outbound. Trip distribution is assumed to be 70% from/to the north and 30% from/to the south. Out of 70% from/to the north, 20% continued north on US 95A toward Fernley and Fallon. The other 50% will utilize Ramsey Weeks Cutoff and split evenly toward Carson City and Reno. This scenario is considered highly conservative and would only last for approximately 6 months of the project construction with the remainder of the 18-24 months generating fewer trips.

Scenario 2 will be analyzed with the cumulative trips of 1,621 in the AM peak and 1,768 in the PM peak. All AM trips are inbound, and all PM trips are outbound. Trip distribution is assumed to be 70% from/to the north and 30% from/to the south. Out of 70% from/to the north, 20% continued north on US 95A toward Fernley and Fallon. The other 50% will utilize Ramsey Weeks Cutoff and split evenly toward Carson City and Reno. This scenario is also considered conservative and speculative since the actual trips and timing of each project is unknown. See Table 6 for the trip generation estimates for each scenario.

Table 6: Trip Generation Estimates

Description	Peak Head Counts	Construction Traffic Trips	AM Peak Hour		PM Peak Hour	
			In	Out	In	Out
Construction Traffic Trips (Winston Energy)	350	250 (250)	100%	0%	0%	100%
			250	0	0	250
Construction Traffic Trips (Cumulative of the three projects)	~ 2,000	1,621 (1,768)	100%	0%	0%	100%
			1,621	0	0	1,768

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6. TRAFFIC VOLUMES

The 2025 field traffic count data (see Appendix B) included the peak hour factor (PHF) information. The AM and PM peak PHF ranges mostly between 0.89 to 0.91; therefore, all analyses will use a PHF of 0.90.

The following percentages were used to distribute the construction traffic to and from the site, as shown in Figure 3 for Scenario 1 and Figure 4 for Scenario 2 (for intersection locations, see figure 1).

- Scenario 1 (Winston Energy Project):
  - 70% to and from US 95A north of Sierra Way
    - 50% will utilize Ramsey Weeks Cutoff and 20% continue north on US 95A
  - 30% to and from US 95A south of Sierra Way
    - 15% continue south on US 95A and 15% will utilize SR 339

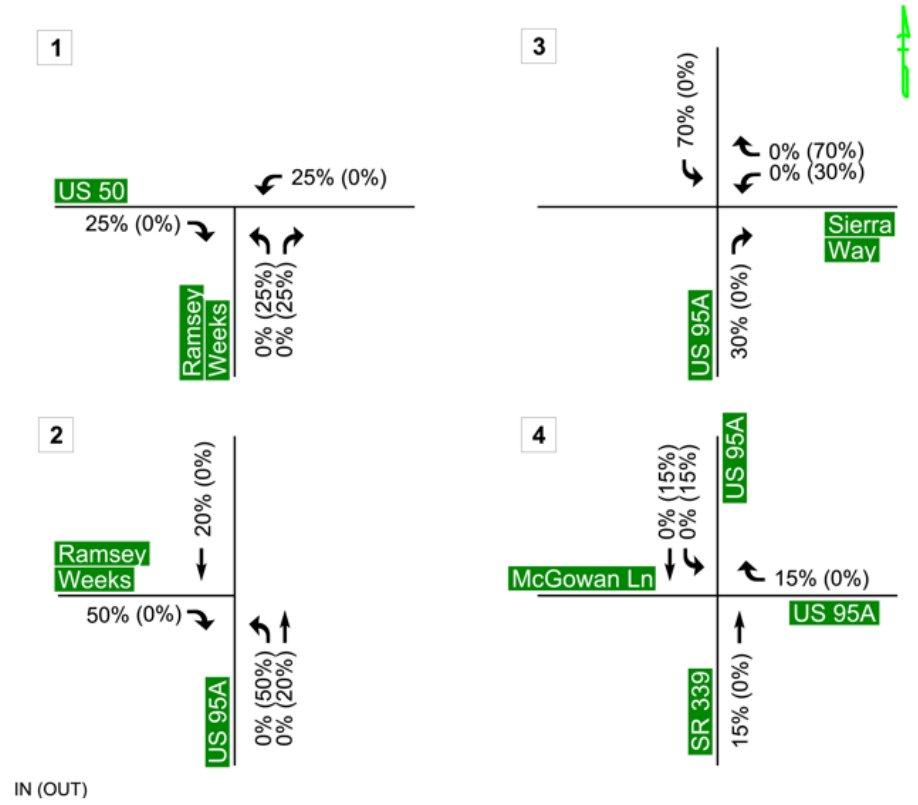

Figure 3: Percentages of Trip Distribution (Winston Energy Project)

- Scenario 2 (Cumulative of Projects):
  - 70% to and from US 95A north of Sierra Way
    - 50% will utilize Ramsey Weeks Cutoff and 20% continue north on US 95A
  - 8% to and from US 95A south of Sierra Way (22% of the cumulative trips are from the Monarch Data Center construction trips that will use Bowman Lane in lieu of Sierra Way)
    - 15% continue south on US 95A and 15% will utilize SR 339

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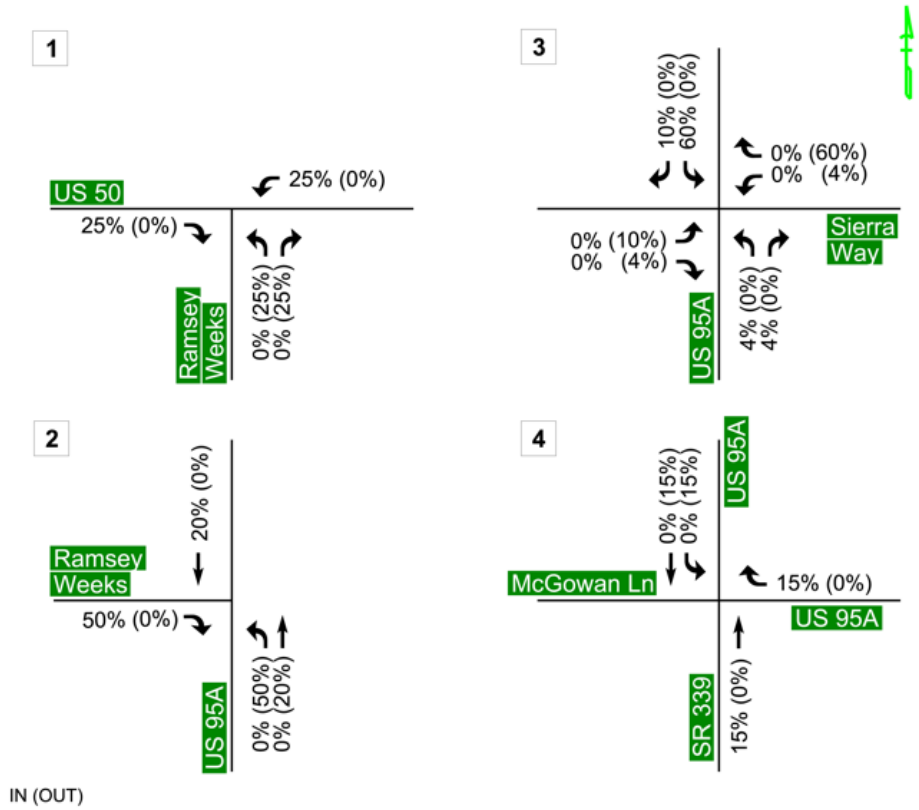

Figure 4: Percentages of Trip Distribution (Cumulative Projects)

The 24-hour field counts for intersections #1 through #3, collected on October 21, 2025, were obtained from Lux Solar TIS report. The 24-hour field counts for intersection #4, collected on March 4, 2025, were obtained from the Monarch Data Center TIS report. Based on the data included in Appendix B, all four intersections exhibit a wide range of AM peak hours, from 5:00 AM to 10:00 AM, and a more consistent PM peak hour, between 4:15 PM and 5:30 PM. To be conservative, the analyses will use these AM and PM peak periods with the construction traffic volumes. Figures 5 through 10 on the following pages show the volumes for each condition:

- Figure 5 – Existing 2025 Traffic Volumes
- Figure 6 – Future 2027 Traffic Volumes
- Figure 7 – Generated Traffic Volumes During Construction (Winston Energy Project)
- Figure 8 – Future 2027 Plus Traffic Volumes During Construction (Winston Energy Project)
- Figure 9 – Generated Traffic Volumes During Construction (Cumulative of Projects)
- Figure 10 – Future 2027 Plus Traffic Volumes During Construction (Cumulative of Projects)

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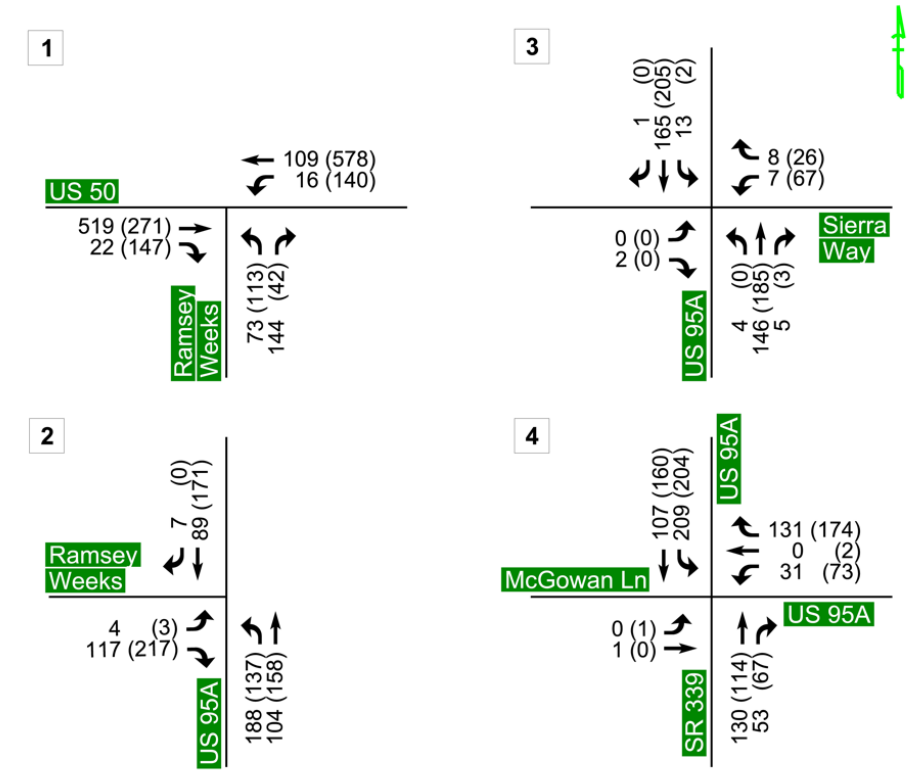

Figure 5: Existing 2025 Traffic Volumes

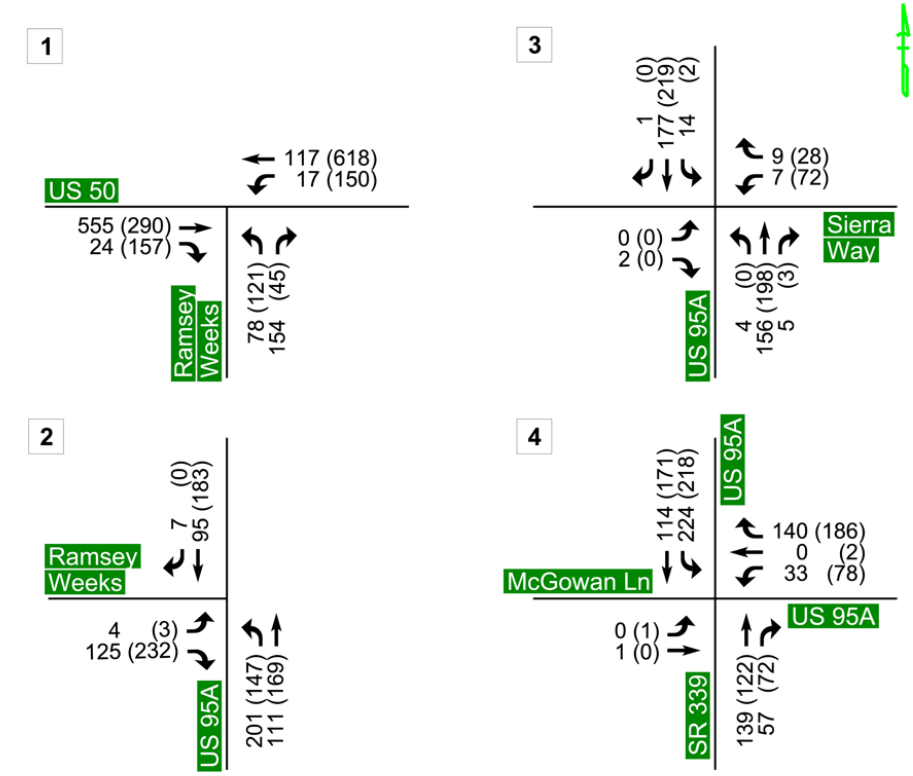

Figure 6: Future 2027 Traffic Volumes

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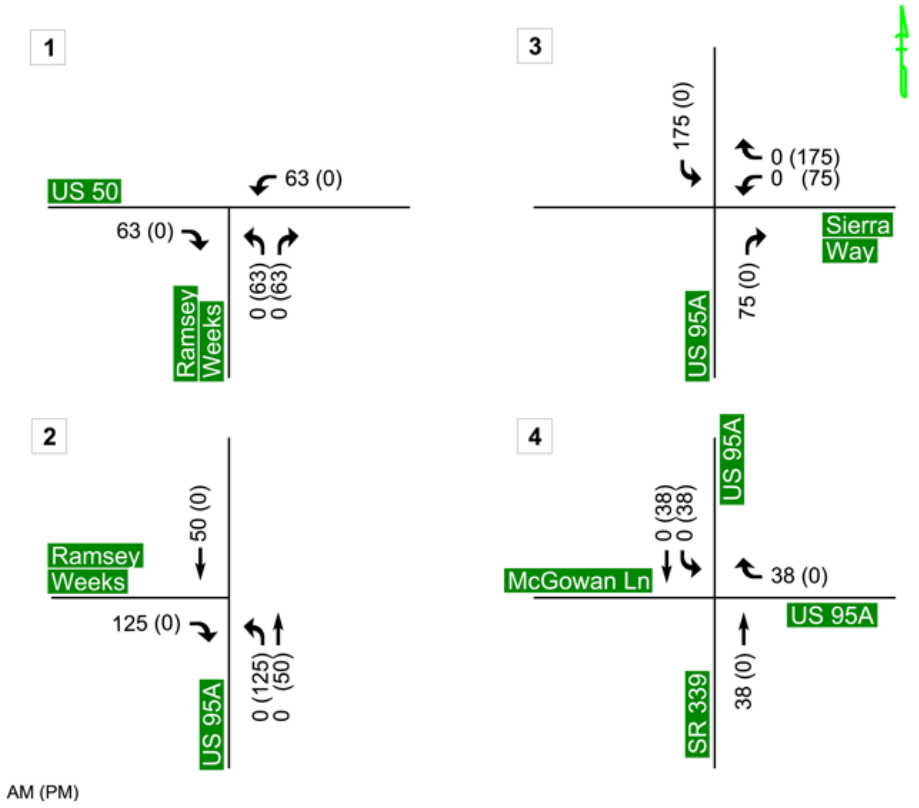

Figure 7: Generated Traffic Volumes during construction (Winston Energy Project)

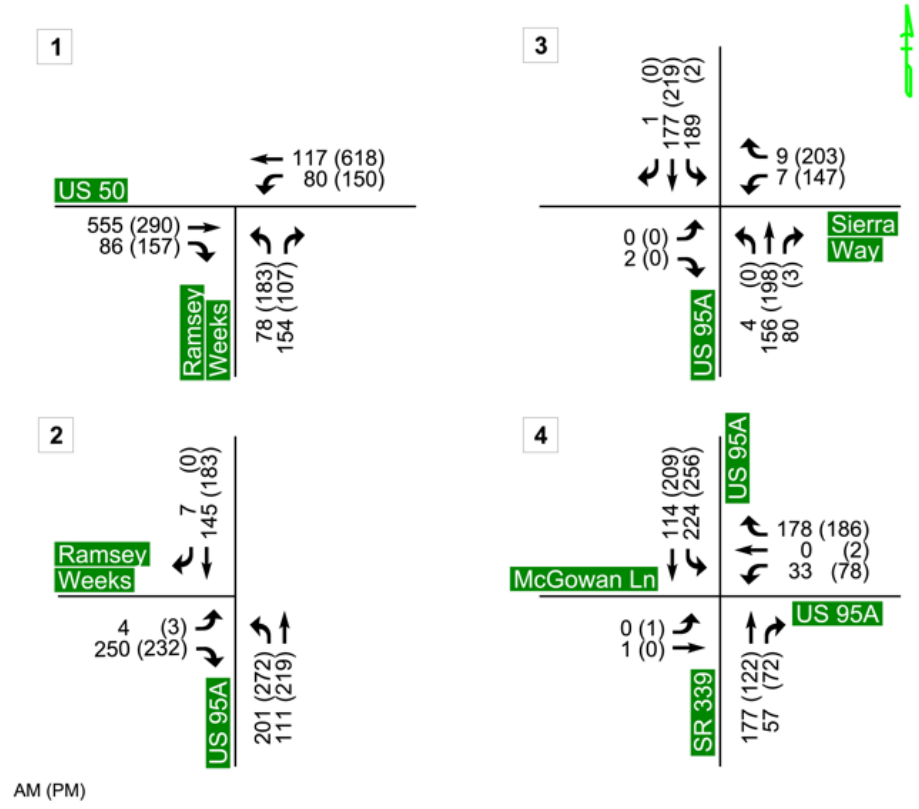

Figure 8: Future 2027 Plus Traffic Volumes During construction (Winston Energy Project)

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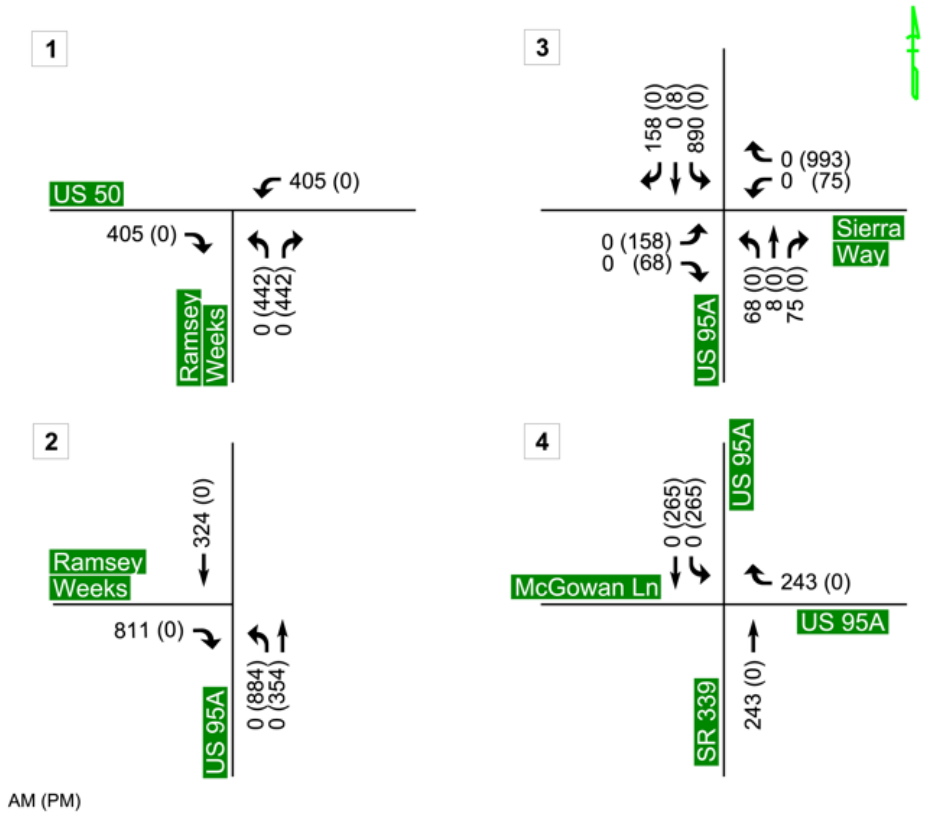

Figure 9: Generated Traffic Volumes during construction (Cumulative of Projects)

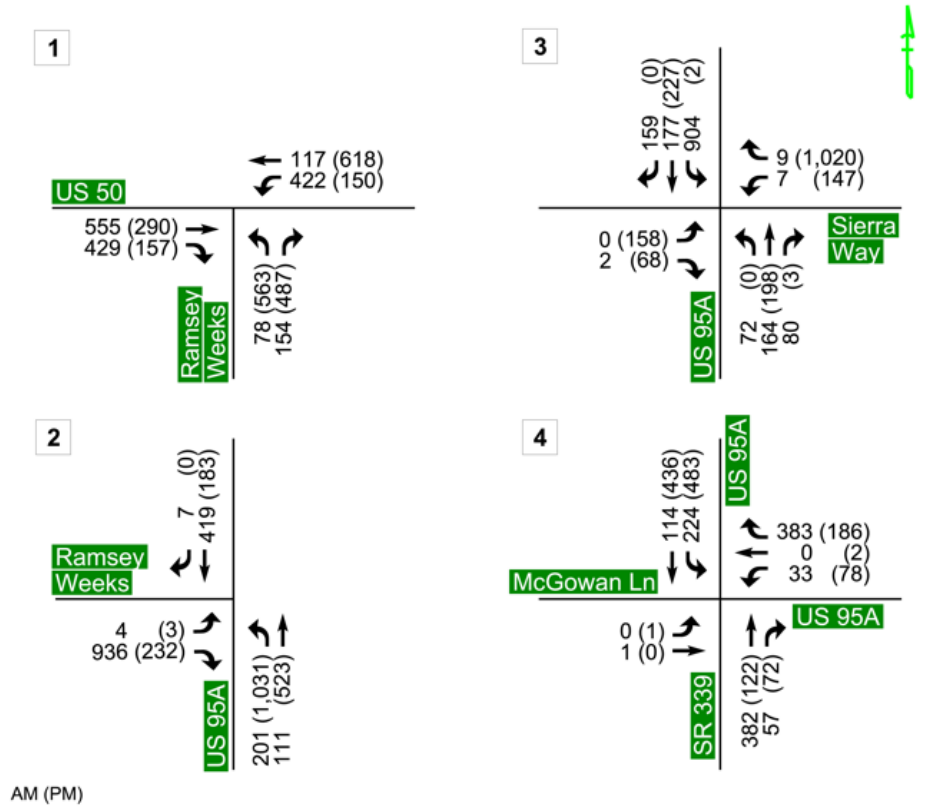

Figure 10: Future 2027 Plus Traffic Volumes During construction (Cumulative of Projects)

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7. TRAFFIC ANALYSIS CONDITIONS

The study analyzes both weekday AM and PM peak hours for the eight (8) SYNCHRO analysis conditions:

- Existing 2025 Conditions
- Future 2027 Conditions
- Future 2027 Plus Construction Traffic Conditions (Winston Energy Project)
- Future 2027 Plus Construction Traffic Conditions (Winston Energy Project) with Additional Turn Lanes at Intersection #3
- Future 2027 Plus Construction Traffic Conditions (Cumulative of Projects)
- Future 2027 Plus Construction Traffic Conditions (Cumulative of Projects) with Additional Turn Lanes and a Temporary Signal at Intersection #3
- Future 2027 Plus Construction Traffic Conditions (Cumulative of Projects) with Additional Turn Lanes at all Four Intersections and Temporary Signals at all analyzed Intersections.
- Future 2027 Plus Construction Traffic Conditions (Cumulative of Projects) with Additional Turn Lanes at all Four Intersections; Temporary Signals at Intersections #1, #3, and #4; and Acceleration Lanes at Intersections #2 and #3

The models were developed for the four project intersections to evaluate traffic operations. The traffic analysis results are discussed in the following section.

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8. TRAFFIC OPERATIONS ANALYSIS

Table 7 shows the unsignalized minor (side street) approach delays and LOS for the Winston Energy Project construction traffic analysis. All minor approaches under Existing 2025 and Future 2027 conditions operate at LOS D or better. When construction traffic is added to the Future 2027 conditions, all minor approaches continue to operate at LOS D or better, except for the westbound approach at the intersection of US 95A and Sierra Way, which operates at LOS E in the PM peak. Therefore, a westbound dedicated right-turn lane is needed to improve the operations.

For Scenario 2 (the cumulative projects scenario), Table 8 presents the unsignalized minor (side street) approach delays and LOS, as well as the overall intersection delay and LOS for signalized intersections, as noted in the footnotes. All minor approaches under Existing 2025 and Future 2027 conditions operate at LOS D or better. When cumulative construction traffic is added, the Future 2027 Plus Construction Traffic with Mitigation A scenario shows all four intersections operating at LOS F (failing). Mitigation A includes only roadway improvements and a temporary signal at the intersection of US 95A and Sierra Way.

With the additional roadway improvements noted under Mitigation B, three of the four intersections continue to operate at LOS F. Intersection of US 50 at Ramsey Weeks Cutoff is the only exception that operates with LOS E. By adding temporary signals at all four intersections, as described in Mitigation C, delays and LOS at Intersection #1 (US 50 at Ramsey Weeks Cutoff) and Intersection #4 (US 95A at SR 339) improved to LOS C. In addition, Mitigation D is installing acceleration lanes on southbound US 95A at Ramsey Weeks Cutoff (Intersection #2), northbound US 95A at Sierra Way Intersection #3) and taking out a temporary traffic signal at intersection #2, resulted in improving operations at both intersections to LOS C in the AM peak. Operations at Intersection #2 continue to fail at LOS F during the PM peak. This failure occurs at the eastbound left-turn lane, where traffic volumes are only three (3) vehicles per hour. The northbound left-turn lane has a 95% queue of 12 vehicles, and the recommendation is to extend the existing left-turn lane to 300-foot storage and a 710-foot deceleration for the northbound left-turn lane with a 360-foot approach taper and not install a temporary traffic signal.

For the Cumulative of Projects scenario, it should be noted that the analysis is conservative and speculative since the actual trips and timing of each project is unknown. Ongoing coordination between NDOT, Lyon County, and current and future projects in Lyon County is advised to determine the timing and final design of the mitigation measure. Additionally, schedule coordination, routing, and other traffic management solutions may also be considered to decrease the impact of combined projects and reduce the need for physical improvement.

Detailed SYNCHRO outputs for each condition are included in Appendices D through K.

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Table 7: Intersection/Approach Delay and LOS (Winston Energy Project)

ID	Intersection	[1] Existing 2025 Conditions		[1] Future 2027 Conditions		[1] Future 2027 Plus Construction Traffic Conditions		[1] Future 2027 Plus Construction Traffic with Mitigation	
		AM	PM	AM	PM	AM	PM	AM	PM
1	US 50 at Ramsey Weeks Cutoff	15.4 (C)	11.7 (B)	16.7 (C)	12.2 (B)	16.7 (C)	14.3 (C)	16.7 (C)	14.3 (C)
2	US 95A at Ramsey Weeks Cutoff	9.8 (A)	11.3 (B)	9.9 (A)	11.6 (B)	11.4 (B)	11.8 (B)	11.4 (B)	11.8 (B)
3	US 95A at Sierra Way	10.5 (B)	12.8 (B)	10.6 (B)	13.3 (B)	15.1 (C)	39.8 (E)	14.1 (B)	13.2 (B)
4	US 95A at SR 339	19.0 (C)	23.0 (C)	20.4 (C)	25.4 (D)	21.3 (C)	31.2 (D)	21.3 (C)	31.2 (D)

Note 1: Delays (LOS) provided are from the worst minor approach.

Table 8: Intersection/Approach Delay and LOS (Cumulative of Projects)

ID	Intersection	[1] Existing 2025 Conditions		[1] Future 2027 Conditions		[1] Future 2027 Plus Construction Traffic with Mitigation A		[1] Future 2027 Plus Construction Traffic with Mitigation B		[2] Future 2027 Plus Construction Traffic with Mitigation C		[2] Future 2027 Plus Construction Traffic with Mitigation D	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	US 50 at Ramsey Weeks Cutoff	15.4 (C)	11.7 (B)	16.7 (C)	12.2 (B)	16.5 (C)	293 (F)	13.2 (B)	36.0 (E)	24.7 (C)	22.5 (C)	24.7 (C)	22.5 (C)
2	US 95A at Ramsey Weeks Cutoff	9.8 (A)	11.3 (B)	9.9 (A)	11.6 (B)	>300 (F)	>300 (F)	>300 (F)	48.6 (E)	143 (F)	35.4 (D)	23.2 (C)	>300 (F)[3]
3	US 95A at Sierra Way *	10.5 (B)	12.8 (B)	10.6 (B)	13.3 (B)	34.3 (C)	80.7 (F)	34.3 (C)	80.7 (F)	34.3 (C)	80.7 (F)	34.1 (C)	8.4 (A)
4	US 95A at SR 339	19.0 (C)	23.0 (C)	20.4 (C)	25.4 (D)	28.4 (D)	>300 (F)	27.9 (D)	202 (F)	33.7 (C)	18.4 (C)	33.7 (C)	18.4 (B)

*- A temporary signal will be installed at US 95A and Sierra Way for (all) Mitigations A through D, and the Delays (LOS) provided are from the signalized intersection.

Note 1: Delays (LOS) provided are from the worst minor approach.

Note 2: Delays (LOS) provided are from the signalized intersections.

Note 3: Eastbound free flow right turns have zero delay due to southbound acceleration lane on US 95A. The >300 (F) delays are from the three (3) vehicles eastbound left turns.

Mitigation A: Intersection of US 95A and Sierra Way is signalized with added SBL, NBR and WBR lanes.

Mitigation B: Includes Mitigation A in addition to adding NBR at intersection #1, added EBR at intersection #2, and added SBL at intersection #4.

Mitigation C: Includes Mitigation B in addition to adding temporary signals at all analyzed intersections.

Mitigation D: Includes Mitigation C in addition to adding acceleration lanes on US 95A at intersections #2 and #3, and taking out temporary signal at intersection #2.

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9. CRASH AND SAFETY ANALYSIS

EXISTING CRASH DATA ANALYSIS

The crash data analysis was conducted using Nevada Department of Transportation (NDOT) crash data for the five-year period from January 1, 2019, to December 31, 2023. The intersections of US 95A/Ramsey Weeks Cutoff and US 50/Ramsey Weeks Cutoff were analyzed to identify crash trends or patterns that could indicate locations where safety enhancements may be warranted. The project limits, including the analyzed intersections, are shown in Figure 1.

Intersection - 1: US 50 and Ramsey Weeks Cutoff

During the five-year analysis period, the intersection US 50 and Ramsey Weeks Cutoff experienced a total of 20 crashes, including 12 angle crashes, four non-collision crashes, two rear-end crashes, one backing crash, and one sideswipe meeting crash. Of these, five were serious injury crashes resulting in ten serious injuries, eight were injury crashes resulting in 13 injuries, and seven were property damage only (PDO) crashes. Table 9 below provides the crash analysis summary for Intersection #1.

Table 9: US 50 and Ramsey Weeks Cutoff Intersection Crash Summary

Overall Crashes	• 20 total crashes ➢ 5 serious injury crashes resulting in 10 serious injuries ○ 8 injury crashes resulting in 13 injuries ➢ 7 PDO crashes
Predominant Crash Types	• 12 angle crashes • 4 non-collision crashes • 2 rear-end crashes • 1 backing crash • 1 sideswipe-meeting crash
Motorcycle Crashes	• No crashes involving motorcycles
Pedestrian Crashes	• No crashes involving pedestrians
Predominant Weather Conditions	• 13 clear • 3 cloudy • 1 fog, smog, smoke, ash • 2 snow • 1 unknown
Predominant Lighting Conditions	• 18 daylight • 1 dawn • 1 dark-spot roadway lighting

Intersection – 2: US 95A and Ramsey Weeks Cutoff

During the five-year analysis period, the intersection of US 95A and Ramsey Weeks Cutoff had a total of 11 crashes, including five rear-end crashes, four non-collision crashes, and two angle crashes. Of these, there was one serious injury crash resulting in two serious injuries, four injury crashes resulting in four injuries, and six PDO crashes. Table 10 below provides the crash analysis summary for intersection 2.

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Table 10: US 95A and Ramsey Weeks Cutoff Intersection Crash Summary

Overall Crashes	• 11 total crashes ➢ 1 serious injury crash resulting in 2 serious injuries ○ 4 injury crashes resulting in 4 injuries ➢ 6 PDO crashes
Predominant Crash Types	• 5 rear-end crashes • 4 non-collision crashes • 2 angle crashes
Motorcycle Crashes	• No crashes involving motorcycles
Pedestrian Crashes	• No crashes involving pedestrians
Predominant Weather Conditions	• 6 clear • 4 cloudy • 1 unknown
Predominant Lighting Conditions	• 7 daylight • 2 dark-spot roadway lighting • 1 dusk • 1 unknown

Intersection 3 - US 95A and Sierra Way

In the five-year analysis period, the intersection of US 95A and Sierra Way had a total of two property damage only (PDO) crashes, with one rear-end crash and one angle crash. Table 11 below provides the crash analysis summary for Intersection 3.

Table 11: US 95A and Sierra Way Intersection Crash Summary

Overall Crashes	• 2 total crashes ➢ 2 PDO crashes
Predominant Crash Types	• 1 rear-end crash • 1 Angle crash
Motorcycle Crashes	• no crashes involving motorcycles
Pedestrian Crashes	• no crashes involving pedestrians
Predominant Weather Conditions	• 2 Clear
Predominant Lighting Conditions	• 2 Daylight

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

Intersection 4 - US 95A and SR 339/West Goldfield Avenue

During the five-year analysis period, the intersection of US 95A and SR 339 had a total of 13 crashes, including five angle crashes, four rear-end crashes, three side swipe same direction (SSSD) crashes, and one head-on crash. Of these, there were two injury crashes resulting in two injuries and 11 PDO crashes. Table 12 below provides the crash analysis summary for Intersection 4.

Table 12: US 95A and SR 339/West Goldfield Avenue Intersection Crash Summary

Overall Crashes	• 13 total crashes ➢ 2 injury crashes with two injuries ➢ 11 PDO crashes
Predominant Crash Types	• 5 Angle crashes • 4 Rear-end crashes • 3 SSSD crashes • 1 Head-on crash
Motorcycle Crashes	• No crashes involving motorcycles
Pedestrian Crashes	• No crashes involving pedestrians
Predominant Weather Conditions	• 10 Clear • 3 Cloudy
Predominant Lighting Conditions	• 9 Daylight • 4 Dark - spot roadway lighting

FINDINGS AND CONCLUSIONS

Based on the five-year crash data analysis, both intersections at Ramsey Weeks Cutoff exhibit crash patterns that indicate opportunities for targeted safety improvements. The intersection of US 50 and Ramsey Weeks Cutoff experienced higher crash frequency and severity, with angle crashes as the predominant type and a notable number of serious injury and injury crashes. The intersection of US 95A and Ramsey Weeks Cutoff had fewer total crashes, primarily rear-end and non-collision crashes.

Crash analyses at Sierra Way and SR 339 indicate low crash frequencies, with most crashes being PDO. Rear-end and angle collisions were the predominant crash types at these two intersections. No pedestrian or motorcycle crashes were recorded at any of the four intersections, and most crashes occurred during clear weather and daylight conditions. This suggests that roadway geometry, traffic operations, or driver behavior (rather than environmental factors) are likely the primary contributors.

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10. SIGNAL WARRANT ANALYSIS

The 11th Edition of the Manual on Uniform Traffic Control Devices (MUTCD) outlines nine warrants to determine if a traffic control signal is justified. While meeting at least one warrant suggests a signal may be appropriate, the MUTCD notes that "the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal." For this analysis of the US 50 and Ramsey Weeks Cutoff intersection, only peak hour traffic data was evaluated. The traffic signal warrant analysis was conducted based on Winston Energy project construction trips (Scenario 1) and cumulative of projects construction trips (Scenario 2). The results of the signal warrant analysis are summarized in Table 13 and detailed signal warrant analysis is included in Appendix M.

Table 13: Temporary Signal Warrant Analysis Results (US 50 and Ramsey Weeks Cutoff)

Scenario	Signal Warrant 3	Satisfied
Scenario 1 – Winston Energy Project	Peak Hour Warrant	No
Scenario 2 – Cumulative of Projects	Peak Hour Warrant	Yes

The analysis supports the installation of a temporary traffic control signal at the intersection of US 50 and Ramsey Weeks Cutoff. This recommendation is based on cumulative traffic volumes during the simultaneous peak construction phases of all three projects. The signal is intended to improve operational efficiency and safety specifically during the PM peak hour.

Outside of this peak period, the intersection will revert to a Two-Way Stop-Controlled (TWSC) configuration. During these hours, the signal will operate in a flashing mode: a flashing yellow indicator for US 50 (mainline free-flow) and a flashing red indicator for the Ramsey Weeks Cutoff approach (stop-controlled).

Because the signal warrant is satisfied only during an hour of the PM peak hour—and given the conservative assumption that all project construction peaks will overlap—final coordination with NDOT is required. This coordination will determine if a temporary signal or an alternative mitigation measure is the most appropriate solution.

Please note that the traffic signal warrant analysis for the intersections at US 95A and Sierra Way and at US 95A and SR 339 were already evaluated in the Monarch Data Center TIS dated October 2025.

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11. ACCESS MANAGEMENT

For the Winston Energy project's traffic volumes, the analysis indicates that a southbound left-turn lane and a northbound right-turn lane are not required. However, the NDOT's AMSS guidelines recommend the following improvements:

Southbound Left-Turn Lane Warrant (US 95A at Sierra Way): The left-turn lane warrant analysis was conducted for the southbound approach of US 95A at Sierra Way. Per NDOT AMSS guidelines, the warrant volume thresholds are provided in Table 4-13: *Left-Turn Lane Warrants at Unsignalized Intersections, Two-Lane Roadways in Rural Areas*. The need for a left-turn lane is based on turning movement volume, posted speed limit, and adjacent roadway through volumes. With a posted speed limit of 60 mph on US 95A and left-turn volumes exceeding 15 vehicles per hour, the left-turn lane warrant is met.

The southbound left-turn lane yields only to northbound through traffic; therefore, a 50-foot storage length is adequate. However, a deceleration lane and an approach taper are also required. Given the posted speed limit of 60 mph on US 95A, a minimum deceleration length of 605 feet and an approach taper of 360 feet are required per AMSS Table 4-20 (*Minimum Length of Left-Turn or Right-Turn Deceleration Lanes*) and Table 4-22 (*Approach and Departure Tapers*), respectively. These lengths will be included in the list of mitigation improvements.

Northbound Right-Turn Lane Warrant (US 95A at Sierra Way): The right-turn lane warrant analysis was conducted for the northbound approach of US 95A at Sierra Way. Per the NDOT AMSS, the warrant volume threshold is detailed in Table 4-17: *Right-Turn Lane Warrants at Unsignalized Intersections, Two-Lane Roadways in Rural Areas*. The requirement for a right-turn lane is based on the turning movement volume, speed limit, and the adjacent roadway through volumes. With the US 95A posted speed limit of 60 mph and the right-turn volumes exceed 25 vph, the right-turn lane warrant is met.

The northbound right-turn lane is a free-flow movement; therefore, no storage queue length is required. However, a deceleration lane and lane taper are required. Given the posted speed limit of 60 mph on US 95A, a minimum deceleration length of 605 feet and a taper of 120 feet are required per AMSS Table 4-20 and Table 4-25 (*Auxiliary Lane-Addition Tapers*), respectively. These will be included in the list of mitigation improvements.

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12. LIST OF APPENDICES

Appendix A – NDOT TRINA Historical Counts
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Appendix C – Supporting Documentation for Trip Generation of 1.4:1 (workers:vehicle trips)
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Appendix G – Future 2027 Plus Construction Traffic Conditions (Winston Energy Project) with Additional Turn Lanes at Intersection #3 SYNCHRO Output
Appendix H – Future 2027 Plus Construction Traffic Conditions (Cumulative of Projects) SYNCHRO Output
Appendix I – Future 2027 Plus Construction Traffic Conditions (Cumulative of Projects) with Additional Turn Lanes and a Temporary Signal at Intersection #3 SYNCHRO Output
Appendix J – Future 2027 Plus Construction Traffic Conditions (Cumulative of Projects) with Additional Turn Lanes at all four intersections and Temporary Signals at all analyzed intersections SYNCHRO Output
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Appendix L – Crash Data
Appendix M – Signal Warrant Analysis

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Appendix A

NDOT TRINA Historical Counts

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

Station 0190048 Location Information

Station Name	0190048
Route ID	
Route Name	US95A
Station Type	ShortTerm
STREET_FRO	Sierra Wy.
STREET_TO	Weeks cutoff Rd.
LATITUDE	4334021.5339
LONGITUDE	311483.6071

Station 0190048 AADT

AADT 2024	3,650
AADT 2023	4,150
AADT 2022	4,500
AADT 2021	4,300
AADT 2020	4,000
AADT 2019	4,150
AADT 2018	2,600
AADT 2017	2,900
AADT 2016	2,700
AADT 2015	2,600
AADT 2014	2,600

Report:

Hourly

Average Daily Factored Class Distribution:

2020 | 2021 | 2022 | 2023
2024 |

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

Station 0190115 Location Information

Station Name	0190115
Route ID	
Route Name	US95A
Station Type	ShortTerm
STREET_FRO	Miller Ln.
STREET_TO	Sierra Way
LATITUDE	4325366.0822
LONGITUDE	311251.1126

Station 0190115 AADT

AADT 2024	5,150
AADT 2023	5,550
AADT 2022	4,700
AADT 2021	5,700
AADT 2020	5,050
AADT 2019	5,250
AADT 2018	4,800
AADT 2017	3,900
AADT 2016	4,400
AADT 2015	3,700
AADT 2014	3,500

Report:

Hourly

Average Daily Factored Class Distribution:

2020 | 2021 | 2022 | 2023
2024 |

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

Station 0190051 Location Information

Station Name	0190051
Route ID	
Route Name	US95A
Station Type	ShortTerm
STREET_FRO	SR339 (Nordyke Rd)
STREET_TO	Burch Dr
LATITUDE	4318477.0148
LONGITUDE	311049.0733

Station 0190051 AADT

AADT 2024	7,400
AADT 2023	8,700
AADT 2022	7,100
AADT 2021	8,150
AADT 2020	6,350
AADT 2019	7,300
AADT 2018	6,900
AADT 2017	6,700
AADT 2016	6,500
AADT 2015	5,200
AADT 2014	5,100

Report:

Hourly

Average Daily Factored Class Distribution:

2020 | 2021 | 2022 | 2023
2024 |

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

Appendix B

Lux Solar and Monarch Data Center: Kimley-Horn and Associates, Inc. 2025 Field Data Collection

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 50 and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348897, Location: 39.394495, -119.284524

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Leg	Ramsey Weeks Cutoff				US 50				US 50				
Direction	Northbound				Eastbound				Westbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2025-10-21 12:00AM	5	12	0	**17**	5	4	0	**9**	10	10	0	**20**	**46**
1:00AM	6	3	0	**9**	10	4	0	**14**	8	8	0	**16**	**39**
2:00AM	3	13	0	**16**	15	4	0	**19**	8	14	0	**22**	**57**
3:00AM	7	19	0	**26**	38	5	0	**43**	6	20	0	**26**	**95**
4:00AM	23	70	0	**93**	239	8	0	**247**	7	38	1	**46**	**386**
5:00AM	73	144	0	**217**	519	22	0	**541**	16	109	0	**125**	**883**
6:00AM	118	97	0	**215**	311	51	0	**362**	63	225	1	**289**	**866**
7:00AM	122	78	0	**200**	278	77	0	**355**	78	194	0	**272**	**827**
8:00AM	110	51	0	**161**	230	91	0	**321**	70	149	1	**220**	**702**
9:00AM	88	75	0	**163**	216	87	0	**303**	91	177	2	**270**	**736**
10:00AM	83	65	0	**148**	165	50	0	**215**	54	172	0	**226**	**589**
11:00AM	84	42	0	**126**	180	55	0	**235**	63	182	4	**249**	**610**
12:00PM	87	49	0	**136**	173	82	0	**255**	47	188	1	**236**	**627**
1:00PM	77	66	0	**143**	179	94	0	**273**	94	256	2	**352**	**768**
2:00PM	91	54	0	**145**	199	106	0	**305**	79	263	2	**344**	**794**
3:00PM	130	58	0	**188**	248	138	0	**386**	117	382	1	**500**	**1074**
4:00PM	110	38	0	**148**	252	143	0	**395**	136	542	0	**678**	**1221**
5:00PM	109	38	0	**147**	264	160	0	**424**	128	398	0	**526**	**1097**
6:00PM	64	40	0	**104**	174	105	0	**279**	112	291	2	**405**	**788**
7:00PM	40	19	0	**59**	60	57	0	**117**	42	107	0	**149**	**325**
8:00PM	25	27	0	**52**	58	44	0	**102**	41	62	0	**103**	**257**
9:00PM	7	23	0	**30**	24	20	0	**44**	37	43	0	**80**	**154**
10:00PM	8	8	0	**16**	16	11	0	**27**	13	28	0	**41**	**84**
11:00PM	5	3	0	**8**	11	19	0	**30**	18	21	0	**39**	**77**
Total	1475	1092	0	**2567**	3864	1437	0	**5301**	1338	3879	17	**5234**	**13102**
% Approach	57.5%	42.5%	0%	**-**	72.9%	27.1%	0%	**-**	25.6%	74.1%	0.3%	**-**	**-**
% Total	11.3%	8.3%	0%	**19.6%**	29.5%	11.0%	0%	**40.5%**	10.2%	29.6%	0.1%	**39.9%**	**-**
Lights	1443	1058	0	**2501**	3507	1408	0	**4915**	1290	3473	14	**4777**	12193
% Lights	97.8%	96.9%	0%	**97.4%**	90.8%	98.0%	0%	**92.7%**	96.4%	89.5%	82.4%	**91.3%**	93.1%
Articulated Trucks	2	8	0	**10**	248	3	0	**251**	17	290	2	**309**	570
% Articulated Trucks	0.1%	0.7%	0%	**0.4%**	6.4%	0.2%	0%	**4.7%**	1.3%	7.5%	11.8%	**5.9%**	4.4%
Buses and Single-Unit Trucks	30	26	0	**56**	109	26	0	**135**	31	116	1	**148**	339
% Buses and Single-Unit Trucks	2.0%	2.4%	0%	**2.2%**	2.8%	1.8%	0%	**2.5%**	2.3%	3.0%	5.9%	**2.8%**	2.6%

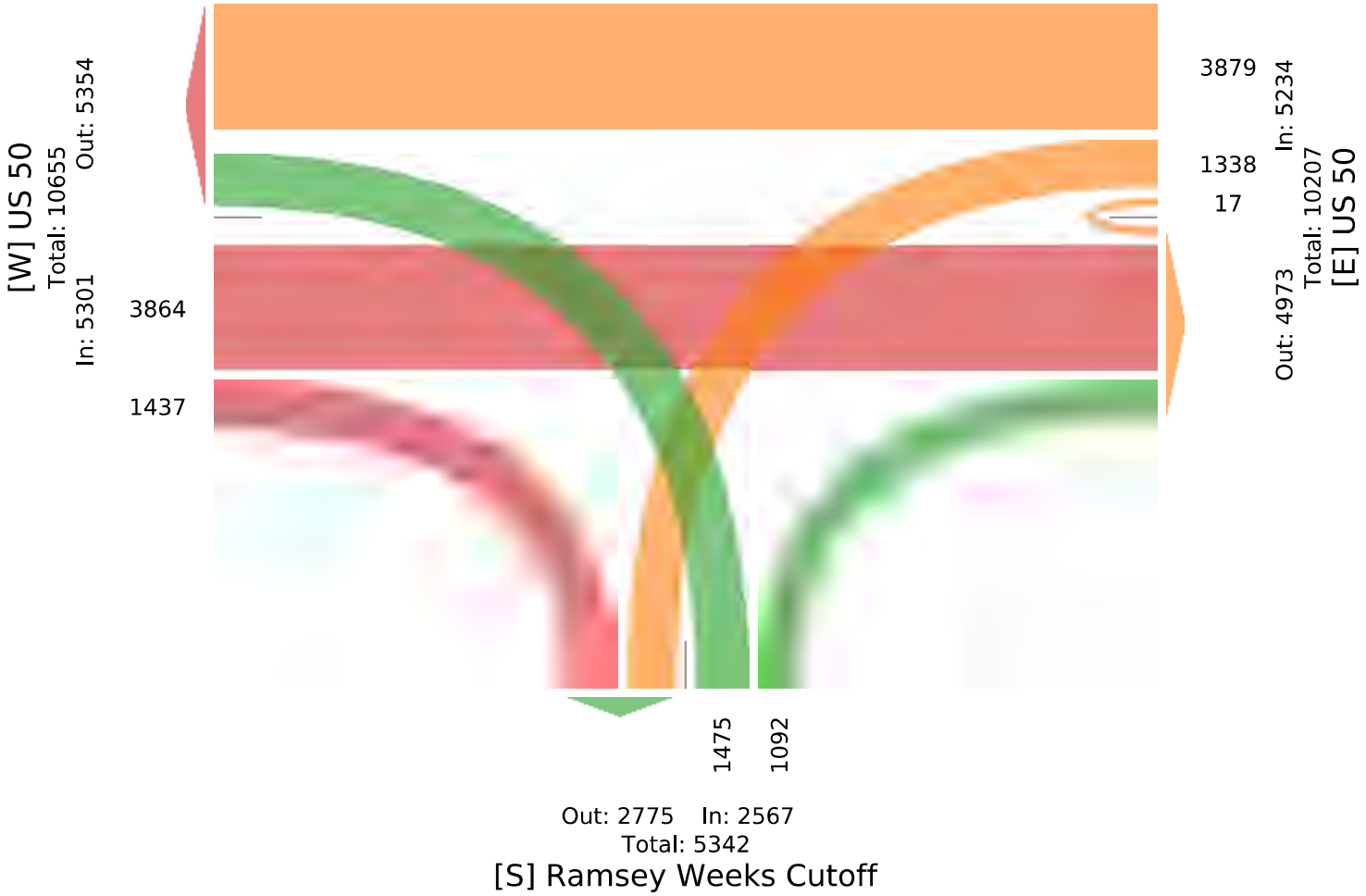
*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 50 and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348897, Location: 39.394495, -119.284524

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 50 and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
AM Peak (5 AM - 6 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348897, Location: 39.394495, -119.284524

Provided by: Kimley-Horn and Associates, Inc.
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Leg Direction	Ramsey Weeks Cutoff Northbound				US 50 Eastbound				US 50 Westbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2025-10-21 5:00AM	13	35	0	**48**	149	4	0	**153**	1	24	0	**25**	**226**
5:15AM	19	48	0	**67**	146	4	0	**150**	3	27	0	**30**	**247**
5:30AM	16	33	0	**49**	138	4	0	**142**	5	27	0	**32**	**223**
5:45AM	25	28	0	**53**	86	10	0	**96**	7	31	0	**38**	**187**
Total	73	144	0	**217**	519	22	0	**541**	16	109	0	**125**	**883**
% Approach	33.6%	66.4%	0%	**-**	95.9%	4.1%	0%	**-**	12.8%	87.2%	0%	**-**	**-**
% Total	8.3%	16.3%	0%	**24.6%**	58.8%	2.5%	0%	**61.3%**	1.8%	12.3%	0%	**14.2%**	**-**
PHF	0.730	0.750	**-**	**0.810**	0.871	0.550	**-**	**0.884**	0.571	0.879	**-**	**0.822**	0.894
Lights	73	143	0	**216**	505	22	0	**527**	16	101	0	**117**	860
% Lights	100%	99.3%	0%	**99.5%**	97.3%	100%	0%	**97.4%**	100%	92.7%	0%	**93.6%**	97.4%
Articulated Trucks	0	0	0	**0**	8	0	0	**8**	0	7	0	**7**	15
% Articulated Trucks	0%	0%	0%	**0%**	1.5%	0%	0%	**1.5%**	0%	6.4%	0%	**5.6%**	1.7%
Buses and Single-Unit Trucks	0	1	0	**1**	6	0	0	**6**	0	1	0	**1**	8
% Buses and Single-Unit Trucks	0%	0.7%	0%	**0.5%**	1.2%	0%	0%	**1.1%**	0%	0.9%	0%	**0.8%**	0.9%

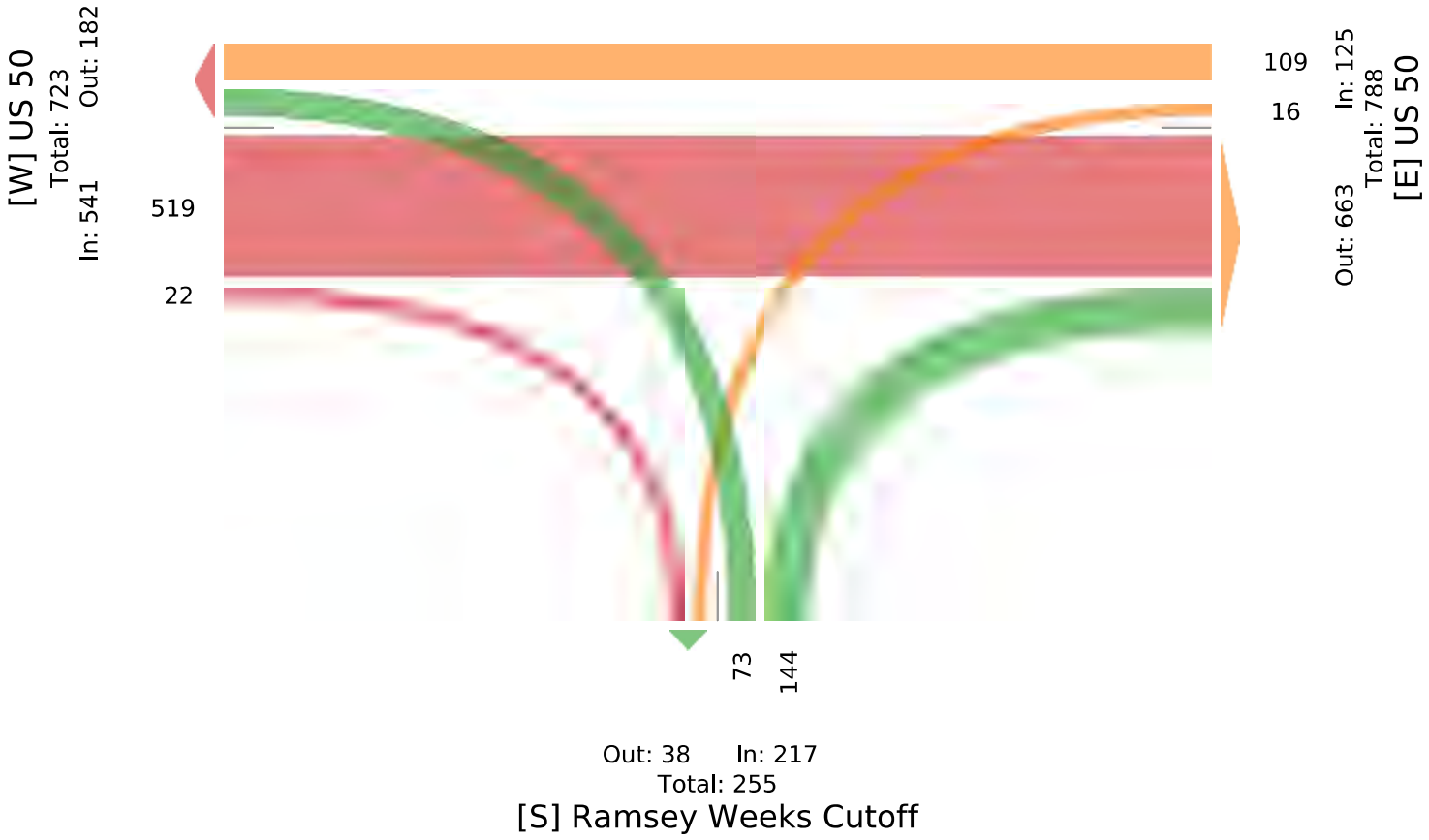
*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 50 and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
AM Peak (5 AM - 6 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348897, Location: 39.394495, -119.284524

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 50 and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
Midday Peak (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348897, Location: 39.394495, -119.284524

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Leg	Ramsey Weeks Cutoff				US 50				US 50				
Direction	Northbound				Eastbound				Westbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2025-10-21 1:00PM	19	22	0	**41**	34	26	0	**60**	21	67	0	**88**	**189**
1:15PM	24	13	0	**37**	50	17	0	**67**	34	50	2	**86**	**190**
1:30PM	19	15	0	**34**	40	27	0	**67**	15	57	0	**72**	**173**
1:45PM	15	16	0	**31**	55	24	0	**79**	24	82	0	**106**	**216**
Total	77	66	0	**143**	179	94	0	**273**	94	256	2	**352**	**768**
% Approach	53.8%	46.2%	0%	**-**	65.6%	34.4%	0%	**-**	26.7%	72.7%	0.6%	**-**	**-**
% Total	10.0%	8.6%	0%	**18.6%**	23.3%	12.2%	0%	**35.5%**	12.2%	33.3%	0.3%	**45.8%**	**-**
PHF	0.802	0.750	**-**	**0.872**	0.814	0.870	**-**	**0.864**	0.691	0.780	0.250	**0.830**	0.889
Lights	76	60	0	**136**	156	89	0	**245**	89	222	2	**313**	694
% Lights	98.7%	90.9%	0%	**95.1%**	87.2%	94.7%	0%	**89.7%**	94.7%	86.7%	100%	**88.9%**	90.4%
Articulated Trucks	0	1	0	**1**	19	1	0	**20**	0	21	0	**21**	42
% Articulated Trucks	0%	1.5%	0%	**0.7%**	10.6%	1.1%	0%	**7.3%**	0%	8.2%	0%	**6.0%**	5.5%
Buses and Single-Unit Trucks	1	5	0	**6**	4	4	0	**8**	5	13	0	**18**	32
% Buses and Single-Unit Trucks	1.3%	7.6%	0%	**4.2%**	2.2%	4.3%	0%	**2.9%**	5.3%	5.1%	0%	**5.1%**	4.2%

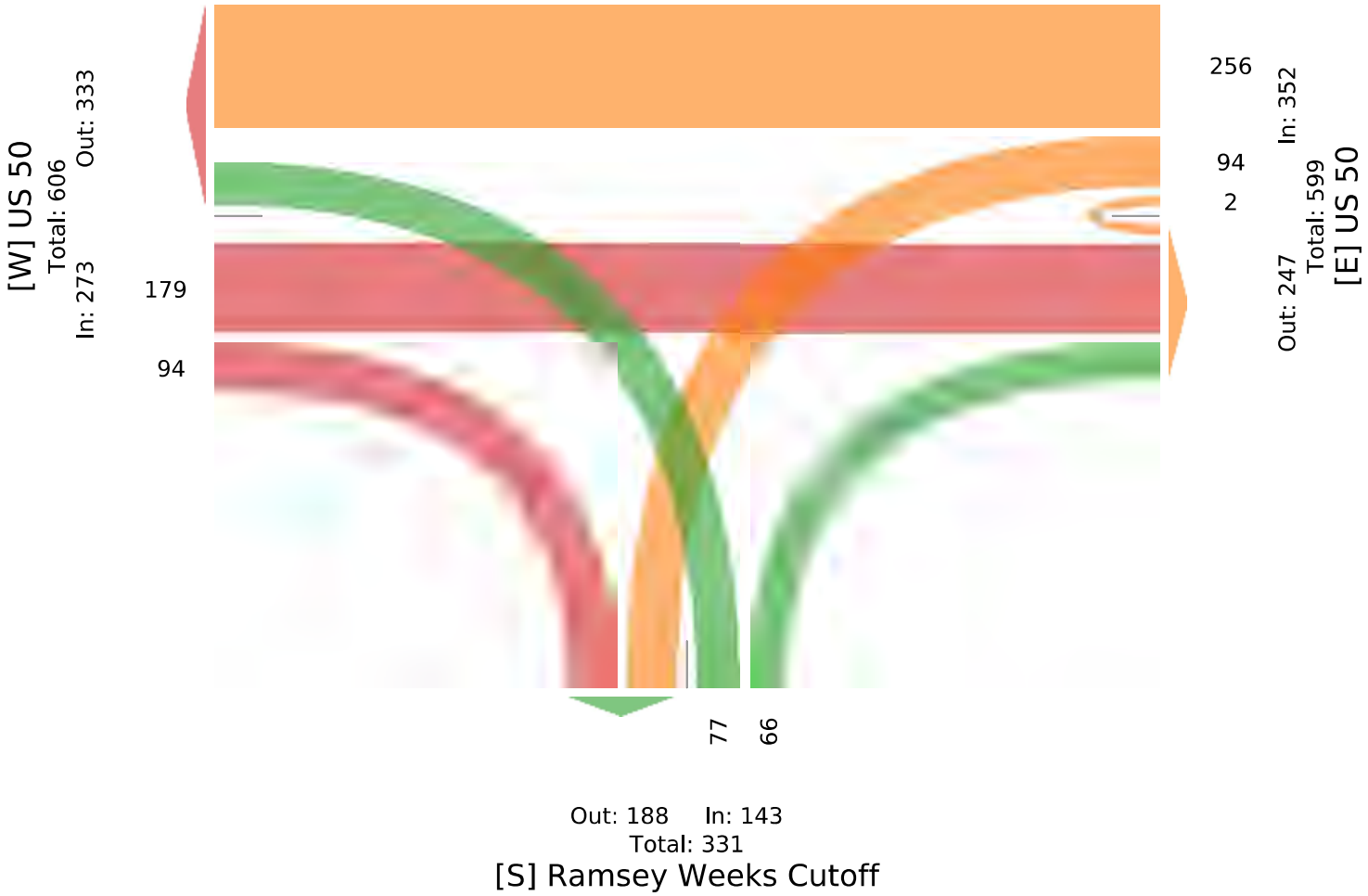
*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 50 and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
Midday Peak (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348897, Location: 39.394495, -119.284524

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 50 and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348897, Location: 39.394495, -119.284524

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Leg Direction	Ramsey Weeks Cutoff Northbound				US 50 Eastbound				US 50 Westbound				
Time	L	R	U	**App**	T	R	U	**App**	L	T	U	**App**	**Int**
2025-10-21 4:15PM	30	14	0	**44**	59	44	0	**103**	35	145	0	**180**	**327**
4:30PM	21	7	0	**28**	75	28	0	**103**	31	148	0	**179**	**310**
4:45PM	34	11	0	**45**	70	32	0	**102**	37	161	0	**198**	**345**
5:00PM	28	10	0	**38**	67	43	0	**110**	37	124	0	**161**	**309**
Total	113	42	0	**155**	271	147	0	**418**	140	578	0	**718**	**1291**
% Approach	72.9%	27.1%	0%	**-**	64.8%	35.2%	0%	**-**	19.5%	80.5%	0%	**-**	**-**
% Total	8.8%	3.3%	0%	**12.0%**	21.0%	11.4%	0%	**32.4%**	10.8%	44.8%	0%	**55.6%**	**-**
PHF	0.831	0.750	**-**	**0.861**	0.903	0.835	**-**	**0.950**	0.946	0.898	**-**	**0.907**	0.936
Lights	108	42	0	**150**	252	146	0	**398**	136	567	0	**703**	1251
% Lights	95.6%	100%	0%	**96.8%**	93.0%	99.3%	0%	**95.2%**	97.1%	98.1%	0%	**97.9%**	96.9%
Articulated Trucks	1	0	0	**1**	12	0	0	**12**	2	5	0	**7**	20
% Articulated Trucks	0.9%	0%	0%	**0.6%**	4.4%	0%	0%	**2.9%**	1.4%	0.9%	0%	**1.0%**	1.5%
Buses and Single-Unit Trucks	4	0	0	**4**	7	1	0	**8**	2	6	0	**8**	20
% Buses and Single-Unit Trucks	3.5%	0%	0%	**2.6%**	2.6%	0.7%	0%	**1.9%**	1.4%	1.0%	0%	**1.1%**	1.5%

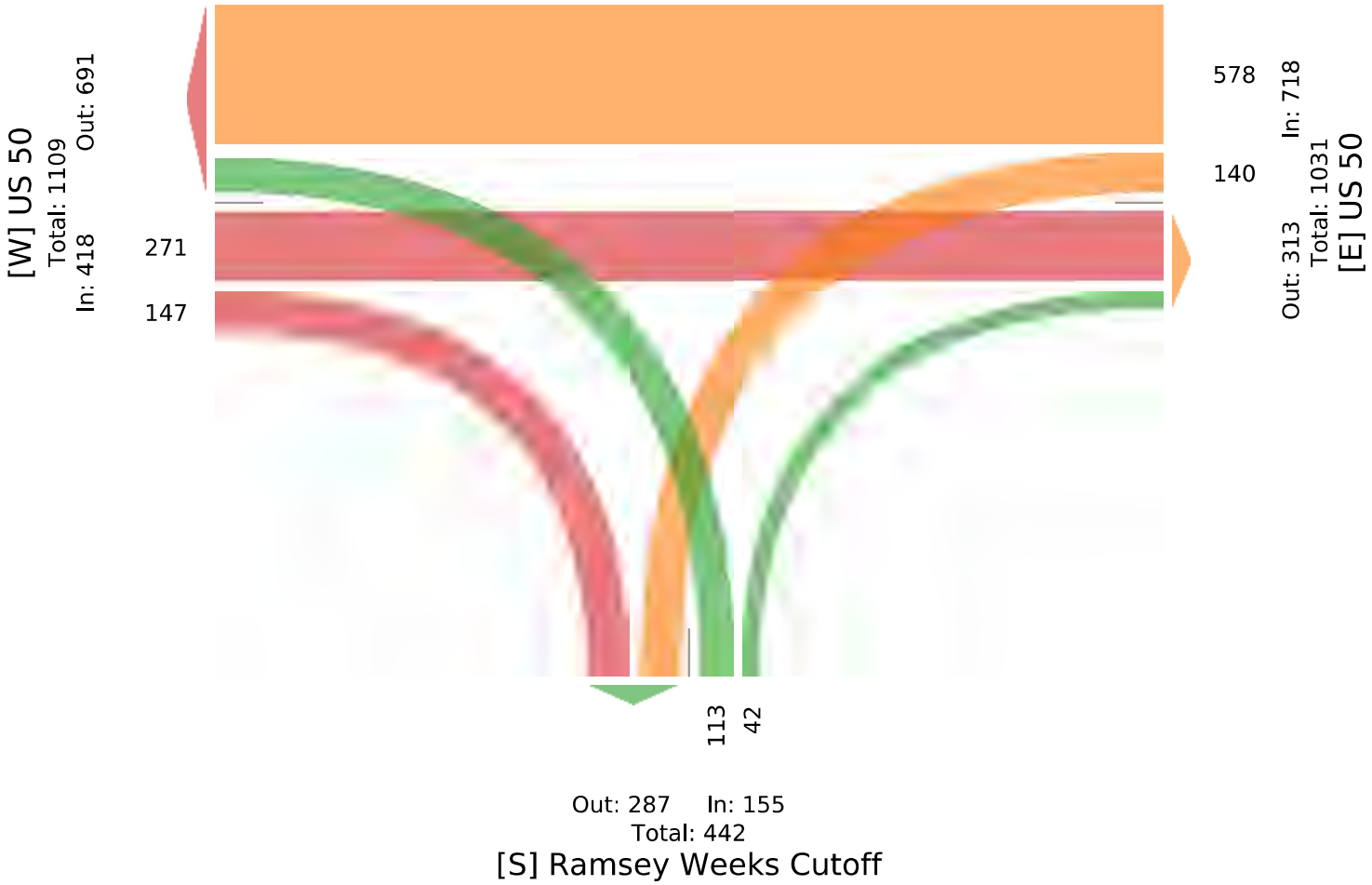
*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 50 and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348897, Location: 39.394495, -119.284524

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348896, Location: 39.361043, -119.236687

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Leg Direction	US 95A Northbound				US 95A Southbound				Ramsey Weeks Cutoff Eastbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2025-10-21 12:00AM	12	16	0	**28**	12	0	0	**12**	0	8	0	**8**	**48**
1:00AM	6	15	0	**21**	11	0	0	**11**	0	8	0	**8**	**40**
2:00AM	14	19	0	**33**	8	0	0	**8**	0	8	0	**8**	**49**
3:00AM	30	16	0	**46**	7	0	0	**7**	0	13	0	**13**	**66**
4:00AM	84	40	0	**124**	16	0	0	**16**	0	8	0	**8**	**148**
5:00AM	183	78	0	**261**	36	0	0	**36**	0	26	0	**26**	**323**
6:00AM	167	78	0	**245**	59	3	0	**62**	0	82	0	**82**	**389**
7:00AM	188	104	0	**292**	89	7	0	**96**	4	117	0	**121**	**509**
8:00AM	148	99	0	**247**	87	8	0	**95**	3	112	0	**115**	**457**
9:00AM	128	98	0	**226**	76	7	0	**83**	7	151	0	**158**	**467**
10:00AM	112	109	0	**221**	89	3	0	**92**	7	99	0	**106**	**419**
11:00AM	110	127	0	**237**	105	7	0	**112**	7	106	0	**113**	**462**
12:00PM	110	102	0	**212**	141	5	0	**146**	8	112	0	**120**	**478**
1:00PM	118	101	0	**219**	125	5	0	**130**	1	142	0	**143**	**492**
2:00PM	115	128	0	**243**	137	0	0	**137**	2	155	0	**157**	**537**
3:00PM	152	107	0	**259**	163	0	0	**163**	3	189	0	**192**	**614**
4:00PM	137	135	0	**272**	173	1	0	**174**	3	212	0	**215**	**661**
5:00PM	121	122	0	**243**	132	5	0	**137**	4	199	0	**203**	**583**
6:00PM	82	83	0	**165**	113	2	0	**115**	4	161	0	**165**	**445**
7:00PM	36	45	0	**81**	82	1	0	**83**	1	68	0	**69**	**233**
8:00PM	41	33	0	**74**	45	1	0	**46**	0	68	0	**68**	**188**
9:00PM	30	30	0	**60**	33	0	0	**33**	0	47	0	**47**	**140**
10:00PM	12	16	0	**28**	26	0	0	**26**	0	25	0	**25**	**79**
11:00PM	8	9	0	**17**	14	1	0	**15**	0	24	0	**24**	**56**
Total	2144	1710	0	**3854**	1779	56	0	**1835**	54	2140	0	**2194**	**7883**
% Approach	55.6%	44.4%	0%	**-**	96.9%	3.1%	0%	**-**	2.5%	97.5%	0%	**-**	**-**
% Total	27.2%	21.7%	0%	**48.9%**	22.6%	0.7%	0%	**23.3%**	0.7%	27.1%	0%	**27.8%**	**-**
Lights	2072	1300	0	**3372**	1349	34	0	**1383**	31	2052	0	**2083**	6838
% Lights	96.6%	76.0%	0%	**87.5%**	75.8%	60.7%	0%	**75.4%**	57.4%	95.9%	0%	**94.9%**	86.7%
Articulated Trucks	13	338	0	**351**	363	17	0	**380**	14	27	0	**41**	772
% Articulated Trucks	0.6%	19.8%	0%	**9.1%**	20.4%	30.4%	0%	**20.7%**	25.9%	1.3%	0%	**1.9%**	9.8%
Buses and Single-Unit Trucks	59	72	0	**131**	67	5	0	**72**	9	61	0	**70**	273
% Buses and Single-Unit Trucks	2.8%	4.2%	0%	**3.4%**	3.8%	8.9%	0%	**3.9%**	16.7%	2.9%	0%	**3.2%**	3.5%

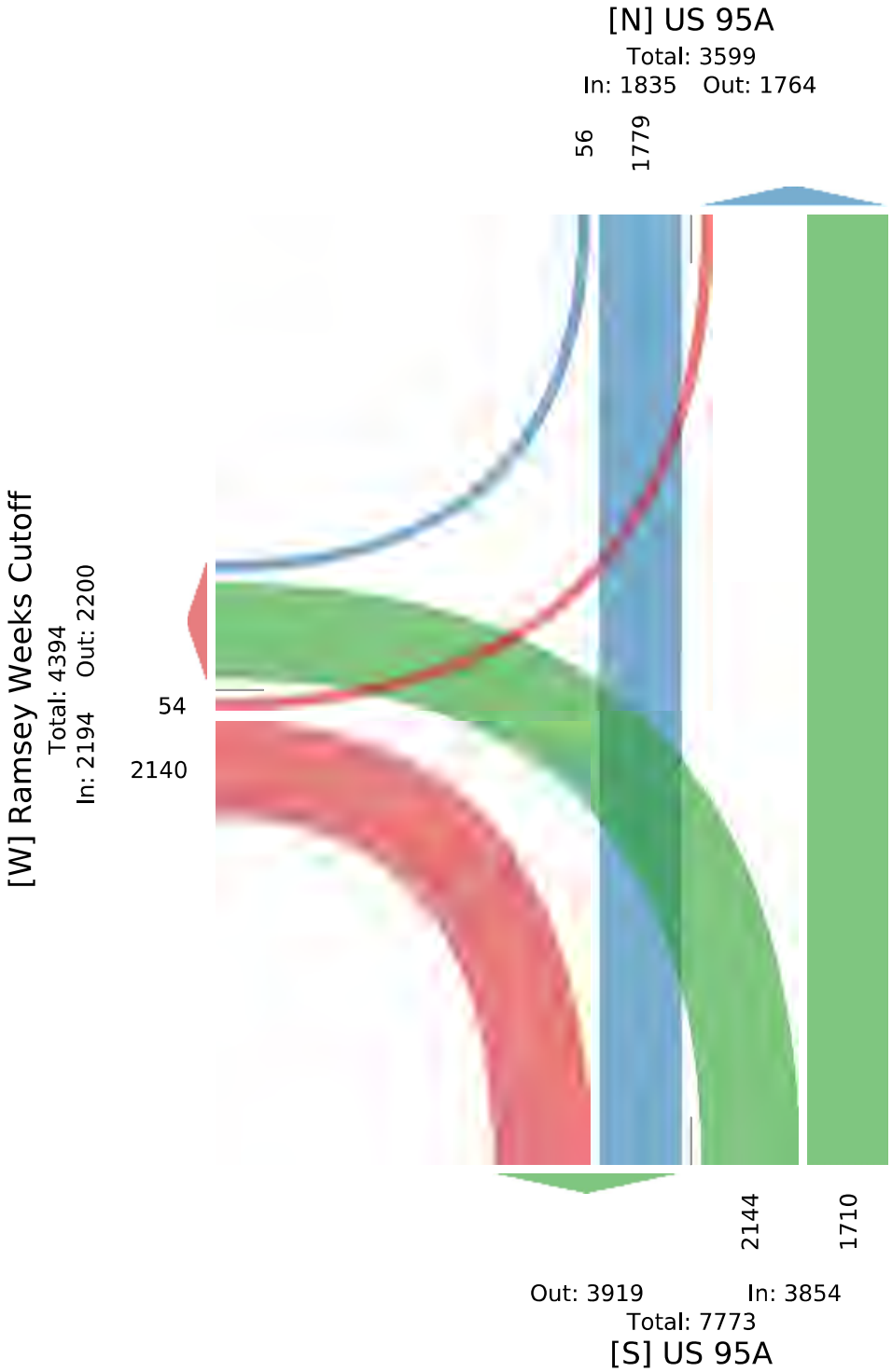
*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348896, Location: 39.361043, -119.236687

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348896, Location: 39.361043, -119.236687

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Leg	US 95A				US 95A				Ramsey Weeks Cutoff				
Direction	Northbound				Southbound				Eastbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2025-10-21 7:00AM	41	27	0	**68**	22	4	0	**26**	0	19	0	**19**	**113**
7:15AM	67	25	0	**92**	21	2	0	**23**	1	27	0	**28**	**143**
7:30AM	52	27	0	**79**	30	1	0	**31**	3	38	0	**41**	**151**
7:45AM	28	25	0	**53**	16	0	0	**16**	0	33	0	**33**	**102**
Total	188	104	0	**292**	89	7	0	**96**	4	117	0	**121**	**509**
% Approach	64.4%	35.6%	0%	**-**	92.7%	7.3%	0%	**-**	3.3%	96.7%	0%	**-**	**-**
% Total	36.9%	20.4%	0%	**57.4%**	17.5%	1.4%	0%	**18.9%**	0.8%	23.0%	0%	**23.8%**	**-**
PHF	0.701	0.963	**-**	**0.793**	0.742	0.438	**-**	**0.774**	0.333	0.770	**-**	**0.738**	0.843
Lights	183	80	0	**263**	70	3	0	**73**	0	110	0	**110**	446
% Lights	97.3%	76.9%	0%	**90.1%**	78.7%	42.9%	0%	**76.0%**	0%	94.0%	0%	**90.9%**	87.6%
Articulated Trucks	0	19	0	**19**	12	3	0	**15**	3	3	0	**6**	40
% Articulated Trucks	0%	18.3%	0%	**6.5%**	13.5%	42.9%	0%	**15.6%**	75.0%	2.6%	0%	**5.0%**	7.9%
Buses and Single-Unit Trucks	5	5	0	**10**	7	1	0	**8**	1	4	0	**5**	23
% Buses and Single-Unit Trucks	2.7%	4.8%	0%	**3.4%**	7.9%	14.3%	0%	**8.3%**	25.0%	3.4%	0%	**4.1%**	4.5%

*L: Left, R: Right, T: Thru, U: U-Turn

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US 95A and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348896, Location: 39.361043, -119.236687

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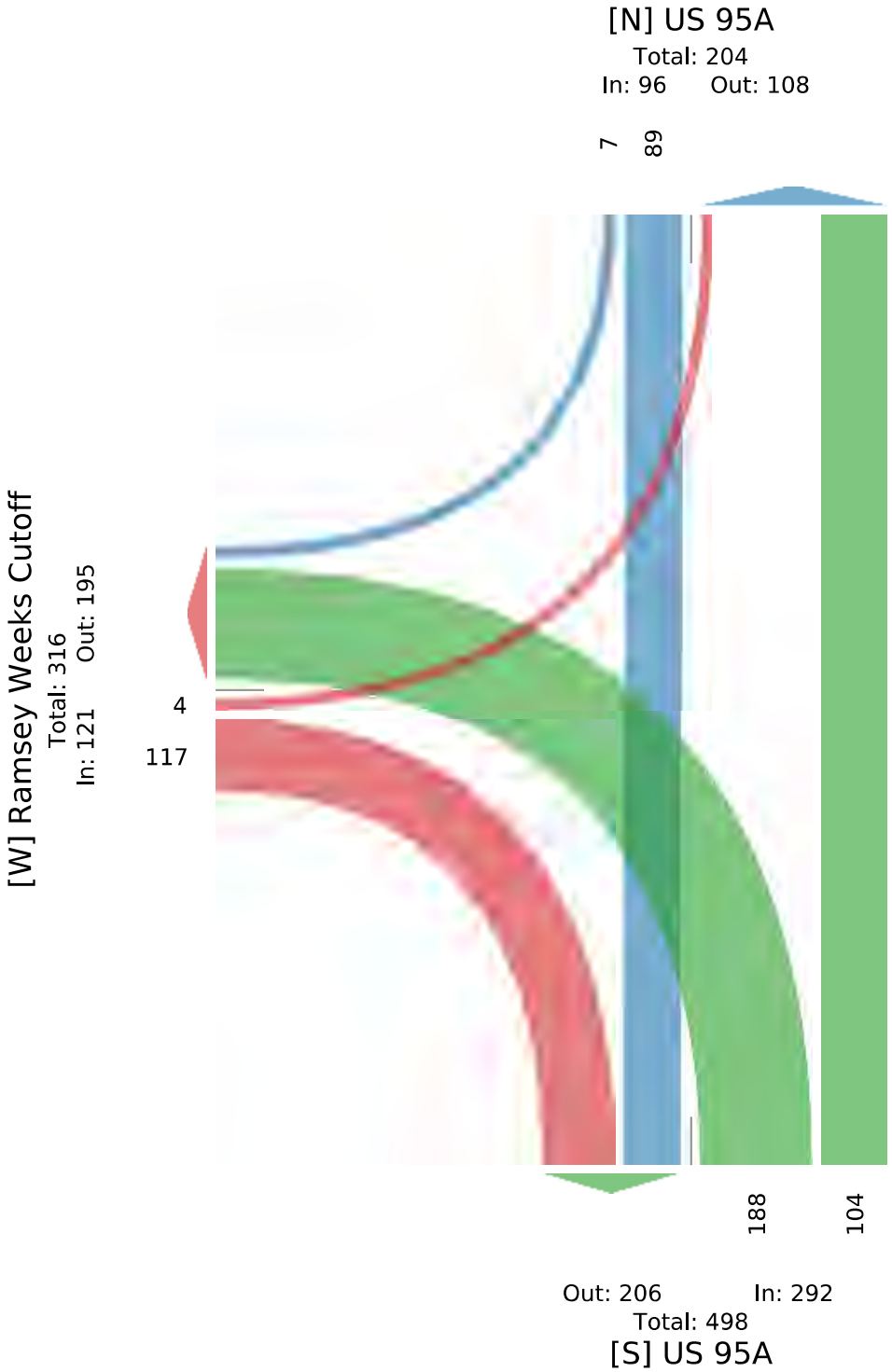

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US 95A and Ramsey Weeks Cutoff TMC - TMC

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Tue Oct 21, 2025
Midday Peak (12:15 PM - 1:15 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348896, Location: 39.361043, -119.236687

Leg Direction	US 95A Northbound				US 95A Southbound				Ramsey Weeks Cutoff Eastbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2025-10-21 12:15PM	27	24	0	**51**	36	1	0	**37**	3	31	0	**34**	**122**
12:30PM	29	29	0	**58**	31	0	0	**31**	3	26	0	**29**	**118**
12:45PM	25	21	0	**46**	38	1	0	**39**	1	31	0	**32**	**117**
1:00PM	35	27	0	**62**	39	2	0	**41**	0	33	0	**33**	**136**
Total	116	101	0	**217**	144	4	0	**148**	7	121	0	**128**	**493**
% Approach	53.5%	46.5%	0%	**-**	97.3%	2.7%	0%	**-**	5.5%	94.5%	0%	**-**	**-**
% Total	23.5%	20.5%	0%	**44.0%**	29.2%	0.8%	0%	**30.0%**	1.4%	24.5%	0%	**26.0%**	**-**
PHF	0.829	0.871	**-**	**0.875**	0.923	0.500	**-**	**0.902**	0.583	0.917	**-**	**0.941**	0.906
Lights	110	80	0	**190**	111	1	0	**112**	3	118	0	**121**	423
% Lights	94.8%	79.2%	0%	**87.6%**	77.1%	25.0%	0%	**75.7%**	42.9%	97.5%	0%	**94.5%**	85.8%
Articulated Trucks	2	15	0	**17**	32	2	0	**34**	3	2	0	**5**	56
% Articulated Trucks	1.7%	14.9%	0%	**7.8%**	22.2%	50.0%	0%	**23.0%**	42.9%	1.7%	0%	**3.9%**	11.4%
Buses and Single-Unit Trucks	4	6	0	**10**	1	1	0	**2**	1	1	0	**2**	14
% Buses and Single-Unit Trucks	3.4%	5.9%	0%	**4.6%**	0.7%	25.0%	0%	**1.4%**	14.3%	0.8%	0%	**1.6%**	2.8%

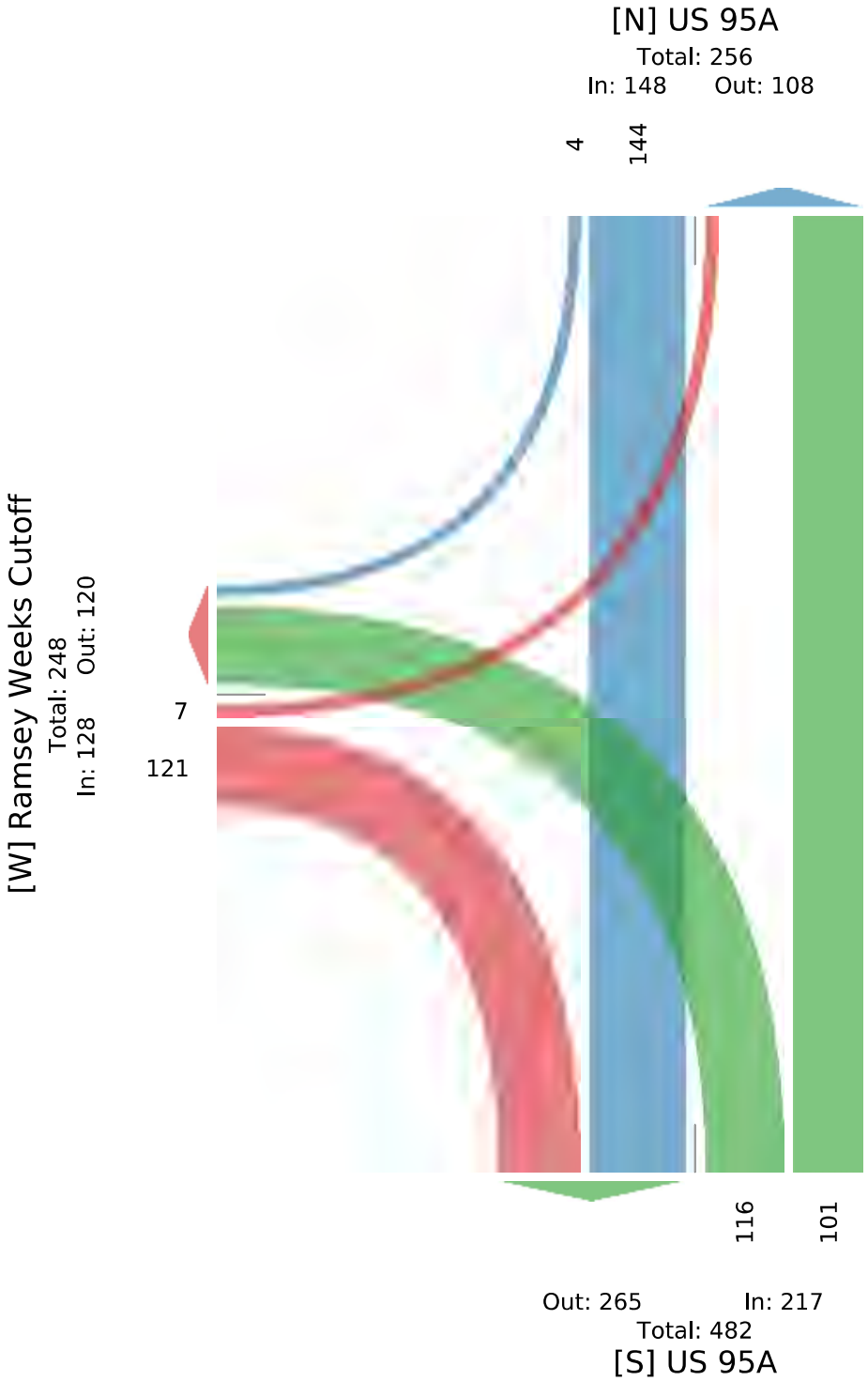
*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
Midday Peak (12:15 PM - 1:15 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348896, Location: 39.361043, -119.236687

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348896, Location: 39.361043, -119.236687

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Leg Direction	US 95A Northbound				US 95A Southbound				Ramsey Weeks Cutoff Eastbound				
Time	L	T	U	**App**	T	R	U	**App**	L	R	U	**App**	**Int**
2025-10-21 4:30PM	24	34	0	**58**	56	0	0	**56**	0	57	0	**57**	**171**
4:45PM	50	42	0	**92**	47	0	0	**47**	1	48	0	**49**	**188**
5:00PM	29	41	0	**70**	33	0	0	**33**	2	50	0	**52**	**155**
5:15PM	34	41	0	**75**	35	0	0	**35**	0	62	0	**62**	**172**
Total	137	158	0	**295**	171	0	0	**171**	3	217	0	**220**	**686**
% Approach	46.4%	53.6%	0%	**-**	100%	0%	0%	**-**	1.4%	98.6%	0%	**-**	**-**
% Total	20.0%	23.0%	0%	**43.0%**	24.9%	0%	0%	**24.9%**	0.4%	31.6%	0%	**32.1%**	**-**
PHF	0.685	0.940	**-**	**0.802**	0.763	-	-	**0.763**	0.375	0.875	**-**	**0.887**	0.912
Lights	135	134	0	**269**	140	0	0	**140**	3	213	0	**216**	625
% Lights	98.5%	84.8%	0%	**91.2%**	81.9%	0%	0%	**81.9%**	100%	98.2%	0%	**98.2%**	91.1%
Articulated Trucks	0	18	0	**18**	27	0	0	**27**	0	2	0	**2**	47
% Articulated Trucks	0%	11.4%	0%	**6.1%**	15.8%	0%	0%	**15.8%**	0%	0.9%	0%	**0.9%**	6.9%
Buses and Single-Unit Trucks	2	6	0	**8**	4	0	0	**4**	0	2	0	**2**	14
% Buses and Single-Unit Trucks	1.5%	3.8%	0%	**2.7%**	2.3%	0%	0%	**2.3%**	0%	0.9%	0%	**0.9%**	2.0%

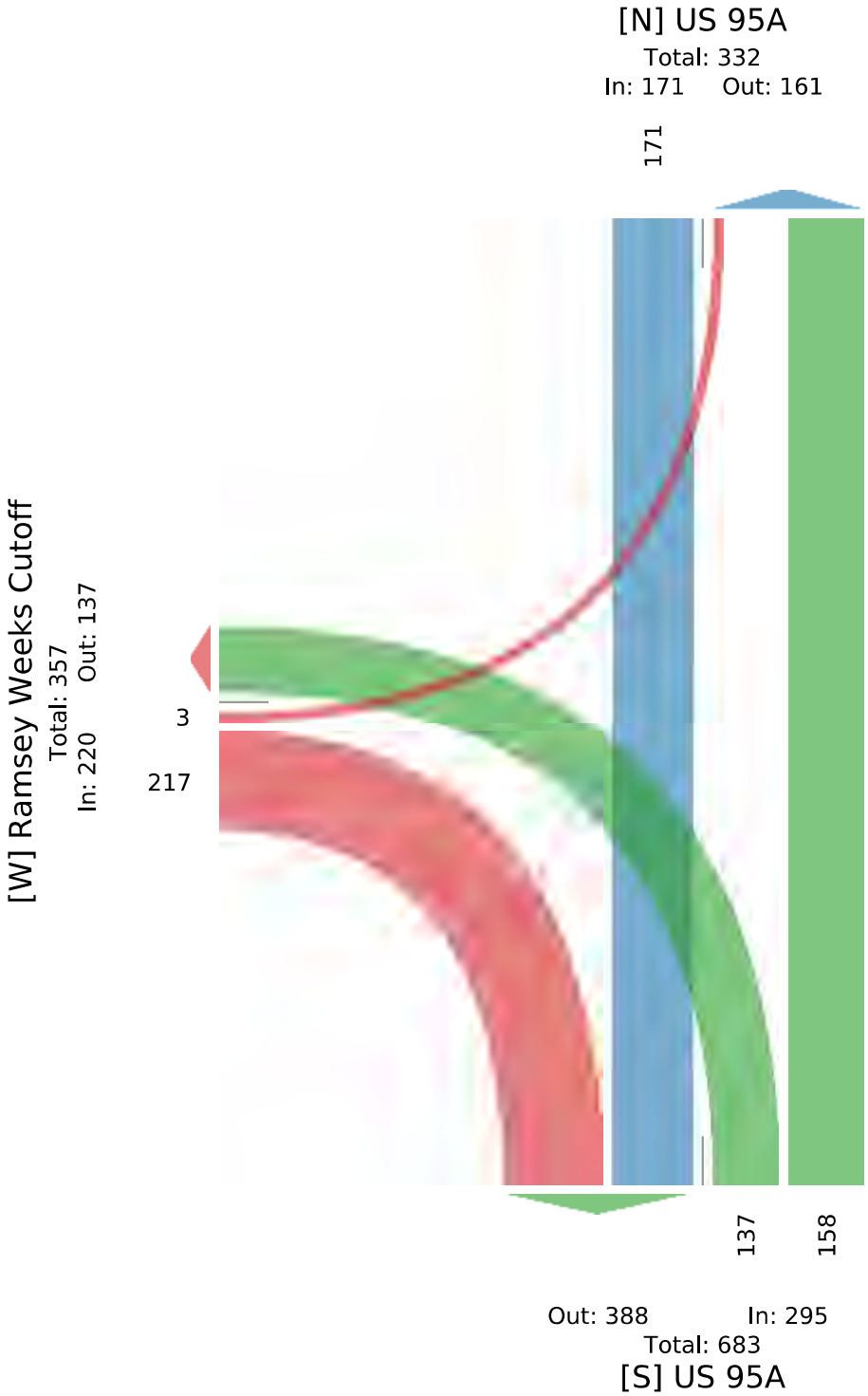
*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and Ramsey Weeks Cutoff TMC - TMC

Tue Oct 21, 2025
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348896, Location: 39.361043, -119.236687

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US+95A+and+Sierra+Way TMC - TMC

Tue Oct 21, 2025
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348895, Location: 39.128385, -119.181012

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

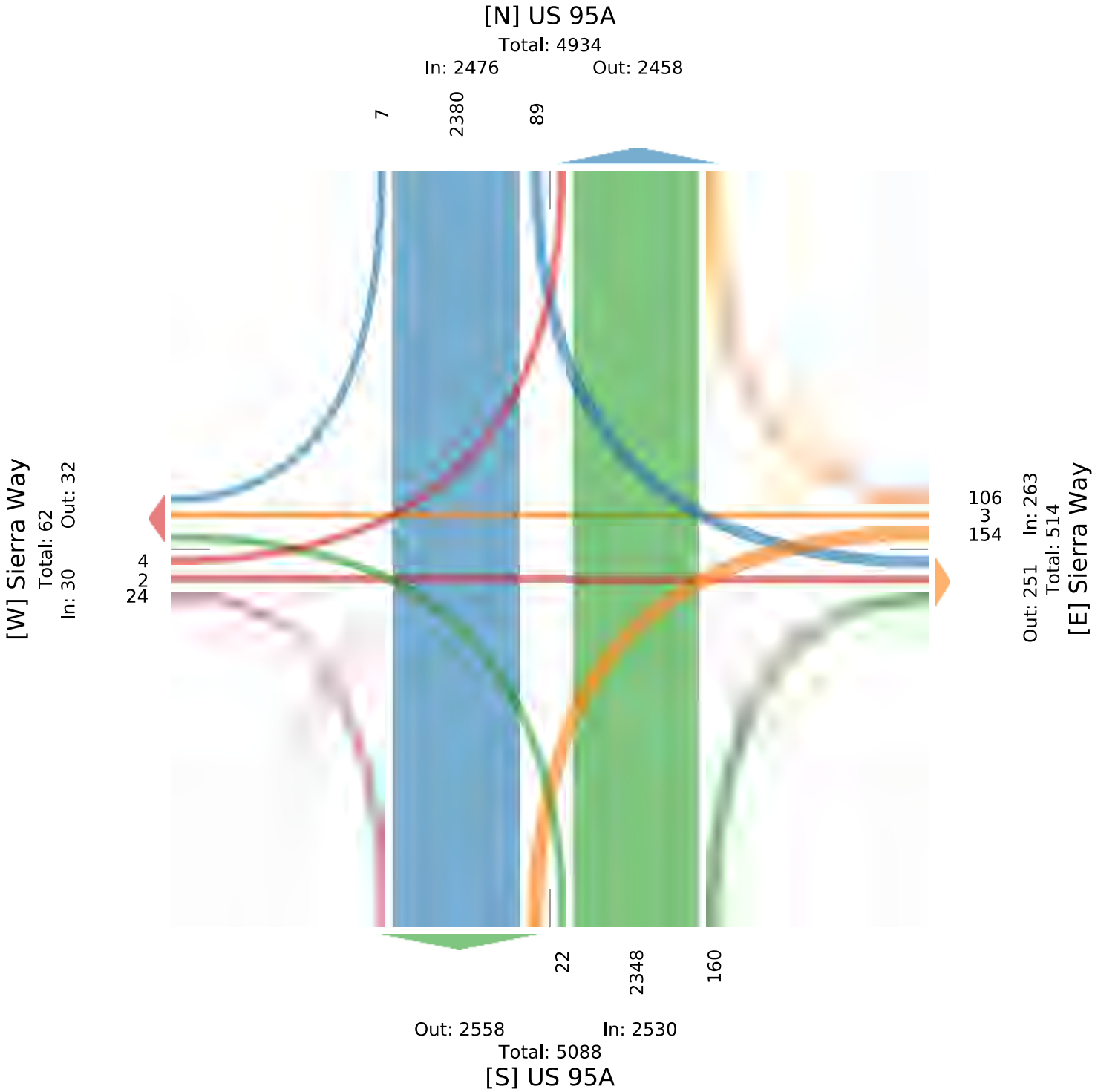
Leg / Direction	US 95A Northbound					US 95A Southbound					Sierra Way Eastbound					Sierra Way Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2025-10-21 12:00AM	0	22	1	0	**23**	0	8	0	0	**8**	0	0	0	0	**0**	0	0	0	0	**0**	**31**
1:00AM	0	15	0	0	**15**	0	14	0	0	**14**	0	0	0	0	**0**	1	0	0	0	**1**	**30**
2:00AM	0	28	0	0	**28**	0	7	0	0	**7**	0	0	0	0	**0**	0	0	0	0	**0**	**35**
3:00AM	0	39	2	0	**41**	3	12	0	0	**15**	0	0	0	0	**0**	3	1	1	0	**5**	**61**
4:00AM	0	81	0	0	**81**	0	19	0	0	**19**	0	0	1	0	**1**	0	0	0	0	**0**	**101**
5:00AM	0	154	23	0	**177**	4	46	0	0	**50**	1	1	0	0	**2**	0	0	0	0	**0**	**229**
6:00AM	2	112	61	0	**175**	12	77	0	0	**89**	0	0	1	0	**1**	0	0	0	0	**0**	**265**
7:00AM	1	152	11	0	**164**	13	126	0	0	**139**	0	0	0	0	**0**	8	0	4	0	**12**	**315**
8:00AM	1	129	5	0	**135**	13	152	1	0	**166**	2	0	1	0	**3**	8	0	7	0	**15**	**319**
9:00AM	4	138	7	0	**149**	12	158	1	0	**171**	0	0	2	0	**2**	5	1	8	0	**14**	**336**
10:00AM	1	135	10	0	**146**	6	150	2	0	**158**	0	1	3	0	**4**	6	0	6	0	**12**	**320**
11:00AM	2	149	4	0	**155**	0	137	0	0	**137**	0	0	3	0	**3**	9	1	3	0	**13**	**308**
12:00PM	2	133	10	0	**145**	5	139	1	0	**145**	0	0	3	0	**3**	10	0	8	0	**18**	**311**
1:00PM	4	141	7	0	**152**	6	174	0	0	**180**	0	0	2	0	**2**	4	0	6	0	**10**	**344**
2:00PM	0	140	5	0	**145**	5	181	1	0	**187**	0	0	3	0	**3**	11	0	16	0	**27**	**362**
3:00PM	3	188	6	0	**197**	5	190	0	0	**195**	0	0	4	0	**4**	9	0	14	0	**23**	**419**
4:00PM	1	176	3	0	**180**	5	219	1	0	**225**	0	0	0	0	**0**	23	0	24	0	**47**	**452**
5:00PM	0	132	2	0	**134**	0	203	0	0	**203**	0	0	0	0	**0**	50	0	8	0	**58**	**395**
6:00PM	1	98	1	0	**100**	0	137	0	0	**137**	1	0	1	0	**2**	2	0	1	0	**3**	**242**
7:00PM	0	61	1	0	**62**	0	83	0	0	**83**	0	0	0	0	**0**	5	0	0	0	**5**	**150**
8:00PM	0	45	0	0	**45**	0	51	0	0	**51**	0	0	0	0	**0**	0	0	0	0	**0**	**96**
9:00PM	0	45	0	0	**45**	0	49	0	0	**49**	0	0	0	0	**0**	0	0	0	0	**0**	**94**
10:00PM	0	15	0	0	**15**	0	27	0	0	**27**	0	0	0	0	**0**	0	0	0	0	**0**	**42**
11:00PM	0	20	1	0	**21**	0	21	0	0	**21**	0	0	0	0	**0**	0	0	0	0	**0**	**42**
Total	22	2348	160	0	**2530**	89	2380	7	0	**2476**	4	2	24	0	**30**	154	3	106	0	**263**	**5299**
% Approach	0.9%	92.8%	6.3%	0%	**-**	3.6%	96.1%	0.3%	0%	**-**	13.3%	6.7%	80.0%	0%	**-**	58.6%	1.1%	40.3%	0%	**-**	**-**
% Total	0.4%	44.3%	3.0%	0%	**47.7%**	1.7%	44.9%	0.1%	0%	**46.7%**	0.1%	0%	0.5%	0%	**0.6%**	2.9%	0.1%	2.0%	0%	**5.0%**	**-**
Lights	8	1930	146	0	**2084**	50	1946	5	0	**2001**	3	0	8	0	**11**	138	2	60	0	**200**	4296
% Lights	36.4%	82.2%	91.3%	0%	**82.4%**	56.2%	81.8%	71.4%	0%	**80.8%**	75.0%	0%	33.3%	0%	**36.7%**	89.6%	66.7%	56.6%	0%	**76.0%**	81.1%
Articulated Trucks	11	318	10	0	**339**	9	335	0	0	**344**	0	0	13	0	**13**	11	0	5	0	**16**	712
% Articulated Trucks	50.0%	13.5%	6.3%	0%	**13.4%**	10.1%	14.1%	0%	0%	**13.9%**	0%	0%	54.2%	0%	**43.3%**	7.1%	0%	4.7%	0%	**6.1%**	13.4%
Buses and Single-Unit Trucks	3	100	4	0	**107**	30	99	2	0	**131**	1	2	3	0	**6**	5	1	41	0	**47**	291
% Buses and Single-Unit Trucks	13.6%	4.3%	2.5%	0%	**4.2%**	33.7%	4.2%	28.6%	0%	**5.3%**	25.0%	100%	12.5%	0%	**20.0%**	3.2%	33.3%	38.7%	0%	**17.9%**	5.5%

*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US+95A+and+Sierra+Way TMC - TMC
Tue Oct 21, 2025
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348895, Location: 39.128385, -119.181012

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US+95A+and+Sierra+Way TMC - TMC

Tue Oct 21, 2025
AM Peak (9:15 AM - 10:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348895, Location: 39.128385, -119.181012

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Leg / Direction	US 95A Northbound					US 95A Southbound					Sierra Way Eastbound					Sierra Way Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-10-21 9:15AM	1	31	2	0	**34**	5	35	0	0	**40**	0	0	2	0	**2**	2	0	4	0	**6**	**82**
9:30AM	0	38	2	0	**40**	3	30	1	0	**34**	0	0	0	0	**0**	2	0	0	0	**2**	**76**
9:45AM	3	35	0	0	**38**	1	54	0	0	**55**	0	0	0	0	**0**	1	0	3	0	**4**	**97**
10:00AM	0	42	1	0	**43**	4	46	0	0	**50**	0	0	0	0	**0**	2	0	1	0	**3**	**96**
Total	4	146	5	0	**155**	13	165	1	0	**179**	0	0	2	0	**2**	7	0	8	0	**15**	**351**
% Approach	2.6%	94.2%	3.2%	0%	**-**	7.3%	92.2%	0.6%	0%	**-**	0%	0%	100%	0%	**-**	46.7%	0%	53.3%	0%	**-**	**-**
% Total	1.1%	41.6%	1.4%	0%	**44.2%**	3.7%	47.0%	0.3%	0%	**51.0%**	0%	0%	0.6%	0%	**0.6%**	2.0%	0%	2.3%	0%	**4.3%**	**-**
PHF	0.333	0.869	0.625	**-**	**0.901**	0.650	0.764	0.250	**-**	**0.814**	-	-	0.250	**-**	**0.250**	0.875	**-**	0.500	**-**	**0.625**	0.905
Lights	1	117	3	0	**121**	7	136	1	0	**144**	0	0	1	0	**1**	5	0	4	0	**9**	275
% Lights	25.0%	80.1%	60.0%	0%	**78.1%**	53.8%	82.4%	100%	0%	**80.4%**	0%	0%	50.0%	0%	**50.0%**	71.4%	0%	50.0%	0%	**60.0%**	78.3%
Articulated Trucks	3	20	1	0	**24**	1	21	0	0	**22**	0	0	1	0	**1**	1	0	0	0	**1**	48
% Articulated Trucks	75.0%	13.7%	20.0%	0%	**15.5%**	7.7%	12.7%	0%	0%	**12.3%**	0%	0%	50.0%	0%	**50.0%**	14.3%	0%	0%	0%	**6.7%**	13.7%
Buses and Single-Unit Trucks	0	9	1	0	**10**	5	8	0	0	**13**	0	0	0	0	**0**	1	0	4	0	**5**	28
% Buses and Single-Unit Trucks	0%	6.2%	20.0%	0%	**6.5%**	38.5%	4.8%	0%	0%	**7.3%**	0%	0%	0%	0%	**0%**	14.3%	0%	50.0%	0%	**33.3%**	8.0%

*L: Left, R: Right, T: Thru, U: U-Turn

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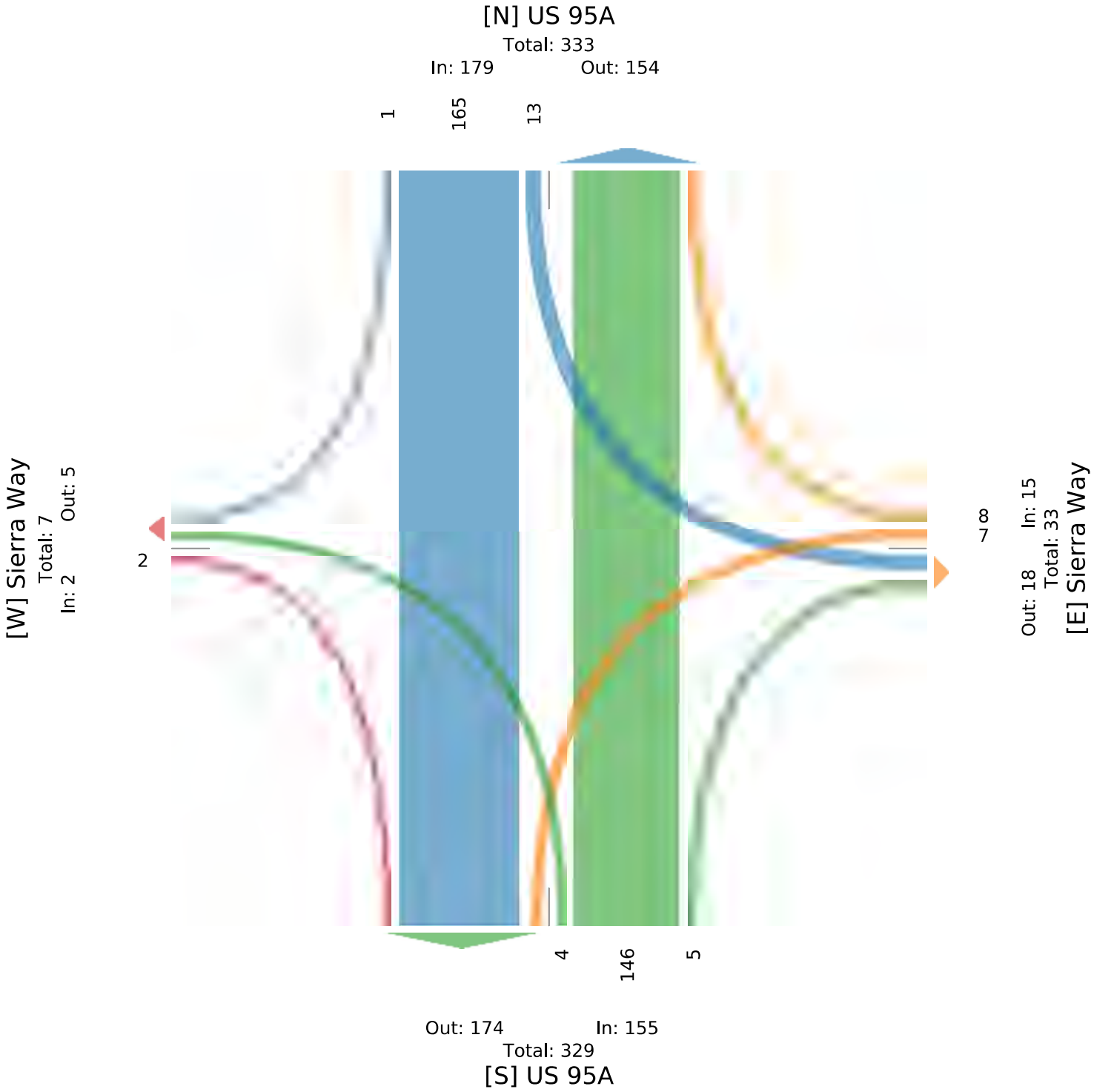
US+95A+and+Sierra+Way TMC - TMC
Tue Oct 21, 2025
AM Peak (9:15 AM - 10:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348895, Location: 39.128385, -119.181012

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US+95A+and+Sierra+Way TMC - TMC

Tue Oct 21, 2025
Midday Peak (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348895, Location: 39.128385, -119.181012

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Leg / Direction	US 95A Northbound					US 95A Southbound					Sierra Way Eastbound					Sierra Way Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-10-21 1:00PM	0	28	2	0	**30**	1	40	0	0	**41**	0	0	0	0	**0**	2	0	2	0	**4**	**75**
1:15PM	2	43	0	0	**45**	3	33	0	0	**36**	0	0	1	0	**1**	1	0	1	0	**2**	**84**
1:30PM	1	28	4	0	**33**	2	53	0	0	**55**	0	0	0	0	**0**	0	0	0	0	**0**	**88**
1:45PM	1	42	1	0	**44**	0	48	0	0	**48**	0	0	1	0	**1**	1	0	3	0	**4**	**97**
Total	4	141	7	0	**152**	6	174	0	0	**180**	0	0	2	0	**2**	4	0	6	0	**10**	**344**
% Approach	2.6%	92.8%	4.6%	0%	**-**	3.3%	96.7%	0%	0%	**-**	0%	0%	100%	0%	**-**	40.0%	0%	60.0%	0%	**-**	**-**
% Total	1.2%	41.0%	2.0%	0%	**44.2%**	1.7%	50.6%	0%	0%	**52.3%**	0%	0%	0.6%	0%	**0.6%**	1.2%	0%	1.7%	0%	**2.9%**	**-**
PHF	0.500	0.820	0.438	-	**0.844**	0.500	0.821	-	-	**0.818**	-	-	0.500	-	**0.500**	0.500	-	0.500	-	**0.625**	0.887
Lights	0	109	5	0	**114**	3	130	0	0	**133**	0	0	1	0	**1**	4	0	1	0	**5**	253
% Lights	0%	77.3%	71.4%	0%	**75.0%**	50.0%	74.7%	0%	0%	**73.9%**	0%	0%	50.0%	0%	**50.0%**	100%	0%	16.7%	0%	**50.0%**	73.5%
Articulated Trucks	3	22	1	0	**26**	0	37	0	0	**37**	0	0	1	0	**1**	0	0	1	0	**1**	65
% Articulated Trucks	75.0%	15.6%	14.3%	0%	**17.1%**	0%	21.3%	0%	0%	**20.6%**	0%	0%	50.0%	0%	**50.0%**	0%	0%	16.7%	0%	**10.0%**	18.9%
Buses and Single-Unit Trucks	1	10	1	0	**12**	3	7	0	0	**10**	0	0	0	0	**0**	0	0	4	0	**4**	26
% Buses and Single-Unit Trucks	25.0%	7.1%	14.3%	0%	**7.9%**	50.0%	4.0%	0%	0%	**5.6%**	0%	0%	0%	0%	**0%**	0%	0%	66.7%	0%	**40.0%**	7.6%

*L: Left, R: Right, T: Thru, U: U-Turn

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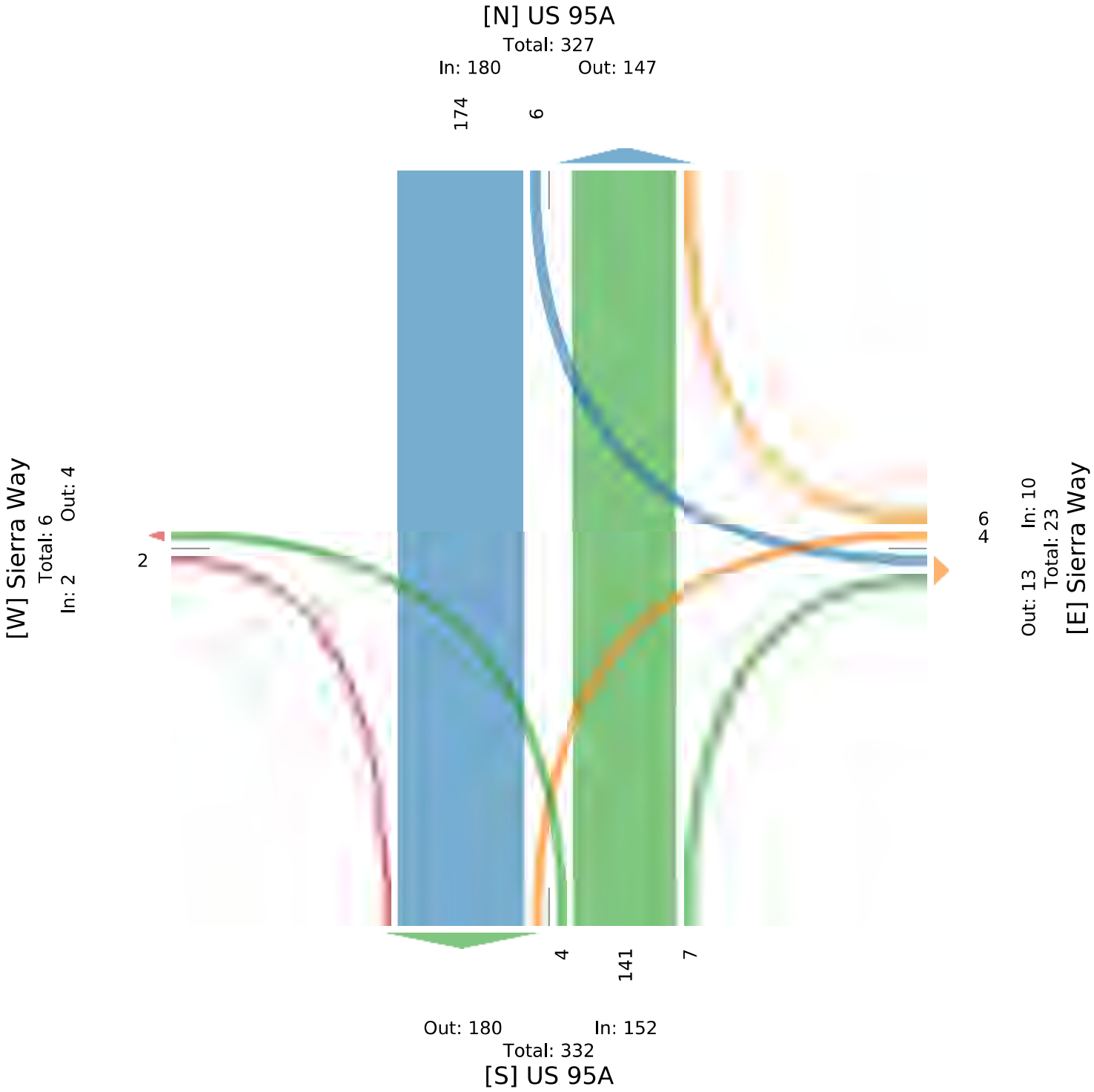
US+95A+and+Sierra+Way TMC - TMC
Tue Oct 21, 2025
Midday Peak (1 PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348895, Location: 39.128385, -119.181012

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US+95A+and+Sierra+Way TMC - TMC

Tue Oct 21, 2025
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348895, Location: 39.128385, -119.181012

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

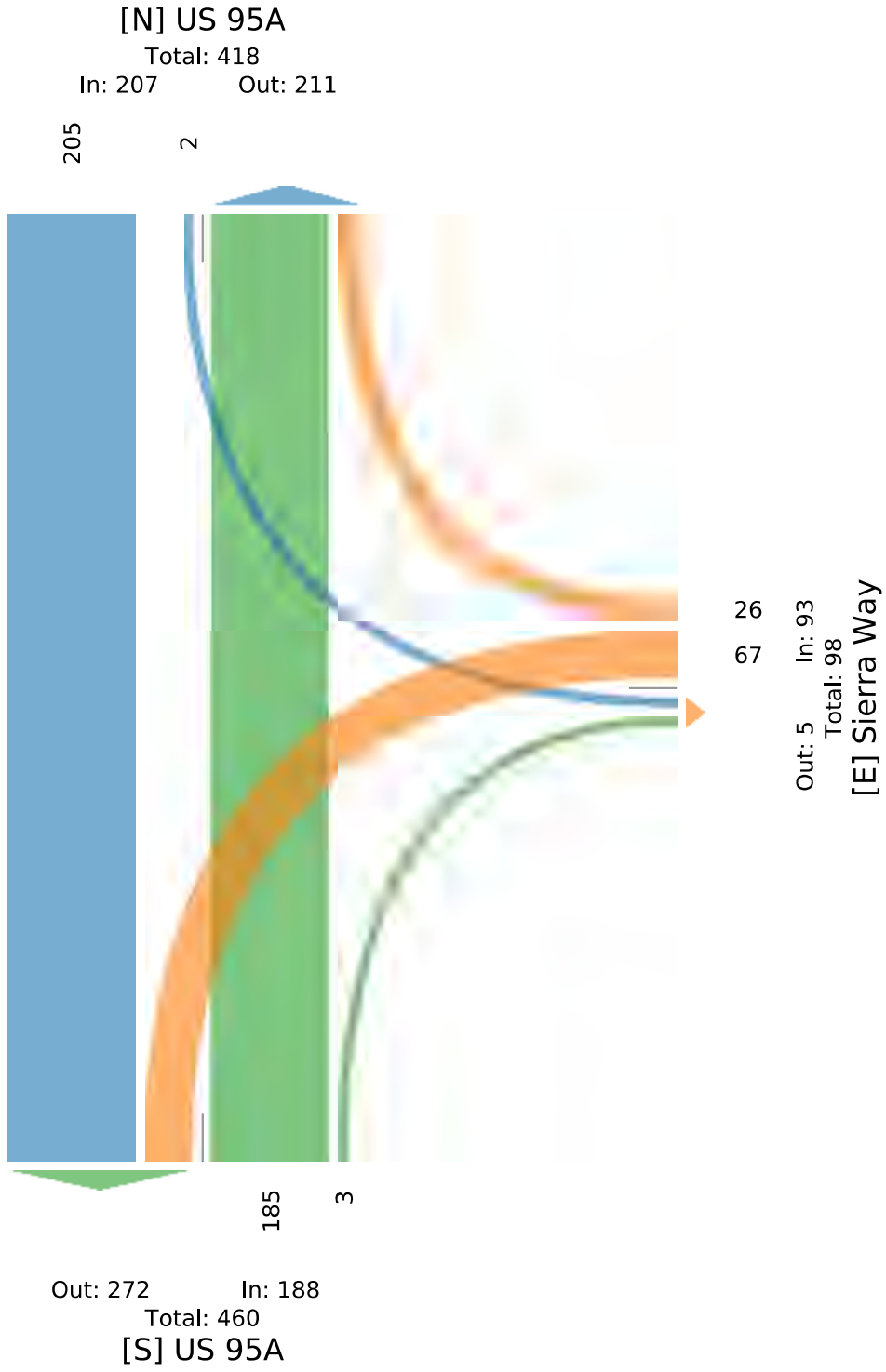
Leg	US 95A					US 95A					Sierra Way					Sierra Way					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-10-21 4:30PM	0	59	3	0	**62**	0	41	0	0	**41**	0	0	0	0	**0**	10	0	9	0	**19**	**122**
4:45PM	0	48	0	0	**48**	2	61	0	0	**63**	0	0	0	0	**0**	8	0	10	0	**18**	**129**
5:00PM	0	31	0	0	**31**	0	52	0	0	**52**	0	0	0	0	**0**	47	0	7	0	**54**	**137**
5:15PM	0	47	0	0	**47**	0	51	0	0	**51**	0	0	0	0	**0**	2	0	0	0	**2**	**100**
Total	0	185	3	0	**188**	2	205	0	0	**207**	0	0	0	0	**0**	67	0	26	0	**93**	**488**
% Approach	0%	98.4%	1.6%	0%	**-**	1.0%	99.0%	0%	0%	**-**	0%	0%	0%	0%	**-**	72.0%	0%	28.0%	0%	**-**	**-**
% Total	0%	37.9%	0.6%	0%	**38.5%**	0.4%	42.0%	0%	0%	**42.4%**	0%	0%	0%	0%	**0%**	13.7%	0%	5.3%	0%	**19.1%**	**-**
PHF	**-**	0.784	0.250	**-**	**0.758**	0.250	0.840	-	-	**0.821**	-	-	-	-	**-**	0.356	**-**	0.650	**-**	**0.431**	0.891
Lights	0	163	3	0	**166**	2	179	0	0	**181**	0	0	0	0	**0**	66	0	22	0	**88**	435
% Lights	0%	88.1%	100%	0%	**88.3%**	100%	87.3%	0%	0%	**87.4%**	0%	0%	0%	0%	**-**	98.5%	0%	84.6%	0%	**94.6%**	89.1%
Articulated Trucks	0	15	0	0	**15**	0	23	0	0	**23**	0	0	0	0	**0**	0	0	1	0	**1**	39
% Articulated Trucks	0%	8.1%	0%	0%	**8.0%**	0%	11.2%	0%	0%	**11.1%**	0%	0%	0%	0%	**-**	0%	0%	3.8%	0%	**1.1%**	8.0%
Buses and Single-Unit Trucks	0	7	0	0	**7**	0	3	0	0	**3**	0	0	0	0	**0**	1	0	3	0	**4**	14
% Buses and Single-Unit Trucks	0%	3.8%	0%	0%	**3.7%**	0%	1.5%	0%	0%	**1.4%**	0%	0%	0%	0%	**-**	1.5%	0%	11.5%	0%	**4.3%**	2.9%

*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US+95A+and+Sierra+Way TMC - TMC
Tue Oct 21, 2025
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1348895, Location: 39.128385, -119.181012

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and SR 339 - TMC

Wed May 14, 2025
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1301159, Location: 38.993972, -119.181888

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Leg	SR 339					US 95A					McGowon Ln					US 95A					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2025-05-14 12:00AM	0	0	0	0	**0**	3	6	0	0	**9**	0	0	0	0	**0**	1	0	3	0	**4**	**13**
12:15AM	0	1	0	0	**1**	2	3	0	0	**5**	0	0	0	0	**0**	0	0	5	0	**5**	**11**
12:30AM	0	1	0	0	**1**	1	0	0	0	**1**	0	0	0	0	**0**	0	0	2	0	**2**	**4**
12:45AM	0	2	1	0	**3**	2	3	0	0	**5**	0	0	0	0	**0**	1	0	2	0	**3**	**11**
Hourly Total	0	4	1	0	**5**	8	12	0	0	**20**	0	0	0	0	**0**	2	0	12	0	**14**	**39**
1:00AM	0	2	1	0	**3**	0	0	0	0	**0**	0	0	0	0	**0**	1	1	3	0	**5**	**8**
1:15AM	0	5	0	0	**5**	3	2	0	0	**5**	0	0	0	0	**0**	1	0	2	0	**3**	**13**
1:30AM	0	3	0	0	**3**	2	1	0	0	**3**	0	0	0	0	**0**	0	0	1	0	**1**	**7**
1:45AM	0	6	1	0	**7**	3	7	0	0	**10**	0	0	0	0	**0**	0	0	3	0	**3**	**20**
Hourly Total	0	16	2	0	**18**	8	10	0	0	**18**	0	0	0	0	**0**	2	1	9	0	**12**	**48**
2:00AM	0	1	1	0	**2**	2	6	0	0	**8**	0	0	0	0	**0**	0	0	4	0	**4**	**14**
2:15AM	0	3	0	0	**3**	3	4	0	0	**7**	0	0	0	0	**0**	0	0	1	0	**1**	**11**
2:30AM	0	5	0	0	**5**	0	2	0	0	**2**	0	0	0	0	**0**	0	0	3	0	**3**	**10**
2:45AM	0	1	0	0	**1**	3	4	0	0	**7**	0	0	0	0	**0**	0	0	3	0	**3**	**11**
Hourly Total	0	10	1	0	**11**	8	16	0	0	**24**	0	0	0	0	**0**	0	0	11	0	**11**	**46**
3:00AM	0	7	2	0	**9**	1	1	0	0	**2**	0	0	0	0	**0**	1	0	4	0	**5**	**16**
3:15AM	0	6	2	0	**8**	3	2	0	0	**5**	0	0	0	0	**0**	0	0	3	0	**3**	**16**
3:30AM	0	8	0	0	**8**	2	6	0	0	**8**	0	0	0	0	**0**	1	0	3	0	**4**	**20**
3:45AM	0	9	2	0	**11**	5	2	0	0	**7**	0	0	0	0	**0**	0	0	3	0	**3**	**21**
Hourly Total	0	30	6	0	**36**	11	11	0	0	**22**	0	0	0	0	**0**	2	0	13	0	**15**	**73**
4:00AM	0	3	4	0	**7**	3	4	0	0	**7**	0	0	0	0	**0**	0	0	5	0	**5**	**19**
4:15AM	0	10	3	0	**13**	5	4	0	0	**9**	0	0	0	0	**0**	0	0	13	0	**13**	**35**
4:30AM	0	16	2	0	**18**	4	4	0	0	**8**	0	0	0	0	**0**	0	0	11	0	**11**	**37**
4:45AM	0	18	4	0	**22**	8	5	0	0	**13**	0	0	0	0	**0**	2	0	13	0	**15**	**50**
Hourly Total	0	47	13	0	**60**	20	17	0	0	**37**	0	0	0	0	**0**	2	0	42	0	**44**	**141**
5:00AM	0	33	4	0	**37**	10	12	0	0	**22**	0	0	0	0	**0**	3	0	11	0	**14**	**73**
5:15AM	0	14	10	0	**24**	12	8	0	0	**20**	0	0	0	0	**0**	6	0	14	0	**20**	**64**
5:30AM	0	43	5	0	**48**	13	10	0	0	**23**	0	0	0	0	**0**	4	0	29	0	**33**	**104**
5:45AM	0	33	4	0	**37**	17	14	0	0	**31**	0	0	0	0	**0**	2	0	25	0	**27**	**95**
Hourly Total	0	123	23	0	**146**	52	44	0	0	**96**	0	0	0	0	**0**	15	0	79	0	**94**	**336**
6:00AM	0	29	7	0	**36**	2	11	0	0	**13**	0	0	0	0	**0**	6	0	28	0	**34**	**83**
6:15AM	0	18	6	0	**24**	5	13	0	0	**18**	0	0	0	0	**0**	6	0	27	0	**33**	**75**
6:30AM	0	34	3	0	**37**	26	20	0	0	**46**	0	0	1	0	**1**	6	0	17	0	**23**	**107**
6:45AM	0	33	10	0	**43**	26	27	0	0	**53**	0	0	0	0	**0**	11	0	26	0	**37**	**133**
Hourly Total	0	114	26	0	**140**	59	71	0	0	**130**	0	0	1	0	**1**	29	0	98	0	**127**	**398**
7:00AM	0	28	10	0	**38**	29	18	0	0	**47**	0	0	0	0	**0**	5	0	25	0	**30**	**115**
7:15AM	0	26	17	0	**43**	36	21	0	0	**57**	0	0	0	0	**0**	6	0	36	0	**42**	**142**
7:30AM	0	28	12	0	**40**	57	22	0	0	**79**	0	0	0	0	**0**	10	0	20	0	**30**	**149**
7:45AM	0	36	21	0	**57**	70	38	0	1	**109**	0	0	0	0	**0**	6	0	43	0	**49**	**215**
Hourly Total	0	118	60	0	**178**	192	99	0	1	**292**	0	0	0	0	**0**	27	0	124	0	**151**	**621**
8:00AM	0	30	5	0	**35**	35	26	0	0	**61**	0	0	0	0	**0**	5	0	35	0	**40**	**136**
8:15AM	0	36	15	0	**51**	46	21	0	0	**67**	0	1	0	0	**1**	10	0	33	0	**43**	**162**
8:30AM	0	33	16	0	**49**	37	26	0	0	**63**	0	0	0	0	**0**	7	1	18	0	**26**	**138**
8:45AM	0	27	12	0	**39**	49	21	0	0	**70**	0	0	0	0	**0**	10	0	25	0	**35**	**144**
Hourly Total	0	126	48	0	**174**	167	94	0	0	**261**	0	1	0	0	**1**	32	1	111	0	**144**	**580**
9:00AM	0	28	20	0	**48**	44	19	0	0	**63**	0	0	0	0	**0**	16	0	24	0	**40**	**151**
9:15AM	0	24	17	0	**41**	46	26	0	0	**72**	0	0	0	0	**0**	2	0	32	0	**34**	**147**
9:30AM	0	37	11	0	**48**	37	17	0	0	**54**	0	0	0	0	**0**	8	0	24	0	**32**	**134**
9:45AM	0	24	9	0	**33**	52	25	0	0	**77**	0	0	0	0	**0**	11	0	30	0	**41**	**151**
Hourly Total	0	113	57	0	**170**	179	87	0	0	**266**	0	0	0	0	**0**	37	0	110	0	**147**	**583**
10:00AM	0	25	10	0	**35**	43	24	0	0	**67**	0	0	0	0	**0**	11	0	29	0	**40**	**142**
10:15AM	1	29	16	0	**46**	47	26	0	0	**73**	0	0	0	0	**0**	5	0	46	0	**51**	**170**
10:30AM	0	27	10	0	**37**	37	33	0	0	**70**	0	0	0	0	**0**	7	0	35	0	**42**	**149**
10:45AM	0	29	19	0	**48**	50	27	0	0	**77**	0	0	0	0	**0**	15	0	38	0	**53**	**178**

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

Leg	SR 339					US 95A					McGowon Ln					US 95A					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
Hourly Total	1	110	55	0	**166**	177	110	0	0	**287**	0	0	0	0	**0**	38	0	148	0	**186**	**639**
11:00AM	0	37	16	0	**53**	38	28	0	0	**66**	0	0	0	0	**0**	14	0	33	0	**47**	**166**
11:15AM	0	18	10	0	**28**	58	27	1	0	**86**	0	0	0	0	**0**	10	0	44	0	**54**	**168**
11:30AM	0	29	9	0	**38**	67	27	1	0	**95**	1	0	0	0	**1**	12	0	25	0	**37**	**171**
11:45AM	0	32	23	0	**55**	63	27	0	0	**90**	0	0	0	0	**0**	10	0	41	0	**51**	**196**
Hourly Total	0	116	58	0	**174**	226	109	2	0	**337**	1	0	0	0	**1**	46	0	143	0	**189**	**701**
12:00PM	0	48	12	0	**60**	58	32	0	0	**90**	0	0	0	0	**0**	9	0	53	0	**62**	**212**
12:15PM	0	23	16	0	**39**	55	27	0	0	**82**	0	0	0	0	**0**	21	0	52	0	**73**	**194**
12:30PM	0	24	19	0	**43**	44	21	0	0	**65**	0	0	0	0	**0**	15	0	67	0	**82**	**190**
12:45PM	0	37	6	0	**43**	44	27	0	0	**71**	0	0	0	0	**0**	10	1	38	0	**49**	**163**
Hourly Total	0	132	53	0	**185**	201	107	0	0	**308**	0	0	0	0	**0**	55	1	210	0	**266**	**759**
1:00PM	0	34	13	0	**47**	54	33	0	0	**87**	0	0	0	0	**0**	14	0	38	0	**52**	**186**
1:15PM	0	23	15	0	**38**	55	23	0	0	**78**	0	0	0	0	**0**	18	0	36	0	**54**	**170**
1:30PM	0	34	15	0	**49**	40	34	0	0	**74**	0	0	0	0	**0**	10	0	52	0	**62**	**185**
1:45PM	0	30	15	0	**45**	56	27	0	0	**83**	0	0	1	0	**1**	10	0	50	0	**60**	**189**
Hourly Total	0	121	58	0	**179**	205	117	0	0	**322**	0	0	1	0	**1**	52	0	176	0	**228**	**730**
2:00PM	0	20	17	0	**37**	64	25	0	0	**89**	0	0	0	0	**0**	10	0	44	0	**54**	**180**
2:15PM	0	18	24	0	**42**	55	26	0	0	**81**	0	0	0	0	**0**	19	0	53	0	**72**	**195**
2:30PM	0	34	12	0	**46**	53	22	0	0	**75**	0	0	0	0	**0**	18	0	62	0	**80**	**201**
2:45PM	0	23	15	0	**38**	38	27	0	0	**65**	0	0	0	0	**0**	20	0	76	0	**96**	**199**
Hourly Total	0	95	68	0	**163**	210	100	0	0	**310**	0	0	0	0	**0**	67	0	235	0	**302**	**775**
3:00PM	0	24	12	0	**36**	37	35	0	0	**72**	0	0	0	0	**0**	26	0	52	0	**78**	**186**
3:15PM	0	34	16	0	**50**	46	44	0	0	**90**	0	0	0	0	**0**	9	0	40	0	**49**	**189**
3:30PM	1	23	20	0	**44**	44	37	0	0	**81**	0	0	0	0	**0**	14	0	43	0	**57**	**182**
3:45PM	0	21	17	0	**38**	52	20	0	0	**72**	0	0	0	0	**0**	18	0	48	0	**66**	**176**
Hourly Total	1	102	65	0	**168**	179	136	0	0	**315**	0	0	0	0	**0**	67	0	183	0	**250**	**733**
4:00PM	0	21	14	0	**35**	46	34	0	0	**80**	0	0	0	0	**0**	18	0	62	0	**80**	**195**
4:15PM	0	26	9	0	**35**	52	37	0	0	**89**	0	0	0	0	**0**	6	0	49	0	**55**	**179**
4:30PM	0	30	16	0	**46**	48	43	0	0	**91**	1	0	0	0	**1**	16	0	42	0	**58**	**196**
4:45PM	0	31	18	0	**49**	49	31	0	0	**80**	0	0	0	0	**0**	15	1	33	0	**49**	**178**
Hourly Total	0	108	57	0	**165**	195	145	0	0	**340**	1	0	0	0	**1**	55	1	186	0	**242**	**748**
5:00PM	0	36	15	0	**51**	54	39	0	0	**93**	0	0	0	0	**0**	20	1	46	0	**67**	**211**
5:15PM	0	17	18	0	**35**	53	47	0	0	**100**	0	0	0	0	**0**	22	0	53	0	**75**	**210**
5:30PM	0	21	14	0	**35**	37	38	0	0	**75**	0	0	0	0	**0**	16	0	39	0	**55**	**165**
5:45PM	0	19	14	0	**33**	47	25	0	0	**72**	0	0	0	0	**0**	18	0	36	0	**54**	**159**
Hourly Total	0	93	61	0	**154**	191	149	0	0	**340**	0	0	0	0	**0**	76	1	174	0	**251**	**745**
6:00PM	0	13	10	0	**23**	39	29	0	0	**68**	0	0	0	0	**0**	16	0	31	0	**47**	**138**
6:15PM	0	18	7	0	**25**	47	46	0	0	**93**	0	0	0	0	**0**	17	0	29	0	**46**	**164**
6:30PM	0	12	9	0	**21**	36	17	0	0	**53**	0	0	0	0	**0**	13	0	23	0	**36**	**110**
6:45PM	0	23	16	0	**39**	36	18	0	0	**54**	0	0	0	0	**0**	8	0	27	0	**35**	**128**
Hourly Total	0	66	42	0	**108**	158	110	0	0	**268**	0	0	0	0	**0**	54	0	110	0	**164**	**540**
7:00PM	0	12	7	0	**19**	21	11	0	0	**32**	0	0	0	0	**0**	12	0	36	0	**48**	**99**
7:15PM	0	10	8	0	**18**	26	12	0	0	**38**	0	0	0	0	**0**	3	0	27	0	**30**	**86**
7:30PM	0	13	8	0	**21**	23	11	0	0	**34**	0	0	0	0	**0**	11	1	28	0	**40**	**95**
7:45PM	0	8	6	0	**14**	13	15	0	0	**28**	0	0	0	0	**0**	9	0	21	0	**30**	**72**
Hourly Total	0	43	29	0	**72**	83	49	0	0	**132**	0	0	0	0	**0**	35	1	112	0	**148**	**352**
8:00PM	0	16	8	0	**24**	14	14	0	0	**28**	0	0	0	0	**0**	9	0	20	0	**29**	**81**
8:15PM	0	1	4	0	**5**	12	12	0	0	**24**	0	0	0	0	**0**	7	0	16	0	**23**	**52**
8:30PM	0	9	4	0	**13**	15	17	0	0	**32**	0	0	0	0	**0**	6	0	18	0	**24**	**69**
8:45PM	0	8	8	0	**16**	18	12	0	0	**30**	0	0	0	0	**0**	6	0	11	0	**17**	**63**
Hourly Total	0	34	24	0	**58**	59	55	0	0	**114**	0	0	0	0	**0**	28	0	65	0	**93**	**265**
9:00PM	0	4	5	0	**9**	13	10	0	0	**23**	0	0	0	0	**0**	3	0	27	0	**30**	**62**
9:15PM	0	4	3	0	**7**	18	7	0	0	**25**	0	0	0	0	**0**	7	0	28	0	**35**	**67**
9:30PM	0	8	4	0	**12**	15	7	0	0	**22**	0	0	0	0	**0**	1	0	15	0	**16**	**50**
9:45PM	0	3	7	0	**10**	9	6	0	0	**15**	0	1	0	0	**1**	3	0	13	0	**16**	**42**
Hourly Total	0	19	19	0	**38**	55	30	0	0	**85**	0	1	0	0	**1**	14	0	83	0	**97**	**221**
10:00PM	0	7	2	0	**9**	8	7	0	0	**15**	0	0	0	0	**0**	3	0	7	0	**10**	**34**
10:15PM	0	7	2	0	**9**	6	5	0	0	**11**	0	0	0	0	**0**	1	0	7	0	**8**	**28**
10:30PM	0	2	4	0	**6**	6	5	0	0	**11**	0	0	0	0	**0**	4	0	9	0	**13**	**30**
10:45PM	0	1	1	0	**2**	5	2	0	0	**7**	0	0	0	0	**0**	0	0	12	0	**12**	**21**

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

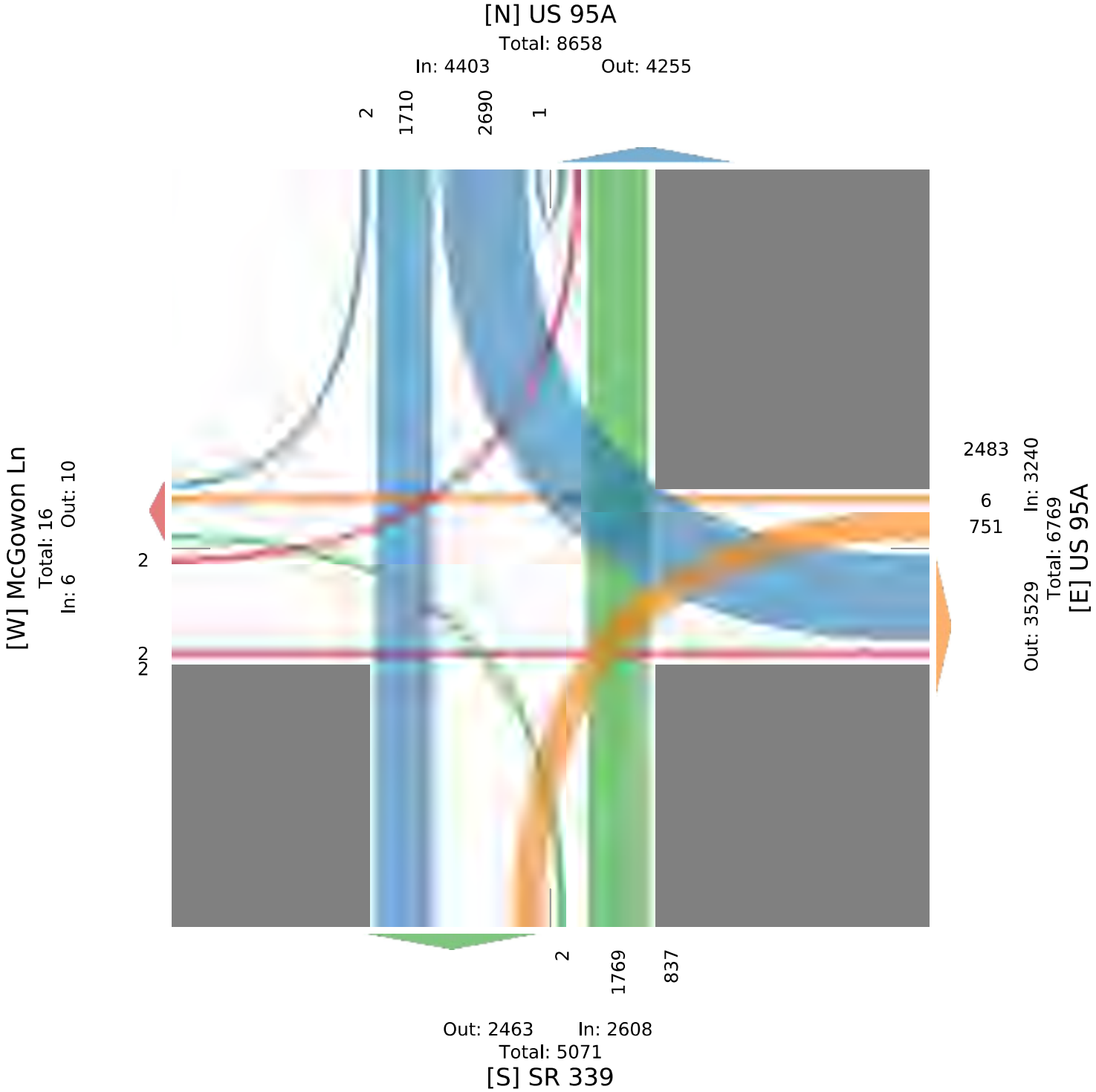
Leg	SR 339					US 95A					McGowon Ln					US 95A					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	0	17	9	0	**26**	25	19	0	0	**44**	0	0	0	0	**0**	8	0	35	0	**43**	**113**
11:00PM	0	3	2	0	**5**	5	5	0	0	**10**	0	0	0	0	**0**	4	0	4	0	**8**	**23**
11:15PM	0	6	0	0	**6**	8	3	0	0	**11**	0	0	0	0	**0**	2	0	8	0	**10**	**27**
11:30PM	0	2	0	0	**2**	4	4	0	0	**8**	0	0	0	0	**0**	0	0	1	0	**1**	**11**
11:45PM	0	1	0	0	**1**	5	1	0	0	**6**	0	0	0	0	**0**	2	0	1	0	**3**	**10**
Hourly Total	0	12	2	0	**14**	22	13	0	0	**35**	0	0	0	0	**0**	8	0	14	0	**22**	**71**
Total	2	1769	837	0	**2608**	2690	1710	2	1	**4403**	2	2	2	0	**6**	751	6	2483	0	**3240**	**10257**
% Approach	0.1%	67.8%	32.1%	0%	**-**	61.1%	38.8%	0%	0%	**-**	33.3%	33.3%	33.3%	0%	**-**	23.2%	0.2%	76.6%	0%	**-**	**-**
% Total	0%	17.2%	8.2%	0%	**25.4%**	26.2%	16.7%	0%	0%	**42.9%**	0%	0%	0%	0%	**0.1%**	7.3%	0.1%	24.2%	0%	**31.6%**	**-**
Lights	1	1472	772	0	**2245**	2391	1456	2	1	**3850**	2	2	2	0	**6**	704	6	2186	0	**2896**	8997
% Lights	50.0%	83.2%	92.2%	0%	**86.1%**	88.9%	85.1%	100%	100%	**87.4%**	100%	100%	100%	0%	**100%**	93.7%	100%	88.0%	0%	**89.4%**	87.7%
Articulated Trucks	0	153	15	0	**168**	178	118	0	0	**296**	0	0	0	0	**0**	16	0	195	0	**211**	675
% Articulated Trucks	0%	8.6%	1.8%	0%	**6.4%**	6.6%	6.9%	0%	0%	**6.7%**	0%	0%	0%	0%	**0%**	2.1%	0%	7.9%	0%	**6.5%**	6.6%
Buses and Single-Unit Trucks	1	144	50	0	**195**	121	136	0	0	**257**	0	0	0	0	**0**	31	0	102	0	**133**	585
% Buses and Single-Unit Trucks	50.0%	8.1%	6.0%	0%	**7.5%**	4.5%	8.0%	0%	0%	**5.8%**	0%	0%	0%	0%	**0%**	4.1%	0%	4.1%	0%	**4.1%**	5.7%

*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and SR 339 - TMC
Wed May 14, 2025
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1301159, Location: 38.993972, -119.181888

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and SR 339 - TMC

Wed May 14, 2025
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1301159, Location: 38.993972, -119.181888

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

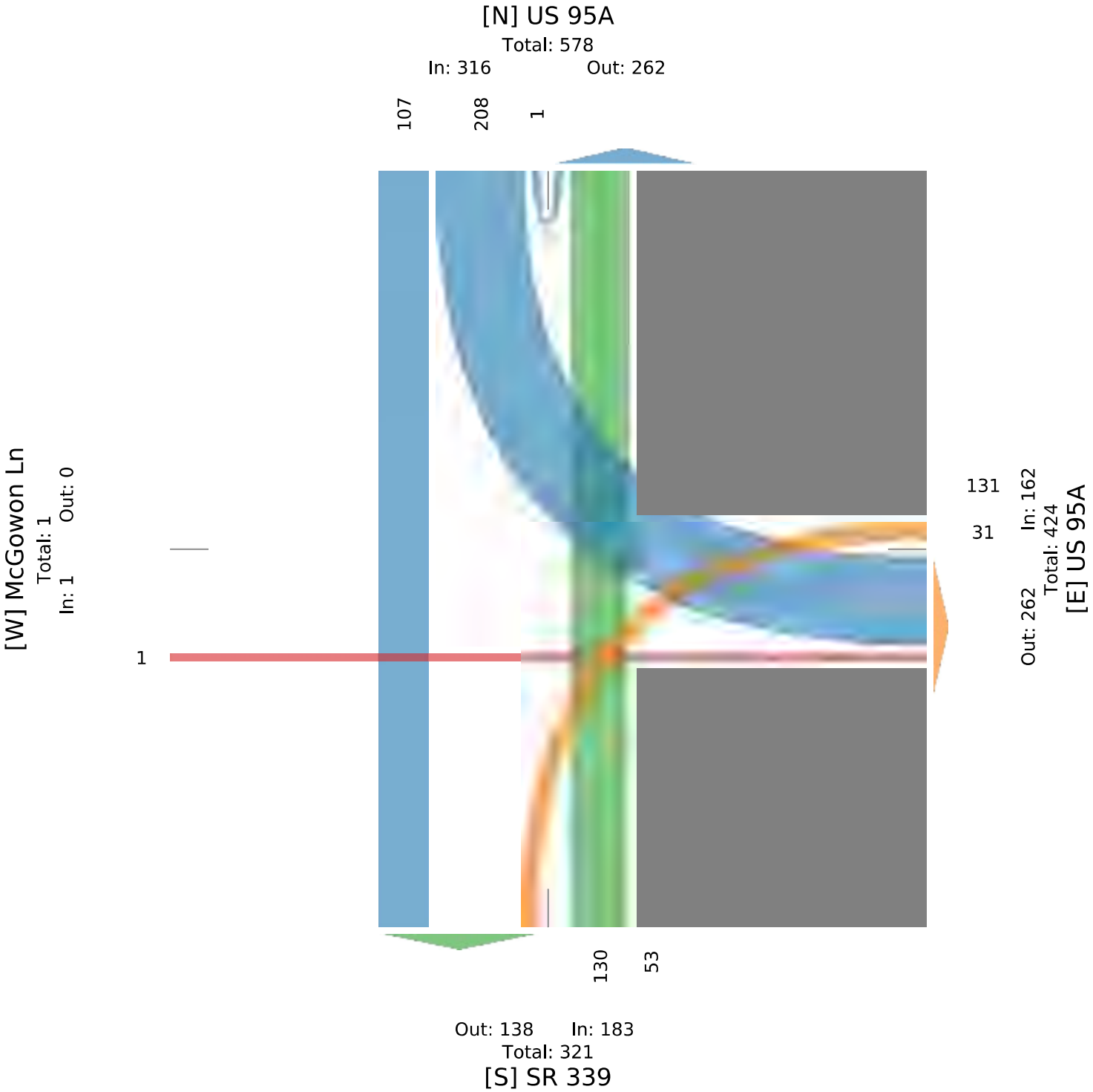
Leg	SR 339					US 95A					McGowon Ln					US 95A					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-05-14 7:30AM	0	28	12	0	**40**	57	22	0	0	**79**	0	0	0	0	**0**	10	0	20	0	**30**	**149**
7:45AM	0	36	21	0	**57**	70	38	0	1	**109**	0	0	0	0	**0**	6	0	43	0	**49**	**215**
8:00AM	0	30	5	0	**35**	35	26	0	0	**61**	0	0	0	0	**0**	5	0	35	0	**40**	**136**
8:15AM	0	36	15	0	**51**	46	21	0	0	**67**	0	1	0	0	**1**	10	0	33	0	**43**	**162**
Total	0	130	53	0	**183**	208	107	0	1	**316**	0	1	0	0	**1**	31	0	131	0	**162**	**662**
% Approach	0%	71.0%	29.0%	0%	**-**	65.8%	33.9%	0%	0.3%	**-**	0%	100%	0%	0%	**-**	19.1%	0%	80.9%	0%	**-**	**-**
% Total	0%	19.6%	8.0%	0%	**27.6%**	31.4%	16.2%	0%	0.2%	**47.7%**	0%	0.2%	0%	0%	**0.2%**	4.7%	0%	19.8%	0%	**24.5%**	**-**
PHF	**-**	0.903	0.631	**-**	**0.803**	0.743	0.704	**-**	0.250	**0.725**	**-**	0.250	-	-	**0.250**	0.775	**-**	0.762	**-**	**0.827**	0.770
Lights	0	107	48	0	**155**	197	96	0	1	**294**	0	1	0	0	**1**	30	0	116	0	**146**	596
% Lights	0%	82.3%	90.6%	0%	**84.7%**	94.7%	89.7%	0%	100%	**93.0%**	0%	100%	0%	0%	**100%**	96.8%	0%	88.5%	0%	**90.1%**	90.0%
Articulated Trucks	0	11	0	0	**11**	5	4	0	0	**9**	0	0	0	0	**0**	1	0	8	0	**9**	29
% Articulated Trucks	0%	8.5%	0%	0%	**6.0%**	2.4%	3.7%	0%	0%	**2.8%**	0%	0%	0%	0%	**0%**	3.2%	0%	6.1%	0%	**5.6%**	4.4%
Buses and Single-Unit Trucks	0	12	5	0	**17**	6	7	0	0	**13**	0	0	0	0	**0**	0	0	7	0	**7**	37
% Buses and Single-Unit Trucks	0%	9.2%	9.4%	0%	**9.3%**	2.9%	6.5%	0%	0%	**4.1%**	0%	0%	0%	0%	**0%**	0%	0%	5.3%	0%	**4.3%**	5.6%

*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and SR 339 - TMC
Wed May 14, 2025
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1301159, Location: 38.993972, -119.181888

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and SR 339 - TMC

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Wed May 14, 2025
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1301159, Location: 38.993972, -119.181888

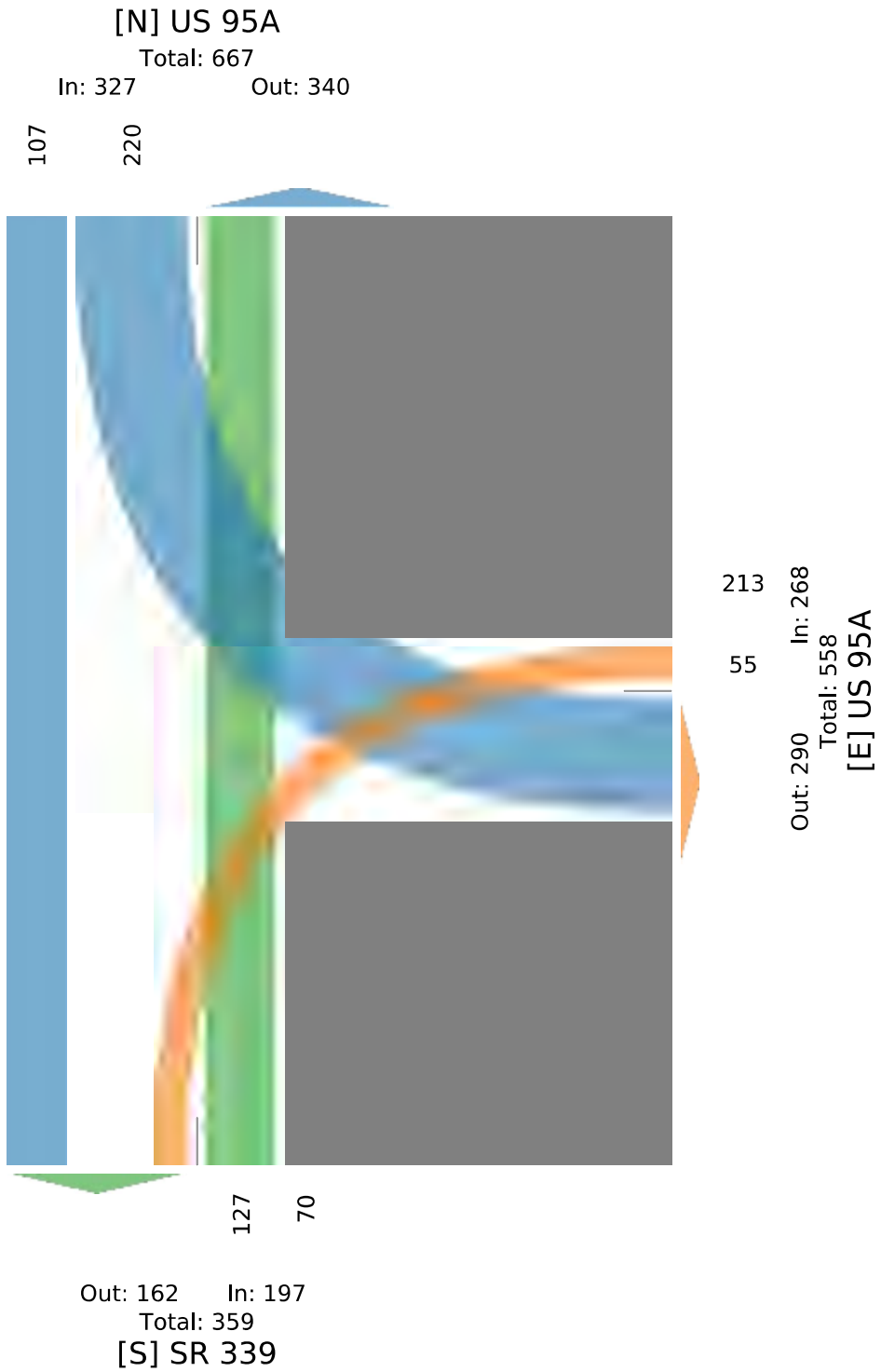
Leg	SR 339					US 95A					McGowon Ln					US 95A					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-05-14 11:45AM	0	32	23	0	**55**	63	27	0	0	**90**	0	0	0	0	**0**	10	0	41	0	**51**	**196**
12:00PM	0	48	12	0	**60**	58	32	0	0	**90**	0	0	0	0	**0**	9	0	53	0	**62**	**212**
12:15PM	0	23	16	0	**39**	55	27	0	0	**82**	0	0	0	0	**0**	21	0	52	0	**73**	**194**
12:30PM	0	24	19	0	**43**	44	21	0	0	**65**	0	0	0	0	**0**	15	0	67	0	**82**	**190**
Total	0	127	70	0	**197**	220	107	0	0	**327**	0	0	0	0	**0**	55	0	213	0	**268**	**792**
% Approach	0%	64.5%	35.5%	0%	**-**	67.3%	32.7%	0%	0%	**-**	0%	0%	0%	0%	**-**	20.5%	0%	79.5%	0%	**-**	**-**
% Total	0%	16.0%	8.8%	0%	**24.9%**	27.8%	13.5%	0%	0%	**41.3%**	0%	0%	0%	0%	**0%**	6.9%	0%	26.9%	0%	**33.8%**	**-**
PHF	**-**	0.661	0.761	**-**	**0.821**	0.873	0.836	-	-	**0.908**	-	-	-	-	**-**	0.655	**-**	0.795	**-**	**0.817**	0.934
Lights	0	109	67	0	**176**	202	97	0	0	**299**	0	0	0	0	**0**	49	0	187	0	**236**	711
% Lights	0%	85.8%	95.7%	0%	**89.3%**	91.8%	90.7%	0%	0%	**91.4%**	0%	0%	0%	0%	**-**	89.1%	0%	87.8%	0%	**88.1%**	89.8%
Articulated Trucks	0	7	1	0	**8**	15	8	0	0	**23**	0	0	0	0	**0**	1	0	16	0	**17**	48
% Articulated Trucks	0%	5.5%	1.4%	0%	**4.1%**	6.8%	7.5%	0%	0%	**7.0%**	0%	0%	0%	0%	**-**	1.8%	0%	7.5%	0%	**6.3%**	6.1%
Buses and Single-Unit Trucks	0	11	2	0	**13**	3	2	0	0	**5**	0	0	0	0	**0**	5	0	10	0	**15**	33
% Buses and Single-Unit Trucks	0%	8.7%	2.9%	0%	**6.6%**	1.4%	1.9%	0%	0%	**1.5%**	0%	0%	0%	0%	**-**	9.1%	0%	4.7%	0%	**5.6%**	4.2%

*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and SR 339 - TMC
Wed May 14, 2025
Midday Peak (11:45 AM - 12:45 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1301159, Location: 38.993972, -119.181888

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US



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US 95A and SR 339 - TMC

Provided by: Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100, Saint Paul, MN, 55114, US

Wed May 14, 2025
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1301159, Location: 38.993972, -119.181888

Leg	SR 339					US 95A					McGowon Ln					US 95A					
Direction	Northbound					Southbound					Eastbound					Westbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2025-05-14 4:30PM	0	30	16	0	**46**	48	43	0	0	**91**	1	0	0	0	**1**	16	0	42	0	**58**	**196**
4:45PM	0	31	18	0	**49**	49	31	0	0	**80**	0	0	0	0	**0**	15	1	33	0	**49**	**178**
5:00PM	0	36	15	0	**51**	54	39	0	0	**93**	0	0	0	0	**0**	20	1	46	0	**67**	**211**
5:15PM	0	17	18	0	**35**	53	47	0	0	**100**	0	0	0	0	**0**	22	0	53	0	**75**	**210**
Total	0	114	67	0	**181**	204	160	0	0	**364**	1	0	0	0	**1**	73	2	174	0	**249**	**795**
% Approach	0%	63.0%	37.0%	0%	**-**	56.0%	44.0%	0%	0%	**-**	100%	0%	0%	0%	**-**	29.3%	0.8%	69.9%	0%	**-**	**-**
% Total	0%	14.3%	8.4%	0%	**22.8%**	25.7%	20.1%	0%	0%	**45.8%**	0.1%	0%	0%	0%	**0.1%**	9.2%	0.3%	21.9%	0%	**31.3%**	**-**
PHF	**-**	0.792	0.931	**-**	**0.887**	0.944	0.851	-	-	**0.910**	0.250	-	-	-	**0.250**	0.830	0.500	0.821	**-**	**0.830**	0.942
Lights	0	102	66	0	**168**	194	146	0	0	**340**	1	0	0	0	**1**	69	2	164	0	**235**	744
% Lights	0%	89.5%	98.5%	0%	**92.8%**	95.1%	91.3%	0%	0%	**93.4%**	100%	0%	0%	0%	**100%**	94.5%	100%	94.3%	0%	**94.4%**	93.6%
Articulated Trucks	0	6	0	0	**6**	9	4	0	0	**13**	0	0	0	0	**0**	1	0	7	0	**8**	27
% Articulated Trucks	0%	5.3%	0%	0%	**3.3%**	4.4%	2.5%	0%	0%	**3.6%**	0%	0%	0%	0%	**0%**	1.4%	0%	4.0%	0%	**3.2%**	3.4%
Buses and Single-Unit Trucks	0	6	1	0	**7**	1	10	0	0	**11**	0	0	0	0	**0**	3	0	3	0	**6**	24
% Buses and Single-Unit Trucks	0%	5.3%	1.5%	0%	**3.9%**	0.5%	6.3%	0%	0%	**3.0%**	0%	0%	0%	0%	**0%**	4.1%	0%	1.7%	0%	**2.4%**	3.0%

*L: Left, R: Right, T: Thru, U: U-Turn

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

US 95A and SR 339 - TMC
Wed May 14, 2025
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1301159, Location: 38.993972, -119.181888

Provided by: Kimley-Horn and Associates, Inc.
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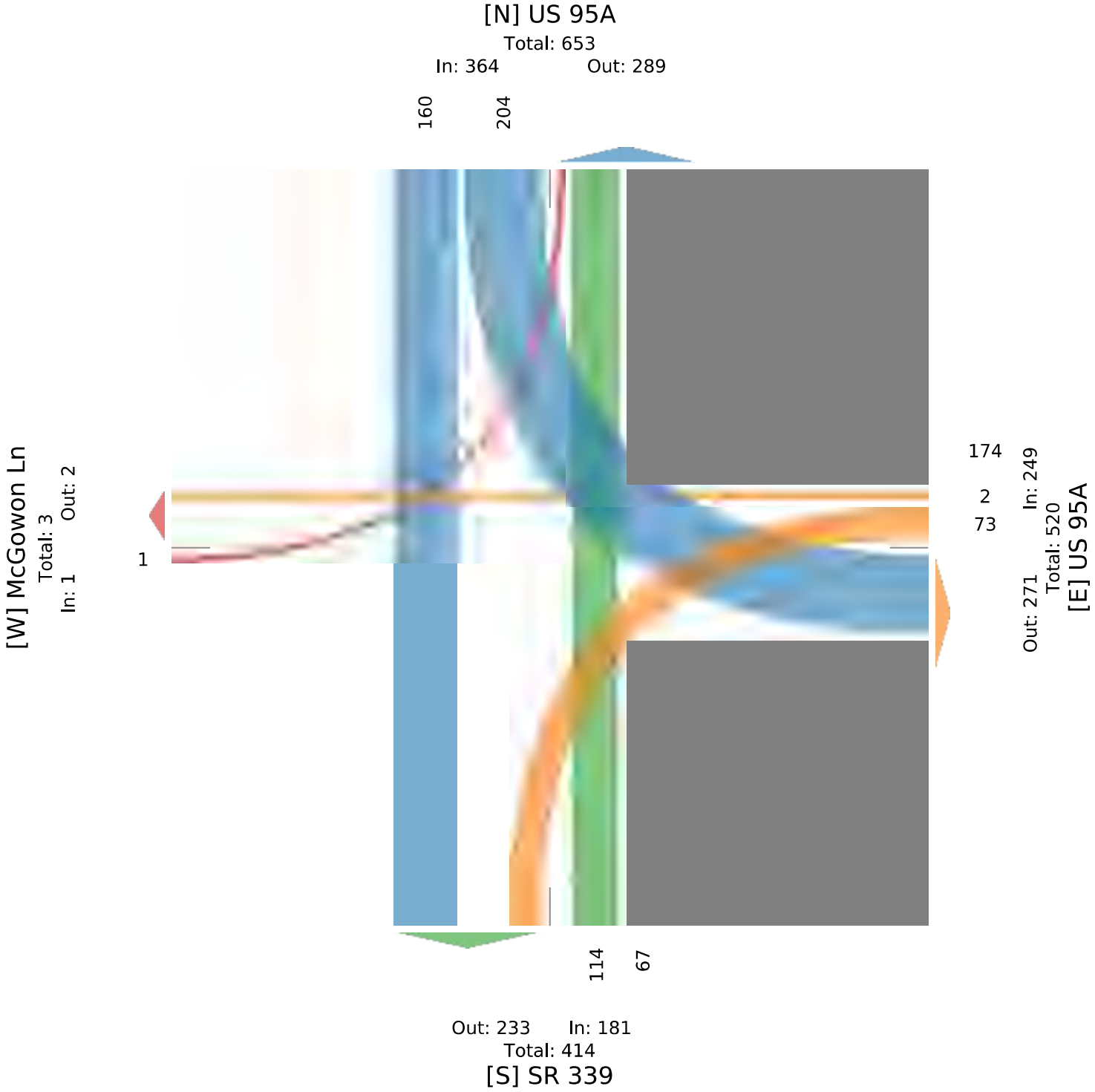

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Appendix C

Supporting Documentation for Trip Generation of 1.4:1 (workers : vehicle trips)

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

EDF power solutions North America
15445 Innovation Drive
San Diego, CA 92128
www.edf-re.com

TO WHOM IT MAY CONCERN

Re: Ridesharing/Carpooling Program Data for the Milagro Solar and Storage Project.

This letter provides data on the ridesharing and carpooling utilization observed among employees during the construction of the Milagro Project located in Doña Ana County, NM, I currently hold the position of Associate Director of Construction for EDF power solutions, and I was the project director in charge of the implementation of the project, over my 7 years of career I have overseen approximately 7 projects for a total of 1,000 MW deployed.

The project involved the construction of a 150 MW solar power facility and 75 MW of battery storage, the workforce reached a maximum of 231 employees during the panel installation phase, sustained over 5 months. The preceding site preparation required approximately 36% of the peak count. Following the peak, the workforce was tapered down to about 25% of the peak count over the final months of construction.

Although overall arrival numbers were influenced by the subcontractor schedules, the majority of employees arrived at the site within the same one-hour timeframe.

We observed high utilization of carpooling, which is a typical pattern for remote construction sites of this nature. The key factors influencing this behavior were:

- The nearest major town capable of housing the entire workforce, El Paso TX, was approximately 30 minutes from the project site.
- Most of the laborers don't have a company car, hence they usually coordinate to economize the usage of vehicles and gas.

Based on the patterns observed during construction we can determine that the employees utilized a rideshare/carpooling ratio of 1.5:1 to 1.7:1 (Employees: Vehicles).

I trust this information is useful.
Please let me know if you have any follow-up questions.

Erit Duarte

Sincerely,
Erit Duarte
Associate Director of Construction- EPC
EDF power solutions.

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EDF power solutions North America
15445 Innovation Drive
San Diego, CA 92128
www.edf-re.com

TO WHOM IT MAY CONCERN

Subject: Data on Ridesharing and Carpooling for the Winston Solar Project

This letter serves to convey insights regarding the usage of ridesharing and carpooling among employees during the construction of the Arrow Canyon Solar Project situated in Clark County, NV. In my role as the Associate Director of Construction at EDF Power Solutions and as the project director responsible for execution, I have led approximately 20+ projects over my 10+ years of experience, contributing to a total generation capacity of 3+ GW.

The project involved the construction of a 200 MW solar power plant accompanied by 300 MWh of battery storage. During the peak panel installation period, the project employed up to 350 individuals, a number that was sustained for 4 months. The initial site preparation engaged about 25% of that peak workforce count. As construction activities drew to a close, the workforce size was reduced to around 15% of its maximum.

Although subcontractor schedules influenced the general patterns of arrival, it was observed that most employees tended to gather at the project site within a similar one-hour timeframe.

Data revealed a notable trend in carpooling, typical for remote construction environments, largely due to the distance from Las Vegas, NV about 35 minutes from the site, as well as the fact that many workers do not have access to company vehicles, which leads them to arrange rides collaboratively to conserve both vehicles and fuel.

Based on the observations from the construction phase, we estimate that the rideshare/carpooling ratio for employees fell between 1.7:1 and 1.9:1 (Employees: Vehicles).

I hope this information proves to be valuable. If you have any additional questions or require further clarification, do not hesitate to reach out.

Sincerely,

Ryan Tran

Associate Director of EPC
EDF power solutions North America

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EDF power solutions North America
15445 Innovation Drive
San Diego, CA 92128
www.edf-re.com

As the Vice-President of Construction at EDF Power Solutions, I oversee all current projects nationwide. With approximately 15 years of experience in the industry, including my recent role on multiple high-profile projects, I have managed about 30+ projects that have collectively achieved 10+ GW in deployment. This correspondence aims to share insights into the ridesharing and carpooling practices observed among employees during the construction of various solar and storage projects throughout the country.

The typical phases of construction encompass site preparation, foundation piles, DC/AC collections, racking and modules installation, followed by commissioning and testing, with peak workforce levels generally occurring during the module installation phase. Both the site preparation and commissioning phases typically engage around 15-25% of the maximum workforce.

While multiple factors, including subcontractor schedules, can influence overall arrival patterns, it is common for most of our workforce to arrive at the site within a concentrated hour window. The choice to carpool is often driven by several additional motivations, such as significant cost savings on fuel and shared expenses, carpooling becomes a practical solution for employees to reduce their spending and reduce their individual driving time.

Historically, we have seen a significant trend towards carpooling, particularly for projects located in remote areas. This behavior is largely influenced by two key factors: the absence of housing options in remote locations—often resulting in travel times of between 30 minutes to one hour—and the reality that many laborers do not have access to company vehicles or company paid transportation, which leads them to coordinate rideshare efforts to optimize costs related to fuel and personal vehicle usage.

Based on my experiences supervising various projects, I have observed that the ridesharing and carpooling ratios among employees typically range from 1.5:1 to 2:1 (Employees : Vehicles).

I trust you will find this information helpful. Please feel free to reach out if you have any questions or need further clarification.

Sincerely,

John Bastarous

John Bastarous

Digitally signed by John Bastarous
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Vice President of Pre-Construction and Construction
EDF power solutions North America

Docusign Envelope ID: 2B5885CB-C43F-46E0-9FE7-7C567421B0E0

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
310 Galletti Way
Sparks, Nevada 89431

Joe Lombardo
Governor

Tracy Larkin-Thomason, P.E., *Director*

January 26, 2026

CA Group, Inc.
2785 S. Rainbow Blvd.
Las Vegas, NV 89146
Attention: Sriram Bala, P.E.

SENT VIA ELECTRONIC MAIL

RE: Winston Energy Project – Traffic Impact Study (1/23/26)

Mr. Bala,

The Nevada Department of Transportation (NDOT) has reviewed the traffic analysis prepared by CA Group, Inc., dated January 23rd, 2026, for the above-referenced project. Based on the above information, this traffic study is accepted for the project, and it can proceed with the NDOT occupancy permit process. Please be aware of the following comments as the project progresses through the permit process.

1. NDOT acceptance of a traffic study is typically valid for one year following the date on the acceptance letter, provided the nature of the development does not significantly change. Permit applications made after one (1) year may require an amendment or a new traffic study. Permit applications made after five (5) years will require a new traffic impact study.

2. The following improvements will be required to mitigate the traffic impacts from the Winston Energy Project based on the traffic impact study:

   a) US 95A and Sierra Way intersection
      1. Install a northbound right-turn deceleration lane per NDOT's Access Management System and Standards (AMSS).
      2. Install a southbound left-turn deceleration lane per NDOT's AMSS. Include a minimum of 100' of storage.
      3. Install a right-turn pocket for the westbound Sierra Way approach.

   b) Provide WB-67 design vehicle turning templates.

   c) Install signing and striping per NDOT and MUTCD standards.

3. The following additional improvements will need to be installed to mitigate the cumulative impact of the multiple developments planned on US 95A in the project vicinity:

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a) US 95A and Sierra Way intersection
   1. Install a northbound left-turn deceleration lane per NDOT's AMSS. Include a minimum of 100' of storage.
   2. Install a southbound right-turn deceleration lane per NDOT's AMSS.
   3. Install a right-turn pocket for the eastbound Sierra Way approach.
   4. Install a northbound acceleration lane for the westbound to northbound right-turn movement per NDOT AMSS.
   5. Install a temporary signal.

b) US 50 and Ramsey Weeks Cutoff intersection
   1. Install a right-turn pocket for the northbound Ramsey Weeks Cutoff approach.
   2. Monitor traffic safety and operations for need of a temporary traffic signal. If delay is exacerbated beyond the LOS E identified in the study or queues become excessive, resulting in unsafe driver behavior, a traffic signal will be required.

c) US 95A and Ramsey Weeks Cutoff intersection
   1. Install an eastbound right-turn pocket.
   2. Install an acceleration lane on US 95A for the eastbound Ramsey Weeks Cutoff to southbound US 95A movement.
   3. Improve the northbound US 95A left turn pocket to NDOT's AMSS requirement with a 100' minimum of storage.

d) US 95A and SR 339 intersection
   1. Install a southbound left-turn lane with 50' minimum storage per NDOT AMSS.
   2. Install a temporary signal.

e) Provide WB-67 design vehicle turning templates.

f) Install signing and striping per NDOT and MUTCD standards.

4. Permit for Lyon County-maintained infrastructure, such as traffic signals, street lighting, County road approaches, etc., shall be on an encroachment permit application with the County as the main applicant.

5. Given the stakeholders involved (Lyon County, NDOT, and Developers) it is recommended to conduct a pre-permit meeting. The pre-permit meeting will help manage expectations for the NDOT permit process, minimize the need for multiple permits to address cumulative impacts, and establish the maintenance responsibility of facilities/encroachments to be permitted within NDOT right-of-way.

6. Given the multiple developments responsible for the mitigation of the cumulative impact, Lyon County may require the construction of transportation improvements it deems necessary to mitigate project-specific or cumulative impacts within NDOT right-of-way. Where such improvements are required and are not constructed by the County, Lyon County may participate in the review, approval, and administration of a reimbursement

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agreement among affected developers to allocate the cost of the required improvements on a pro rata basis. All required improvements shall be reviewed and permitted through NDOT and constructed in accordance with applicable NDOT standards and requirements.

7. All design features will be required to comply with NDOT Standards. Any deviation will require approval from the District Engineer. The Permit Office will provide details required for the deviation requests if needed during the permit application review.

8. This acceptance letter and the accepted traffic impact study will need to be included as part of the NDOT encroachment permit submittal. For additional information about the NDOT encroachment permitting process, please contact the NDOT District II Permits Office at (775) 834-8330 or D2Permits@dot.nv.gov.

NDOT may require additional changes and/or comments as the permit process progresses. If you have any questions, please feel free to contact Jeff Graham at (775) 834-8382.

We look forward to working with your design team and helping you to achieve the successful completion of your project.

Sincerely,

Signed by:
Kelly Gaworski
0B63A74DA2BE4A8...

Kelly Gaworski, PE
Engineering Services Manager
NDOT District II

KG:jg

Enclosures: Winston Energy Project – Traffic Impact Study (1/23/26)

Cc: Kevin Verre – NDOT Chief Planning
Bhupinder Sandhu – NDOT DII District Engineer
Andrew Lawerence – NDOT Assistant District Engineer
Chris Bell – NDOT Traffic Operations
Gavin Henderson – Lyon County
Louis Cariola – Lyon County
NDOT District II Traffic Engineering
NDOT District II Permits Office
File

Appendix A – PUD Justification

WINSTON ENERGY PROJECT JUSTIFICATION LETTER

PREPARED FOR:

Winston FC Solar, LLC
15445 Innovation Dr
San Diego, CA 92128
Contact: David Calderon
David.Calderon@edf-re.com

PREPARED BY:

ICF
3665 John F. Kennedy Parkway, Building 1, Suite 300
Fort Collins, CO 80525
Contact: Sarah Pritchard
sarah.pritchard@icf.com

October 2025

Introduction

The purpose of this Justification Letter is to provide rationale as to how the proposed Winston Energy Project complies with the standards and criteria established for Planned Unit Developments in Sections 15.349.01, 15.349.02 and Subsections 15.349.03 A - K of the Lyon County Land Use and Development Code. This document addresses the Planned Unit Development requirements applicable to the Winston Energy Project by code section and provides a direct response to each section or subsection, as applicable. Standards and criteria that are not applicable to this Project are indicated as such in each response. Supplemental details on the Winston Energy Project's purpose, facility components, development timeline, and operational characteristics are provided in the Project Narrative submitted as a part of this application package.

15.349.01 : Purpose

A. *Planned unit development (PUD) is a land use designation designed to provide an overall planning and design approach for a single use development or a development incorporating a mix of uses. PUD allows for deviation from a strict application of dimensional and use limitations of the zoning district or districts in order to provide flexibility for landowners to creatively plan for the overall development of their land to achieve a more desirable environment than would be possible through strict application of the standard requirements of the zoning district.*

While not to be considered as the explicit standards to be applied when evaluating a PUD, the general purpose or purposes for establishing a PUD may include one or more of the following:

1. *Permit the integration rather than separation of uses so that necessary commercial, recreation, and educational facilities are conveniently located to housing;*

   Applicant Response: Not applicable.

2. *Establish land use patterns that promote and expand opportunities for public transportation and for efficient, compact, networks of streets and utilities that lower development and maintenance costs and conserve energy;*

   Applicant Response: Not applicable.

3. *Help preserve valued environmental resource lands and avoid development of natural hazard areas;*

   Applicant Response: The Winston Energy site has been intentionally developed exclusively on private land, rather than incorporating development on adjacent BLM land. This approach supports Lyon County's desire to maintain public land for recreational and resource-oriented purposes. This siting decision also consistent with broader environmental goals by avoiding development on lands that may contain sensitive ecological resources or be subject to natural hazards. Public lands often encompass critical wildlife habitat, riparian corridors, and areas with unique geological or hydrological features that warrant protection. By focusing development on private land that has been evaluated for suitability and low environmental risk, the project minimizes potential impacts to valued resource lands and avoids areas prone to flooding, erosion, or other natural hazards.

4. *Help maintain and enhance surface and ground water quality and quantity, and to maintain air quality;*

   Applicant Response: The Winston Energy Project will have a very small water demand during Project operations and will not release any water-borne or liquid pollutants into surrounding surface and groundwater resource. This supports the goal to maintain and enhance water quality and quantity by minimizing pollutant discharge into natural hydrologic systems. Additionally, solar energy production emits no air pollutants or greenhouse gases during operation, directly contributing to improved air quality and climate change mitigation.

5. *Help improve and enhance the County's trail and park system and maintain access to public lands;*

   Applicant Response: Not applicable.

6. *Help protect and maintain critical wildlife habitat and migration corridors;*

   Applicant Response: Not applicable.

7. *Establish incentives for applicants to assure that long term affordable housing will be developed;*

   Applicant Response: Not applicable.

8. *Help provide for well-located, clean, safe, and pleasant industrial sites involving a minimum of strain on transportation facilities;*

   Applicant Response: The Winston Energy Project site is located in an established industrial area, adjacent to the Walker River Substation (f.k.a. Fort Churchill Substation) and existing railroad infrastructure. Solar facilities are good neighbors, producing very little noise, no emissions, and requiring minimal maintenance, which helps preserve the safety and character of surrounding areas. The facility's clean and quiet operation also contributes to a safe and pleasant industrial environment, free from emissions, noise, or hazardous materials typically associated with traditional industrial activities. The project will not impact local traffic or roadways during operation, and existing infrastructure is sufficient to accommodate temporary construction traffic without affecting residential access.

9. *Encourage innovations in residential, commercial and industrial development and renewal so that the growing demands of the population may be met by greater variety in type, design, and layout of buildings, and by the conservation and more efficient use of open space ancillary to the built environment;*

   Applicant Response: The Winston Energy Project will introduce an innovative and sustainable form of industrial development that complements the County's broader goals for land use diversity and resource conservation. By utilizing private land for renewable energy generation and storage, the Project avoids encroachment on public lands and preserves open space for recreational and resource-oriented uses. The facility's modular design and low-impact footprint demonstrate flexibility in layout and land use, allowing for efficient integration into the surrounding landscape without disrupting the existing community character.

10. *Minimize the burden of traffic on roads and highways;*

Applicant Response: The Winston Energy Project will support Lyon County's transportation goals by proposing a use that requires minimal operational traffic on local roadways. The nature of the Winston Energy project limits on-site vehicle visits to infrequent, scheduled maintenance and emergency response only. Other industrial uses that may be sited in the proposed Project area would likely require heavy truck and passenger vehicle traffic to maintain daily operations. Through the Project's planning and design process, the Applicant has been proactively addressing potential transportation impacts and has ensured the Project is compatible with surrounding transportation infrastructure. Additionally, throughout the engineering and construction phases of the Project, the Applicant will regularly engage with the Nevada Department of Transportation (NDOT), Lyon County Public Works, local emergency management services, and adjacent property owners to ensure that that the Project does not have undue impacts to regional traffic, local access, or existing road infrastructure.

11. *Help ensure that the purposes, goals, objectives and policies of applicable Lyon County Comprehensive Master Plans and maps are achieved. (Ord. 603, 11-1-2018)*

Applicant Response: The Lyon County Master Plan's Land Use Policy No. LU 3.2 provides that Lyon County "encourages industrial development to locate in designated locations show on the Land Use Plan, where public facilities exist or are planned to accommodate such development cost-effectively [and] to coordinate industrial land use designation to avoid conflicting land uses". The Winston Energy Project supports Lyon County's commitment to ensuring industrial uses are located consistent with the future Land Use Plan in the following ways:

- The Winston Energy Project is located within an established industrial zone identified in the Land Use Plan, ensuring compatibility with surrounding uses.
- The Winston Energy Project is located directly adjacent to the Walker River Substation (f.k.a. Fort Churchill Substation), reducing the infrastructural demand, resources impacts, and visual contrast associated with transmission infrastructure.
- The facility's clean and quiet operation avoids conflicts with nearby land uses and contributes to a safe, orderly industrial environment.

Lyon County Master Plan's Land Use Policy No. LU 5.1 provides that Lyon County "will encourage development that incorporates…sustainable design and that reduces energy and resource consumption by minimizing resource consumption, energy use, and water use, [and] using renewable energy sources." The Winston Energy Project supports Lyon County's commitment to sustainable design and resource-conscious development in the following ways:

- The development of a 400 MW solar energy facility 400-megawatt (MW) photovoltaic (PV) solar energy facility (facility) and Battery Energy Storage System (BESS) will provide sustainable renewable energy resources to NV Energy's transmission system, serving both Lyon County residents, and residents throughout the state.

- The development of renewable energy resources in the region will contribute to the long-term resilience of Nevada's energy infrastructure by diversifying the state's energy resources.
- The Winston Energy Project is located directly adjacent to the Walker River Substation (f.k.a. Fort Churchill Substation), reducing the infrastructural demand, resources impacts, and visual contrast associated with transmission infrastructure.
- Unlike fossil fuel development, solar PV facilities require minimal water for operation. Water conservation is especially critical in Lyon County, where water resources are scarce, and better utilized for agricultural purposes.
- The proposed solar arrays will be installed in a manner that allows for the preservation of native vegetation and maintenance of existing soil integrity.

The Lyon County Master Plan's Natural Resources Policy No. NR 3.1 provides that Lyon County "will protect the water supply and encourage efficient use of water resources." The Winston Energy Project supports this policy in the following ways:

- The Project will have low water demand during Project operations.
- The Project will not produce waterborne pollutants, protecting surface and groundwater resources, and supports water quality goals.

The Lyon County Master Plan's Natural Resources and Environmental Policy No. 4.1 provides that Lyon County will continue to maintain and work to improve air quality [and] encourage development of low pollution energy resources." The Winston Energy Project supports this policy through the following strategies:

- By generating electricity from sunlight, solar facilities produce no air pollutants or greenhouse gases during operation, offering a clean alternative to fossil fuels. Their success demonstrates the viability of renewable energy, attracting investment, supporting policy goals, and encouraging broader adoption of low-emission technologies across the energy sector.

The Lyon County Master Plan's Natural Resources and Environment Policy No. NR 5.1 further provides that "Lyon County will encourage the utilization of available renewable energy resources, such as solar radiation," and that the County will "[i]dentify sites with significant solar resources that may be suitable for future utility-scale development" while "consider[ing] measures to encourage alternative energy development on these sites." The Winston Energy Project supports Lyon County's commitment to identifying sites with significant solar resources that may be suitable for future utility-scale development in the following ways:

- The Project is located in a compatible industrial zoning district, consistent with Lyon County Land Use designations that support utility-scale energy development.
- The site offers strong solar irradiance, making it ideal for renewable energy generation.

Lyon County Master Plan's Natural Resources and Environmental Policy No. NR 8.2 states that Lyon County " will minimize light pollution while allowing for adequate

lighting for safety and security… [and] implement lighting standards for… industrial properties to address issues such as avoiding light instruction onto neigh properties". The Winston Energy Project supports Lyon County's commitment to minimizing light pollution in the following ways:

- The Winston Energy Project operations require minimal nighttime lighting, and all light fixtures will be shielded and use downward-facing fixtures to prevent light pollution. Since solar energy is generated during daylight hours, the site remains largely inactive at night, preserving the natural night environment and reducing impacts on nearby communities and wildlife.

15.349.02 : Applicability

PUDs shall be permitted in Suburban and Rural Character Areas of Lyon County as identified in the Lyon County Comprehensive Master Plan and maps. PUDs may be permitted in all Suburban Character Area Zoning Districts provided the project, and its component elements and uses, is planned in a manner compatible with each and to the surrounding environment. (Ord. 603, 11-1-2018).

Applicant Response: The Winston Energy Project is located within a "Rural Character District," of Mason Valley, which is an area of "predominately undeveloped open space, in agricultural or resource-based use, or very low-density residential development with limited neighborhood commercial uses." (L.C.C. § 15.300.02.). The Project area will be sited within the Heavy Industrial – Suburban (HI-S) and Rural Residential 20 Acre Minimum (RR-20) zone districts, which are located in Lyon County's Suburban and Residential Character Districts, respectively.

15.349.03 : Standards and Criteria

The following standards and criteria shall govern PUD proposals within Lyon County:

A. Proposed Uses: The use (or uses) proposed is (are) consistent with the goals and policies of the Lyon County Comprehensive Master Plan.

Applicant Response: As outlined under Section 15.349.01.A.11. above*, the Winston Energy Project's use is consistent with multiple goals and policies outlined in the Lyon County Comprehensive Master Plan including:

- Goal LU 3: Diverse Economy
  - Policy LU 3.2: Business and Industry Locations that are Consistent with Future Land Use Plan
- Goal LU 5: Encourage Resource Sensitive Growth
  - Policy LU 5.1: Encourage Resource-Sensitive Growth and Sustainable Design
- Goal NR 3: Clean Water
  - Policy NR 3.1: Water Supply and Quality
- Goal NR 4: Clean Air
  - Policy NR 4.1: Clean Air

- Goal NR 5: Renewable Energy
    - Policy NR 5.1: Geothermal, Solar and Wind
- Policy NR 8.2: Dark Skies

* Note: A description as to how the Winston Energy Project complies with each of these goals/policies is provided in the rationale under Section 15.349.01.A.11.

B. *Site Area: The minimum site area required for a proposed PUD is five (5) acres. The tract or tracts of land included in a proposed PUD must be in a single ownership or under the development control of a joint application of owners or authorized agents of the property involved.*

Applicant Response: The Winston Energy Project will encompass approximately 2,374 acres of land across 11 parcels, as outlined in the Application Form. All landowners of the PUD's involved parcels have entered into long-term lease agreements with Winston FC Solar, LLC and will be managed by the applicant under unified development control per said agreements.

C. *Design: The PUD will comply with the Lyon County Design Criteria and Improvement Standards and specifications contained in appendix B on file in the County.*

Applicant Response: Not applicable.

D. *Density: The allowable residential density shall be established for the subject property, using the net density acreage as defined in chapter 1200 of this title, appendix A. An increase in residential density above the maximum residential density allowed in the existing underlying zoning district may be proposed and can be permitted. The applicant must mitigate increased density, and the level of mitigation shall increase as the proposed density increases. At a minimum, the applicant must explain how the increase can be offset through provision of usable open space and amenities, innovative site design, architectural variety, and quality of construction or promulgates a master plan goal/policy/strategy and demonstrate that any adverse impacts can be mitigated. If the PUD is to be developed in phases, the County may allow for a greater concentration of density or intensity of land use within a section of the development as long as the increase is offset by a reciprocal decrease in density or intensity of land use in any completed prior section of development or by an appropriate reservation of common open space on the remaining land by a grant of permanent protective easement as proscribed in subsection 15.340.08A4 of this title or by covenant in favor of the County.*

Applicant Response: The Winston Energy Project does not include any proposed residential development. As such, these density requirements are not applicable.

E. *Bulk Requirements: Building and parking area setbacks, minimum lot area, lot coverage and building height must conform to the requirements of the equivalent zoning district or the existing underlying zoning for a majority of the PUD unless deviations from those underlying zoning development standards are proposed, considered and approved as a part of the review process. Any such deviation(s) must be justified by the applicant by addressing the allowable modifications contained in chapters 340 through 349 of this title where appropriate, and the exceptions criteria of subsection M of this section.*

Applicant Response: A majority of the proposed PUD is located in the Heavy Industrial – Suburban (HI-S) zone district, and as such, the Winston Energy Project is consistent with the requirements of the HI-S zone district under Section 15.314.02 of the Lyon County Code.

- *15.314.02.B: Building Setbacks* – The Winston Energy Project layout is consistent with the building setbacks outlined in Section 15.314.02.B. Please see the attached Project Setback Map for specific Project setbacks.
- *Parking Area Setbacks* - There are no parking area setback requirements under the requirements for the HI-S zone district in Section 15.314.02.
- *15.314.02.C: Building Form Requirements* – There are no floor area ratio requirements in this zone district. Building height requirements are addressed under Subsection 15.314.02.F.2., as identified by the code.
- *15.314.02.E: Minimum Lot Requirements* - All parcels involved in this PUD are at least 7,000 square feet and at least 50 feet wide, consistent with this code requirement.
- *15.314.02.F.1: Minimum Lot Frontage* – The Project's combined lot frontage is approximately 1.2 miles on either side of Sierra Way. Accordingly, these frontages are well above the 30 feet minimum required by this code section, thus the Project is incompliance with the lot frontage requirement for the HI-S zone district.
- *15.314.02.F.2: Building Height* – The Winston Energy Project will include an Operation and Maintenance Building that will be no larger than 25 feet tall, as outlined in the Project Narrative. Accordingly, the Project does not include any buildings that reach or exceed the 45 foot threshold for additional heigh-related setbacks under this code section. Accordingly, all buildings are compliant with the building height requirements for the HI-S zone district.

F. *Commercial Design: Commercial building placement and architectural design shall conform to the intent of Chapter 360 of this title, commercial design standards.*

Applicant Response: The Winston Energy Project does not include any proposed commercial development. As such, these commercial design criteria are not applicable.

G. *Residential Design: Multi-family housing placement and design shall conform to the intent of chapter 348, "Multi-Family Residential Design Standards", of this title.*

Applicant Response: The Winston Energy Project does not include any proposed residential development. As such, these residential design criteria are not applicable.

H. *Parking: Parking shall be provided as required by chapter 401 of this title, parking and loading. Further reductions in the amount of parking to be provided may be proposed by the applicant but shall be approved only if they meet the exceptions criteria of subsection M3 of this section.*

Applicant Response: The proposed Operations and Maintenance Building is consistent with both the **"**Indoor storage/warehousing/vehicle service/manufacturing area" and "Offices" uses outlined under Section 15.401.03.B. The Applicant has proposed 13 parking spaces to accompany the Operations and Maintenance Building, which at 3,600 square feet, totals 1 parking space per 276 square feet, complying with the parking requirements for both the

"Indoor storage/warehousing/vehicle service/manufacturing area" and "Offices" uses of the building.

I. *Open Space: The minimum amount of area to be designated and preserved as common open space in any planned unit development shall be twenty percent (20%). Each planned unit development proposal shall identify all areas proposed as common open space meeting the requirements contained in section 15.340.08 of this title. Where a decrease in the required common open space is proposed the applicant shall provide a detailed justification addressing the criteria for exception to the common open space requirement outlined in subsection M of this section. For nonresidential development the common open space requirement can be met by providing a minimum of twenty percent (20%) of the development as landscaped area, which exceeds the minimum standards imposed.*

    1. *Usable common open space in residential PUDs shall be sited and improved to provide active recreational amenities intended to provide appropriate opportunities for physical activity and interaction among residents within the development. Except where inventoried significant natural resources or Flood Hazard Zone are present on site, one hundred percent (100%) of the required usable common open space area shall be improved for active or passive recreational use. Usable common open space in Rural Character Areas of Lyon County may retain agricultural/ranching uses, operations and related support structures to continue the agricultural/ranching uses subject to a restrictive covenant recorded on the common open space areas outlining the remaining agricultural/ranching uses and activities to continue on the open space areas while extinguishing any residual development rights from the designated open space areas.*

    2. *Development within Historic Character Areas shall provide usable common open space improvements which enhance the pedestrian environment and are appropriate to these higher density areas. Such improvements may include, but are not limited to, the following: hardscaped courtyards; weather canopies; water features and drinking fountains; benches or low walls with seating areas; free-standing planters; play structures; public art or other pedestrian space or design features integrated into the overall design of the development.*

    3. *Open space deemed unusable shall be placed under permanent protective easement as proscribed in section 15.340.08 of this title, with evidence provided at the time of application that the proposed easement holder has or will accept the easement and perpetual management and maintenance as required by section 15.340.08 of this title.*

Applicant Response: Section 15.349.03.M.4. of the Lyon County Code offers the opportunity for a reduction in the minimum open space requirements outlined above. The Applicant is requesting a reduction in the minimum 20% open space requirement as the location of the Winston Energy Project is within ¼ mile walking distance of the Mason Valley Wildlife Management Area, a publicly accessible, active open space, consistent with the open space reduction requirements. Accordingly, the Winston Energy Project is proposing 281 acres of open space outside of the Project's fenced area. This open space totals approximately 11.8% of the total Project Area.

In addition to complying with the requirement to reduce the minimum open space requirement, it is important to note that the Project and the local community would not benefit from the incorporation of additional open space beyond what is proposed. The requirement for a PUD to

incorporate open space is typically intended to preserve areas as residential or commercial amenities, such as community gathering spaces and opportunities for access to recreational facilities. However, a utility-scale solar project, such as the Winston Energy Project, is by nature a secured, fenced, and operational energy generation site that cannot reasonably provide public recreational or residential amenity functions without compromising safety and operations. These conditions are incompatible with the public access expectations of typical open space requirements.

Additionally, the Project Area is in an already developed industrial area of Lyon County and surrounded by existing open space (i.e. BLM land and the Mason Valley Wildlife Management Area). As such, the public would not significantly benefit from additional open space in the vicinity of the Project, and such requirement would place an undue burden on the Applicant. Accordingly, this requirement should be considered not applicable to the Winston Energy Project.

J. Connectivity: Planned unit developments shall provide vehicular, bicycle, pedestrian or equestrian connections to adjacent and nearby residential areas, transit stops, neighborhood activity centers and other neighborhood facilities in the following manner:

1. *In PUDs that are five (5) acres or more in size, full street connections with spacing of no more than six hundred feet (600') between these connections shall be provided except where barriers such as topography, railroads, or pre-existing development prevent their construction.*

2. *Within PUDs in which full street connections are not possible, bicycle and pedestrian connection on public easements or rights- of-way shall be provided with spacing of no more than four hundred feet (400') between connections except where barriers such as topography, railroads, or pre-existing development prevent their construction.*

3. *In PUDs, opportunities to incrementally extend and connect proposed new streets with existing streets in adjacent or nearby areas shall be considered in addition to addressing street connectivity recommendations shown on the County-Wide Integrated Roadway Network Maps contained within appendix B of the Lyon County Comprehensive Master Plan on file in the County.*

4. *The use of cul-de-sac designs and closed street systems shall be limited to circumstances in which barriers such as topography, railroads, arterial highways, or pre-existing development prevent full street extensions. When permitted, cul-de-sacs shall have a maximum length of two hundred feet (200') and shall serve no more than twenty five (25) dwelling units.*

5. *Narrow street designs for local streets may be permitted with approval of the County Engineer, Road Superintendent and Fire Chief of the local Fire Protection District, provided that other minimum dimensional requirements are met for travel lanes, bike lanes, parking lanes and sidewalk widths or other suitable alternative facilities (such as grade-separated bike lanes and sidewalks, designated parking areas, etc.) are provided.*

6. *Where site conditions are favorable to stormwater infiltration "green streets" designs may be utilized. Permissible design elements and facilities include, but are not limited to, minimizing paving and/or using pervious paving materials, maximizing street tree coverage, using multi-functional open drainage systems in lieu of more conventional curb-and-gutter systems, reducing cul-de-sac radii and using vegetated islands in the center, and minimizing the negative effects of stream crossings.*

Applicant Response: The Winston Energy Project is a unique use type for a PUD application as it does not include any residential or commercial uses and will not be publicly accessible at any time during construction, operation, or decommissioning. The Project Area will be fenced off to public access and all internal roads will require gate access by authorized personnel. Accordingly, the specific connectivity-related requirements outlined in this code section do not apply to the Winston Energy Project. However, the applicant has included a Connectivity Analysis as a part of this application submittal that addresses how the Project will connect with existing roadways/vehicular connections, as required under subsection 15.349.07.10.

K. *Employment Or Commercial Designations: Planned unit development in areas designated employment or commercial on the Lyon County Comprehensive Master Plan Map may allow mixed industrial, commercial, and residential uses subject to the following:*

1. *The site proposed for the PUD is not less than twenty (20) gross acres in size.*

2. *The PUD preliminary development plan shall indicate the approximate size, general location, and character of use of all areas of the site which the applicant designates for uses other than those allowed by the Lyon County Comprehensive Master Plan Map and this title.*

Applicant Response: The Winston Energy Project is not located in in an Employment or Commercial designation per the 2020 Lyon County Master Plan. Accordingly, this criterion is not applicable.

L. *Buffers: Planned unit developments shall establish adequate buffer zones between dissimilar uses within the development and between dissimilar uses and/or densities exterior to the planned unit development. Special design* considerations *such as height controls, density controls, architectural modifications, and landscaping buffers shall be incorporated in any portion of the development which adjoins a previously approved land use or division of land.*

Applicant Response: The Winston Energy Project implements a combination of vegetative screening and large separation distances to ensure adequate buffer zones between dissimilar uses exterior to the Project. The Applicant has prepared a Conceptual Landscape Plan as a part of this application package, which outlines the location, density, and vegetation types of the Project's landscape buffers. Additionally, the Project has been designed in a manner to prevent impacts to dissimilar uses including residential uses and public ROWs. The Project's solar arrays are setback at least 300 feet from neighboring public ROWs including U.S. Alt 95 and Sierra Way, while larger Project components including the BESS and Substation are located near the center of the Project area to minimize visual and noise impacts to surrounding uses. Similarly, the nearest non-participating residential structure is approximately 1,400 feet away from the southern Project's boundary, further minimizing the potential for conflicts with neighboring

residents. Finally, the Project was intentionally located adjacent to other industrial uses to minimize impacts to other land use types. Neighboring industrial uses include the Walker River Substation, the Fort Churchill Generating Station, the Fort Churchill Solar, the Wabuska geothermal power plant, railroad corridor, and the proposed Lux Solar Center and Monarch data center.

Yerington Chamber of Commerce
102 North Main Street
Yerington, NV 89447

Lyon County Planning Commission

27 South Main Street

Yerington, NV 89447

December 8, 2025

RE: Support for the EDF Renewables Winston Project – Special Use Permit and Related Applications

Dear Chair and Members of the Lyon County Planning Commission,

On behalf of the Yerington Chamber of Commerce, we respectfully submit this letter of support for the EDF Renewables Winston Project currently under review. As an organization committed to promoting responsible economic development, supporting local business vitality, and encouraging long-term diversification of the regional economy, we believe this project holds significant potential benefit for Lyon County.

Renewable energy development is becoming an increasingly important component of strong rural economies, helping broaden the tax base, stabilize long-term revenue, and attract new investment. The Winston Project aligns with these goals while advancing opportunities for future workforce development and local contracting. The Chamber looks forward to continued collaboration with EDF Renewables as the project evolves and as those opportunities become clearer.

We recognize that any large-scale project must be evaluated carefully for its impacts on surrounding property owners and the broader community. For this reason, we appreciate that EDF Renewables provided details and their dedication of this process demonstrating diligence in addressing community concerns particularly those related to traffic, visual impacts, and compatibility with neighboring uses. Their efforts have included:

- Providing detailed visual simulations
- Proposing expanded vegetation screening
- Working toward improvements along the US-95 corridor

This type of proactive community engagement and willingness to adapt the project design is commendable and reflects a commitment to being a responsible long-term partner in the county.

From the Chamber's perspective, the Winston Project provides several important regional benefits:

- **Responsible Economic Diversification:** Strengthens long-term economic stability by adding a new industry sector to the region.
- **Opportunities for Skilled Workforce Development:** These types of projects often bring employment and contracting opportunities, expanding local capacity in high-demand fields.
- **Enhanced Regional Visibility:** Positions Lyon County as an attractive location for forward-looking industries and investment.
- **Potential Long-Term Revenue:** Renewable energy projects frequently contribute to local services, schools, and infrastructure through long-term financial mechanisms.

We support continued open dialogue between EDF Renewables, residents, and county leadership to ensure the project moves forward in a way that reflects community values, protects local resources, and maximizes economic benefit.
For these reasons, the Yerington Chamber of Commerce respectfully encourages the Planning Commission to give strong consideration to approving the land use applications associated with the Winston Project.

Thank you for your time, service, and careful deliberation.

Sincerely,

Melanie Young
Chamber Liaison
Yerington Chamber of Commerce

YERINGTON MAIN STREET COMMITTEE

"Promoting community values and activity through community beautification and fostering economic growth and development."

Yerington Main Street Committee
14 East Goldfield Ave
Yerington, NV 89447

Lyon County Planning Commission
27 S. Main Street
Yerington, NV 89447

RE: Letter of Support – EDF Winston Solar Project

December 8, 2025

Dear Planning Commissioners,

On behalf of the Yerington Main Street Committee, we respectfully submit this letter in support of the EDF Winston Solar Project Planned Unit Development application PLZ-2025-084. We recognize that this proposal has prompted many discussions within the community, especially regarding the change from agricultural land to renewable energy use. These concerns are important and understandable. At the same time, we believe the project presents opportunities that align with several broader goals identified in our Strategic Plan.

The Main Street Committee is committed to supporting efforts that contribute to long-term economic stability, thoughtful growth, and stronger community infrastructure. Renewable energy projects, when appropriately planned, can help diversify the local economy, bring new investment into the region, and support jobs. The Winston Solar Project has the potential to add to Yerington's economic base in ways that complement ongoing revitalization work on Main Street and surrounding corridors.

We also appreciate that EDF Power Solutions has been open throughout this process and has taken steps to respond to concerns raised by residents. Their efforts include preparing visual simulations, proposing vegetation screening, and working on improvements to U.S. 95 to help address traffic-related issues. While these measures may not resolve every concern, we value the willingness to communicate and adjust based on community feedback.

Our support for the project does not diminish the importance of Yerington's agricultural heritage or the viewpoints of those who prefer to keep the land in agricultural production. Instead, it reflects our belief that with appropriate mitigation, continued engagement, and clear conditions of approval, the Winston Solar Project can provide community benefits while respecting local values.

"Promoting community values and activity through community beautification
and fostering economic growth and development."

We respectfully encourage the Lyon County Planning Commission to consider the potential economic and infrastructure benefits of this project, along with its alignment with long-term planning efforts, as you make your decision.

Thank you for your time and careful review.

Sincerely,

Melanie Young
Executive Director
Yerington Main Street Committee

12-22-2025
[Date]

Dear Lyon County Board of Commissioners,

I am writing to express my support for the Winston Energy project proposed by EDF power solutions (EDFps), and to respectfully ask you to approve this project. This project represents a significant opportunity for our community, bringing long-term economic growth and new employment opportunities.

The Winston Energy project, which includes a 400-megawatt photovoltaic facility paired with 400 MW of battery energy storage, entails an investment of over $1 billion in Lyon County. It is estimated that over $100 million in tax revenue will be generated over the project's life. Furthermore, the local school district is projected to receive approximately $47 million in direct tax revenue over a twenty-year span, which is crucial for enhancing educational resources and facilities.

Additionally, the project is anticipated to create around 400 construction jobs and several full-time positions, providing local workers with valuable new skills that will strengthen our regional workforce and benefit the community for years to come. Local businesses and service providers will also see increased activity during the construction phase, further enhancing our local economy.

I appreciate that EDFps is not only focused on developing an energy project but is also committed to being a good neighbor through investments and partnerships with local organizations. Their contributions to community initiatives, such as support for the Lyon County Sheriff's Office Christmas program, the Mason Valley Fire Protection District, and the Boys and Girls Clubs of Mason Valley and Truckee Meadows, reflect their dedication to our community.

Projects like Winston Energy help ensure that Lyon County remains a place where families can thrive economically. I strongly encourage the Lyon County Planning Commission to support the approval of the Winston Energy project.

Thank you for your consideration.

Sincerely,

Jeffery D Brown
[Printed Name]

397 US Highway 95A North
[Address]

Jeffery D Brown
[Signature]

Wiredogrepair@Gmail.Com
[Email / Phone]

JEFF J. RIFE & ASSOCIATES
CERTIFIED PUBLIC ACCOUNTANTS

December 30, 2025

To: Lyon County Board of Commissioners / Planning Commission /
Relevant Authority Yerington NV 89447

Subject: Letter of Support for the Winston Solar Project

Dear Chairperson/Commissioners,

I am writing to express my strong support for the Winston Solar Project, a development that represents a tremendous opportunity for economic growth, smart land use, and responsible environmental stewardship in our county.

This project will generate much-needed tax revenue to support county services and local infrastructure. Its strategic siting next to an existing power substation within a designated energy corridor demonstrates thoughtful planning and alignment with the 2020 Master Plan amendment, which emphasized utilizing existing energy corridors for future development.

The Winston Solar Project is thoughtfully located on marginal agricultural ground that requires no water use, an important advantage in our over-appropriated water basin. This is a forward-thinking approach that reduces pressure on our limited water resources while supporting clean, stable energy production.

In addition, the residential impact is minimal. Project representatives have personally met with residents in close proximity to the site, and not one negative comment was received. Nearby homeowners understand that change is inevitable and have responded with strong community acceptance.

While the project will require a reduction in setback standards under Lyon County Code, the code appropriately allows for discretion on a case-by-case basis, and this site is an excellent candidate for such consideration. The project is bordered by the Monarch Data Center project, another significant investment bringing both substantial tax revenue and quality employment opportunities to our area. Importantly, Winston

102 S. CENTER STREET • YERINGTON, NV 89447 • (775) 463-2176
jeff@jeffrifecpa.com email • www.jeffrifecpa.com

Solar is coordinating closely with Monarch to help alleviate potential traffic impacts through shared access easements and infrastructure improvements.

The company has also shown a strong commitment to the aesthetic character of the area, pledging to mitigate visual impacts along the highway frontage through appropriate design measures and screening. This consideration will help ensure the project integrates well with the surrounding landscape.

Beyond its economic and environmental merits, the Winston project developer has demonstrated genuine community partnership, supporting important local causes such as the Boys and Girls Club, the Mason Valley Fire Protection District, and local law enforcement. This kind of engagement underscores the company's commitment to being a long-term, responsible member of our community.

In summary, the Winston Solar Project is the right project, in the right place, at the right time. Its approval will bring lasting benefits—clean energy, strong revenues, and enhanced community collaboration. I respectfully urge the Commission to approve this project.

Thank you for your consideration.

Sincerely,

Jeff J Rife

Dec 16 2025
[Date]

Dear Lyon County Board of Commissioners,

I am writing to express my support for the Winston Energy project proposed by EDF power solutions (EDFps), and to respectfully ask you to approve this project. This project represents a significant opportunity for our community, bringing long-term economic growth and new employment opportunities.

The Winston Energy project, which includes a 400-megawatt photovoltaic facility paired with 400 MW of battery energy storage, entails an investment of over $1 billion in Lyon County. It is estimated that over $100 million in tax revenue will be generated over the project's life. Furthermore, the local school district is projected to receive approximately $47 million in direct tax revenue over a twenty-year span, which is crucial for enhancing educational resources and facilities.

Additionally, the project is anticipated to create around 400 construction jobs and several full-time positions, providing local workers with valuable new skills that will strengthen our regional workforce and benefit the community for years to come. Local businesses and service providers will also see increased activity during the construction phase, further enhancing our local economy.

I appreciate that EDFps is not only focused on developing an energy project but is also committed to being a good neighbor through investments and partnerships with local organizations. Their contributions to community initiatives, such as support for the Lyon County Sheriff's Office Christmas program, the Mason Valley Fire Protection District, and the Boys and Girls Clubs of Mason Valley and Truckee Meadows, reflect their dedication to our community.

Projects like Winston Energy help ensure that Lyon County remains a place where families can thrive economically. I strongly encourage the Lyon County Planning Commission to support the approval of the Winston Energy project.

Thank you for your consideration.

Sincerely,

Dan Morose
[Printed Name]

8 La Buena Vida Ln
[Address]

[Signature]

[Email / Phone]

12/16/25
[Date]

Dear Lyon County Board of Commissioners:

I am writing to express my support for the Winston Energy project proposed by EDF power solutions (EDFps), and to respectfully ask you to approve this project. As a [Yerington/Lyon County] resident, I believe this project offers a responsible approach to energy development that aligns with our community's values.

The project will utilize underused and marginal agricultural land, ensuring that productive farmland and the rural character of our community are preserved. This careful siting demonstrates respect for both the environment and our agricultural heritage.

Furthermore, it is estimated that over $100 million in tax revenue will be generated over the project's life. The local school district is projected to receive approximately $47 million in direct tax revenue over a twenty-year span, which is crucial for enhancing educational resources and facilities.

The project's benefits will have a lasting positive impact. EDFps has shown a genuine commitment to being involved locally, and their efforts with community programs reinforce that they want to be part of [Yerington/Lyon County's] long-term success.

I am proud to support this project.

Sincerely,

Hailey Morose
[Printed Name]

Haley Morse
[Signature]

194 US Hwy 95A N.
[Address]

[Email / Phone]

December 19, 2025

Dear Lyon County Board of Commissioners:

I am writing to express my support for the Winston Energy project proposed by EDF power solutions (EDFps), and to respectfully ask you to approve this project. As a Yerington/Lyon County resident, I believe this project offers a responsible approach to energy development that aligns with our community's values.

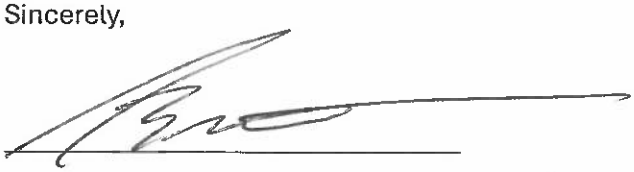
The project will utilize underused and marginal agricultural land, ensuring that productive farmland and the rural character of our community are preserved. This careful siting demonstrates respect for both the environment and our agricultural heritage.

Furthermore, it is estimated that over $100 million in tax revenue will be generated over the project's life. The local school district is projected to receive approximately $47 million in direct tax revenue over a twenty-year span, which is crucial for enhancing educational resources and facilities.

The project's benefits will have a lasting positive impact. EDFps has shown a genuine commitment to being involved locally, and their efforts with community programs reinforce that they want to be part of Yerington/Lyon County's long-term success.

I am proud to support this project.

Sincerely,



Bryson Masini
226 N Hwy 95A
Yerington NV 89447
775-461-6224

Lyon County is at an important crossroads, and the decisions made today will shape our long-term economic stability. Renewable energy development, especially solar, offers a path forward that supports both business growth and community needs.

Solar projects require significant upfront investment and create hundreds of construction jobs, followed by permanent positions. These developments help local businesses thrive and encourage additional investment across the region, expanding opportunity for residents and strengthening our economic base.

Producing energy locally also improves energy security and energy independence. Solar generates power right here at home, helping meet growing demand while keeping energy dollars in Nevada instead of sending them elsewhere. Expanding solar capacity here in Lyon County would help increase our energy independence and create a competitive advantage as industries look for reliable power sources.

There are practically no opportunities in this area for young people to earn a decent living. They might live here but they are driving to USA Parkway everyday to make ends meet. It is our responsibility as a community to provide opportunities so the best & brightest want to stay here & raise their families like they were raised.

Royce Aldridge
airaldridge@gmail.com
Yerington, NV, 89447
Lyon County

I am writing to voice my support for renewable energy development as a key economic driver in Lyon County. A strong and diverse economy depends on reliable energy, especially as our region continues to attract industrial activity.

Solar energy projects bring meaningful benefits to local communities. Construction alone creates hundreds of jobs, while long-term operations provide long-term employment. These developments also increase business activity across the county, supporting restaurants, suppliers, and service providers.

The public benefits are also significant. Solar projects generate millions in sales tax revenue for schools and contribute tens of millions in property taxes over their lifespan, funding services like emergency response, infrastructure maintenance, and county operations. Solar energy can help Lyon County grow while building long-term financial stability.

Peggy Anderson
peggyanderson740@gmail.com
Dayton, NV
Lyon County

As a Lyon County resident, I am writing to express strong support for solar energy development in our community. We have a unique opportunity for our region to grow, and that growth depends on having a reliable, affordable energy supply to support new industry and infrastructure.

Solar projects present a real opportunity to strengthen our local economy. These projects bring substantial private investment – often approaching billions of dollars – along with hundreds of construction jobs and long-term employment in operations and maintenance. That activity supports local contractors, suppliers, and small businesses, while also making Lyon County more attractive to future employers.

Just as important is the revenue these projects generate. Solar projects contribute millions in sales taxes that help fund schools, improve facilities, and expand resources for students and educators. Over time, they also deliver tens of millions in property tax revenue that supports emergency services, road upkeep, and county operations. Solar energy can help diversify our economy and position Lyon County for a more secure and prosperous future.

Bob Ballard
newleafme@yahoo.com
Fernley, NV, 89408
Lyon County

I am writing in favor of energy projects that support Lyon County's long-term economic health. Expanding energy capacity is essential for sustaining industrial development and attracting new employers. Solar energy can play an important role.

Solar projects can bring significant private investment and create hundreds of construction jobs, along with permanent positions. The tax revenue generated from a project is significant and comes directly from the company developing the projects – and doesn't cost taxpayers a dime. Sales tax revenue helps fund local schools and educational improvements, while long-term property taxes support public services and infrastructure.

I urge you to support solar development in Lyon County for the good of our economy and our community.

Angelina Bell-carrasco
angelinabell1024@gmail.com
Fernley, NV
Lyon County

Gmail

Brandi Lathrop <blathrop@lyon-county.org>

Public comment bocc meeting Jan 5, 12c

1 message

'Bonnie' via County Clerks <countyclerks@lyon-county.org> Fri, Jan 2, 2026 at 9:57 AM
Reply-To: Bonnie <bonniebobo@yahoo.com>
To: countyclerks@lyon-county.org

In regards to 12c
Most people that live here and want to be here have come for wide open spaces. Solar fields are sure ugly. And take up alot of open space that is greatly valued. And I believe you put ordinances in place for setbacks (which I greatly appreciate). Please don't bring in big solar here. (Or data centers for that matter!)
Please listen to the community for which you are a part of, work for, and represent.
Thank you.
Bonnie Swain
Lyon county resident

Get BlueMail for Mobile

I am writing to voice my support for renewable energy development as a key economic driver in Lyon County. A strong and diverse economy depends on reliable energy, especially as our region continues to attract industrial activity.

Solar energy projects bring meaningful benefits to local communities. Construction alone creates hundreds of jobs, while long-term operations provide long-term employment. These developments also increase business activity across the county, supporting restaurants, suppliers, and service providers.

The public benefits are also significant. Solar projects generate millions in sales tax revenue for schools and contribute tens of millions in property taxes over their lifespan, funding services like emergency response, infrastructure maintenance, and county operations. Solar energy can help Lyon County grow while building long-term financial stability.

We have so much sun that the Desert can sustain solar much easier than rainy gray areas.

Mitzi Boyles
mitzfit@msn.com
Silver Springs, NV
Lyon County

As a resident of Lyon County, I believe renewable energy development is essential to our economic future. Meeting the energy needs of a growing population and industrial base requires thoughtful planning and investment in new power generation.

Solar projects offer a proven way to support economic growth. They bring large-scale private investment, create hundreds of construction jobs, and establish long-term operations and maintenance positions. These projects also help attract additional businesses that rely on dependable energy supply.

Local power generation also increases energy independence and keeps money in our state. By expanding solar capacity, Lyon County can strengthen its economy, diversify revenue sources, and ensure our community remains competitive for future development.

I support solar! Saves money!

Susan Cammarota
sec1923@gmail.com
Dayton, NV
Lyon County

Lyon County is at an important crossroads, and the decisions made today will shape our long-term economic stability. Renewable energy development, especially solar, offers a path forward that supports both business growth and community needs.

Solar projects require significant upfront investment and create hundreds of construction jobs, followed by permanent positions. These developments help local businesses thrive and encourage additional investment across the region, expanding opportunity for residents and strengthening our economic base.

Producing energy locally also improves energy security and energy independence. Solar generates power right here at home, helping meet growing demand while keeping energy dollars in Nevada instead of sending them elsewhere. Expanding solar capacity here in Lyon County would help increase our energy independence and create a competitive advantage as industries look for reliable power sources.

Richard Chada
richardchada87@gmail.com
Dayton, NV, 89403
Lyon County

As a Lyon County resident, I am writing to express strong support for solar energy development in our community. We have a unique opportunity for our region to grow, and that growth depends on having a reliable, affordable energy supply to support new industry and infrastructure.

Solar projects present a real opportunity to strengthen our local economy. These projects bring substantial private investment – often approaching billions of dollars – along with hundreds of construction jobs and long-term employment in operations and maintenance. That activity supports local contractors, suppliers, and small businesses, while also making Lyon County more attractive to future employers.

Just as important is the revenue these projects generate. Solar projects contribute millions in sales taxes that help fund schools, improve facilities, and expand resources for students and educators. Over time, they also deliver tens of millions in property tax revenue that supports emergency services, road upkeep, and county operations. Solar energy can help diversify our economy and position Lyon County for a more secure and prosperous future.

Dan Clements
antiqueantics@gmail.com
Fernley, NV, 89408
Lyon County

Lyon County is experiencing growth, and with that growth comes an increasing demand for dependable energy. I believe solar development is a commonsense solution that meets rising demand while strengthening local energy independence and supporting the economy.

Producing electricity locally is a key step toward greater energy independence and security. Solar projects generate power right here in our community, helping stabilize the grid and reduce exposure to external energy markets. Additional capacity ensures that existing businesses and new industries have the reliable energy they need to operate and expand.
Solar projects are also powerful economic engines. Construction alone creates hundreds of jobs and injects significant spending into the local economy. Additionally, these projects generate millions of dollars in sales tax revenue that directly support schools, classrooms, and educational infrastructure. Over their lifetimes, they also contribute tens of millions in property taxes that fund emergency services, transportation infrastructure, and county operations. Supporting solar energy helps Lyon County achieve both economic resilience and long-term energy independence.

I urge you to prioritize additional power generation here in Lyon County, with solar as a key part of the energy mix.

Rachel Clerico
clerico@live.com
Fernley, NV
Lyon County

15.336.09: SOLAR GENERATION, COMMERCIAL: Purpose: The intent of this section is to encourage the development of commercial solar energy conversion systems (SECS) while protecting the public health, safety and general welfare.

The specified setbacks as part of the Conditional Use Permit process were included to meet the purpose of protecting the health, safety and welfare of our residents, and the drivers who use our roads. The proposed Winston Solar project must follow the CUP process. The only reason this was filed as a PUD application was to encourage the Board of County Commissioners to reduce the setbacks, as specified in the last sentence of Section E.2. "The Board of County Commissioners may, at their sole discretion, approve setbacks that are less than the setbacks outlined in this chapter if the project is a part of a Planned Unit Development (PUD)."

As I read it, the intent of a PUD is to allow multiple uses (residential, retail, commercial, industrial, recreational) within a single project. The intent of having a solar component in a PUD was to allow solar arrays to supply energy to the residential, commercial and industrial entities that are part of the project. It is stretching credibility too far to include this utility-scale solar project as a PUD, when it clearly is not.

Please deny the PUD application and require the application to be resubmitted under the Conditional Use Permit process. Of course, the solar company will whine about it, but this is a huge project. Certainly, they can remove some of their 780,000 panels to provide safe setbacks.

As a Lyon County resident, I am writing to express strong support for solar energy development in our community. We have a unique opportunity for our region to grow, and that growth depends on having a reliable, affordable energy supply to support new industry and infrastructure.

Solar projects present a real opportunity to strengthen our local economy. These projects bring substantial private investment – often approaching billions of dollars – along with hundreds of construction jobs and long-term employment in operations and maintenance. That activity supports local contractors, suppliers, and small businesses, while also making Lyon County more attractive to future employers.

Just as important is the revenue these projects generate. Solar projects contribute millions in sales taxes that help fund schools, improve facilities, and expand resources for students and educators. Over time, they also deliver tens of millions in property tax revenue that supports emergency services, road upkeep, and county operations. Solar energy can help diversify our economy and position Lyon County for a more secure and prosperous future.

Kathleen Douglas
ladykate0@yahoo.com
Yerington, NV, 89447
Lyon County

NEVADA BUILDERS ALLIANCE
BUILDING A BETTER NEVADA

12/22/2025

Dear Lyon County Board of Commissioners,

On behalf of the Nevada Builders Alliance, I am writing to express our support for the Winston Energy Project proposed by EDF power solutions (EDF) and to respectfully urge your approval of this important investment in Lyon County.

The Winston Energy Project—a 400-megawatt photovoltaic solar facility paired with 400 megawatts of battery energy storage—represents an investment of more than $1 billion in the local economy. Over the life of the project, it is estimated to generate more than $100 million in tax revenue for Lyon County, including approximately $47 million in direct revenue to the local school district over a twenty-year period. These revenues will provide long-term, stable funding to support public services and educational resources.

Beyond its fiscal contributions, the project is expected to create approximately 400 construction jobs, along with permanent operational positions. These opportunities will provide meaningful employment, workforce development, and skills training for residents, while also supporting local contractors, suppliers, and service providers during construction and operation.

We also recognize and appreciate EDF's demonstrated commitment to being a responsible community partner. Their support of local organizations—including the Lyon County Sheriff's Office Christmas program, the Mason Valley Fire Protection District, and the Boys and Girls Clubs of Mason Valley and Truckee Meadows—reflects a genuine investment in the communities in which they operate.

Projects such as Winston Energy contribute to economic diversification, infrastructure investment, and long-term fiscal stability—key factors in ensuring that Lyon County remains a place where families, businesses, and communities can thrive. For these reasons, the Nevada Builders Alliance strongly supports approval of the Winston Energy Project.

Thank you for your time and thoughtful consideration.

Sincerely,

Jeff Sutich
Chief Executive Officer
Nevada Builders Alliance

As a resident of Lyon County, I am writing to urge local officials to support solar energy development. Reliable, locally produced energy is essential if our region is going to sustain industrial growth and remain competitive in the years ahead.

Energy independence matters for communities like ours. Generating power within Lyon County reduces reliance on external sources and helps protect residents and businesses from supply disruptions and volatility. Expanding solar capacity strengthens the energy grid while ensuring that more energy dollars remain in Nevada rather than leaving the state.

Solar development also delivers meaningful economic benefits. These projects require significant capital investment, often reaching hundreds of millions or more, and create hundreds of construction jobs. Once operational, they provide long-term employment opportunities in operations and maintenance, supporting stable careers for local workers.

In addition, solar projects contribute critical revenue for the county. Sales taxes generated during construction help fund schools and educational resources, and long-term property tax payments support public safety, road maintenance, and essential government services. By investing in energy independence through solar, Lyon County can build a stronger economy while securing its energy future.

I support solar energy.

Jon Fabel
jwfabel@gmail.com
Dayton , NV, 89403
Lyon County

Lyon County is experiencing growth, and with that growth comes an increasing demand for dependable energy. I believe solar development is a commonsense solution that meets rising demand while strengthening local energy independence and supporting the economy.

Producing electricity locally is a key step toward greater energy independence and security. Solar projects generate power right here in our community, helping stabilize the grid and reduce exposure to external energy markets. Additional capacity ensures that existing businesses and new industries have the reliable energy they need to operate and expand.
Solar projects are also powerful economic engines. Construction alone creates hundreds of jobs and injects significant spending into the local economy. Additionally, these projects generate millions of dollars in sales tax revenue that directly support schools, classrooms, and educational infrastructure. Over their lifetimes, they also contribute tens of millions in property taxes that fund emergency services, transportation infrastructure, and county operations. Supporting solar energy helps Lyon County achieve both economic resilience and long-term energy independence.

I urge you to prioritize additional power generation here in Lyon County, with solar as a key part of the energy mix.

Please support this solar project. Lyon County needs this.

Valerie Friskey
vfriskey@yahoo.com
Dayton, NV
Lyon County

As a Lyon County resident, I am writing to express strong support for solar energy development in our community. We have a unique opportunity for our region to grow, and that growth depends on having a reliable, affordable energy supply to support new industry and infrastructure.

Solar projects present a real opportunity to strengthen our local economy. These projects bring substantial private investment – often approaching billions of dollars – along with hundreds of construction jobs and long-term employment in operations and maintenance. That activity supports local contractors, suppliers, and small businesses, while also making Lyon County more attractive to future employers.

Just as important is the revenue these projects generate. Solar projects contribute millions in sales taxes that help fund schools, improve facilities, and expand resources for students and educators. Over time, they also deliver tens of millions in property tax revenue that supports emergency services, road upkeep, and county operations. Solar energy can help diversify our economy and position Lyon County for a more secure and prosperous future.

Renewable energy sources should be a cornerstone for our economy and the environment.

Valarie Goldston
goldstonval@aol.com
Fernley, NV, 89408
Lyon County

As a resident of Lyon County, I am writing to urge local officials to support solar energy development. Reliable, locally produced energy is essential if our region is going to sustain industrial growth and remain competitive in the years ahead.

Energy independence matters for communities like ours. Generating power within Lyon County reduces reliance on external sources and helps protect residents and businesses from supply disruptions and volatility. Expanding solar capacity strengthens the energy grid while ensuring that more energy dollars remain in Nevada rather than leaving the state.

Solar development also delivers meaningful economic benefits. These projects require significant capital investment, often reaching hundreds of millions or more, and create hundreds of construction jobs. Once operational, they provide long-term employment opportunities in operations and maintenance, supporting stable careers for local workers.

In addition, solar projects contribute critical revenue for the county. Sales taxes generated during construction help fund schools and educational resources, and long-term property tax payments support public safety, road maintenance, and essential government services. By investing in energy independence through solar, Lyon County can build a stronger economy while securing its energy future.

I'm all for clean renewable energy.

Elmo Guyton III
bigmoose1954@yahoo.com
Dayton, NV, 89403
Lyon County

I am writing to voice my support for renewable energy development as a key economic driver in Lyon County. A strong and diverse economy depends on reliable energy, especially as our region continues to attract industrial activity.

Solar energy projects bring meaningful benefits to local communities. Construction alone creates hundreds of jobs, while long-term operations provide long-term employment. These developments also increase business activity across the county, supporting restaurants, suppliers, and service providers.

The public benefits are also significant. Solar projects generate millions in sales tax revenue for schools and contribute tens of millions in property taxes over their lifespan, funding services like emergency response, infrastructure maintenance, and county operations. Solar energy can help Lyon County grow while building long-term financial stability.

I support energy expansion using existing and emerging technologies that are efficient and cost effective.

Nicholas Hansen
nhansen454@gmail.com
Dayton, NV
Lyon County

I am writing to voice my support for renewable energy development as a key economic driver in Lyon County. A strong and diverse economy depends on reliable energy, especially as our region continues to attract industrial activity.

Solar energy projects bring meaningful benefits to local communities. Construction alone creates hundreds of jobs, while long-term operations provide long-term employment. These developments also increase business activity across the county, supporting restaurants, suppliers, and service providers.

The public benefits are also significant. Solar projects generate millions in sales tax revenue for schools and contribute tens of millions in property taxes over their lifespan, funding services like emergency response, infrastructure maintenance, and county operations. Solar energy can help Lyon County grow while building long-term financial stability.

Jeanie Hill
graniej@hotmail.com
Fernley, NV
Lyon County

As a Lyon County resident, I am writing to express strong support for solar energy development in our community. We have a unique opportunity for our region to grow, and that growth depends on having a reliable, affordable energy supply to support new industry and infrastructure.

Solar projects present a real opportunity to strengthen our local economy. These projects bring substantial private investment – often approaching billions of dollars – along with hundreds of construction jobs and long-term employment in operations and maintenance. That activity supports local contractors, suppliers, and small businesses, while also making Lyon County more attractive to future employers.

Just as important is the revenue these projects generate. Solar projects contribute millions in sales taxes that help fund schools, improve facilities, and expand resources for students and educators. Over time, they also deliver tens of millions in property tax revenue that supports emergency services, road upkeep, and county operations. Solar energy can help diversify our economy and position Lyon County for a more secure and prosperous future.

Zane Hinrichs
zanegler@gmail.com
Fernley, NV
Lyon County

As a Lyon County resident, I am writing to express strong support for solar energy development in our community. We have a unique opportunity for our region to grow, and that growth depends on having a reliable, affordable energy supply to support new industry and infrastructure.

Solar projects present a real opportunity to strengthen our local economy. These projects bring substantial private investment – often approaching billions of dollars – along with hundreds of construction jobs and long-term employment in operations and maintenance. That activity supports local contractors, suppliers, and small businesses, while also making Lyon County more attractive to future employers.

Just as important is the revenue these projects generate. Solar projects contribute millions in sales taxes that help fund schools, improve facilities, and expand resources for students and educators. Over time, they also deliver tens of millions in property tax revenue that supports emergency services, road upkeep, and county operations. Solar energy can help diversify our economy and position Lyon County for a more secure and prosperous future.

Kristi Howard
kristi.howard3@gmail.com
Dayton, NV, 89403
Lyon County

As a resident of Lyon County, I am writing to urge local officials to support solar energy development. Reliable, locally produced energy is essential if our region is going to sustain industrial growth and remain competitive in the years ahead.

Energy independence matters for communities like ours. Generating power within Lyon County reduces reliance on external sources and helps protect residents and businesses from supply disruptions and volatility. Expanding solar capacity strengthens the energy grid while ensuring that more energy dollars remain in Nevada rather than leaving the state.

Solar development also delivers meaningful economic benefits. These projects require significant capital investment, often reaching hundreds of millions or more, and create hundreds of construction jobs. Once operational, they provide long-term employment opportunities in operations and maintenance, supporting stable careers for local workers.

In addition, solar projects contribute critical revenue for the county. Sales taxes generated during construction help fund schools and educational resources, and long-term property tax payments support public safety, road maintenance, and essential government services. By investing in energy independence through solar, Lyon County can build a stronger economy while securing its energy future.

Elisabeth Kanago
jbkanago@gmail.com
Dayton, NV, 89403
Lyon County

Lyon County has an opportunity to position itself as a leader in energy-driven economic development. The bottom line is, we need more energy to keep pace, and solar is an important part of the energy mix. It's the cheapest and fastest to deploy new form of energy generation – and can play an important role in meeting the growing energy needs of businesses and our growing population.

Major solar investments inject substantial capital into the local economy, sometimes in the billions per project. That level of spending creates hundreds of jobs during construction and supports permanent positions that remain for decades. These projects also help existing businesses grow while attracting new employers seeking stable energy access.

Nevada is blessed with abundant natural resources. Developing solar power locally helps strengthen grid reliability and keeps more economic value within our state's borders. Supporting solar means supporting local jobs, stronger public services, and a more secure energy future for Lyon County.

Karen Smith
chriskarensmithnv@gmail.com
Dayton, NV
Lyon County

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Diana Kissenberger
dikvkiss88@icloud.com
Fernley, NV, 89408
Lyon County

I urge county leaders to support private solar energy development. Our region needs additional power generation to keep pace with industrial expansion and long-term economic growth.

Solar energy projects represent a meaningful investment in our community. They not only generate clean, affordable, reliable power to help meet rising demand, but they can also provide a significant boost to the local economy and Lyon County community. These projects create good jobs from construction to operations. Additionally, sales taxes from construction and operations help fund local schools, while long-term property tax contributions support public safety, roads, and essential services. Expanding renewable energy also adds economic diversity, which is vital for long-term resilience in Lyon County.

Our grandkids future in Lyon county depend on some kind of growth.

Scott Lommori
sllommori@gmail.com
Yerington, NV, 89447
Lyon County

JOE LOMBARDO
Governor

STATE OF NEVADA

DWAYNE MCCLINTON
Director

MATTHEW BROWN
Deputy Director

GOVERNOR'S OFFICE OF ENERGY
600 E. William Street, Suite 200 | Carson City, NV 89701
energy.nv.gov | (775) 687-7189

March 5, 2025

Lyon County Board of Commissioners
27 South Main Street
Yerington, Nevada 89447

RE: Support for EDF Renewables' Winston Project in Lyon County

Dear Commissioners:

As Director of the Governor's Office of Energy, I write to express support for the Winston Solar and Storage Project, currently under development in Lyon County by EDF Renewables.

The Governor's Office of Energy is dedicated to meeting Nevada's energy needs utilizing the state's abundant resources to the benefit of its citizens. EDF Renewables has demonstrated a strong commitment to Nevada, with 462 MWs in operation, 895 MWs in active development and more in the pipeline.

With successful completion of all phases of the project, Winston Project will deliver 400 megawatts (MWs) of clean, reliable solar energy to Nevada. This translates to more than $1 billion in investment in the county, and nearly $100 million in direct sales and property taxes over the life of the project. The local economy will also realize increased tax revenue to local services, infrastructure, businesses, community programs and other indirect benefits as well.

I respectfully urge the Board of Commissioners to support the Winston Solar project as it moves forward.

Thank you for your consideration.

Sincerely,

Dwayne McClinton

Nevada Governor's Office of Energy
Director

As a resident of Lyon County, I believe renewable energy development is essential to our economic future. Meeting the energy needs of a growing population and industrial base requires thoughtful planning and investment in new power generation.

Solar projects offer a proven way to support economic growth. They bring large-scale private investment, create hundreds of construction jobs, and establish long-term operations and maintenance positions. These projects also help attract additional businesses that rely on dependable energy supply.

Local power generation also increases energy independence and keeps money in our state. By expanding solar capacity, Lyon County can strengthen its economy, diversify revenue sources, and ensure our community remains competitive for future development.

Linda Lynch
lal194714@yahoo.com
Fernley, NV
Lyon County

Lyon County is at an important crossroads, and the decisions made today will shape our long-term economic stability. Renewable energy development, especially solar, offers a path forward that supports both business growth and community needs.

Solar projects require significant upfront investment and create hundreds of construction jobs, followed by permanent positions. These developments help local businesses thrive and encourage additional investment across the region, expanding opportunity for residents and strengthening our economic base.

Producing energy locally also improves energy security and energy independence. Solar generates power right here at home, helping meet growing demand while keeping energy dollars in Nevada instead of sending them elsewhere. Expanding solar capacity here in Lyon County would help increase our energy independence and create a competitive advantage as industries look for reliable power sources.

I feel solar energy is the way of the future we should be in front! Yes, I agree.

Anna Marks
anthonyanna18@aol.com
Fernley, NV, 89408
Lyon County

As a Lyon County resident, I am writing to express strong support for solar energy development in our community. We have a unique opportunity for our region to grow, and that growth depends on having a reliable, affordable energy supply to support new industry and infrastructure.

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Annabell Mendez
cymbilically@gmail.com
Silver Springs, NV, 89429
Lyon County

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Darren Moss
aliceinpaintland@gmail.com
Dayton, NV, 89403
Lyon County

I urge county leaders to support private solar energy development. Our region needs additional power generation to keep pace with industrial expansion and long-term economic growth.

Solar energy projects represent a meaningful investment in our community. They not only generate clean, affordable, reliable power to help meet rising demand, but they can also provide a significant boost to the local economy and Lyon County community. These projects create good jobs from construction to operations. Additionally, sales taxes from construction and operations help fund local schools, while long-term property tax contributions support public safety, roads, and essential services. Expanding renewable energy also adds economic diversity, which is vital for long-term resilience in Lyon County.

Mark Oswell
oswell.1@yahoo.com
Yerington, NV
Lyon County

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Nevada is blessed with abundant natural resources. Developing solar power locally helps strengthen grid reliability and keeps more economic value within our state's borders. Supporting solar means supporting local jobs, stronger public services, and a more secure energy future for Lyon County.

Joseph Page
josephkpage@gmail.com
Yerington, NV
Lyon County

I am writing in favor of energy projects that support Lyon County's long-term economic health. Expanding energy capacity is essential for sustaining industrial development and attracting new employers. Solar energy can play an important role.

Solar projects can bring significant private investment and create hundreds of construction jobs, along with permanent positions. The tax revenue generated from a project is significant and comes directly from the company developing the projects – and doesn't cost taxpayers a dime. Sales tax revenue helps fund local schools and educational improvements, while long-term property taxes support public services and infrastructure.

I urge you to support solar development in Lyon County for the good of our economy and our community.

I support solar energy.

Sandra Lee Palmer
mtnjnky@aol.com
Dayton, NV
Lyon County

As a Lyon County resident, I am writing to express strong support for solar energy development in our community. We have a unique opportunity for our region to grow, and that growth depends on having a reliable, affordable energy supply to support new industry and infrastructure.

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I am a Lyon County resident and I support solar energy solar energy development in our community.

Denise Parlet
deniseparlet@mail.com
Yerington, NV, 89447
Lyon County

Gmail

Brandi Lathrop <blathrop@lyon-county.org>

Renewable Winston project.

1 message

Pete Jubin <petejubin@gmail.com> Tue, Dec 9, 2025 at 7:19 PM
To: countyclerks@lyon-county.org

Regarding the Winston project a traffic study should have been completed before the planning commissioners meeting on December 9th 2025 took place. There are procedures to follow and this company did not follow procedures. I am totally opposed to the Winston renewable project.

Water contamination: Small amounts of toxic materials (lead and calcium are contained in solar panels. Contamination could result in our surface and underground water sources if any panels are damaged or improperly disposed of. Current recycling methods are few and not cost effective.

This only creates temporary jobs during construction. Nothing like the Anaconda mining days I hear so much about.. Permanent jobs will be very few in the long run. 5 to 15 people? This could destabilize the local economy that depends on agriculture. Once the land is used for solar it can render it fallow for decades to come. There is no going back.

This could also negatively alter property values for people in a close proximity. It will ruin the visual landscape, not to mention the beauty of the desert in that area.

Rows upon rows of dark unsightly solar panels and fences are not very becoming to our landscape. By 2040 solar development is expected to consume 25 million acres of land in the United States alone. 83% expected to be farmland. I find this unsustainable for the future farming industry.

It possibly could alter water run off potentially affecting local water quality. There is also a solar flux effect killing birds and insects. It interferes with animal migration. It creates its own micro climate. Dark panels alter surface reflectivity and temperature.

This is only the tip of the iceberg. Please include this in your comments at the next board of commissioners meeting if applicable. Thank you Patricia Jubin

Gmail

Brandi Lathrop <blathrop@lyon-county.org>

For public comment: BOCC meeting January 5, 2026 item 12c

1 message

'mapswain' via County Clerks <countyclerks@lyon-county.org> Fri, Jan 2, 2026 at 9:39 AM
Reply-To: mapswain <mapswain@yahoo.com>
To: countyclerks@lyon-county.org

Dear Commissioners:

Regarding item 12c, approval of the request for the Winston Solar project:

I have not been able to find the Lyon County Planned Unit Development ordinance, but I found NRS 278A.065. Although that law is quite vague, it does state that typically a PUD would have a residential component, which the Winston Solar Project lacks. Calling it a Planned Unit Development seems like quite a "reach" and fails to follow the intent of the law.

Winston FC Solar LLC's complaints that following the setback ordinance would eliminate the project's profitability is the same complaint that solar companies made when the ordinance was passed. The setback ordinance was passed to protect roadways, residences, and viewsheds. This solar project is enormous; surely the solar company can find a way to maintain profitability and still honor the setback ordinance. If the solar company tries to cut corners regarding this aspect of the project, what other corners will they attempt to cut?

Please honor the ordinance that you passed.

Patricia Swain
Wellington (Lyon County)

Sent from my Verizon, Samsung Galaxy smartphone

I urge county leaders to support private solar energy development. Our region needs additional power generation to keep pace with industrial expansion and long-term economic growth.

Solar energy projects represent a meaningful investment in our community. They not only generate clean, affordable, reliable power to help meet rising demand, but they can also provide a significant boost to the local economy and Lyon County community. These projects create good jobs from construction to operations. Additionally, sales taxes from construction and operations help fund local schools, while long-term property tax contributions support public safety, roads, and essential services. Expanding renewable energy also adds economic diversity, which is vital for long-term resilience in Lyon County.

Definitely pro solar.

Patrick Pearman
patrickapearman@gmail.com(775) 338-3336
Silver Springs, NV, 89429
Lyon County

As a Lyon County resident, I am writing to express strong support for solar energy development in our community. We have a unique opportunity for our region to grow, and that growth depends on having a reliable, affordable energy supply to support new industry and infrastructure.

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Kathleen Pitts
kpitts925@gmail.com
Dayton, NV, 89403
Lyon County

Lyon County is experiencing growth, and with that growth comes an increasing demand for dependable energy. I believe solar development is a commonsense solution that meets rising demand while strengthening local energy independence and supporting the economy.

Producing electricity locally is a key step toward greater energy independence and security. Solar projects generate power right here in our community, helping stabilize the grid and reduce exposure to external energy markets. Additional capacity ensures that existing businesses and new industries have the reliable energy they need to operate and expand.
Solar projects are also powerful economic engines. Construction alone creates hundreds of jobs and injects significant spending into the local economy. Additionally, these projects generate millions of dollars in sales tax revenue that directly support schools, classrooms, and educational infrastructure. Over their lifetimes, they also contribute tens of millions in property taxes that fund emergency services, transportation infrastructure, and county operations. Supporting solar energy helps Lyon County achieve both economic resilience and long-term energy independence.

I urge you to prioritize additional power generation here in Lyon County, with solar as a key part of the energy mix.

Richard Platt
r88bronco@live.com
Fernley, NV
Lyon County

Dear Lyon County Board of Commissioners,

I am writing to express my support for the Winston Energy project proposed by EDF power solutions (EDFps), and to respectfully ask you to approve this project. This project represents a significant opportunity for our community, bringing long-term economic growth and new employment opportunities.

The Winston Energy project, which includes a 400-megawatt photovoltaic facility paired with 400 MW of battery energy storage, entails an investment of over $1 billion in Lyon County. It is estimated that over $100 million in tax revenue will be generated over the project's life. Furthermore, the local school district is projected to receive approximately $47 million in direct tax revenue over a twenty-year span, which is crucial for enhancing educational resources and facilities.

Additionally, the project is anticipated to create around 400 construction jobs and several full-time positions, providing local workers with valuable new skills that will strengthen our regional workforce and benefit the community for years to come. Local businesses and service providers will also see increased activity during the construction phase, further enhancing our local economy.

I appreciate that EDFps is not only focused on developing an energy project but is also committed to being a good neighbor through investments and partnerships with local organizations. Their contributions to community initiatives, such as support for the Lyon County Sheriff's Office Christmas program, the Mason Valley Fire Protection District, and the Boys and Girls Clubs of Mason Valley and Truckee Meadows, reflect their dedication to our community.

Projects like Winston Energy help ensure that Lyon County remains a place where families can thrive economically. I strongly encourage the Lyon County Planning Commission to support the approval of the Winston Energy project.

Thank you for your consideration.

Sincerely,

QUINTIN BOYLES
[Printed Name]

191 SIERRA WAY, YERINGTON
[Address]

[Signature]

775-304-2400
qboyles2@gmail.com
[Email / Phone]

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Bill Roberts
wjroberts50@gmail.com
Fernley, NV, 89408
Lyon County

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I urge you to prioritize additional power generation here in Lyon County, with solar as a key part of the energy mix.

Debby Romero
desertrosedeb2002@yahoo.com
Silver Springs, NV
Lyon County

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Johnye Saylor
amahjohnyehk@aol.com
Dayton, NV
Lyon County

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Lupe Schaffer
lupedschaffer@gmail.com
Fernley, NV
Lyon County

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Solar projects offer a proven way to support economic growth. They bring large-scale private investment, create hundreds of construction jobs, and establish long-term operations and maintenance positions. These projects also help attract additional businesses that rely on dependable energy supply.

Local power generation also increases energy independence and keeps money in our state. By expanding solar capacity, Lyon County can strengthen its economy, diversify revenue sources, and ensure our community remains competitive for future development.

Janet Sherrill
jsherr01@aol.com
Dayton, NV
Lyon County

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Taylor Shuey
taylorshuey4444@gmail.com
Fernley, NV
Lyon County

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Ann Skovira
cahannon54@comcast.net
Dayton, NV
Lyon County

As a resident of Lyon County, I am writing to urge local officials to support solar energy development. Reliable, locally produced energy is essential if our region is going to sustain industrial growth and remain competitive in the years ahead.

Energy independence matters for communities like ours. Generating power within Lyon County reduces reliance on external sources and helps protect residents and businesses from supply disruptions and volatility. Expanding solar capacity strengthens the energy grid while ensuring that more energy dollars remain in Nevada rather than leaving the state.

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Danny Smith
djsnas@chase.com
Fernley, NV
Lyon County

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I fully support this initiative.

Kayla Sneed
ksneed0523@gmail.com
Dayton, NV
Lyon County

As a resident of Lyon County, I am writing to urge local officials to support solar energy development. Reliable, locally produced energy is essential if our region is going to sustain industrial growth and remain competitive in the years ahead.

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Guadalupe Elizabeth Summerville
summervilleelizabeth@yahoo.com
Yerington, NV, 89447
Lyon County

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I urge you to prioritize additional power generation here in Lyon County, with solar as a key part of the energy mix.

Please support!

Rick Taylor
ricktaylor1230@yahoo.com
Dayton
Lyon County

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I really hope this happens.

Jeanell Terhune
jeanellterhune4@gmail.com
Fernley, NV, 89408
Lyon County

01/5/2026
Lyon County Board of Commissioners
27 South Main Street
Yerington, Nevada 89447

Dear Members of the Lyon County Board of Commissioners,

As a resident of Lyon County, I want to express my support for the Winston Energy project proposed by EDF Power Solutions. This project represents an incredible opportunity to bring long-term economic growth and new employment opportunities to our community.

By investing over $1 billion in our region, EDF Power Solutions will help create new jobs, expand our tax base, and bring long-term funding to schools and essential services. At the same time, the project supports our goals of economic development and energy independence. Additionally, the creation of approximately 400 construction jobs and several full-time positions will allow local and regional workers to learn valuable new skills and strengthen our workforce.

Having lived in Yerington for the past 26 years and worked in the non-profit sector as a CEO of a Youth Development Organization, I know firsthand the constant economic strain that are continuing to face our families are very real. The need for businesses such as EDF are vital and their commitment to our valley will be a welcome step in the right direction.

I appreciate that EDF Power Solutions has been transparent throughout this process and is diligently working to address the traffic and visual impacts that the community has identified as main concerns. Their efforts include providing visual simulations, incorporating vegetation screening, and making improvements to US95. This commitment to transparency and community engagement is commendable. They are listening to the valid concerns of our community and responding professionally.

Moreover, EDF Power Solutions is not only developing an energy project but also investing in our community through partnerships and donations to local organizations, including the Lyon County Sheriff's Office Christmas program, the Mason Valley Fire Protection District, and the Boys and Girls Clubs of Mason Valley and Truckee Meadows. This demonstrates their commitment to being a good neighbor.

I respectfully urge the Board of Commissioners approval of Planned Unit Development application PLZ-2025-084 for the Winston Energy project. Projects like Winston Energy help ensure that Lyon County remains a place where families can thrive economically.

Sincerely,

Travis Crowder
Lyon County Resident

Lyon County is experiencing growth, and with that growth comes an increasing demand for dependable energy. I believe solar development is a commonsense solution that meets rising demand while strengthening local energy independence and supporting the economy.

Producing electricity locally is a key step toward greater energy independence and security. Solar projects generate power right here in our community, helping stabilize the grid and reduce exposure to external energy markets. Additional capacity ensures that existing businesses and new industries have the reliable energy they need to operate and expand.
Solar projects are also powerful economic engines. Construction alone creates hundreds of jobs and injects significant spending into the local economy. Additionally, these projects generate millions of dollars in sales tax revenue that directly support schools, classrooms, and educational infrastructure. Over their lifetimes, they also contribute tens of millions in property taxes that fund emergency services, transportation infrastructure, and county operations. Supporting solar energy helps Lyon County achieve both economic resilience and long-term energy independence.

I urge you to prioritize additional power generation here in Lyon County, with solar as a key part of the energy mix.

Larry Tuttle
ltpatents49@yahoo.com
Dayton, NV
Lyon County

Lyon County is at an important crossroads, and the decisions made today will shape our long-term economic stability. Renewable energy development, especially solar, offers a path forward that supports both business growth and community needs.

Solar projects require significant upfront investment and create hundreds of construction jobs, followed by permanent positions. These developments help local businesses thrive and encourage additional investment across the region, expanding opportunity for residents and strengthening our economic base.

Producing energy locally also improves energy security and energy independence. Solar generates power right here at home, helping meet growing demand while keeping energy dollars in Nevada instead of sending them elsewhere. Expanding solar capacity here in Lyon County would help increase our energy independence and create a competitive advantage as industries look for reliable power sources.

Lori Ugolik
ugolikdc@gmail.com
Silver Springs, NV
Lyon County

Lyon County is experiencing growth, and with that growth comes an increasing demand for dependable energy. I believe solar development is a commonsense solution that meets rising demand while strengthening local energy independence and supporting the economy.

Producing electricity locally is a key step toward greater energy independence and security. Solar projects generate power right here in our community, helping stabilize the grid and reduce exposure to external energy markets. Additional capacity ensures that existing businesses and new industries have the reliable energy they need to operate and expand.
Solar projects are also powerful economic engines. Construction alone creates hundreds of jobs and injects significant spending into the local economy. Additionally, these projects generate millions of dollars in sales tax revenue that directly support schools, classrooms, and educational infrastructure. Over their lifetimes, they also contribute tens of millions in property taxes that fund emergency services, transportation infrastructure, and county operations. Supporting solar energy helps Lyon County achieve both economic resilience and long-term energy independence.

I urge you to prioritize additional power generation here in Lyon County, with solar as a key part of the energy mix.

Ephraim Vergara
ephraim1984@yahoo.com
Dayton, NV
Lyon County

As a Lyon County resident, I am writing to express strong support for solar energy development in our community. We have a unique opportunity for our region to grow, and that growth depends on having a reliable, affordable energy supply to support new industry and infrastructure.

Solar projects present a real opportunity to strengthen our local economy. These projects bring substantial private investment – often approaching billions of dollars – along with hundreds of construction jobs and long-term employment in operations and maintenance. That activity supports local contractors, suppliers, and small businesses, while also making Lyon County more attractive to future employers.

Just as important is the revenue these projects generate. Solar projects contribute millions in sales taxes that help fund schools, improve facilities, and expand resources for students and educators. Over time, they also deliver tens of millions in property tax revenue that supports emergency services, road upkeep, and county operations. Solar energy can help diversify our economy and position Lyon County for a more secure and prosperous future.

Susan W.
word.s.rn@gmail.com
Fernley, NV, 89408
Lyon County

As a Lyon County resident, I am writing to express strong support for solar energy development in our community. We have a unique opportunity for our region to grow, and that growth depends on having a reliable, affordable energy supply to support new industry and infrastructure.

Solar projects present a real opportunity to strengthen our local economy. These projects bring substantial private investment – often approaching billions of dollars – along with hundreds of construction jobs and long-term employment in operations and maintenance. That activity supports local contractors, suppliers, and small businesses, while also making Lyon County more attractive to future employers.

Just as important is the revenue these projects generate. Solar projects contribute millions in sales taxes that help fund schools, improve facilities, and expand resources for students and educators. Over time, they also deliver tens of millions in property tax revenue that supports emergency services, road upkeep, and county operations. Solar energy can help diversify our economy and position Lyon County for a more secure and prosperous future.

Brian Walling
braindw@msn.com
Dayton, NV, 89403
Lyon County

I am writing to voice my support for renewable energy development as a key economic driver in Lyon County. A strong and diverse economy depends on reliable energy, especially as our region continues to attract industrial activity.

Solar energy projects bring meaningful benefits to local communities. Construction alone creates hundreds of jobs, while long-term operations provide long-term employment. These developments also increase business activity across the county, supporting restaurants, suppliers, and service providers.

The public benefits are also significant. Solar projects generate millions in sales tax revenue for schools and contribute tens of millions in property taxes over their lifespan, funding services like emergency response, infrastructure maintenance, and county operations. Solar energy can help Lyon County grow while building long-term financial stability.

Increasing clean energy projects and benefitting the schools. This is a win win.

Justin Wass
sparkywass@att.net
Dayton, NV
Lyon County

As a Lyon County resident, I am writing to express strong support for solar energy development in our community. We have a unique opportunity for our region to grow, and that growth depends on having a reliable, affordable energy supply to support new industry and infrastructure.

Solar projects present a real opportunity to strengthen our local economy. These projects bring substantial private investment – often approaching billions of dollars – along with hundreds of construction jobs and long-term employment in operations and maintenance. That activity supports local contractors, suppliers, and small businesses, while also making Lyon County more attractive to future employers.

Just as important is the revenue these projects generate. Solar projects contribute millions in sales taxes that help fund schools, improve facilities, and expand resources for students and educators. Over time, they also deliver tens of millions in property tax revenue that supports emergency services, road upkeep, and county operations. Solar energy can help diversify our economy and position Lyon County for a more secure and prosperous future.

Jobs and Lyon city is on the move, economy is essential for the fast growing population coming to our area. Homes, businesses are growing.

Jack Weddle
mrtwigggs@yahoo.com
Dayton, NV, 89403
Lyon County

I am writing in favor of energy projects that support Lyon County's long-term economic health. Expanding energy capacity is essential for sustaining industrial development and attracting new employers. Solar energy can play an important role.

Solar projects can bring significant private investment and create hundreds of construction jobs, along with permanent positions. The tax revenue generated from a project is significant and comes directly from the company developing the projects – and doesn't cost taxpayers a dime. Sales tax revenue helps fund local schools and educational improvements, while long-term property taxes support public services and infrastructure.

I urge you to support solar development in Lyon County for the good of our economy and our community.

Cheryle West
cawest2021@gmail.com
Yerington, NV
Lyon County

NNDA | Northern Nevada Development Authority

111 W. Proctor Street
Carson City, NV 89703
775.883.4413
www.nnda.org

December 22, 2025

Lyon County Board of Commissioners
27 S. Main Stret
Yerington, NV 89447

RE: Support Letter for the Winston Energy Project by EDF Power Solutions

Dear Lyon County Board of Commissioners,

On behalf of Northern Nevada Development Authority, I'm writing to share my support for the Winston Energy project by EDF Power Solutions (EDF), and to ask for your approval of this investment opportunity for Lyon County.

This proposed project; a 400-megawatt solar facility and 400 MW battery storage system, will bring more than $1 billion in investment into local economy, along with long-term revenue and meaningful job creation. As a result, over the life of the project, it is estimated that Lyon County will receive more than $100 million in tax revenue.

The Winston Energy project will also bring an estimated 400 construction jobs and several permanent career opportunities. This will help local workers build valuable skills, and support Lyon County families.

We also would like to mention the EDF's commitment to becoming part of community—not just as a project developer, but as a partner. Their contributions to local organizations, including the Lyon County Sheriff's Office Christmas program, Mason Valley Fire Protection District, and the Boys and Girls Clubs of Mason Valley and Truckee Meadows, show they are investing in community, people and future.

Projects like Winston Energy are essential to building a strong, diversified and long-term economic development for Lyon County. Northern Nevada Development Authority respectfully and enthusiastically supports this project.

Thank you very much for your time and thoughtful consideration.

Sincerely,

Tatjana Vukovic
Deputy Director,
Northern Nevada Development Authority

I urge county leaders to support private solar energy development. Our region needs additional power generation to keep pace with industrial expansion and long-term economic growth.

Solar energy projects represent a meaningful investment in our community. They not only generate clean, affordable, reliable power to help meet rising demand, but they can also provide a significant boost to the local economy and Lyon County community. These projects create good jobs from construction to operations. Additionally, sales taxes from construction and operations help fund local schools, while long-term property tax contributions support public safety, roads, and essential services. Expanding renewable energy also adds economic diversity, which is vital for long-term resilience in Lyon County.

Please support clean energy.

Ruth Wolff
4ruthsmail@gmail.com
Silver Springs, NV, 89429
Lyon County

Lyon County is experiencing growth, and with that growth comes an increasing demand for dependable energy. I believe solar development is a commonsense solution that meets rising demand while strengthening local energy independence and supporting the economy.

Producing electricity locally is a key step toward greater energy independence and security. Solar projects generate power right here in our community, helping stabilize the grid and reduce exposure to external energy markets. Additional capacity ensures that existing businesses and new industries have the reliable energy they need to operate and expand.
Solar projects are also powerful economic engines. Construction alone creates hundreds of jobs and injects significant spending into the local economy. Additionally, these projects generate millions of dollars in sales tax revenue that directly support schools, classrooms, and educational infrastructure. Over their lifetimes, they also contribute tens of millions in property taxes that fund emergency services, transportation infrastructure, and county operations. Supporting solar energy helps Lyon County achieve both economic resilience and long-term energy independence.

I urge you to prioritize additional power generation here in Lyon County, with solar as a key part of the energy mix.

Joyce Wood
chickstirdevant15@gmail.com
Silver Springs, NV
Lyon County

Lyon County has an opportunity to position itself as a leader in energy-driven economic development. The bottom line is, we need more energy to keep pace, and solar is an important part of the energy mix. It's the cheapest and fastest to deploy new form of energy generation – and can play an important role in meeting the growing energy needs of businesses and our growing population.

Major solar investments inject substantial capital into the local economy, sometimes in the billions per project. That level of spending creates hundreds of jobs during construction and supports permanent positions that remain for decades. These projects also help existing businesses grow while attracting new employers seeking stable energy access.

Nevada is blessed with abundant natural resources. Developing solar power locally helps strengthen grid reliability and keeps more economic value within our state's borders. Supporting solar means supporting local jobs, stronger public services, and a more secure energy future for Lyon County.

Cinnamon Woodcock
cinnamonwoodcock4@gmail.com
Fernley, NV
Lyon County

I urge county leaders to support private solar energy development. Our region needs additional power generation to keep pace with industrial expansion and long-term economic growth.

Solar energy projects represent a meaningful investment in our community. They not only generate clean, affordable, reliable power to help meet rising demand, but they can also provide a significant boost to the local economy and Lyon County community. These projects create good jobs from construction to operations. Additionally, sales taxes from construction and operations help fund local schools, while long-term property tax contributions support public safety, roads, and essential services. Expanding renewable energy also adds economic diversity, which is vital for long-term resilience in Lyon County.

Lyle Zabolocky
lzabo51@yahoo.com
Dayton, NV, 89403
Lyon County

I am writing in favor of energy projects that support Lyon County's long-term economic health. Expanding energy capacity is essential for sustaining industrial development and attracting new employers. Solar energy can play an important role.

Solar projects can bring significant private investment and create hundreds of construction jobs, along with permanent positions. The tax revenue generated from a project is significant and comes directly from the company developing the projects – and doesn't cost taxpayers a dime. Sales tax revenue helps fund local schools and educational improvements, while long-term property taxes support public services and infrastructure.

I urge you to support solar development in Lyon County for the good of our economy and our community.

Ziad Ziadeh
zziadeh@yahoo.com
Silver Springs, NV
Lyon County

comstock

March 5, 2025

Lyon County Board of Commissioners
27 South Main Street
Yerington, Nevada 89447

RE: Support for EDF Renewables' Winston Project in Lyon County

Dear Commissioners:

Comstock Metals submits this letter to express our support for the **Winston Solar and Storage Project, currently under development in Lyon County by EDF Renewables.**

As part of a responsible, forward-looking approach to solar development, we support the inclusion of a comprehensive solar panel management and end-of-life plan for the Winston Energy project. Comstock Metals, conveniently located in Lyon County, can support this effort by assisting in development of the plan and by responsibly managing and recycling damaged and end-of-life panels locally. This approach helps to keep panel materials out of landfills and reduce future disposal concerns that affect your immediate community when panels are landfilled at the end of their useful life, while keeping investment within the county, creating local jobs, reducing transportation impacts, and delivering long-term economic and environmental benefits through a Nevada-based, closed-loop recycling solution.

We recognize the magnitude of economic and environmental benefits the Winston Project represents for Lyon County. Clean energy deployment, when paired with responsible life-cycle planning and local recycling solutions, strengthens community trust, reduces long-term liabilities, and ensures that renewable energy projects deliver true, lasting value.

We respectfully encourage the Board of Commissioners to support the Winston Solar and Storage Project and to consider the advantages of incorporating robust panel management and recycling strategy as part of the approval process.

Thank you for your consideration.

Sincerely,

Fortunato Villamagna,
President
Comstock Metals LLC

Fwd: Lyon County Solar Project

1 message

Martha Tapia <mtapia@lyon-county.org> Mon, Feb 23, 2026 at 8:15 AM
To: Brandi Lathrop <blathrop@lyon-county.org>

Hi Brandi,

I'm not sure if you received this email? Let me know if you will add this or if I need to.

Thank you.

---------- Forwarded message ---------
From: **Daniel Harrell** <daniel.l.harrell@gmail.com>
Date: Fri, Feb 20, 2026 at 4:43 PM
Subject: Lyon County Solar Project
To: countyclerks@lyon-county.org <countyclerks@lyon-county.org>

Lyon County Board of Commissioners,

I am writing to express serious concern regarding the proposed commercial-scale solar installation under consideration. My objections are not rooted in opposition to energy innovation, but in the growing body of evidence showing that large utility-scale solar developments often produce immediate, measurable ecological harms while their projected benefits rely heavily on modeled assumptions that may not materialize as promised.

This distinction — between observed damage and theoretical mitigation — is a central and unresolved issue in environmental science and deserves careful consideration before irreversible land use decisions are made.

Avian Mortality and Polarized Light Pollution ("Lake Effect")
Large reflective arrays can mimic water bodies, creating polarized light signatures that attract migratory birds. This phenomenon has been documented to cause collisions, disorientation, and mass mortality events, particularly among waterbirds that attempt to land on panels or become stranded in arid environments where takeoff is impossible.

Habitat Fragmentation and Barrier Effects
Perimeter fencing, access roads, and associated infrastructure fragment landscapes and block historic movement corridors for large mammals. Studies across the West show that species such as pronghorn, desert bighorn sheep, and other migratory wildlife are especially vulnerable to these artificial barriers, which restrict access to forage and water.

Direct Habitat Destruction ("Blade-and-Grade")
The standard construction method — clearing vegetation and grading soil — removes entire ecological communities. Ground-nesting birds, reptiles such as tortoises, pollinators, and small mammals lose habitat immediately, with recovery timelines measured in decades, if recovery occurs at all.

Entrapment and Predator Imbalance
Fencing can trap wildlife within project areas, while disturbed or injured animals attract scavengers like ravens and coyotes, increasing localized predation pressures and further destabilizing the ecosystem.

Beyond ecological concerns, there is also a broader question of technological prudence. Utility-scale installations commit large tracts of land to current-generation photovoltaic technology whose performance and lifecycle impacts continue to evolve. Historical documentation under the Invention Secrecy Act shows that certain advanced energy technologies have been subject to national security review, underscoring that publicly available systems may not represent the full frontier of efficiency or long-term solutions. This raises a reasonable policy question: whether committing extensive county land today to large fixed installations is the most responsible course when technology trajectories remain uncertain.

In practical terms, once landscapes are industrialized at this scale, reversal is extraordinarily difficult.

I respectfully urge the Commission to:

- Require comprehensive, independent ecological impact assessments that account for migration corridors and cumulative effects.
- Consider distributed generation alternatives (rooftop, brownfield siting, already-disturbed lands) before approving greenfield conversion.
- Evaluate long-term land use tradeoffs, including decommissioning risks and habitat recovery feasibility.
- Ensure that mitigation plans are based on demonstrated outcomes rather than modeled projections.

Energy policy should not force a false choice between environmental stewardship and power generation. Thoughtful siting and caution can avoid unintended consequences that future generations will be left to manage.

Thank you for your time and consideration.

Respectfully,

Daniel L. Harrell
Research Engineer | AI Systems Architect | Verification & Data Integrity Specialist
Uncanny Covenant | Eddy Map Research Project
(M) 775.450.1798
536 Pete Hendrichs Rd.
Yerington, NV 89447

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
14.b

Subject:
For Possible Action: To approve the request from GDA Degree Inc. for a Zoning Map Amendment to amend the Zoning Map split-zoned designations from the Title 10 districts of Limited Commercial District (C-1) and Fifth Rural Residential District (20 Acres) (RR-5) to the Title 15 district of Rural Residential, 20 Acre Minimum (RR-20), for an 18.00-acre parcel located at 20 Hoye Canyon Road in Smith Valley (APN 010-631-32), PLZ-2025-102. (Senior Planner Lisa Nash)

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Staff Report
- Backup

LYON COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING * DEVELOPMENT ENGINEERING * PLANNING
CODE ENFORCEMENT * ECONOMIC DEVELOPMENT
27 SOUTH MAIN STREET, YERINGTON, NV 89447
PHONE: 775-463-6592 FAX: 775-463-5305
WEBSITE: www.lyon-county.org

BOARD OF COUNTY COMMISSIONERS

PLZ-2025-102

Proposed Action	Zoning Map Amendment
Meeting Date	March 5, 2026
Property Owners	Garmsland Limited LLC
Applicant	GDA Degree Inc.
Representative	Resource Concepts Inc.
Community	Wellington
Location	20 Hoye Canyon Road
Parcel Number(s)	010-631-32
Parcel Size(s)	18.00 acres
Master Plan	Rural Residential
Current Zoning	Limited Commercial District (C-1) and Fifth Rural Residential District (20 Acres) (RR-5)
Proposed Zoning	Rural Residential, 20 Acre Minimum (RR-20)
Case Planner	Lisa Nash

REQUEST

The Applicant requests a Zoning Map Amendment to amend the Zoning designation from the expired Title 10 districts of Limited Commercial District (C-1) and Fifth Rural Residential District (20 Acres) (RR-5) to the Title 15 district of Rural Residential, 20 Acre Minimum (RR-20) on one parcel approximately 18.00 acres in size.

PLANNING COMMISSION

The Planning Commission heard the item on February 10, 2026. The Commission forwarded a recommendation of approval, voting 7-0 (7 Ayes; 0 Nays; 0 Abstentions). The recommendation was based on the findings listed in the staff report.

A Zoning Map Amendment request cannot be conditioned.

RECOMMENDED MOTION

If after review and public comment the Board of County Commissioners determines that they will approve the requested Zoning Map Amendment application, then the Board should make a motion similar to the following.

The Board of County Commissioners finds that:

A. The proposed amendment is consistent with the policies embodied in the adopted master plan and the underlying land use designation contained in the land use plan;

B. The proposed amendment will not be inconsistent with the adequate public facilities policies contained in this title; and

C. The proposed amendment is compatible with the actual or master planned adjacent uses.

Based on the aforementioned Findings, I move that the Board of County Commissioners approves the request from GDA Degree Inc. for a Zoning Map Amendment to amend the Zoning Map split-zoned designations from the Title 10 districts of Limited Commercial District (C-1) and Fifth Rural Residential District (20 Acres) (RR-5) to the Title 15 district of Rural Residential, 20 Acre Minimum (RR-20), for an 18.00-acre parcel located at 20 Hoye Canyon Road in Smith Valley (APN 010-631-32), PLZ-2025-102.

ALTERNATIVES TO APPROVAL

Alternative Motion for Continuance

If the Board of County Commissioners determines that there is insufficient information with which to make a decision on the Zoning Map Amendment application before them and that additional information, discussion and public comment are necessary to have a more complete and thorough review of the proposed project, then they should make the appropriate findings and move to continue the Public Hearing for the Zoning Map Amendment application to a future date with concurrence from the applicant.

If so, then the Board may wish to consider a motion similar to the following:

The Board of County Commissioners finds that:

A. Additional information, discussion, and public review are necessary for a more thorough review of the proposed Master Plan Amendment application.

Based on the aforementioned finding, and with the applicant's concurrence, I move that the Board of County Commissioners continues the request from GDA Degree Inc. for a Zoning Map Amendment to amend the Zoning Map split-zoned designations from the Title 10 districts of Limited Commercial District (C-1) and Fifth Rural Residential District (20 Acres) (RR-5) to the Title 15 district of Rural Residential, 20 Acre Minimum (RR-20), for an 18.00-acre parcel located at 20 Hoye Canyon Road in Smith Valley (APN 010-631-32), PLZ-2025-102 for ___ days.

Alternative Motion for Denial

If after review and public comment the Board of County Commissioners determines that they should deny the Zoning Map Amendment application, then the Board needs to make findings supporting the denial. The Board may wish to consider a motion similar to the following:

The Board of County Commissioners has considered:

15.220.05: FINDINGS:

When approving a zoning text or map amendment the Commission and the Board must make the following findings, supported by a statement of evidence, facts and conclusions.

A. That the proposed amendment is consistent with the policies embodied in the adopted master plan and the underlying land use designation contained in the land use plan;

B. That the proposed amendment will not be inconsistent with the adequate public facilities policies contained in this title;

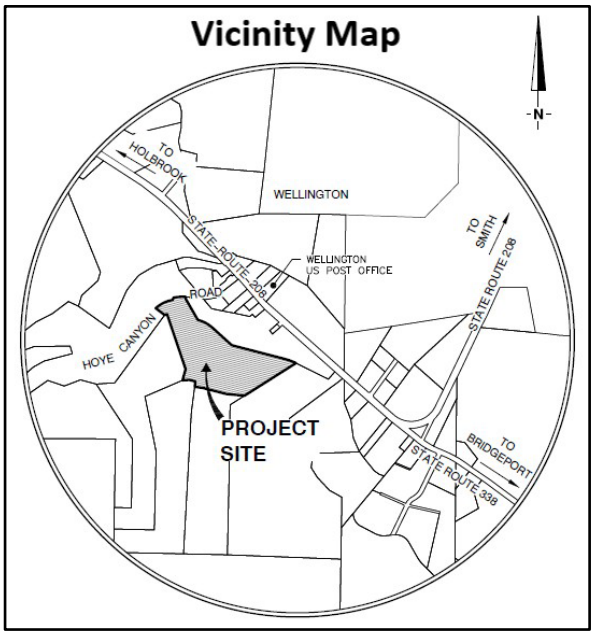
C. That the proposed amendment is compatible with the actual or master planned adjacent uses.

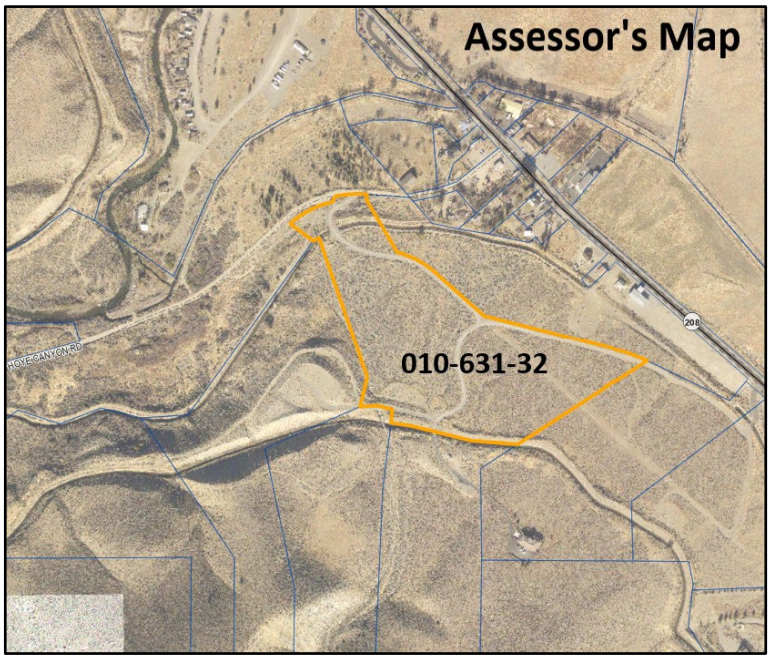
After consideration of the above-listed Findings, I move that the Board of County Commissioners <u>denies</u> the request from GDA Degree Inc. for a Zoning Map Amendment to amend the Zoning Map split-zoned designations from the Title 10 districts of Limited Commercial District (C-1) and Fifth Rural Residential District (20 Acres) (RR-5) to the Title 15 district of Rural Residential, 20 Acre Minimum (RR-20), for an 18.00-acre parcel located at 20 Hoye Canyon Road in Smith Valley (APN 010-631-32), PLZ-2025-102.

BACKGROUND INFORMATION

<u>Location and Size</u>

The subject parcel is located in Wellington at 20 Hoye Canyon Road and is approximately 18.00 acres in size. The maps below show the location of the parcel and the aerial view.

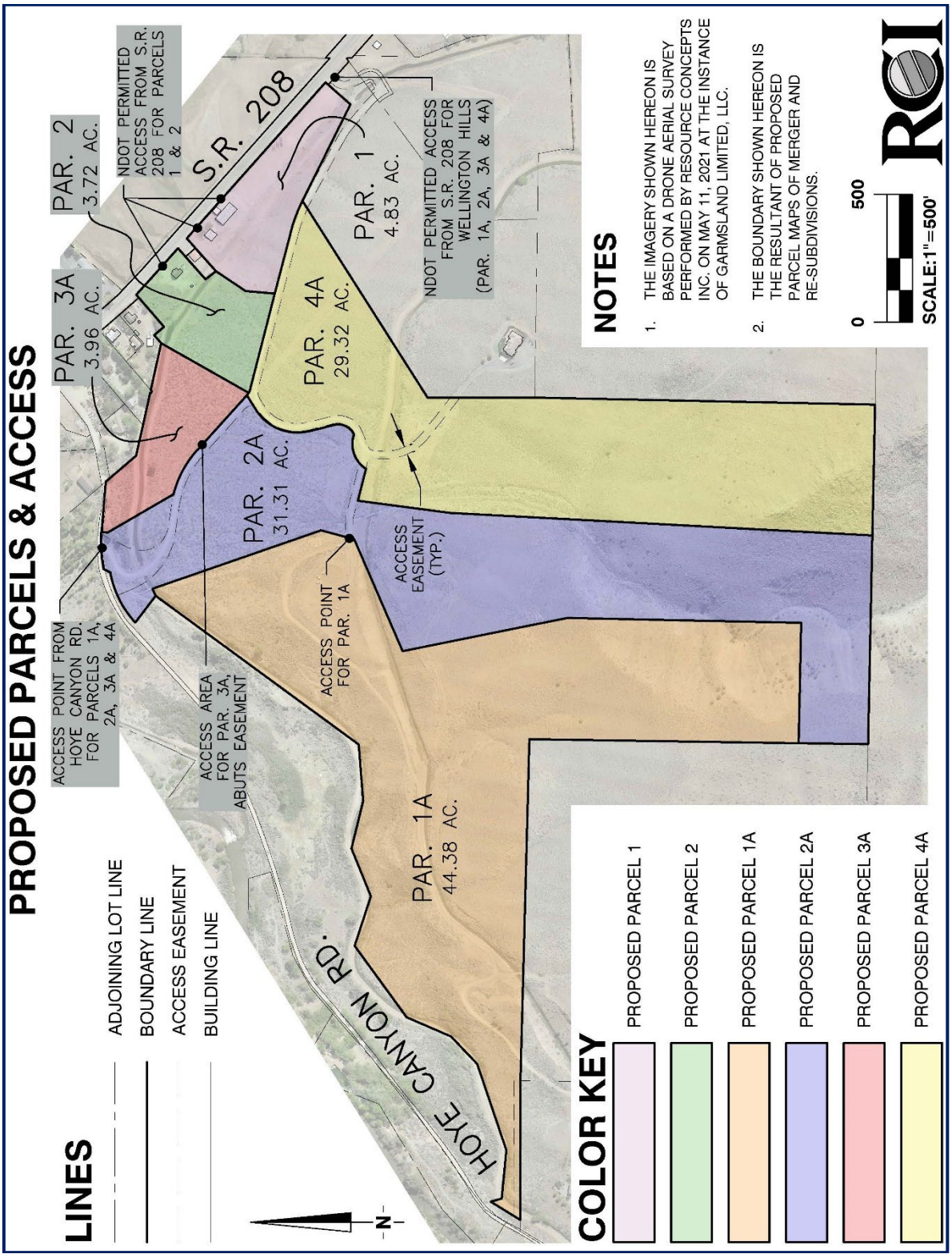




<u>Concurrent Applications</u>

The applicant submitted two additional applications concurrently to the Planning Commission: Tentative Parcel Map, TPM No. 1 (PLZ-2025-107) and a second Tentative Parcel Map, TPM No. 2 (PLZ-2025-103). These items were heard by the Planning Commission on February 10, 2026. The two TPMs applications were approved by the Planning Commission and ZMA application was forwarded with a recommendation of approval to the Board of County

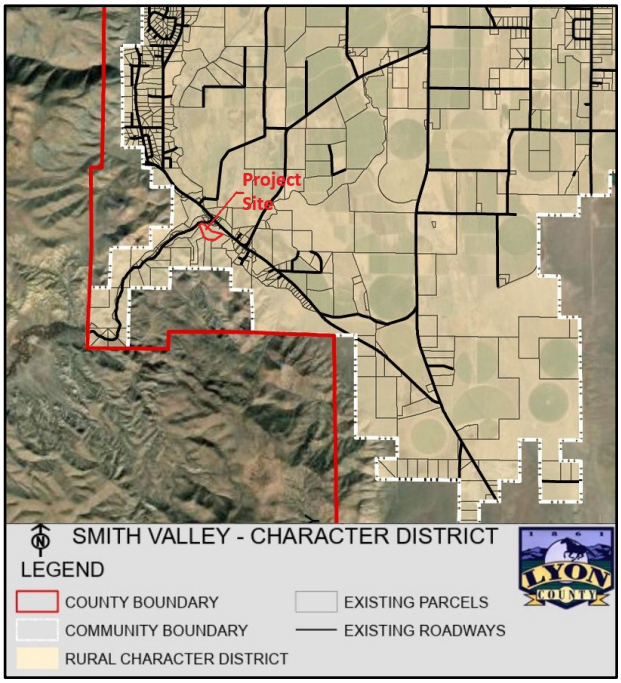
Commissioners for consideration on March 5, 2026. The total project starts with six (6) properties and, after the three applications, results in six (6) properties. The final lot alignments, after the Final Parcel Maps are recorded, are shown below.

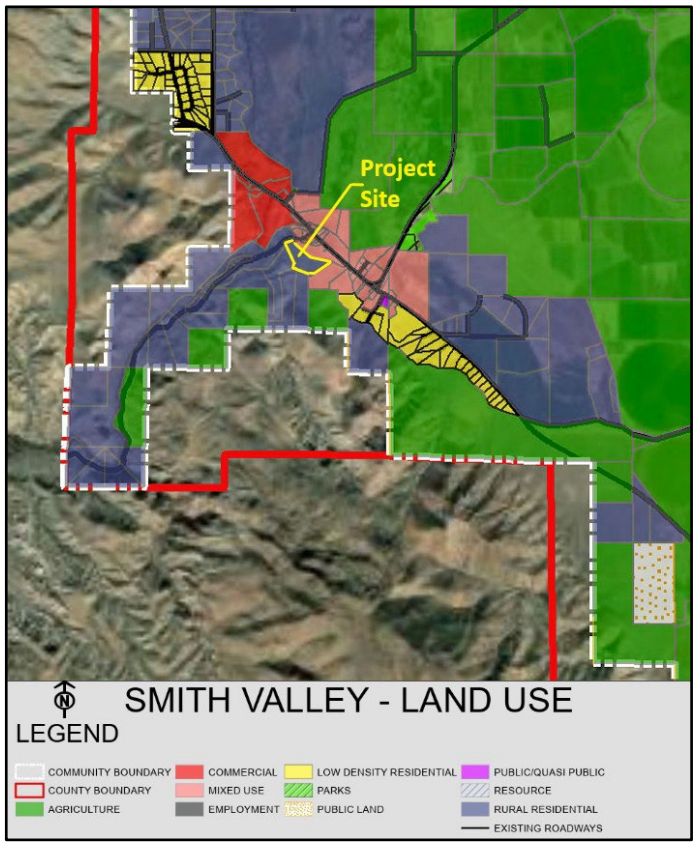


MASTER PLAN AND ZONING

Master Plan

The site is within the Rural Character District per the Smith Valley Character District Map adopted with the 2020 Master Plan. The Master Plan land use is Rural Residential.





Existing Zoning

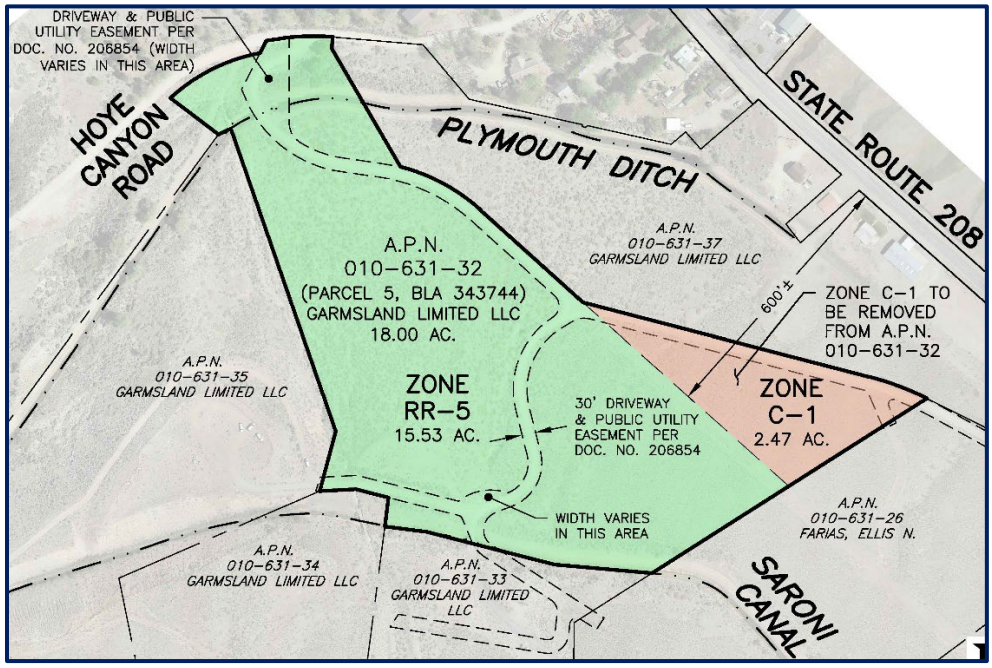
The applicable zoning for the subject parcel is Limited Commercial District (C-1) and Fifth Rural Residential District (20 Acres) (RR-5), district names from the County's expired Title 10 development code. In 2018 the County adopted Title 15 with Appendix A, the Zoning Consistency Matrix. The Matrix "converts" expired district names to the applicable and current Title 15 district. The applicable zoning today is Neighborhood Commercial (NC) and Rural Residential, 20 Acre Minimum (RR-20) for the subject parcels, resulting in split zoning on the parcel. Under the 2020 Master Plan, the NC zoning is not compatible with the Rural Residential land use designation.

The applicants request would bring the parcel into conformance with the Master Plan designation. Additionally, the existing acreage associated with the RR-5 zoning is less than 20 acres currently and the Tentative Parcel Maps (TPM) approved by the Planning Commission on February 10, 2026 will correct that, resulting in all RR-5/RR-20 zoning to have lots larger than 20 acres. The approved TPMs are attached as backup to this application.

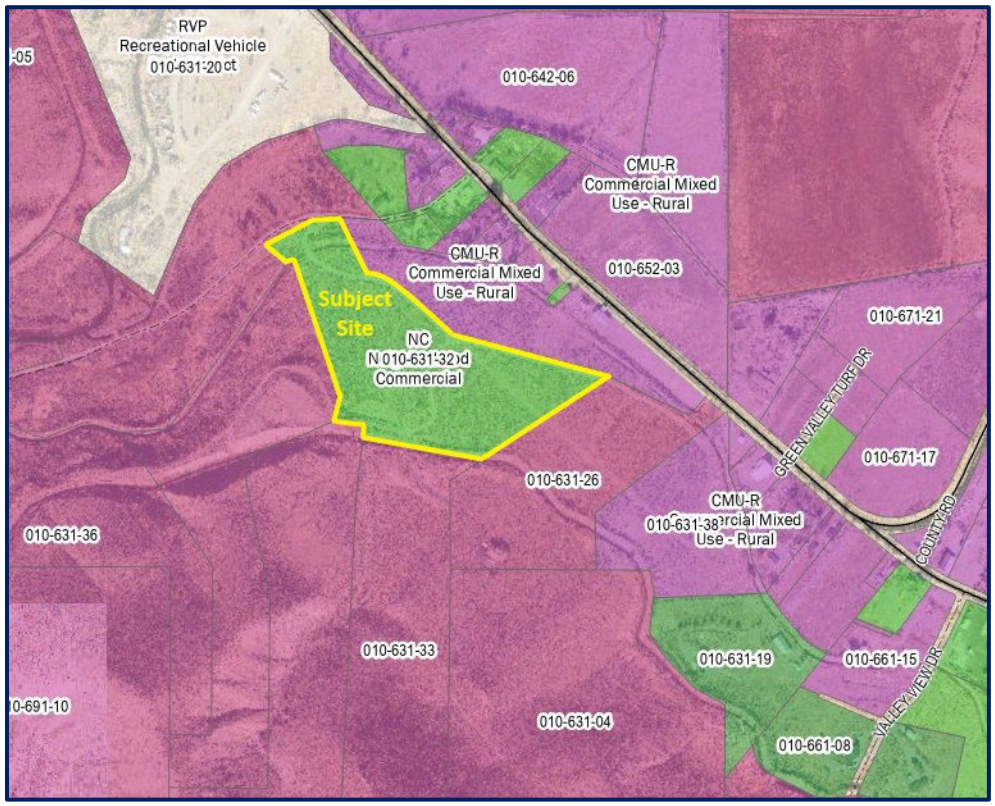
The first image on the following page illustrates the parcel's existing split-zoning, provided by the applicant. The second image from the County's GIS shows the applicable zoning districts for the subject parcel and surrounding parcels as converted through the Title 15 Matrix. The GIS incorrectly depicts the subject parcel as entirely NC because the GIS programming does not reflect show split zoning.

As seen below, the region has a patchwork of zoning districts with most of the existing designations being consistent with the Master Plan designations.

Current applicable zoning is C-1 and RR-5 as depicted in the map below.

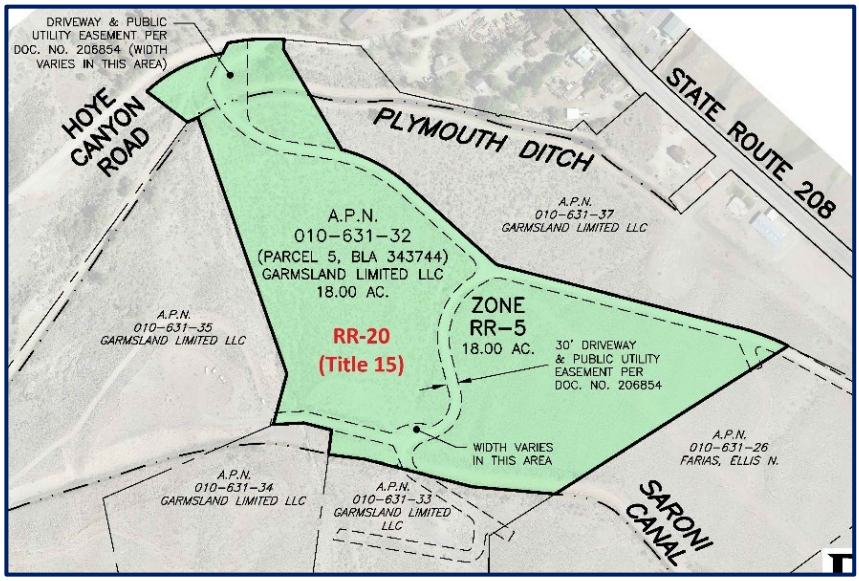


Surrounding property zoning (as converted in Title 15) is RR-20, CMU-R and NC as depicted in the map below.



Proposed Zoning

The proposed zoning of RR-20 would allow the entire parcel to be zoned as residential and would provide for a compatible district with the Master Plan. Additionally, the proposed rezoning aligns the parcel's zoning and supports the proposed Tentative Parcel Maps (TPM) (TPM No. 1: PLZ-2025-107 and TPM No. 2: PLZ-2025-103) that were heard concurrently with this application at the Planning Commission.



As discussed previously, the existing (15.53 acres) and proposed (18.00 acres) acreages associated with this zone amendment are less than 20 acres required by the zoning districts. The TPMs No. 1 and No. 2 were approved by the Planning Commission on February 10, 2026 and will correct the acreage being less than 20 acres, resulting in all RR-5/RR-20 zoning to have lots larger than 20 acres. The approved TPMs are attached as backup to this application.

The purpose of the zoning district per Title 15 is as quoted below:

> ***15.311.01: RURAL RESIDENTIAL, 20 ACRE MINIMUM (RR-20):***
>
> *A. Purpose: This zone is intended to promote the development of single-family detached units at a density and character compatible with agricultural and other rural and suburban fringe uses with a minimum lot size of twenty (20) acres. Unless otherwise specified in this title, no more than one primary residence per parcel is permitted in this zoning district. The RR-20 Zone implements the rural residential land use designation of the Master Plan in Rural Character Districts.*

Per Title 15, the allowed uses in the RR-20 district are as listed below. Uses with a "C" indicate that approval of a Conditional Use Permit and a "T" indicate that approval of a Temporary Use Permit is required for the use to commence.

Accessory Dwelling Unit	Plant Nursery
Home Based Business	Vineyard
Home Occupation	Agricultural Tourism - C
Residential Accessory Use or Building	Agriculture Related Industry – on farm
Single Family Detached	Artisan/Craft Product Manufacturing and Processing
Farm Labor Housing - C	Farm Market - C
Group Living Facility, Small (10 or fewer residents)	Winery
Group Living Facility, Large (11 or more residents) - C	Animal Rescue Facility – C

Public Safety Facility	Kennel – C
Adult or Child Daycare, in- home, 6 or fewer adults or children	Event or Conference Center - C
Adult or Child Daycare, 7 to 12 adults or children - C	Food Trucks/Food Carts – C/T
Adult or Child Daycare, more than 12 adults or children - C	B&B or Inn - C
Athletic Field and Courts	Guest/Dude Ranch - C
Community gardens	Aggregate, Sand and Gravel Extraction and Processing (including asphalt batch plants) - C
Equestrian facilities	Geothermal Generating Systems, Commercial - C
Golf Course or Driving Range	Power Substations - C
Parks	Power Transmission Lines (60 kV or greater) – C/P
Playground	Solar Power Generating Facility, Commercial - C
Private Residential Recreation Facility	Energy Storage Systems - C
Private Use Airstrip - C	Wind Energy Conversion, Commercial - C
Rodeo	Transfer Station – C
School, K-12 (public or private) - C	Brewery - C
Animal Keeping – livestock, poultry, etc.	Craft Distillery - C
Commercial Stable	Estate Distillery - C
Field Crops	

STAFF REVIEW AND COMMENTS

The proposed zoning map amendments are reviewed by staff and the Planning Commission, which forward recommendations to the Board of Commissioners for final action.

FINDINGS FOR REVIEWING A ZONING MAP AMENDMENT REQUEST

Chapter 15.220.05 of Lyon County Code states that when considering approval of a zoning map amendment, three Findings must be considered and supported by a statement of evidence, facts and conclusions. Staff has included those three Findings in **bold type** below. Each Finding is listed with the applicant's response in *italics* and then staff's comments.

Finding A: The proposed amendment is consistent with the policies embodied in the adopted master plan and the underlying land use designation contained in the land use plan.

Applicant's Response

Yes, this proposed amendment is consistent with the Master Plan within the Smith Valley community. A.P.N. 010-631-32, the subject parcel is a vacant 18.00 Acre parcel that lies within the Wellington Hills area. Owner plans to merge and re-subdivide the subject parcel with adjacent parcels under his ownership to create more suitable/buildable parcels along the hillside for future growth. Subject parcel currently has two zone districts (RR-5 & C-1). Zone RR-5 portion is approximately 15.53 acres and Zone C-1 is approximately 2.47 acres in the most east portion of the subject parcel. The owner would like to amend the zoning to omit the C-1 portion.

Staff Comment

The applicant's response is generally supported by staff as the property is currently split-zoned and the commercial portion of the existing zoning is not compatible with the Master Plan, while the proposed zoning is compatible. The proposed zoning amendment to RR-20 supports the following Master Plan Policies:

- Policy LU 1.1: Follow Development Patterns as Established in the Land Use Plan
- Policy LU 2.2: Service Levels to Vary by Character Areas

Staff is able to make this Finding in the affirmative.

Finding B: The proposed amendment will not be inconsistent with the adequate public facilities policies contained in this title;

Applicant's Response

This proposed amendment does not require public facilities at this time. The subject parcel has an existing dirt/gravel roadway that traverses the land with access from Hoye Canyon Road and State Route 208 using a 30-foot driveway and public utility easement per Document No. 206854.

Staff Comment

As described in the Master Plan, "*Smith Valley is a scenic agricultural community and includes the unincorporated communities of Smith and Wellington. The latter is accessed from Highway 208, which enters the Valley from the west"* and *"The vast majority of Smith Valley is designated as Agriculture and Rural Residential in the Master Plan with outposts of Low Density Residential providing most of the residential development potential in the Valley and Mixed Use providing land for services. The Smith Valley is a rural place with limited utility infrastructure, making it unlikely that residents will experience increased growth in the near future."*

Rural Character Areas are typically not served by municipal utilities and may or may not have existing paved accesses. Emergency services will be provided by the Smith Valley Fire Protection District and the Lyon County Sheriffs. This Finding is met in the affirmative by staff.

Finding C: That the proposed amendment is compatible with the actual or master planned adjacent uses.

Applicant's Response

Yes, this proposed amendment is compatible with adjacent uses. Land use is to remain Rural Residential. Land use to the south is Rural Residential. Land use to the north is mixed use along the State Route 208 corridor.

Staff Comment

As stated by the Applicant above, the subject parcels are located in a region of Lyon County that is appropriate for the proposed zoning and would begin to bring this parcel into compliance with the Master Plan. The requested zone change is also the first step, followed by the two Tentative Parcel Maps that will reconfigure a group of properties, bringing them all in compliance with the Master Plan and zoning designations without any increase in density of uses. This Finding is met in the affirmative by staff.

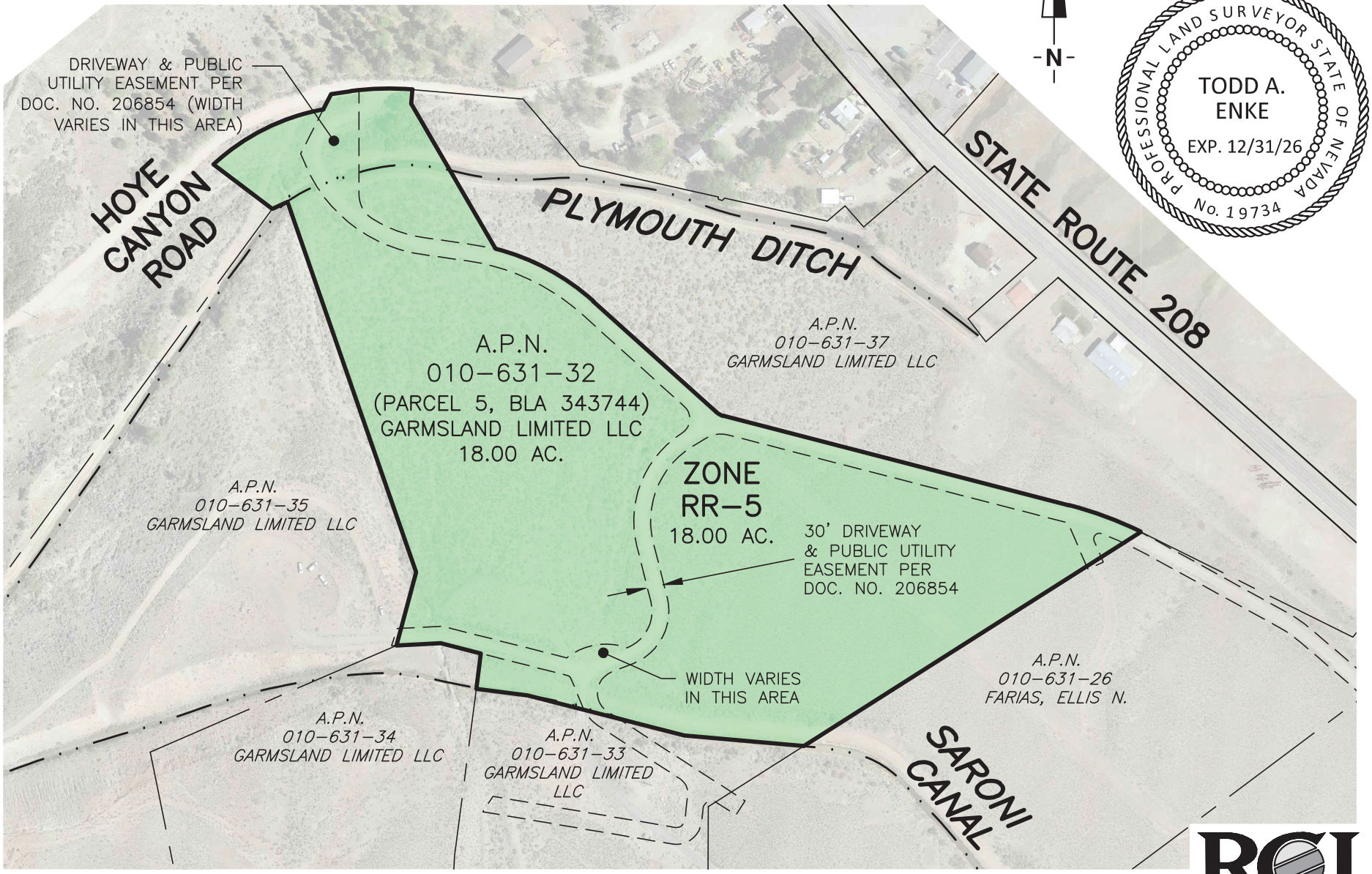
EXHIBIT

PROPOSED ZONING MAP AMENDMENT

(OVER A.P.N. 10-631-32)

0 250

1"=250'



PROFESSIONAL LAND SURVEYOR STATE OF NEVADA
TODD A. ENKE
EXP. 12/31/26
No. 19734

OCTOBER 23, 2025 DRAWN: JS JOB NO. 23-134

RCI
Resource Concepts Inc.
www.rci-nv.com

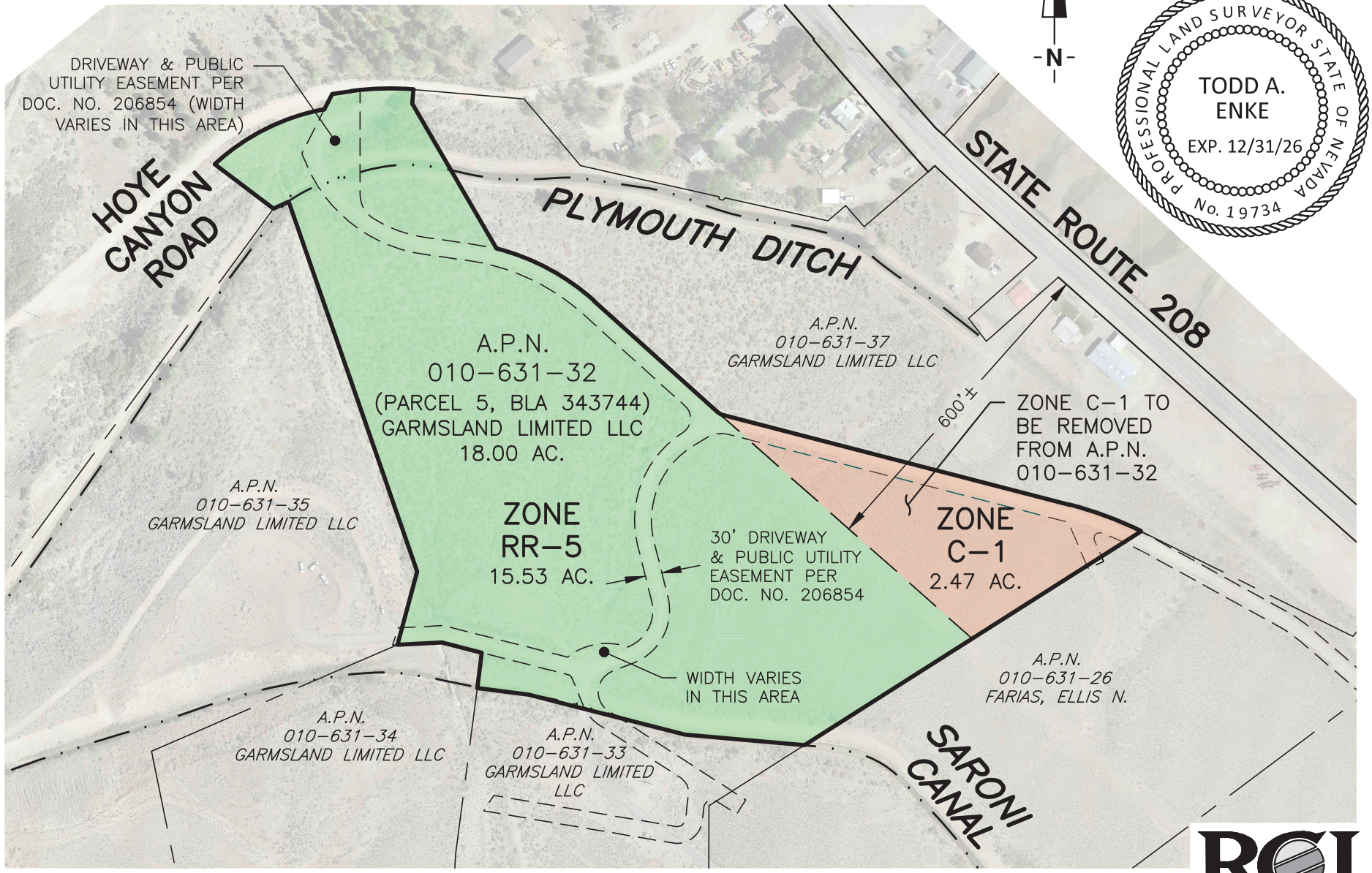
EXHIBIT

EXISTING ZONING

(OVER A.P.N. 10-631-32)

0 250

1"=250'



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PROFESSIONAL LAND SURVEYOR STATE OF NEVADA
TODD A. ENKE
EXP. 12/31/26
No. 19734

OCTOBER 23, 2025 DRAWN: JS JOB NO. 23-134

RCI
Resource Concepts Inc.
www.rci-nv.com

Resource Concepts Inc
Engineering • Surveying • Water Rights
Resource & Environmental Services
www.rci-nv.com

CARSON CITY OFFICE
340 N. Minnesota St.
Carson City, NV 89703-4152
Ph: (775) 883-1600
Fax: (775) 883-1656

DATE:	October 23, 2025
TO:	Lyon County Community Development
FROM:	Jerit Shuman, LSIT(NV), PLS(CA)
RCI PROJECT:	Garmsland Limited LLC Zoning Map Amendment
SUBJECT:	Zoning Map Amendment Project Description for A.P.N. 010-631-32

Project Description

The applicant/owner, Gary Garms, President of Garmsland Limited LLC, is requesting a zone map amendment to change the current zoning of A.P.N. 010-631-32, being Parcel 5 of the Map to Support a Boundary Line Adjustment Document No. 343744. The subject parcel currently lies within two (2) zoning districts, Zone Rural Residential 5-Acre Minimum (RR-5) and Zone Limited Commercial (C-1). The applicant would like to convert the subject parcel to Zone RR-5 entirely and remove the Zone C-1.

Existing Conditions

A.P.N. 010-631-32 is a vacant 18.00 Acre parcel that lies within an area known as Wellington Hills. The subject parcel has primary access from Hoye Canyon Road from the west and secondary access from State Route 208 from the north. There is a 30-foot driveway and public utility easement per Document No. 206854 that traverses the property. Zone C-1 is bounded by Zone VCMU(to the northeast) and Zone RR-5 (to the southwest).

Conclusion

The owner has no plans to use that portion of the subject parcel as limited commercial. The proposed amendment will comply with Lyon County Code 15.220 and NRS 278.260. With the result of this amendment, the owner will then proceed to merge and re-subdivide the subject parcel with adjacent parcels under his ownership to create more suitable/buildable parcels within this mountainous terrain of Wellington Hills while maintaining compliance with Zone RR-5.

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CARSON CITY OFFICE
340 N. Minnesota St.
Carson City, NV 89703-4152
Ph: (775) 883-1600
Fax: (775) 883-1656

DATE:	October 23, 2025
TO:	Lyon County Community Development
FROM:	Jerit Shuman, LSIT(NV), PLS(CA)
RCI PROJECT:	Garmsland Limited LLC Zoning Map Amendment
SUBJECT	Zoning Map Amendment Justification / Findings for A.P.N. 010-631-32

Justifications / Findings (Lyon County Code Chapter15.220.05)

A. Consistency with the Master Plan:

Yes, this proposed amendment is consistent with the Master Plan within the Smith Valley community. A.P.N. 010-631-32, the subject parcel is a vacant 18.00 Acre parcel that lies within the Wellington Hills area. Owner plans to merge and re-subdivide the subject parcel with adjacent parcels under his ownership to create more suitable/buildable parcels along the hillside for future growth. Subject parcel currently has two zone districts (RR-5 & C-1). Zone RR-5 portion is approximately 15.53 acres and Zone C-1 is approximately 2.47 acres in the most east portion of the subject parcel. The owner would like to amend the zoning to omit the C-1 portion.

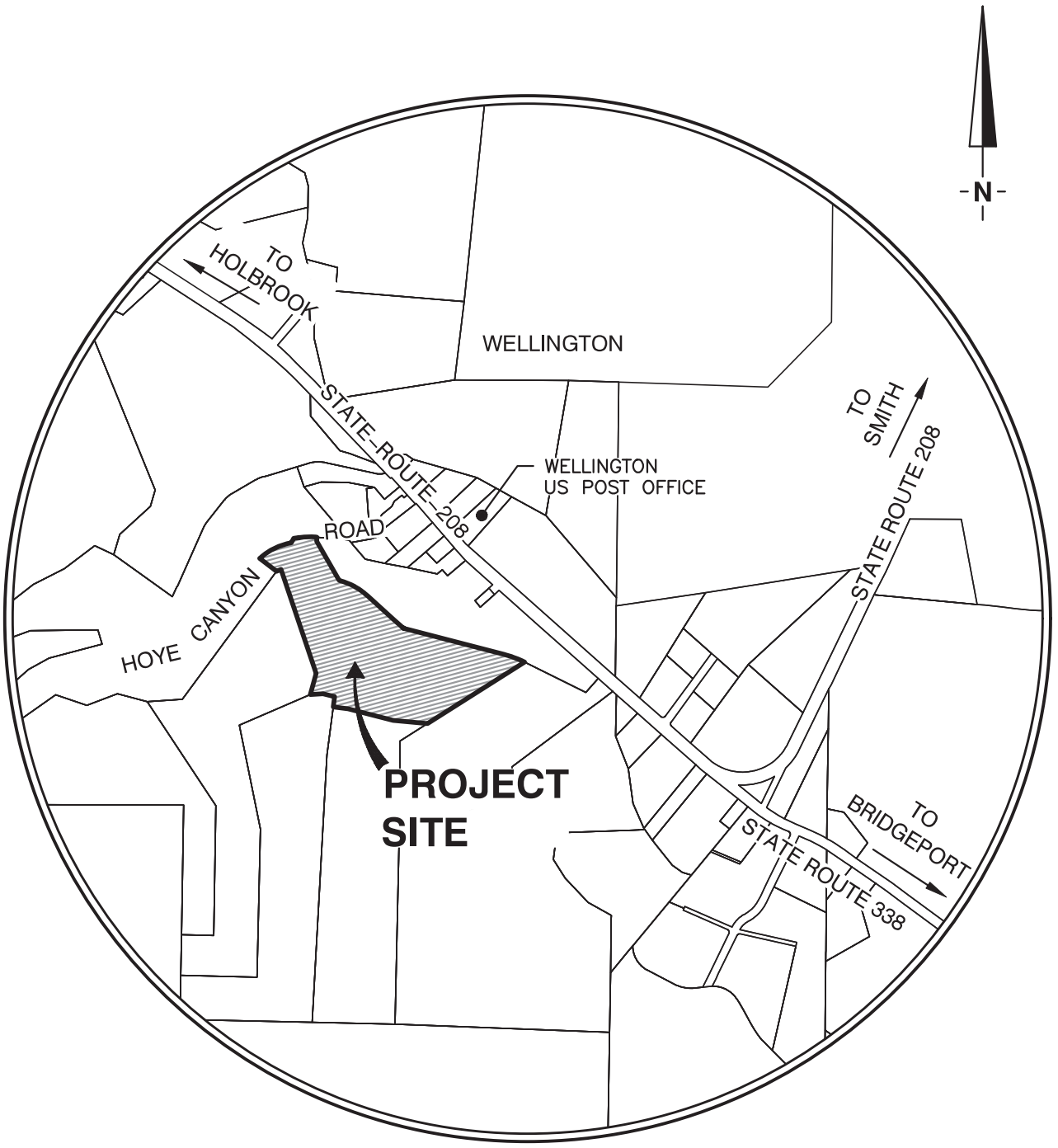
B. Adequate public facilities:

This proposed amendment does not require public facilities at this time. The subject parcel has an existing dirt/gravel roadway that traverses the land with access from Hoye Canyon Road and State Route 208 using a 30-foot driveway and public utility easement per Document No. 206854.

C. Compatibility with adjacent uses:

Yes, this proposed amendment is compatible with adjacent uses. Land use is to remain Rural Residential. Land use to the south is Rural Residential. Land use to the north is mixed use along the State Route 208 corridor.

VICINITY MAP



NO SCALE

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CARSON CITY OFFICE
340 N. Minnesota St.
Carson City, NV 89703-4152
Ph: (775) 883-1600
Fax: (775) 883-1656

DATE:	October 23, 2025
TO:	Lyon County Community Development
FROM:	Jerit Shuman, LSIT(NV), PLS(CA)
RCI PROJECT:	Garmsland Limited LLC Zoning Map Amendment
SUBJECT	Zoning Map Amendment Not-Applicable Letter for A.P.N. 010-631-32

Not-Applicable Letter Items:

6. Reduced Map (11” x 17”)

Due to the type of project, mapping exhibits are legible at 8.5” x 11”.

OWNER'S CERTIFICATE

THIS IS TO CERTIFY THAT GARMSLAND LIMITED LLC, A NEVADA LIMITED LIABILITY COMPANY IS THE OWNER OF THE TRACT(S) OF LAND REPRESENTED ON THIS PLAT AND THAT THE SAME IS EXECUTED IN COMPLIANCE WITH AND SUBJECT TO THE PROVISIONS OF N.R.S. CHAPTER 278. THAT ALL EASEMENTS SHOWN HEREON ARE GRANTED FOR THE STATED PURPOSES. I DECLARE THAT I HAVE EXECUTED THIS CERTIFICATE FOR THE PURPOSE STATED HEREIN. IN WITNESS WHEREOF, THE UNDERSIGNED HAS AFFIXED THEIR NAME. I CONSENT TO THE PREPARATION AND RECORDATION OF THIS PARCEL MAP.

GARMSLAND LIMITED LLC, A NEVADA LIMITED LIABILITY COMPANY

_____
GDA DEGREE INC., GARY J. GARMS — DATE
PRESIDENT, MANAGER

NOTARY PUBLIC

STATE OF NEVADA)
CARSON CITY) S.S.

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON

_____, 2026 BY GDA DEGREE INC., GARY J. GARMS, PRESIDENT, MANAGER OF GARMSLAND LIMITED LLC, A NEVADA LIMITED LIABILITY COMPANY, PERSONALLY APPEARED BEFORE ME, A NOTARY PUBLIC, WHO ACKNOWLEDGED THAT HE EXECUTED THE ABOVE INSTRUMENT.

_____
NOTARY PUBLIC
(MY COMMISSION EXPIRES: _____)

MARY M. WILKINS
NOTARY PUBLIC
STATE OF NEVADA
APPT. No. 23-1083-03
MY APPT. EXPIRES MARCH 20, 2027

TITLE COMPANY CERTIFICATE

THE UNDERSIGNED HEREBY CERTIFIES THAT THIS PARCEL MAP HAS BEEN EXAMINED AND THAT GARMSLAND LIMITED LLC, A NEVADA LIMITED LIABILITY COMPANY IS THE LAST TITLE HOLDER OF RECORD FOR ALL THE LANDS DELINEATED HEREON AND THAT NO ONE HOLDS OF RECORD A SECURITY INTEREST IN THE LANDS AND THAT THERE ARE NO LIENS OF RECORD AGAINST THE OWNER FOR DELINQUENT STATE, COUNTY, MUNICIPAL, FEDERAL OR LOCAL TAXES COLLECTED AS TAXES OR SPECIAL ASSESSMENTS, AS OF _____, 2026.

TICOR TITLE OF NEVADA, INC.

_____
BY: DATE

SURVEYOR'S CERTIFICATE

I, TODD A. ENKE, A PROFESSIONAL LAND SURVEYOR, LICENSED IN THE STATE OF NEVADA DO HEREBY STATE THAT:

1. THIS IS A TRUE AND ACCURATE REPRESENTATION OF THE LANDS SURVEYED UNDER MY SUPERVISION AT THE INSTANCE OF GARY J. GARMS.
2. THE LANDS SURVEYED LIE WITHIN SECTIONS 2, 3 & 11, TOWNSHIP 10 NORTH, RANGE 23 EAST, M.D.M. AND THE SURVEY WAS COMPLETED ON NOVEMBER 5, 2025.
3. THIS MAP IS NOT IN CONFLICT WITH THE PROVISION OF NRS 278.010 TO 278.630, INCLUSIVE.
4. THIS PLAT COMPLIES WITH APPLICABLE STATUTES OF THIS STATE AND ANY LOCAL ORDINANCES IN EFFECT ON THE DATE THAT THE SURVEY WAS COMPLETED, AND THE SURVEY WAS CONDUCTED IN ACCORDANCE WITH CHAPTER 625 OF THE NEVADA ADMINISTRATIVE CODE.
5. THE MONUMENTS DEPICTED ON THE PLAT ARE OF THE CHARACTER SHOWN, OCCUPY THE POSITIONS INDICATED, AND ARE OF SUFFICIENT DURABILITY.

_____ 12/18/2025
TODD A. ENKE, PLS 19734 DATE:

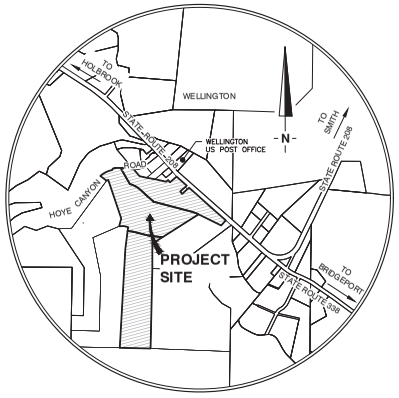
NEVADA SURVEYOR TODD A. ENKE EXP. 12/31/26 PROFESSIONAL LAND SURVEYOR No. 19734

G.I.S. CERTIFICATE

A DIGITAL COPY OF THIS MAP HAS BEEN DELIVERED TO THE LYON COUNTY G.I.S. DEPARTMENT.

_____
BY: DATE

LYON COUNTY G.I.S. DEPARTMENT



VICINITY MAP
NO SCALE

UTILITY COMPANIES CERTIFICATE

A PUBLIC UTILITY EASEMENT IS HEREBY GRANTED WITHIN EACH PARCEL FOR THE EXCLUSIVE PURPOSE OF INSTALLING AND MAINTAINING UTILITY SERVICE FACILITIES TO THAT PARCEL, WITH THE RIGHT TO EXIT THAT PARCEL WITH SAID UTILITY FACILITIES FOR THE PURPOSE OF SERVING OTHER PARCELS, AT LOCATIONS MUTUALLY AGREED UPON BY THE OWNER OF RECORD AT THE TIME OF INSTALLATION AND THE UTILITY.

_____
SIERRA PACIFIC POWER COMPANY — DATE
d/b/a NV ENERGY

_____
PRINT

THE UTILITY EASEMENTS SHOWN ON THIS PLAT HAVE BEEN CHECKED, ACCEPTED AND APPROVED BY THE UNDERSIGNED CABLE TV AND PUBLIC UTILITY COMPANIES.

_____
FRONTIER COMMUNICATIONS — DATE

_____
PRINT

_____
LYON COUNTY UTILITIES — DATE

_____
PRINT

DIVISION OF WATER RESOURCES

THIS FINAL MAP IS APPROVED BY THE DIVISION OF WATER RESOURCES OF THE DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES CONCERNING WATER QUANTITY, SUBJECT TO THE REVIEW OF APPROVAL ON FILE IN THIS OFFICE.

_____
BY: DATE

CHIEF WATER RIGHTS

DIVISION OF WATER RESOURCES

WALKER RIVER IRRIGATION DISTRICT

THE IRRIGATION AND DRAINAGE EASEMENTS SHOWN ON THIS MAP HAVE BEEN CHECKED AND APPROVED, TOGETHER WITH A REVIEW AND CONFIRMATION OF _____ APPURTENANT WATER RIGHT ACRES WITHIN THE BOUNDARIES OF THE WALKER RIVER IRRIGATION DISTRICT.

_____
BY: DATE

RIGHT TO FARM CERTIFICATE

THE LANDS SHOWN HEREON ARE SUBJECT TO THE PROVISIONS OF NEVADA REVISED STATUTES 40.140 AND CHAPTER 15.20 OF THE LYON COUNTY CODE, THE RIGHT TO FARM. LYON COUNTY HAS DETERMINED THAT THE HIGHEST AND BEST USE FOR AGRICULTURAL LAND IS TO DEVELOP OR PRESERVE SAID LANDS FOR THE PURPOSES OF AGRICULTURAL OPERATIONS AND IT WILL NOT CONSIDER THE INCONVENIENCES OR DISCOMFORTS ARISING FROM OR RELATED TO AGRICULTURAL OPERATIONS TO BE A PERCEIVED NUISANCE IF SUCH OPERATIONS ARE LEGAL, CONSISTENT WITH ACCEPTED CUSTOMS AND STANDARDS, AND OPERATED IN A NON-NEGLIGENT MANNER.

COMMUNITY DEVELOPMENT AND PLANNING COMMISSION CERTIFICATE

THIS PLAT HAS BEEN EXAMINED AND FOUND TO BE IN SUBSTANTIAL CONFORMANCE WITH THE TENTATIVE MAP PLZ-___-___ APPROVED BY THE PLANNING COMMISSION ON THE ___ DAY OF _____, 202__, AND ALL CONDITIONS IMPOSED UPON ITS APPROVAL HAVE BEEN SATISFIED.

_____
BY: DATE
PLANNING COMMISSION CHAIRPERSON

_____
BY: DATE
COMMUNITY DEVELOPMENT DIRECTOR

COUNTY ENGINEER'S CERTIFICATE

I, _____ CERTIFY THAT I HAVE EXAMINED THIS FINAL MAP FOR GARMSLAND LIMITED LLC, A NEVADA LIMITED LIABILITY COMPANY LOCATED IN SECTIONS 2, 3 & 11, TOWNSHIP 10 NORTH, RANGE 23 EAST, M.D.M., AS SHOWN ON THIS PLAT, AND THAT IT IS SUBSTANTIALLY AS IT APPEARS ON THE APPROVED TENTATIVE MAP, THAT ALL PROVISIONS OF NRS 278 AND ALL LOCAL ORDINANCES HAVE BEEN COMPLIED WITH AND THAT THIS MAP IS TECHNICALLY CORRECT.

_____
BY: DATE

LYON COUNTY ENGINEER

TREASURER'S CERTIFICATE

I, STACI LINDBERG, LYON COUNTY CLERK/TREASURER HEREBY CERTIFY THAT THERE ARE NO LIENS FOR UNPAID STATE, COUNTY, CITY OR LOCAL TAXES OR SPECIAL ASSESSMENTS AND THAT ALL TAXES FOR THE FISCAL YEAR HAVE BEEN PAID ON PROPERTY THAT IS THE SUBJECT OF THIS MAP.
A.P.N. 010-631-32, A.P.N. 010-631-33, & A.P.N. 010-631-37

_____
STACI LINDBERG — DATE
LYON COUNTY CLERK/TREASURER

RECORDER'S CERTIFICATE

FILED FOR RECORD THIS _____ DAY OF _____, 2026, AT ___ MINUTES PAST ___ O'CLOCK __.M., IN THE OFFICIAL RECORDS OF LYON COUNTY, NEVADA, AT THE REQUEST OF GARMSLAND LIMITED LLC, A NEVADA LIMITED LIABILITY COMPANY.

RECORDING FEE: _____ FILE NO.: _____

_____
ANITA TALBOT
LYON COUNTY RECORDER

SHEET 1 OF 3

PARCEL MAP

MERGER AND RESUBDIVISION OF PARCEL 4 & PARCEL 5 OF MAP TO SUPPORT A BOUNDARY LINE ADJUSTMENT FILE NO. 343744, AND A.P.N. 010-631-31 OF RECORD OF SURVEY FILE NO. 673884 FOR

GARMSLAND LIMITED LLC

PORTION OF SECTIONS 2, 3 & 11, TOWNSHIP 10 NORTH, RANGE 23 EAST, M.D.M.

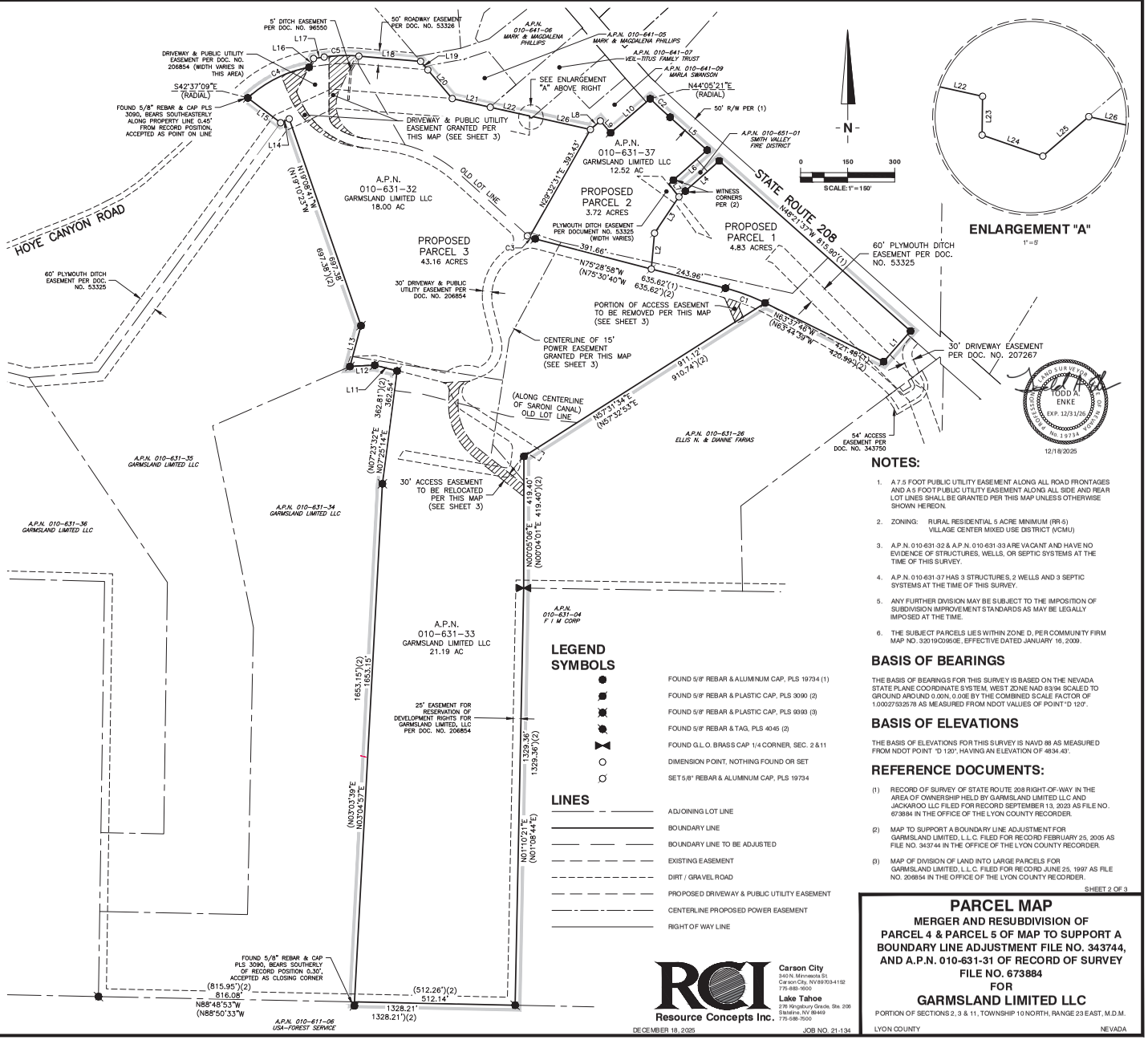
LYON COUNTY — NEVADA

Resource Concepts Inc.
Carson City
340 N. Minnesota St.
Carson City, NV 89703-4152
775-883-1600
Lake Tahoe
276 Kingsbury Grade, Ste. 206
Stateline, NV 89449
775-588-7500

DECEMBER 18, 2025 — JOB NO. 21-134

LINE TABLE			
LINE	BEARING	DISTANCE	RECORD
L1	S41°25'23"W	129.83'	(1)
	(S41°23'37"W)		(2)
L2	N05°07'38"E	114.70'	
L3	N33°51'33"E	139.51'	
L4	N48°19'26"E	171.76'	(1)
	(N48°17'44"E)		(2)
L5	S48°21'37"E	157.60'	(1)
L6	S48°19'26"W	162.31'	(1)
	(S48°17'44"W)		(2)
L7	S37°52'44"E	51.58'	(1)
	(S37°54'26"E)	(51.58')	(2)
L8	N49°11'03"E	41.86'	(1)
	(N49°09'21"E)	(41.86')	(2)
L9	S40°54'27"E	49.93'	(1)
	(S40°56'09"E)	(49.93')	(2)
L10	N49°19'55"E	166.17'	(1)
	(N49°18'13"E)		(2)
L11	N75°43'03"W	73.53'	
	(N75°44'45"W)	(73.61')	(2)
L12	S87°10'32"W	79.10'	
	(S87°08'50"W)	(79.10')	(2)
L13	N15°08'21"E	134.77'	
	(N15°06'39"E)	(134.77')	(2)
L14	N65°33'53"E	30.09'	
	(N65°06'56"E)	(30.09')	(2)
L15	N52°50'10"W	131.10'	
	(N52°48'23"W)	(131.10')	(2)
L16	N27°09'22"E	31.33'	
	(N27°07'40"E)	(31.04')	(2)
	(N27°07'44"E)	(31.03')	(3)
L17	N82°05'49"E	34.33'	
	(N82°04'07"E)	(34.33')	(2)(3)
L18	S85°09'10"E	197.34'	(1)
	(S85°10'52"E)	(197.34')	(2)
	(S85°10'46"E)	(197.35')	(3)
L19	S40°28'36"E	35.54'	(1)
	(S40°28'18"E)	(35.55')	(2)
	(S40°28'13"E)	(35.54')	(3)
L20	S40°24'15"E	120.10'	(1)
	(S40°25'57"E)	(120.10')	(2)
	(S40°28'13"E)	(120.02')	(3)
L21	S77°08'58"E	124.40'	(1)
	(S77°10'40"E)	(124.40')	(2)
L22	S77°28'30"E	128.35'	(1)
	(S77°30'12"E)	(128.36')	(2)
L23	S00°42'23"W	4.12'	(1)
	(S00°40'41"W)	(4.12')	(2)
L24	S70°55'07"E	6.83'	(1)
	(S70°56'49"E)	(6.83')	(2)
L25	N49°19'05"E	6.43'	(1)
	(N49°17'23"E)	(6.43')	(2)
L26	S77°22'14"E	187.01'	(1)
	(S77°23'56"E)	(187.01')	(2)

CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	RECORD
C1	134.97'	665.00'	11°37'43"	(1)(2)
C2	86.57'	2025.00'	2°26'58"	(1)
C3	9.80'	30.00'	18°43'34"	
C4	221.01'	394.20'	32°07'22"	(2)
C5	110.80'	500.00'	12°41'47"	(2)(3)



LEGEND

SYMBOLS

- FOUND 5/8" REBAR & ALUMINUM CAP, PLS 19734 (1)
- FOUND 5/8" REBAR & PLASTIC CAP, PLS 3090 (2)
- FOUND 5/8" REBAR & PLASTIC CAP, PLS 9393 (3)
- FOUND 5/8" REBAR & TAG, PLS 4045 (2)
- FOUND G.L.O. BRASS CAP 1/4 CORNER, SEC. 2 & 11
- DIMENSION POINT, NOTHING FOUND OR SET
- SET 5/8" REBAR & ALUMINUM CAP, PLS 19734

LINES

- ADJOINING LOT LINE
- BOUNDARY LINE
- BOUNDARY LINE TO BE ADJUSTED
- EXISTING EASEMENT
- DIRT / GRAVEL ROAD
- PROPOSED DRIVEWAY & PUBLIC UTILITY EASEMENT
- CENTERLINE PROPOSED POWER EASEMENT
- RIGHT OF WAY LINE

NOTES:

1. A 7.5 FOOT PUBLIC UTILITY EASEMENT ALONG ALL ROAD FRONTAGES AND A 5 FOOT PUBLIC UTILITY EASEMENT ALONG ALL SIDE AND REAR LOT LINES SHALL BE GRANTED PER THIS MAP UNLESS OTHERWISE SHOWN HEREON.
2. ZONING: RURAL RESIDENTIAL 5 ACRE MINIMUM (RR-5)
   VILLAGE CENTER MIXED USE DISTRICT (VCMU)
3. A.P.N. 010-631-32 & A.P.N. 010-631-33 ARE VACANT AND HAVE NO EVIDENCE OF STRUCTURES, WELLS, OR SEPTIC SYSTEMS AT THE TIME OF THIS SURVEY.
4. A.P.N. 010-631-37 HAS 3 STRUCTURES, 2 WELLS AND 3 SEPTIC SYSTEMS AT THE TIME OF THIS SURVEY.
5. ANY FURTHER DIVISION MAY BE SUBJECT TO THE IMPOSITION OF SUBDIVISION IMPROVEMENT STANDARDS AS MAY BE LEGALLY IMPOSED AT THE TIME.
6. THE SUBJECT PARCELS LIES WITHIN ZONE D, PER COMMUNITY FIRM MAP NO. 32019C0950E, EFFECTIVE DATED JANUARY 16, 2009.

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS BASED ON THE NEVADA STATE PLANE COORDINATE SYSTEM, WEST ZONE NAD 83/94 SCALED TO GROUND AROUND 0.00N, 0.00E BY THE COMBINED SCALE FACTOR OF 1.00027532578 AS MEASURED FROM NDOT VALUES OF POINT "D 120".

BASIS OF ELEVATIONS

THE BASIS OF ELEVATIONS FOR THIS SURVEY IS NAVD 88 AS MEASURED FROM NDOT POINT "D 120", HAVING AN ELEVATION OF 4834.43'.

REFERENCE DOCUMENTS:

(1) RECORD OF SURVEY OF STATE ROUTE 208 RIGHT-OF-WAY IN THE AREA OF OWNERSHIP HELD BY GARMSLAND LIMITED LLC AND JACKAROO LLC FILED FOR RECORD SEPTEMBER 13, 2023 AS FILE NO. 673884 IN THE OFFICE OF THE LYON COUNTY RECORDER.

(2) MAP TO SUPPORT A BOUNDARY LINE ADJUSTMENT FOR GARMSLAND LIMITED, L.L.C. FILED FOR RECORD FEBRUARY 25, 2005 AS FILE NO. 343744 IN THE OFFICE OF THE LYON COUNTY RECORDER.

(3) MAP OF DIVISION OF LAND INTO LARGE PARCELS FOR GARMSLAND LIMITED, L.L.C. FILED FOR RECORD JUNE 25, 1997 AS FILE NO. 206854 IN THE OFFICE OF THE LYON COUNTY RECORDER.

PARCEL MAP

MERGER AND RESUBDIVISION OF PARCEL 4 & PARCEL 5 OF MAP TO SUPPORT A BOUNDARY LINE ADJUSTMENT FILE NO. 343744, AND A.P.N. 010-631-31 OF RECORD OF SURVEY FILE NO. 673884

FOR

GARMSLAND LIMITED LLC

PORTION OF SECTIONS 2, 3 & 11, TOWNSHIP 10 NORTH, RANGE 23 EAST, M.D.M.

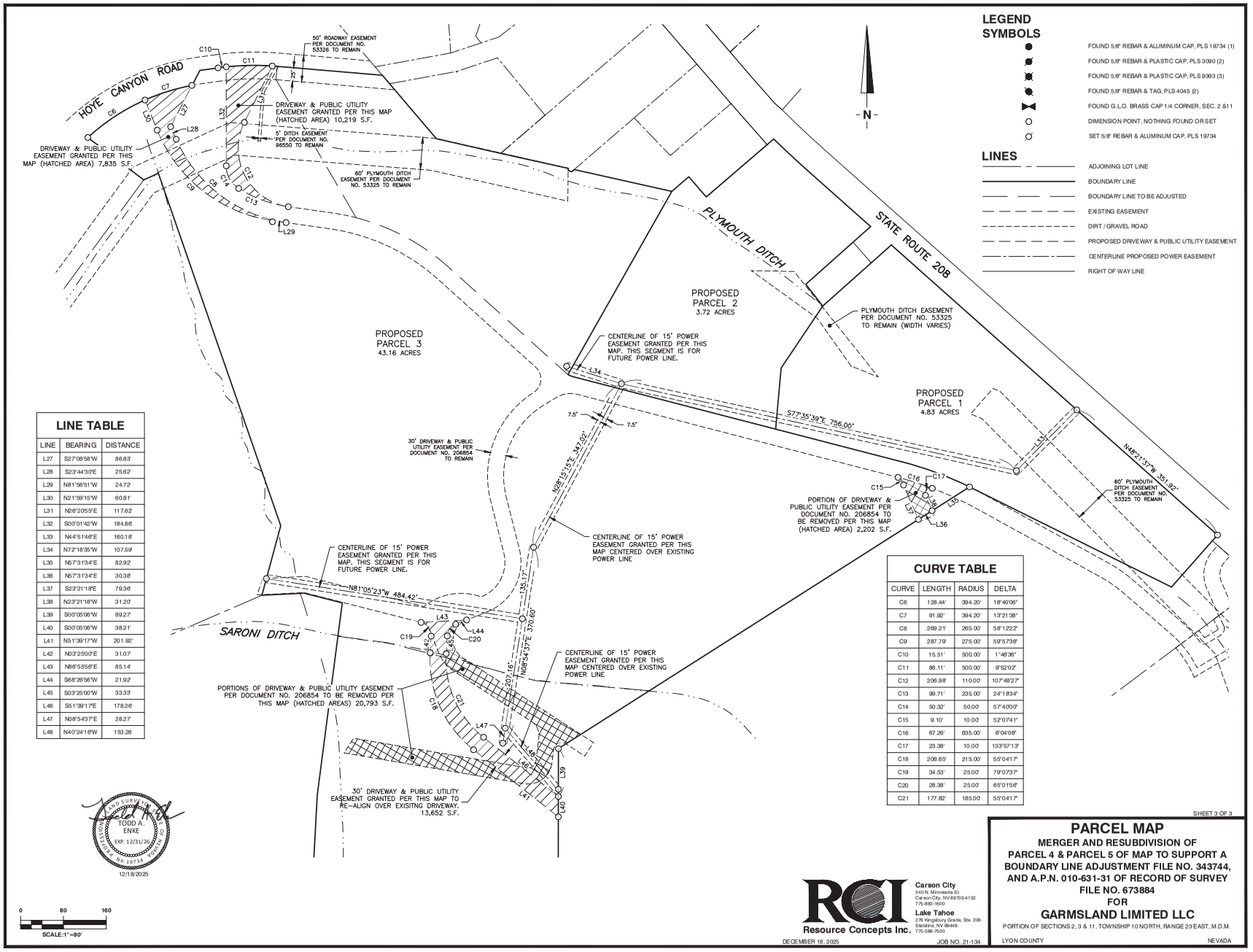
LYON COUNTY NEVADA

Resource Concepts Inc.

Carson City
340 N. Minnesota St.
Carson City, NV 89703-4152
775-883-1600

Lake Tahoe
276 Kingsbury Grade, Ste. 206
Stateline, NV 89449
775-588-7500

DECEMBER 18, 2025 JOB NO. 21-134



LINE TABLE

LINE	BEARING	DISTANCE
L27	S27°08'58"W	86.83'
L28	S23°44'30"E	25.62'
L29	N81°56'51"W	24.72'
L30	N21°59'15"W	60.81'
L31	N26°20'55"E	117.62'
L32	S00°01'42"W	184.86'
L33	N44°51'46"E	160.18'
L34	N72°18'35"W	107.59'
L35	N57°31'34"E	82.92'
L36	N57°31'34"E	30.38'
L37	S23°21'18"E	79.36'
L38	N23°21'18"W	31.20'
L39	S00°05'06"W	89.27'
L40	S00°05'06"W	38.21'
L41	N51°39'17"W	201.92'
L42	N03°29'00"E	31.07'
L43	N86°55'56"E	85.14'
L44	S68°26'56"W	21.92'
L45	S03°25'00"W	33.33'
L46	S51°39'17"E	178.26'
L47	N08°54'37"E	28.27'
L48	N40°24'16"W	153.28'

CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA
C6	128.44'	394.20'	18°40'06"
C7	91.92'	394.20'	13°21'38"
C8	269.21'	265.00'	58°12'22"
C9	287.79'	275.00'	59°57'36"
C10	15.51'	500.00'	1°46'36"
C11	86.11'	500.00'	9°52'02"
C12	206.98'	110.00'	107°48'27"
C13	99.71'	235.00'	24°18'34"
C14	50.32'	50.00'	57°40'00"
C15	9.10'	10.00'	52°07'41"
C16	67.26'	635.00'	6°04'08"
C17	23.38'	10.00'	133°57'13"
C18	206.65'	215.00'	55°04'17"
C19	34.53'	25.00'	79°07'37"
C20	28.38'	25.00'	65°01'56"
C21	177.82'	185.00'	55°04'17"

TODD A. ENKE
EXP. 12/31/25
12/18/2025

SHEET 3 OF 3

PARCEL MAP

MERGER AND RESUBDIVISION OF PARCEL 4 & PARCEL 5 OF MAP TO SUPPORT A BOUNDARY LINE ADJUSTMENT FILE NO. 343744, AND A.P.N. 010-631-31 OF RECORD OF SURVEY FILE NO. 673884

FOR

GARMSLAND LIMITED LLC

PORTION OF SECTIONS 2, 3 & 11, TOWNSHIP 10 NORTH, RANGE 23 EAST, M.D.M.

LYON COUNTY NEVADA

Resource Concepts Inc.
Carson City
340 N. Minnesota St.
Carson City, NV 89703-4152
775-883-1600
Lake Tahoe
276 Kingsbury Grade, Ste. 206
Stateline, NV 89449
775-588-7500

DECEMBER 18, 2025 JOB NO. 21-134

OWNER'S CERTIFICATE

THIS IS TO CERTIFY THAT GARMSLAND LIMITED LLC, A NEVADA LIMITED LIABILITY COMPANY IS THE OWNER OF THE TRACT(S) OF LAND REPRESENTED ON THIS PLAT AND THAT THE SAME IS EXECUTED IN COMPLIANCE WITH AND SUBJECT TO THE PROVISIONS OF N.R.S. CHAPTER 278. THAT ALL EASEMENTS SHOWN HEREON ARE GRANTED FOR THE STATED PURPOSES. I DECLARE THAT I HAVE EXECUTED THIS CERTIFICATE FOR THE PURPOSE STATED HEREIN. IN WITNESS WHEREOF, THE UNDERSIGNED HAS AFFIXED THEIR NAME. I CONSENT TO THE PREPARATION AND RECORDATION OF THIS PARCEL MAP.

GARMSLAND LIMITED LLC, A NEVADA LIMITED LIABILITY COMPANY

_____

GDA DEGREE INC., GARY J. GARMS DATE
PRESIDENT, MANAGER

NOTARY PUBLIC

STATE OF NEVADA)
CARSON CITY) S.S.

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON

_____, 2026 BY GDA DEGREE INC., GARY J. GARMS, PRESIDENT, MANAGER OF GARMSLAND LIMITED LLC, A NEVADA LIMITED LIABILITY COMPANY, PERSONALLY APPEARED BEFORE ME, A NOTARY PUBLIC, WHO ACKNOWLEDGED THAT HE EXECUTED THE ABOVE INSTRUMENT.

_____
NOTARY PUBLIC
(MY COMMISSION EXPIRES:_____)

MARY M. WILKINS
NOTARY PUBLIC
STATE OF NEVADA
APPT. No. 23-1065-03
MY APPT. EXPIRES MARCH 20, 2027

TITLE COMPANY CERTIFICATE

THE UNDERSIGNED HEREBY CERTIFIES THAT THIS PARCEL MAP HAS BEEN EXAMINED AND THAT GARMSLAND LIMITED LLC, A NEVADA LIMITED LIABILITY COMPANY IS THE LAST TITLE HOLDER OF RECORD FOR ALL THE LANDS DELINEATED HEREON AND THAT NO ONE HOLDS OF RECORD A SECURITY INTEREST IN THE LANDS AND THAT THERE ARE NO LIENS OF RECORD AGAINST THE OWNER FOR DELINQUENT STATE, COUNTY, MUNICIPAL, FEDERAL OR LOCAL TAXES COLLECTED AS TAXES OR SPECIAL ASSESSMENTS, AS OF _____, 2026.

TICOR TITLE OF NEVADA, INC.

_____
BY: DATE

SURVEYOR'S CERTIFICATE

I, TODD A. ENKE, A PROFESSIONAL LAND SURVEYOR, LICENSED IN THE STATE OF NEVADA DO HEREBY STATE THAT:

1. THIS IS A TRUE AND ACCURATE REPRESENTATION OF THE LANDS SURVEYED UNDER MY SUPERVISION AT THE INSTANCE OF GARY J. GARMS.
2. THE LANDS SURVEYED LIE WITHIN SECTIONS 2, 3 & 11, TOWNSHIP 10 NORTH, RANGE 23 EAST, M.D.M. AND THE SURVEY WAS COMPLETED ON NOVEMBER 5, 2025.
3. THIS MAP IS NOT IN CONFLICT WITH THE PROVISION OF NRS 278.010 TO 278.630, INCLUSIVE.
4. THIS PLAT COMPLIES WITH APPLICABLE STATUTES OF THIS STATE AND ANY LOCAL ORDINANCES IN EFFECT ON THE DATE THAT THE SURVEY WAS COMPLETED, AND THE SURVEY WAS CONDUCTED IN ACCORDANCE WITH CHAPTER 625 OF THE NEVADA ADMINISTRATIVE CODE.
5. THE MONUMENTS DEPICTED ON THE PLAT ARE OF THE CHARACTER SHOWN, OCCUPY THE POSITIONS INDICATED, AND ARE OF SUFFICIENT DURABILITY.

_____ 12/18/2025
TODD A. ENKE, PLS 19734 DATE:

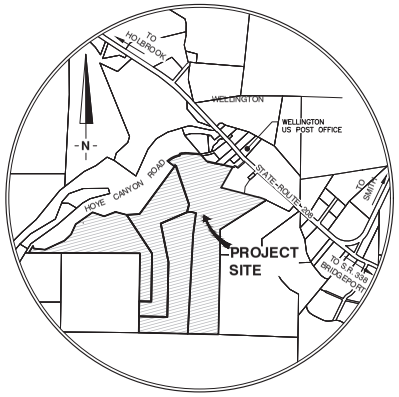
PROFESSIONAL LAND SURVEYOR
TODD A. ENKE
EXP. 12/31/26
STATE OF NEVADA
No. 19734

G.I.S. CERTIFICATE

A DIGITAL COPY OF THIS MAP HAS BEEN DELIVERED TO THE LYON COUNTY G.I.S. DEPARTMENT.

_____
BY: DATE

LYON COUNTY G.I.S. DEPARTMENT



VICINITY MAP
NO SCALE

UTILITY COMPANIES CERTIFICATE

A PUBLIC UTILITY EASEMENT IS HEREBY GRANTED WITHIN EACH PARCEL FOR THE EXCLUSIVE PURPOSE OF INSTALLING AND MAINTAINING UTILITY SERVICE FACILITIES TO THAT PARCEL, WITH THE RIGHT TO EXIT THAT PARCEL WITH SAID UTILITY FACILITIES FOR THE PURPOSE OF SERVING OTHER PARCELS, AT LOCATIONS MUTUALLY AGREED UPON BY THE OWNER OF RECORD AT THE TIME OF INSTALLATION AND THE UTILITY.

_____
SIERRA PACIFIC POWER COMPANY DATE
d/b/a NV ENERGY

_____
PRINT

THE UTILITY EASEMENTS SHOWN ON THIS PLAT HAVE BEEN CHECKED, ACCEPTED AND APPROVED BY THE UNDERSIGNED CABLE TV AND PUBLIC UTILITY COMPANIES.

_____
FRONTIER COMMUNICATIONS DATE

_____
PRINT

_____
LYON COUNTY UTILITIES DATE

_____
PRINT

DIVISION OF WATER RESOURCES

THIS FINAL MAP IS APPROVED BY THE DIVISION OF WATER RESOURCES OF THE DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES CONCERNING WATER QUANTITY, SUBJECT TO THE REVIEW OF APPROVAL ON FILE IN THIS OFFICE.

_____
BY: DATE

CHIEF WATER RIGHTS

DIVISION OF WATER RESOURCES

WALKER RIVER IRRIGATION DISTRICT

THE IRRIGATION AND DRAINAGE EASEMENTS SHOWN ON THIS MAP HAVE BEEN CHECKED AND APPROVED, TOGETHER WITH A REVIEW AND CONFIRMATION OF APPURTENANT WATER RIGHT ACRES WITHIN THE BOUNDARIES OF THE WALKER RIVER IRRIGATION DISTRICT.

_____
BY: DATE

NOTES:

1. A 7.5 FOOT PUBLIC UTILITY EASEMENT ALONG ALL ROAD FRONTAGES AND A 5 FOOT PUBLIC UTILITY EASEMENT ALONG ALL SIDE AND REAR LOT LINES SHALL BE GRANTED PER THIS MAP UNLESS OTHERWISE SHOWN HEREON.
2. ZONING: RURAL RESIDENTIAL 5 ACRE MINIMUM (RR-5)
   VILLAGE CENTER MIXED USE DISTRICT (VCMU)
3. ALL SUBJECT PARCELS ARE VACANT AND HAVE NO EVIDENCE OF STRUCTURES, WELLS, OR SEPTIC SYSTEMS AT THE TIME OF THIS SURVEY.
4. ANY FURTHER DIVISION MAY BE SUBJECT TO THE IMPOSITION OF SUBDIVISION IMPROVEMENT STANDARDS AS MAY BE LEGALLY IMPOSED AT THE TIME.
5. THE SUBJECT PARCELS LIES WITHIN ZONE A & ZONE D, PER COMMUNITY FIRM MAP NO. 32019C0950E, EFFECTIVE DATED JANUARY 16, 2009.

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS BASED ON THE NEVADA STATE PLANE COORDINATE SYSTEM, WEST ZONE NAD 83/94 SCALED TO GROUND AROUND 0.00N, 0.00E BY THE COMBINED SCALE FACTOR OF 1.00027532578 AS MEASURED FROM NDOT VALUES OF POINT "D 120".

REFERENCE DOCUMENTS:

(1) RECORD OF SURVEY OF STATE ROUTE 208 RIGHT-OF-WAY IN THE AREA OF OWNERSHIP HELD BY GARMSLAND LIMITED LLC AND JACKAROO LLC FILED FOR RECORD SEPTEMBER 13, 2023 AS FILE NO. 673884 IN THE OFFICE OF THE LYON COUNTY RECORDER.

(2) MAP TO SUPPORT A BOUNDARY LINE ADJUSTMENT FOR GARMSLAND LIMITED, L.L.C. FILED FOR RECORD FEBRUARY 25, 2005 AS FILE NO. 343744 IN THE OFFICE OF THE LYON COUNTY RECORDER.

(3) MAP OF DIVISION OF LAND INTO LARGE PARCELS FOR GARMSLAND LIMITED, L.L.C. FILED FOR RECORD JUNE 25, 1997 AS FILE NO. 206854 IN THE OFFICE OF THE LYON COUNTY RECORDER.

(4) PARCEL MAP BEING A MERGER AND RESUBDIVISION FOR GARMSLAND LIMITED LLC FILED FOR RECORD _____, 2026 AS FILE NO. _____ IN THE OFFICE OF THE LYON COUNTY RECORDER.

RIGHT TO FARM CERTIFICATE

THE LANDS SHOWN HEREON ARE SUBJECT TO THE PROVISIONS OF NEVADA REVISED STATUTES 40.140 AND CHAPTER 15.20 OF THE LYON COUNTY CODE, THE RIGHT TO FARM. LYON COUNTY HAS DETERMINED THAT THE HIGHEST AND BEST USE FOR AGRICULTURAL LAND IS TO DEVELOP OR PRESERVE SAID LANDS FOR THE PURPOSES OF AGRICULTURAL OPERATIONS AND IT WILL NOT CONSIDER THE INCONVENIENCES OR DISCOMFORTS ARISING FROM OR RELATED TO AGRICULTURAL OPERATIONS TO BE A PERCEIVED NUISANCE IF SUCH OPERATIONS ARE LEGAL, CONSISTENT WITH ACCEPTED CUSTOMS AND STANDARDS, AND OPERATED IN A NON-NEGLIGENT MANNER.

COMMUNITY DEVELOPMENT AND PLANNING COMMISSION CERTIFICATE

THIS PLAT HAS BEEN EXAMINED AND FOUND TO BE IN SUBSTANTIAL CONFORMANCE WITH THE TENTATIVE MAP PLZ-_____-___ APPROVED BY THE PLANNING COMMISSION ON THE ___ DAY OF _____, 202__, AND ALL CONDITIONS IMPOSED UPON ITS APPROVAL HAVE BEEN SATISFIED.

_____
BY: DATE
PLANNING COMMISSION CHAIRPERSON

_____
BY: DATE
COMMUNITY DEVELOPMENT DIRECTOR

COUNTY ENGINEER'S CERTIFICATE

I, _____, CERTIFY THAT I HAVE EXAMINED THIS FINAL MAP FOR GARMSLAND LIMITED LLC, A NEVADA LIMITED LIABILITY COMPANY LOCATED IN SECTIONS 2, 3 & 11, TOWNSHIP 10 NORTH, RANGE 23 EAST, M.D.M., AS SHOWN ON THIS PLAT, AND THAT IT IS SUBSTANTIALLY AS IT APPEARS ON THE APPROVED TENTATIVE MAP, THAT ALL PROVISIONS OF NRS 278 AND ALL LOCAL ORDINANCES HAVE BEEN COMPLIED WITH AND THAT THIS MAP IS TECHNICALLY CORRECT.

_____
BY: DATE

LYON COUNTY ENGINEER

TREASURER'S CERTIFICATE

I, STACI LINDBERG, LYON COUNTY CLERK/TREASURER HEREBY CERTIFY THAT THERE ARE NO LIENS FOR UNPAID STATE, COUNTY, CITY OR LOCAL TAXES OR SPECIAL ASSESSMENTS AND THAT ALL TAXES FOR THE FISCAL YEAR HAVE BEEN PAID ON PROPERTY THAT IS THE SUBJECT OF THIS MAP.
A.P.N. 010-631-34, A.P.N. 010-631-35, A.P.N. 010-631-36 & A.P.N. 010-631-___

_____
STACI LINDBERG DATE
LYON COUNTY CLERK/TREASURER

RECORDER'S CERTIFICATE

FILED FOR RECORD THIS _____ DAY OF _____, 2026, AT ___ MINUTES PAST ___ O'CLOCK __.M., IN THE OFFICIAL RECORDS OF LYON COUNTY, NEVADA, AT THE REQUEST OF GARMSLAND LIMITED LLC, A NEVADA LIMITED LIABILITY COMPANY.

RECORDING FEE: _____ FILE NO.: _____

_____
ANITA TALBOT
LYON COUNTY RECORDER

SHEET 1 OF 2

PARCEL MAP

MERGER AND RESUBDIVISION OF PARCEL 1, PARCEL 2 & PARCEL 3 OF MAP TO SUPPORT A BOUNDARY LINE ADJUSTMENT FILE NO. 343744, AND PARCEL 3 OF PARCEL MAP FILE NO. _____

FOR

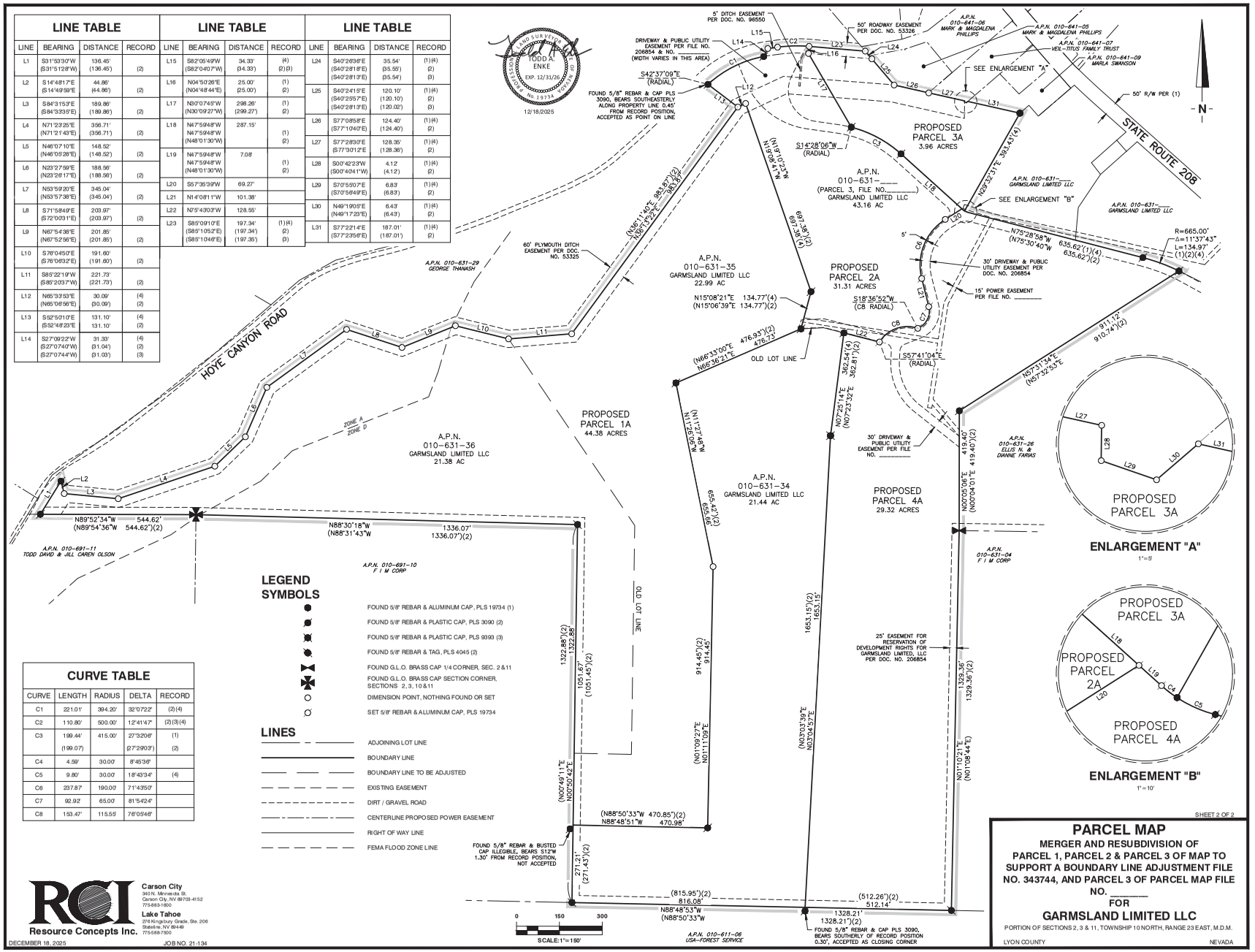
GARMSLAND LIMITED LLC

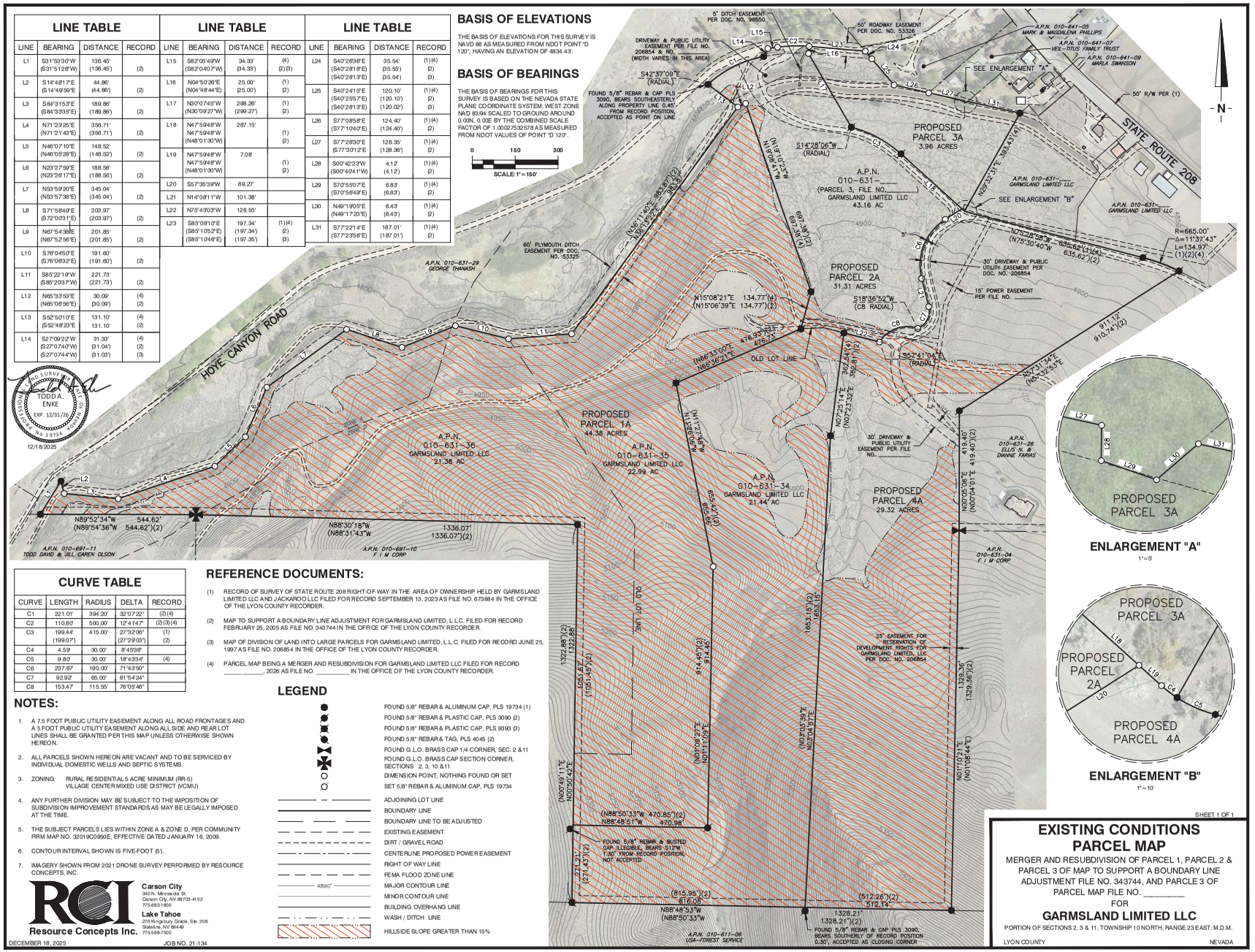
PORTION OF SECTIONS 2, 3 & 11, TOWNSHIP 10 NORTH, RANGE 23 EAST, M.D.M.

LYON COUNTY NEVADA

Resource Concepts Inc.
Carson City
340 N. Minnesota St.
Carson City, NV 89703-4152
775-883-1600
Lake Tahoe
276 Kingsbury Grade, Ste. 206
Stateline, NV 89449
775-588-7500

DECEMBER 18, 2025 JOB NO. 21-134


LINE TABLE
LINE | BEARING | DISTANCE | RECORD
L1 | S31°53'30"W (S31°51'28"W) | 136.45' (136.45') | (2)
L2 | S14°48'17"E (S14°49'59"E | 44.86' (44.86') | (2)
L3 | S84°31'53"E (S84°33'35"E) | 189.86' (189.86') | (2)
L4 | N71°23'25"E (N71°21'43"E) | 356.71' (356.71') | (2)
L5 | N46°07'10"E (N46°05'28"E) | 148.52' (148.52') | (2)
L6 | N23°27'59"E (N23°26'17"E) | 188.56' (188.56') | (2)
L7 | N53°59'20"E (N53°57'38"E) | 345.04' (345.04') | (2)
L8 | S71°58'49"E (S72°00'31"E) | 203.97' (203.97') | (2)
L9 | N67°54'38"E (N67°52'56"E) | 201.85' (201.85') | (2)
L10 | S76°04'50"E (S76°06'32"E) | 191.60' (191.60') | (2)
L11 | S85°22'19"W (S85°20'37"W) | 221.73' (221.73') | (2)
L12 | N65°33'53"E | 30.09' (30.09') | (4) (2)
L13 | S52°50'10"E | 131.10' 131.10' | (4) (2)
L14 | S27°09'22"W | 31.33' (31.04') (31.03') | (4) (2) (3)
LINE TABLE
L15 | S82°05'49"W (S82°04'07"W) | 34.33' (34.33') | (4) (2) (3)
L16 | N04°50'26"E (N04°48'44"E) | 25.00' (25.00') | (1) (2)
L17 | N30°07'45"W (N30°09'27"W) | 298.26' (299.27') | (1) (2)
L18 | N47°59'48"W N47°59'48"W (N48°01'30"W) | 287.15' | (1) (2)
L19 | N47°59'48"W N47°59'48"W (N48°01'30"W) | 7.08' | (1) (2)
L20 | S57°35'39"W | 69.27' |
L21 | N14°08'11"W | 101.38' |
L22 | N75°43'03"W | 128.55' |
L23 | S85°09'10"E (S85°10'52"E) (S85°10'46"E) | 197.34' (197.34') (197.35') | (1) (4) (2) (3)
LINE TABLE
L24 | S40°26'36"E (S40°28'18"E) (S40°28'13"E) | 35.54' (35.55') (35.54') | (1) (4) (2) (3)
L25 | S40°24'15"E (S40°25'57"E) (S40°28'13"E) | 120.10' (120.10') (120.02') | (1) (4) (2) (3)
L26 | S77°08'58"E (S77°10'40"E) | 124.40' (124.40') | (1) (4) (2)
L27 | S77°28'30"E (S77°30'12"E | 128.35' (128.36') | (1) (4) (2)
L28 | S00°42'23"W (S00°40'41"W) | 4.12' (4.12') | (1) (4) (2)
L29 | S70°55'07"E (S70°56'49"E) | 6.83' (6.83') | (1) (4) (2)
L30 | N49°19'05"E (N49°17'23"E) | 6.43' (6.43') | (1) (4) (2)
L31 | S77°22'14"E (S77°23'56"E) | 187.01' (187.01') | (1) (4) (2)
CURVE TABLE
CURVE | LENGTH | RADIUS | DELTA | RECORD
C1 | 221.01' | 394.20' | 32°07'22" | (2) (4)
C2 | 110.80' | 500.00' | 12°41'47" | (2) (3) (4)
C3 | 199.44' (199.07') | 415.00' | 27°32'06" (27°29'03") | (1) (2)
C4 | 4.59' | 30.00' | 8°45'36" |
C5 | 9.80' | 30.00' | 18°43'34" | (4)
C6 | 237.87' | 190.00' | 71°43'50" |
C7 | 92.92' | 65.00' | 81°54'24" |
C8 | 153.47' | 115.55' | 76°09'46" |
TODD A. ENKE
EXP. 12/31/26
12/18/2025
FOUND 5/8" REBAR & CAP PLS 3090, BEARS SOUTHEASTERLY ALONG PROPERTY LINE 0.45' FROM RECORD POSITION, ACCEPTED AS POINT ON LINE
S42°37'09"E (RADIAL)
DRIVEWAY & PUBLIC UTILITY EASEMENT PER FILE NO. 206854 & NO. _____ (WIDTH VARIES IN THIS AREA)
5' DITCH EASEMENT PER DOC. NO. 96550
50' ROADWAY EASEMENT PER DOC. NO. 53326
A.P.N. 010-641-06 MARK & MAGDALENA PHILLIPS
A.P.N. 010-641-05 MARK & MAGDALENA PHILLIPS
A.P.N. 010-641-07 VEIL-TITUS FAMILY TRUST
A.P.N. 010-641-09 MARLA SWANSON
SEE ENLARGEMENT "A"
50' R/W PER (1)
STATE ROUTE 208
PROPOSED PARCEL 3A 3.96 ACRES
S14°28'06"W (RADIAL)
A.P.N. 010-631-____ (PARCEL 3, FILE NO._____) GARMSLAND LIMITED LLC 43.16 AC
A.P.N. 010-631-____ GARMSLAND LIMITED LLC
SEE ENLARGEMENT "B"
A.P.N. 010-631- GARMSLAND LIMITED LLC
R=665.00' Δ=11°37'43" L=134.97' (1)(2)(4)
N75°28'58"W (N75°30'40"W 635.62'(1)(4) 635.62')(2)
30' DRIVEWAY & PUBLIC UTILITY EASEMENT PER DOC. NO. 206854
15' POWER EASEMENT PER FILE NO. _____
60' PLYMOUTH DITCH EASEMENT PER DOC. NO. 53325
A.P.N. 010-631-29 GEORGE THANASH
A.P.N. 010-631-35 GARMSLAND LIMITED LLC 22.99 AC
PROPOSED PARCEL 2A 31.31 ACRES
N15°08'21"E 134.77'(4) (N15°06'39"E 134.77')(2)
S18°36'52"W (C8 RADIAL)
HOYE CANYON ROAD
ZONE A
ZONE D
A.P.N. 010-631-36 GARMSLAND LIMITED LLC 21.38 AC
PROPOSED PARCEL 1A 44.38 ACRES
N66°33'00"E N66°36'21"E 476.93'(2) 476.73'
OLD LOT LINE
S57°41'04"E (RADIAL)
362.54'(4) 362.81')(2)
N07°25'14"E (N07°23'32"E)
911.12' 910.74')(2)
N57°31'34"E (N57°32'53"E
30' DRIVEWAY & PUBLIC UTILITY EASEMENT PER FILE NO. _____
A.P.N. 010-631-26 ELLIS N. & DIANNE FARIAS
419.40' 419.40')(2)
N00°05'08"E (N00°04'01"E
A.P.N. 010-631-34 GARMSLAND LIMITED LLC 21.44 AC
PROPOSED PARCEL 4A 29.32 ACRES
N30°57'47"W (N30°56'06"W 655.42'(2) 655.98'
A.P.N. 010-691-11 TODD DAVID & JILL CAREN OLSON
N89°52'34"W (N89°54'36"W 544.62' 544.62')(2)
N88°30'18"W (N88°31'43"W 1336.07' 1336.07')(2)
A.P.N. 010-691-10 F I M CORP
A.P.N. 010-631-04 F I M CORP
OLD LOT LINE
1322.88')(2) 1322.88'
1051.67' (1051.45')(2)
914.45')(2) 914.45'
1653.15')(2) 1653.15'
1329.36')(2) 1329.36'
(N00°49'11"E N00°50'42"E
(N01°09'27"E N01°11'09"E
(N03°53'39"E N03°04'53"E
(N01°10'21"E (N01°08'44"E)
25' EASEMENT FOR RESERVATION OF DEVELOPMENT RIGHTS FOR GARMSLAND LIMITED, LLC PER DOC. NO. 206854
(N88°50'33"W 470.85')(2) N88°48'51"W 470.98'
FOUND 5/8" REBAR & BUSTED CAP ILLEGIBLE, BEARS S12°W 1.30' FROM RECORD POSITION, NOT ACCEPTED
271.43')(2) 271.43'
(815.95')(2) 816.08'
(512.26')(2) 512.14'
N88°48'53"W (N88°50'33"W
1328.21' 1328.21')(2)
FOUND 5/8" REBAR & CAP PLS 3090, BEARS SOUTHERLY OF RECORD POSITION 0.30', ACCEPTED AS CLOSING CORNER
A.P.N. 010-611-06 USA-FOREST SERVICE
0 150 300
SCALE: 1"=150'
LEGEND
SYMBOLS
FOUND 5/8" REBAR & ALUMINUM CAP, PLS 19734 (1)
FOUND 5/8" REBAR & PLASTIC CAP, PLS 3090 (2)
FOUND 5/8" REBAR & PLASTIC CAP, PLS 9393 (3)
FOUND 5/8" REBAR & TAG, PLS 4045 (2)
FOUND G.L.O. BRASS CAP 1/4 CORNER, SEC. 2 &11
FOUND G.L.O. BRASS CAP SECTION CORNER, SECTIONS 2, 3, 10 &11
DIMENSION POINT, NOTHING FOUND OR SET
SET 5/8" REBAR & ALUMINUM CAP, PLS 19734
LINES
ADJOINING LOT LINE
BOUNDARY LINE
BOUNDARY LINE TO BE ADJUSTED
EXISTING EASEMENT
DIRT / GRAVEL ROAD
CENTERLINE PROPOSED POWER EASEMENT
RIGHT OF WAY LINE
FEMA FLOOD ZONE LINE
PROPOSED PARCEL 3A
PROPOSED PARCEL 2A
PROPOSED PARCEL 4A
ENLARGEMENT "A"
1"=5'
ENLARGEMENT "B"
1"=10'
SHEET 2 OF 2
PARCEL MAP
MERGER AND RESUBDIVISION OF PARCEL 1, PARCEL 2 & PARCEL 3 OF MAP TO SUPPORT A BOUNDARY LINE ADJUSTMENT FILE NO. 343744, AND PARCEL 3 OF PARCEL MAP FILE NO. _____
FOR
GARMSLAND LIMITED LLC
PORTION OF SECTIONS 2, 3 & 11, TOWNSHIP 10 NORTH, RANGE 23 EAST, M.D.M.
LYON COUNTY NEVADA
Resource Concepts Inc.
Carson City 340 N. Minnesota St. Carson City, NV 89703-4152 775-883-1600
Lake Tahoe 276 Kingsbury Grade, Ste. 206 Stateline, NV 89449 775-588-7500
DECEMBER 18, 2025
JOB NO. 21-134



CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	RECORD
C1	221.01'	394.20'	32°07'22"	(2)(4)
C2	110.80'	500.00'	12°41'47"	(2)(3)(4)
C3	199.44' (199.07')	415.00'	27°32'06" (27°29'03")	(1) (2)
C4	4.59'	30.00'	8°45'36"	
C5	9.80'	30.00'	18°43'34"	(4)
C6	237.87'	190.00'	71°43'50"	
C7	92.92'	65.00'	81°54'24"	
C8	153.47'	115.55'	76°05'46"	

REFERENCE DOCUMENTS:

(1) RECORD OF SURVEY OF STATE ROUTE 208 RIGHT-OF-WAY IN THE AREA OF OWNERSHIP HELD BY GARMSLAND LIMITED LLC AND JACKAROO LLC FILED FOR RECORD SEPTEMBER 13, 2023 AS FILE NO. 673884 IN THE OFFICE OF THE LYON COUNTY RECORDER.

(2) MAP TO SUPPORT A BOUNDARY LINE ADJUSTMENT FOR GARMSLAND LIMITED, L.L.C. FILED FOR RECORD FEBRUARY 25, 2005 AS FILE NO. 343744 IN THE OFFICE OF THE LYON COUNTY RECORDER.

(3) MAP OF DIVISION OF LAND INTO LARGE PARCELS FOR GARMSLAND LIMITED, L.L.C. FILED FOR RECORD JUNE 25, 1997 AS FILE NO. 206854 IN THE OFFICE OF THE LYON COUNTY RECORDER.

(4) PARCEL MAP BEING A MERGER AND RESUBDIVISION FOR GARMSLAND LIMITED LLC FILED FOR RECORD _____, 2026 AS FILE NO. _____, IN THE OFFICE OF THE LYON COUNTY RECORDER.

LEGEND

- FOUND 5/8" REBAR & ALUMINUM CAP, PLS 19734 (1)
- FOUND 5/8" REBAR & PLASTIC CAP, PLS 3090 (2)
- FOUND 5/8" REBAR & PLASTIC CAP, PLS 9393 (3)
- FOUND 5/8" REBAR & TAG, PLS 4045 (2)
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- EXISTING EASEMENT
- DIRT / GRAVEL ROAD
- CENTERLINE PROPOSED POWER EASEMENT
- RIGHT OF WAY LINE
- FEMA FLOOD ZONE LINE
- 4890' MAJOR CONTOUR LINE
- MINOR CONTOUR LINE
- BUILDING OVERHANG LINE
- WASH / DITCH LINE
- HILLSIDE SLOPE GREATER THAN 15%

NOTES:

1. A 7.5 FOOT PUBLIC UTILITY EASEMENT ALONG ALL ROAD FRONTAGES AND A 5 FOOT PUBLIC UTILITY EASEMENT ALONG ALL SIDE AND REAR LOT LINES SHALL BE GRANTED PER THIS MAP UNLESS OTHERWISE SHOWN HEREON.
2. ALL PARCELS SHOWN HEREON ARE VACANT AND TO BE SERVICED BY INDIVIDUAL DOMESTIC WELLS AND SEPTIC SYSTEMS.
3. ZONING: RURAL RESIDENTIAL 5 ACRE MINIMUM (RR-5) VILLAGE CENTER MIXED USE DISTRICT (VCMU)
4. ANY FURTHER DIVISION MAY BE SUBJECT TO THE IMPOSITION OF SUBDIVISION IMPROVEMENT STANDARDS AS MAY BE LEGALLY IMPOSED AT THE TIME.
5. THE SUBJECT PARCELS LIES WITHIN ZONE A & ZONE D, PER COMMUNITY FIRM MAP NO. 32019C0950E, EFFECTIVE DATED JANUARY 16, 2009.
6. CONTOUR INTERVAL SHOWN IS FIVE-FOOT (5').
7. IMAGERY SHOWN FROM 2021 DRONE SURVEY PERFORMED BY RESOURCE CONCEPTS, INC.

RCI Resource Concepts Inc.
Carson City
340 N. Minnesota St.
Carson City, NV 89703-4152
775-883-1600
Lake Tahoe
276 Kingsbury Grade, Ste. 206
Stateline, NV 89449
775-588-7500

DECEMBER 18, 2025 JOB NO. 21-134

EXISTING CONDITIONS PARCEL MAP

MERGER AND RESUBDIVISION OF PARCEL 1, PARCEL 2 & PARCEL 3 OF MAP TO SUPPORT A BOUNDARY LINE ADJUSTMENT FILE NO. 343744, AND PARCLE 3 OF PARCEL MAP FILE NO. _____

FOR

GARMSLAND LIMITED LLC

PORTION OF SECTIONS 2, 3 & 11, TOWNSHIP 10 NORTH, RANGE 23 EAST, M.D.M.

LYON COUNTY NEVADA

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
14.c

Subject:
For Possible Action: To approve the request from Microsoft Corporation for a Conditional Use Permit to construct a 345/120-kilovolt electrical substation, two high voltage power lines, and other associated infrastructure for the Nighthawk Substation over approximately 32.59 acres of five parcels with Neighborhood Commercial (NC) zoning located north of US Highway 50 in Silver Springs at 1200 W US Highway 50 (Portion of APN 015-141-13 and 018-551-03, 018-551-04, 018-552-01, 018-552-02); PLZ-2025-109. (Senior Planner Louis Cariola)

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Staff Report
- Project Description
- Site Photos
- Public Comment

LYON COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING • DEVELOPMENT ENGINEERING • PLANNING

27 S. MAIN STREET
YERINGTON, NEVADA 89447
(775) 463-6591
FAX: (775) 463-5305

34 LAKES BOULEVARD
DAYTON, NEVADA 89403
(775) 246-6135
FAX: (775) 246-6147

BOARD OF COUNTY COMMISSIONERS

PLZ-2025-109

Proposed Action	Conditional Use Permit for an electrical power substation ("Nighthawk")
Meeting Date	March 5, 2026
Property Owners	Microsoft Corporation
Applicant	Microsoft Corporation
Representative	Wood Rodgers Inc. / Stacie Huggins
Area Location	North of US Highway 50, Silver Springs at 1200 W Hwy 50
Parcel Numbers	018-551-03, 018-551-04, 018-552-01, 018-552-02 and a portion of 015-141-131
Area	Approximately 32.59 acres
Zoning	NC (Neighborhood Commercial)
Master Plan	Commercial
Case Planner	Louis Cariola

REQUEST

Microsoft requests approval for a Conditional Use Permit to construct an electrical power substation to support a data center campus under separate review.

PLANNING COMMISSION RECOMMENDATION

On February 10, 2026, the Planning Commission heard presentations from staff and the applicants and voted 6-0 (with one abstention – Commissioner Jones) to forward a recommendation of approval to the Board of County Commissioners.

RECOMMENDED MOTION

If the Board of County Commissioners determines that they will approve the request, then the Commission may want to consider a motion similar to the following.

The Lyon County Board of County Commissioners finds that:

A. The proposed use at the specified location is consistent with the policies embodied in the adopted master plan and the general purpose and intent of the applicable district regulations;

B. The proposed use is compatible with the character and integrity of adjacent development and neighborhoods and includes improvements or modifications either on-site or within the public rights-of-way to mitigate development related adverse impacts, such as traffic, noise, odors, visual nuisances, or other similar adverse effects to adjacent development and neighborhoods;

C. The proposed use will not generate vehicular traffic which cannot be accommodated by the existing, planned or conditioned roadway infrastructure;

D. The proposed use incorporates roadway improvements, traffic control devices or mechanisms, or access restrictions to control traffic flow or divert traffic as needed to mitigate the development impacts;

E. The proposed use incorporates features to address adverse effects, including visual impacts and noise, of the proposed conditional use on adjacent properties;

F. The proposed conditional use complies with all additional standards imposed on it by the particular provisions of this chapter and all other requirements of this title applicable to the proposed conditional use and uses within the applicable base zoning district, including but not limited to, the adequate public facility policies of this title; and

G. The proposed conditional use will not be materially detrimental to the public health, safety and welfare, and will not result in material damage or prejudice to other properties in the vicinity.

Based on the aforementioned Findings, I move that the Board of County Commissioners approve the request from Microsoft Corporation for a Conditional Use Permit to construct a 345/120-kilovolt electrical substation, two high voltage power lines, and other associated infrastructure for the Nighthawk Substation over approximately 32.59 acres of five parcels with Neighborhood Commercial (NC) zoning located north of US Highway 50 in Silver Springs, accessed from Rhyolite Lane (Portion of APN 015-141-13 and 018-551-03, 018-551-04, 018-552-01, 018-552-02); PLZ-2025-109.

CONDITIONS OF APPROVAL

1. The project activities shall be constructed and operated in accordance with the conceptual site plan and construction drawings as submitted and reviewed as part of this approval. Any further expansion will require modification of this Conditional Use Permit or an additional Conditional Use Permit and/or other approvals.
2. Any modification, expansion, intensification or material change in use or operation shall require an application for, and public hearings on, an amendment to the Conditional Use Permit use pursuant to Lyon County Code.
3. The applicant shall comply with all state, federal and local government regulations to the satisfaction of the appropriate agencies for the proposed uses. The applicant shall comply with all applicable Fire, building, zoning and improvement code requirements and obtain any necessary public inspections.
4. All construction documents, to include separate applications, must be submitted to Lyon County Utilities, Central Lyon Fire Protection District and Lyon County Building for review and approval to obtain a Building Permit.
5. The applicant is required to submit for a separate and independent Fire Plan review and will be required to comply with the 2024 Northern Nevada Code Amendments package and all applicable NFPA standards.
6. All contractors doing any construction, modifications, or remodel must be licensed in the State of Nevada.
7. The applicant shall maintain a Lyon County business license for the use while occupying the site.
8. The applicant shall receive approval from the Federal Aviation Administration (FAA) of a Form 7460-1 and supply it to the County prior to the issuance of Building Permits.
9. The applicant shall receive approval from the County Roads Department of an encroachment permit to pave access roads to the site prior to initiation of construction and grading on-site.
10. In accordance with the project description, the substation building pad shall be secured with a 14 foot tall CMU (Concrete Masonry Unit) wall.

11. The operations authorized per this Conditional Use Permit shall not exceed 65 dBA (A-weighted decibel) during daytime hours or 60 dBA during night time hours as averaged from a two-hour monitoring period from the property boundary. The Community Development Director reserves the right to require a sound study to verify sound levels of the functioning operations. If a sound study determines that the use permitted per this Conditional Use Permit exceeds the limit allowed, the authorization may be rescinded at the discretion of the Director.
12. Exterior site and building lighting shall be installed as to eliminate any nuisance to adjoining properties. No unshaded light sources shall be permitted.
13. The applicant shall comply with the Lyon County drainage guidelines (2024 updated edition) to the satisfaction of the County Engineer. The property owner shall be responsible for maintenance of all roads, parking areas and drainage facilities within the parcel, as well as any storm water detention facilities.
14. The substantial failure to comply with the conditions imposed on the issuance of this conditional use permit or the operation of the conditional use in a manner that endangers the health, safety or welfare of Lyon County or its residents or the violation of ordinances, regulations or laws in the conditional use may result in the institution of revocation proceedings. **Failure to initiate the conditional use permit within two (2) years from the date of approval will result in the expiration of the conditional use permit approval.**

Alternative Motions

Alternative Motion for Continuance

If the Board of County Commissioners determines that additional information, discussion and public review are necessary for a more thorough review of the proposed conditional use permit; the Commission should make appropriate findings and move to **continue** the Public Hearing with a specific time period for the applicant to provide additional specific information necessary for the analysis of the request. The Commission may wish to consider a motion similar to the following:

The Board of County Commissioners finds that:

A. Additional information, discussion and public review are necessary for a more thorough review of the proposed Conditional Use Permit.

Based on the above findings and with the applicant's concurrence, I move that the Board of County Commissioners continues the request from Microsoft Corporation for a Conditional Use Permit to construct a 345/120-kilovolt electrical substation, two high voltage power lines, and other associated infrastructure for the Nighthawk Substation over approximately 32.59 acres of five parcels with Neighborhood Commercial (NC) zoning located north of US Highway 50, accessed from Rhyolite Lane (Portion of APN 015-141-13 and 018-551-03, 018-551-04, 018-552-01, 018-552-02); PLZ-2025-109 __ days.

Alternative Motion for Denial

If the Board of County Commissioners determines that they should deny the request for a Conditional Use Permit, then they need to make findings supporting a recommendation of denial. The Commissioners may wish to consider a motion similar to the following:

The Board of County Commissioners finds that the proposed use:

A. Will be detrimental to the use, peaceful enjoyment, economic value, or development of surrounding properties or the general neighborhood; and is incompatible with and detrimental to the character and integrity of adjacent development and neighborhoods, nor has the applicant proposed mitigation of adverse impacts such as noise, vibrations, fumes, odors, dust, glare or physical activity related to the proposed project.

B. Will be detrimental to the public health, safety, convenience and welfare; and

C. Will result in material damage or prejudice to other property in the vicinity.

Based on the aforementioned findings, I move that the Board of County Commissioners deny the request from Microsoft Corporation for a Conditional Use Permit to construct a 345/120-kilovolt electrical substation, two high voltage power lines, and other associated infrastructure for the Nighthawk Substation over approximately 32.59 acres of five parcels with Neighborhood Commercial (NC) zoning located north of US Highway 50 in Silver Springs, accessed from Rhyolite Lane (Portion of APN 015-141-13 and 018-551-03, 018-551-04, 018-552-01, 018-552-02); PLZ-2025-109.

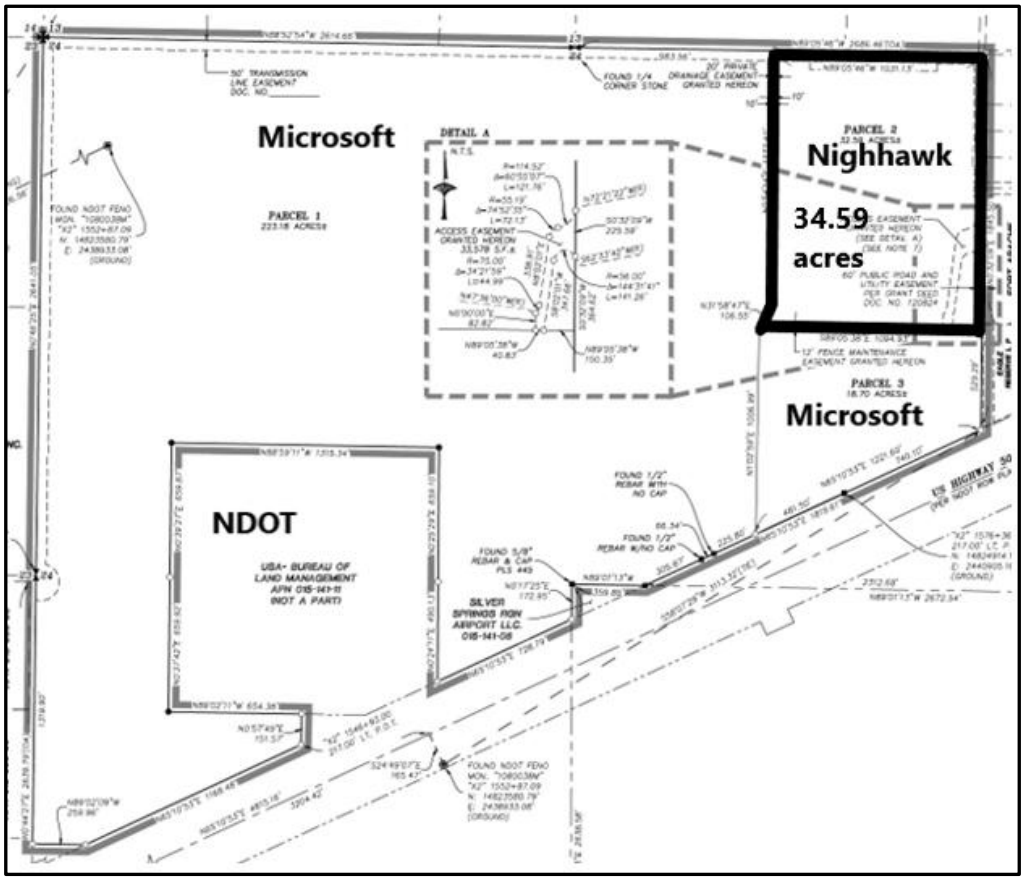
BACKGROUND INFORMATION

Location

The subject parcels are located in Silver Springs, north of US Highway 50 and the Silver Springs Airport. The parcels are approximately 0.5 miles west of the intersection with US Highway 95A and two miles east of the intersection with USA Parkway. The subject parcels include APNs 018-551-03 (addressed as 1160 Rhyolite Lane), 018-551-04 (addressed as 1160 Rhyolite Lane), 018-552-01 (addressed as 1225 Rhyolite Lane), 018-552-02 (addressed as 1165 Rhyolite Lane), and a portion of APN 015-141-13 (unaddressed). The project site is vacant.

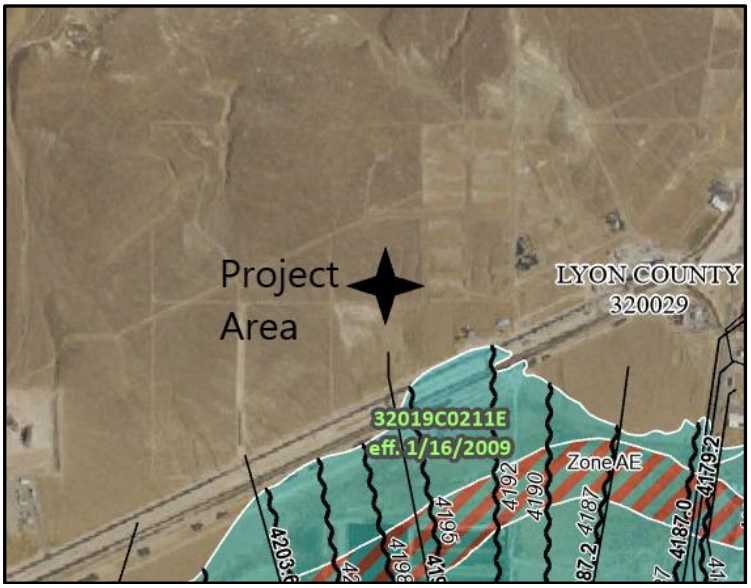
Size

The subject parcels are under review by Lyon County for recordation of a Final Map which will create a new single-parcel configuration that will itself encompass the entire project area. The project area is/will be approximately 34.59 acres, as depicted in the image below from the yet-to-be-recorded Final Map. Microsoft also owns the land to the south and west. The western parcel surrounds an NDOT maintenance yard.



Flood Zone Designation

Per FEMA Flood Insurance Rate Maps (FIRMs) shown below, the subject parcels are located in the X Zone (area of minimal flood hazard). No Floodplain Development permits will be required. Slopes on the site range between 5 percent and 20 percent towards Hwy 50.



Access

Access to the parcels is via unmaintained and unpaved Deodar Street to the east, which connects to the Highway 50 frontage road Right of Way (ROW). The images that follow are from attachment 2 of this report: pictures provided by the applicant.

Microsoft RNO18
Nighthawk Substation
Conditional Use Permit
Photo Exhibit

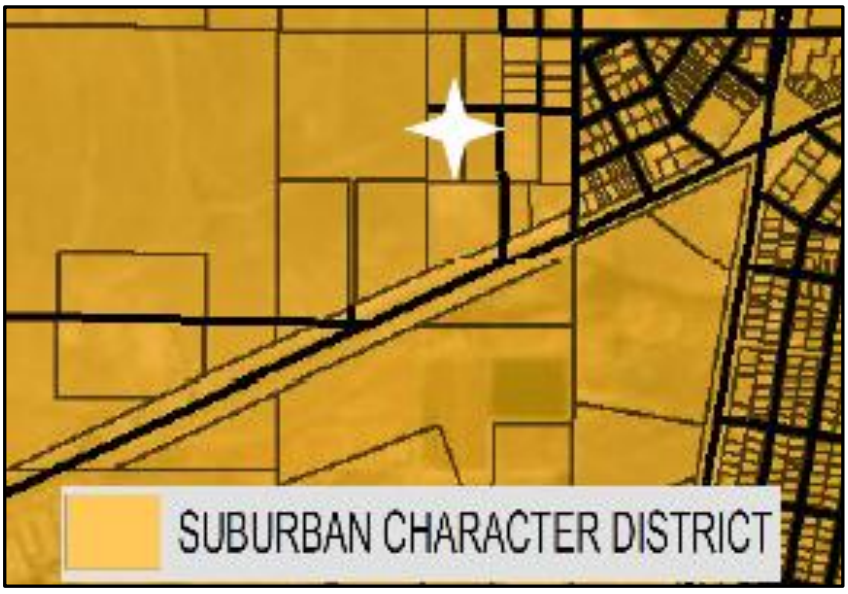
Photo Location 3: Rhyolite Lane, near property center

Photo 3.1: Rhyolite lane looking northwest across site

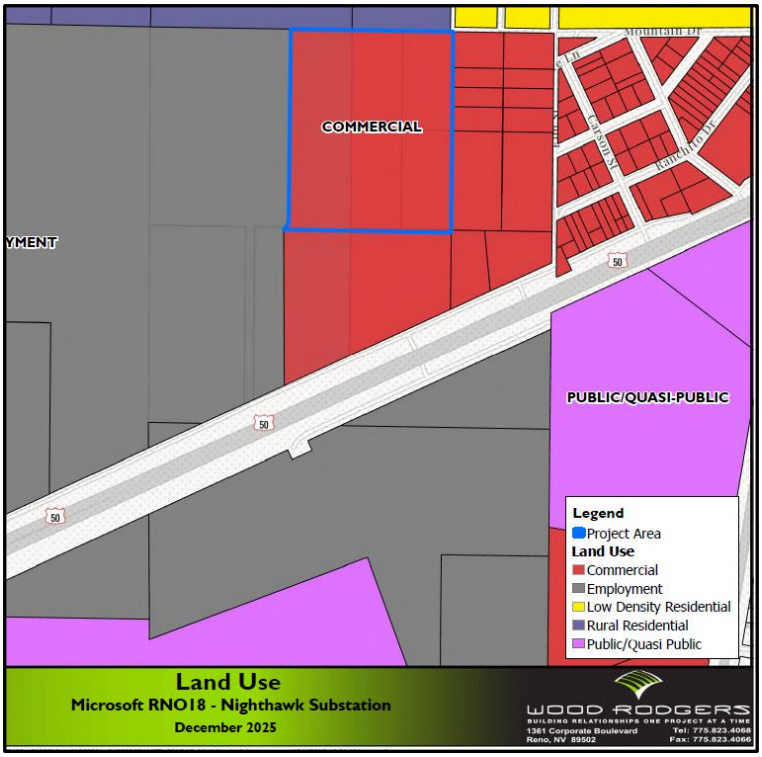
MASTER PLAN AND ZONING

The project area is within a Suburban Character District per the 2020 Master Plan. The project area is designated as Commercial per the 2020 Master Plan for Silver Springs and is zoned NC (Neighborhood Commercial).

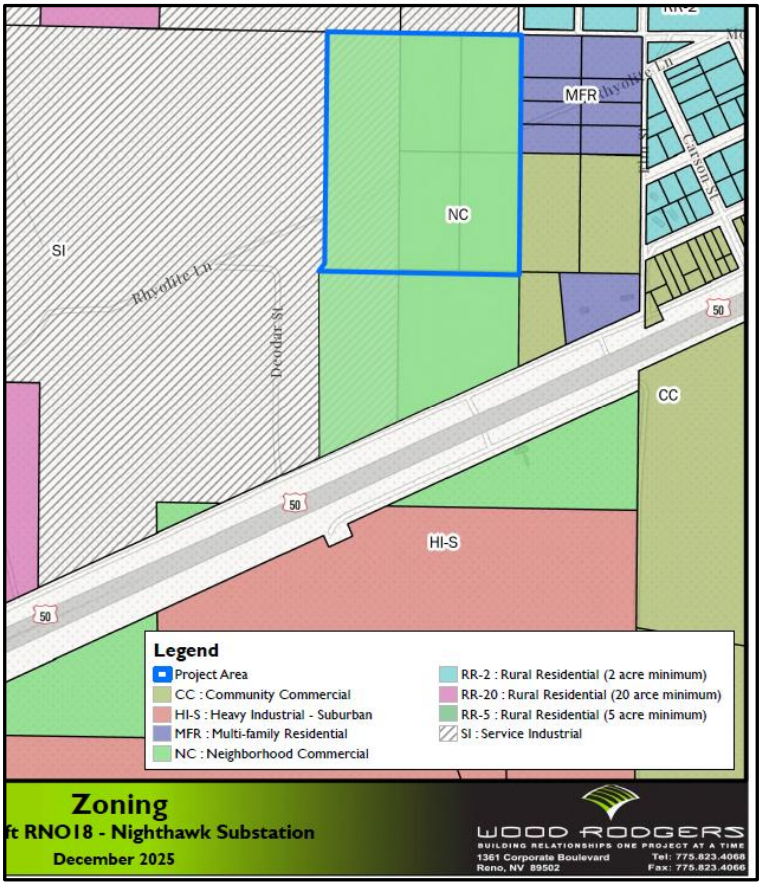
Character District



Master Plan: Commercial - image cropped from the applicant's submittal materials



Zoning: Neighborhood Commercial - image cropped from the applicant's submittal materials



The use of "*power substation"* requires a Conditional Use Permit (CUP) in the NC district per Table 15.320-2, subject to Code section 15.336.11, copied below the Land Use Table excerpt (with <u>underline</u> added).

TABLE 15.320-2
TABLE OF ALLOWED USES - SUBURBAN RESIDENTIAL, MIXED USE AND COMMERCIAL ZONING DISTRICTS

P = Permitted; C = Conditional use permit required; T = Temporary use permit required; - = Not permitted

Use Category	Use Type	Suburban Residential								Mixed Use/Commercial						Specific Use Regulations (Code Reference)
		SR-2	SR-1	SR-1/2	SR-12000	SR-9000	NR	MFR	RMU	NC	CC	RC	TC-S	CMU-S	HMU-S	
	Power substations	C	C	C	C	C	C	C	C	C	C	C	C	C	C	Section 15.336.11

15.336.11: POWER SUBSTATIONS:

A. Purpose: It is the intent of this section to provide for the delivery of electrical power in an efficient and effective manner to the utility's customers allowing for a timely review process for new power substations to be located within the County.

B. Other Permits: Power substations may be located on either private or public lands in order to tie into other existing or proposed utility infrastructure (e.g., connecting transmission lines). If the power substation project is located on land administered by any agency of the Federal government the applicant shall notify the County of its intent to submit an application concurrent with the Federal review and permit application process, and attend a pre-submittal conference with County staff to discuss the project and specific application requirements. Subsequent to the pre-application meeting, the applicant shall submit as the application the appropriate documents related to the environmental review by State and Federal land management agencies. If the applicant is required to apply for a permit to construct under the Utility Environmental Protection Act from the Public Utilities Commission of Nevada, then the applicant's NEPA application shall constitute the environmental review documents for the conditional use permit application.

<u>C. Conditional Use Permit: A conditional use permit shall be required for a power substation project that is located on private land in order to review, identify and develop mitigation measures that reduce the potential negative impacts to abutting properties. (Ord. 603, 11-1-2018)</u>

STAFF REVIEW AND COMMENTS

Project Details

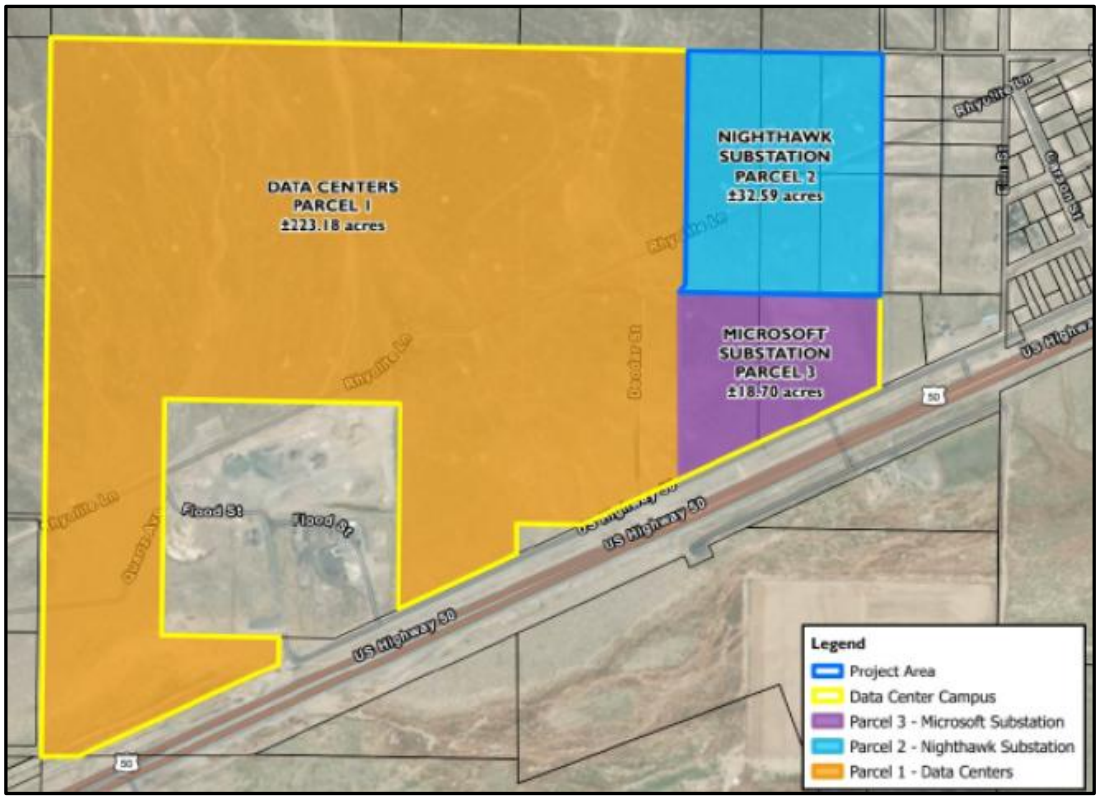
Microsoft corporation has been working closely with the County for over 3 years to successively move through multiple entitlements and mapping exercises. The end goal is the construction of a data center campus with two power substations. This CUP application is one of two that are concurrently under review by the County. One substation will be operate by NV Energy, which is this one named "Nighthawk". The other substation will be operated by Microsoft.

Generalized Timeline

- 2022: Initial meeting with Microsoft with County management and staff
- 2023: First round of zoning map amendments (ZMA) and mapping exercises
- 2024: Second round of ZMAs and mapping exercises
- 2025: Third round of ZMAs plus master plan amendment
- 2026: CUPs and ADR (Administrative Design Review) for data center project

The applicant provided a full project description of the proposed use, included as Attachment 1 of this report. The excerpt below is followed by an image that depicts the data center and the substations' locations.

> *"….a parcel map has been approved (PLZ-2025-035) and is pending recordation which will combine all of the parcels and reestablish three new parcels ultimately allowing the data center campus to develop on their own parcels while also establishing two separate parcels for substation development. Upon recordation of the Parcel Map, the larger project site will include three parcels referred to hereinafter as follows:*
>
> - ***Parcel 1** (± 223.18 acres) – Data Centers*
> - ***Parcel 2** (± 32.59 acres) – Nighthawk Substation (NV Energy)*
> - ***Parcel 3** (± 18.70 acres) – Microsoft Substation*



The following is also an expert from Attachment 1 of this report, with modifications from staff.

Project Details

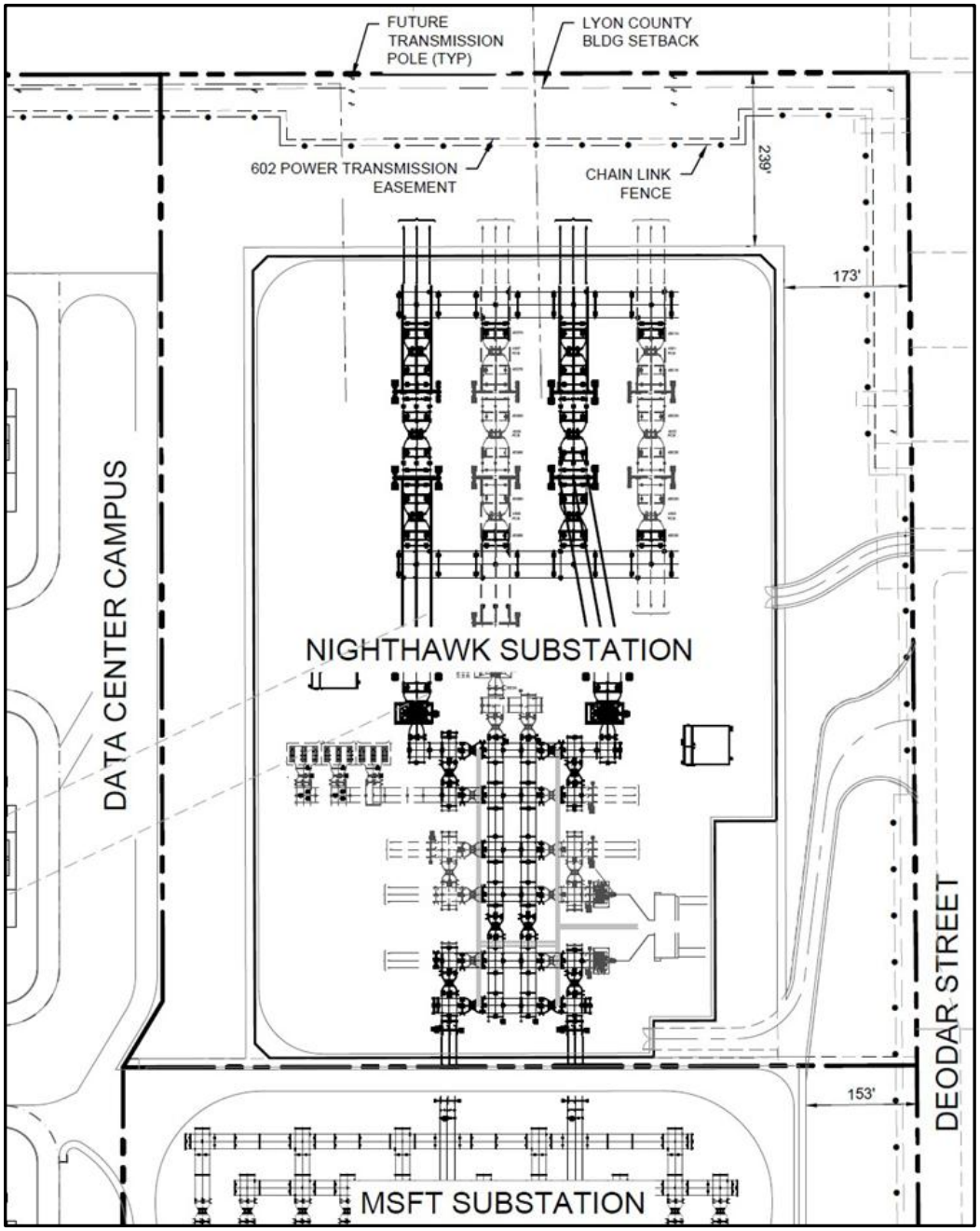
As part of a broader data center campus, the applicant (Microsoft, Inc) in collaboration with NV Energy, plans to construct a 345/120-kilovolt (kV) substation on the project site (Parcel 2) in order to support development of an adjacent data center facility. The Applicant will complete grading, access improvements, and construction of the perimeter wall, following which NV Energy will construct the substation project. The proposed substation and two HVD lines will work in concert with an adjacent private 120 kV substation (also being constructed by the Applicant), both of which will support the broader data center campus. The scope of work for this project includes construction of the new Nighthawk 345/120 kV Substation, a fold of the proposed 345 kV line between the Walker River and Comstock Meadows Substations, two 120 kV service lines from Nighthawk to the adjacent future planned applicant-owned substation, metering and associated communication and protection equipment. The 60kV 602 line currently bisecting the parcels will be relocated on private property along the east, west, and northern property boundary lines to allow for future development.

The Nighthawk Substation will be designed to operate at 345/120 kV, providing a critical node in the regional electrical transmission network. Its primary function is to step down high-voltage electricity from the transmission system to a lower voltage suitable for distribution. Although initially distribution will be solely to the data center campus, distribution to homes, businesses, and public facilities may be available in the future. The facility will include transformers, circuit breakers, control equipment, and a security CMU perimeter wall, all engineered to meet applicable safety and reliability standards. The Nighthawk Substation, 345 kV Fold, and HVD lines will be owned, operated and maintained by NV Energy.

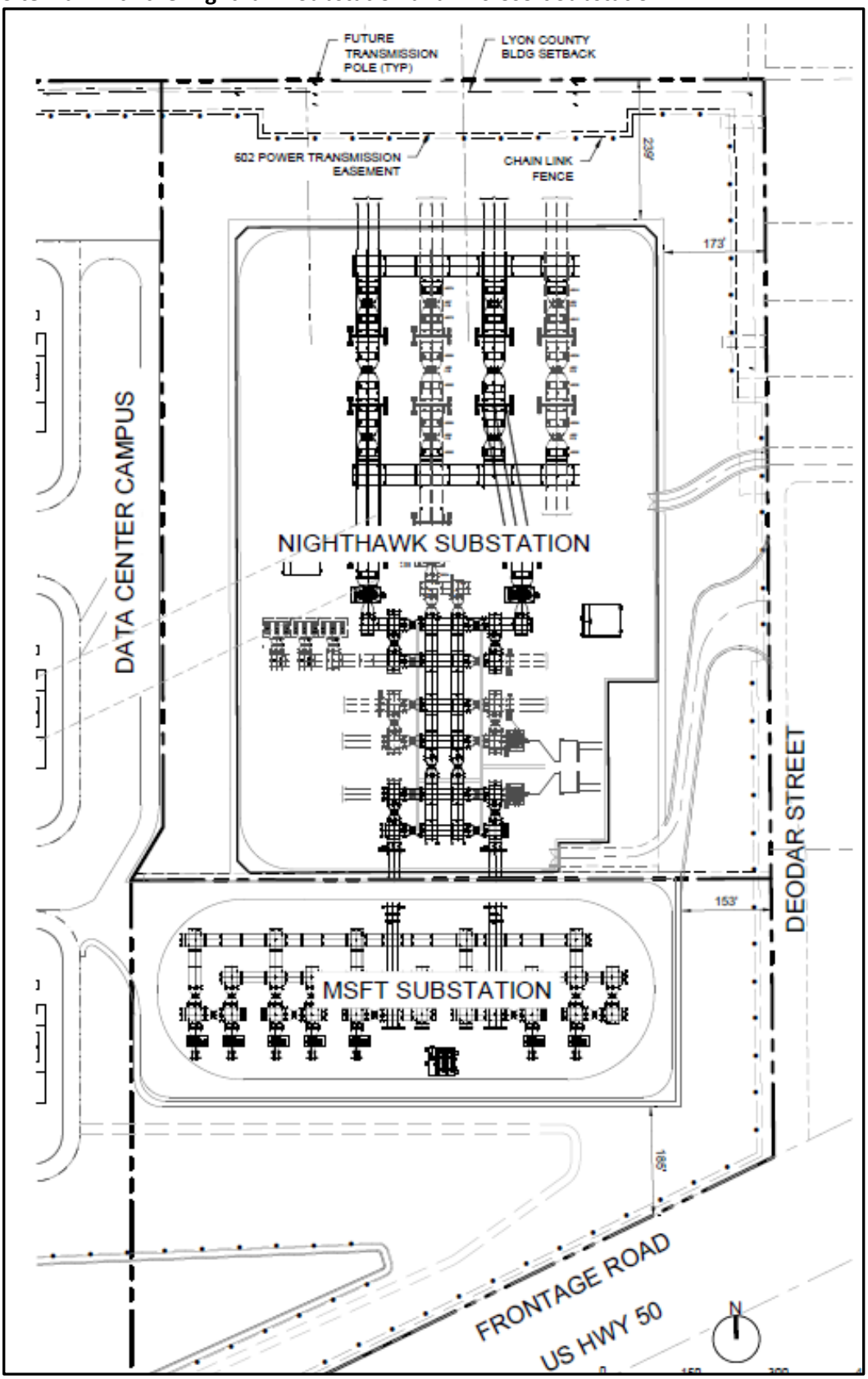
The facility will operate 24 hours per day, 365 days per year. Traffic associated with the project will be most notable during construction, with construction crews typically working six days a week, 7am to 7pm, with some deliveries for equipment occurring outside normal working hours. Construction activities are anticipated to occur from November 2026 to March 2029. The substation itself will have no dedicated employees post construction and it is anticipated it will be visited approximately once a month for general maintenance. The substation will have no public access or services and no changes to traffic service levels are anticipated as a result of the project.

Noise and light mitigation have been provided for nighttime hours during emergency calls. The substation pad will be secured with a 14-ft-tall CMU wall installed around the perimeter for security. In terms of lighting, the substation yard lights are controlled by a manual light switch which is manually activated when personnel are working at the substation. Only the control enclosure exterior lights are controlled by a photocell to turn them on at night and off during the day. The lights will also be mounted as low as possible and include shields aimed down toward the ground and away from adjacent residentially zoned properties to the extent feasible.

Figure 2: Nighthawk Substation Equipment Layout

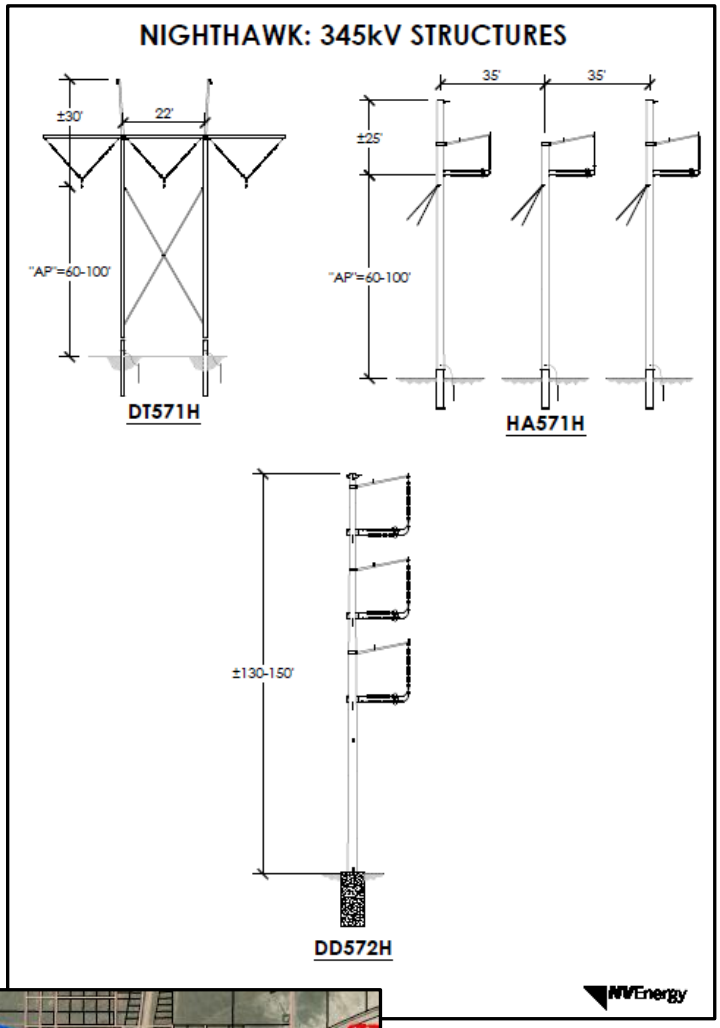


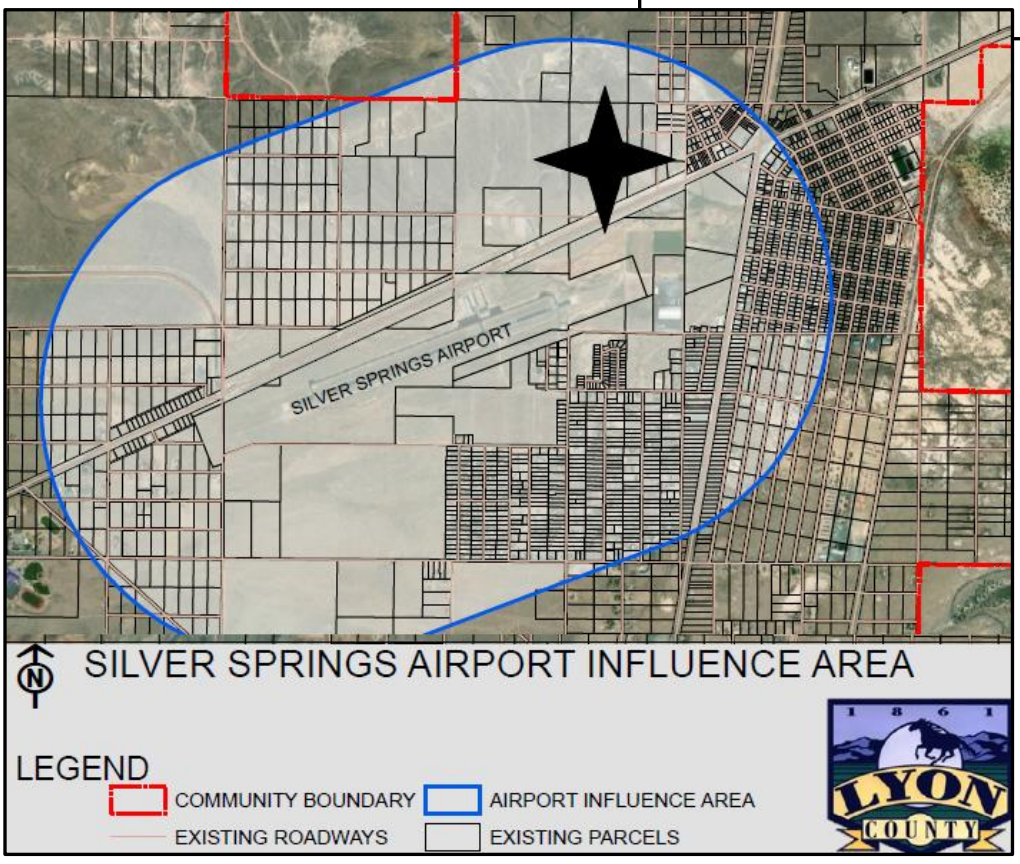
Site Plan with the Nighthawk Substation and Microsoft Substation



The detail to the right is from NV Energy and was included in the applications for both substation projects. It is labeled as being applicable to the Nighthawk substation, which is a larger installation (340 kilovolt).

The height of the substation infrastructure is up to 150 feet. Even though the subject of this CUP is for a smaller substation, staff has included a Condition of Approval requiring that the applicant receive approval from the Federal Aviation Administration (FAA) of a Form 7460-1 for each of the CUPs. This approval from FAA addresses the height of new structures within the Airport Influence Area of the Silver Springs Airport.





FINDINGS

When considering applications for a Conditional Use Permit (CUP), the Commission or Board must evaluate the impact of the conditional use on, and its compatibility with, surrounding properties and neighborhoods to mitigate potential impacts of the use at a particular location and make the following findings from *Chapter 15.230.06: FINDINGS.* Each Finding is listed with the applicant's response and staff's comments.

Finding A: The proposed use at the specified location is consistent with the policies embodied in the adopted master plan and the general purpose and intent of the applicable district regulations;

Applicant's Response

Goal LU 1: Orderly Growth Patterns

Policy LU 1.1: *Follow Development Patterns as established in the Land Use Plan*

Response: *The Lyon County Land Use Plan identifies the subject property as having a Commercial land use designation, which supports its Neighborhood Commercial (NC) zoning. Adjacent parcels to the east and south also have a Commercial land use designation. The Commercial land use designation on site serves as a transition between future commercial uses to the east and employment/industrial uses on the adjacent properties to the west and south (also owned by the Applicant).*

The proposed Nighthawk Substation is essential to support the planned Microsoft data center campus to the west. The site is particularly suitable for this use due to its proximity to compatible planned development, including the Microsoft Data center campus to the east and Microsoft Substation to the south, both under separate entitlement applications. Together the Nighthawk Substation and the Microsoft Substation will provide reliable power to the adjacent data center campus, without imposing undue demand on the existing grid.

Surrounding conditions further enforce compatibility with surrounding land uses. Vacant parcels to the east share the same Commercial designation as the subject property, and vacant parcels to the north include a specific plan which contemplated similar land uses to those proposed on site. This location, at the interface of commercial and industrial land use designations, is ideal for a substation, serving as a transitional use that aligns with existing zoning and Master Plan goals and policies while complementing adjacent employment and industrial development.

By providing resilient and sustainable power infrastructure, the Nighthawk Substation supports future growth consistent with the Land Use Plan and furthers Master Plan Policy LU 1.1 by adhering to established development patterns therein.

Policy LU 1.4*: Locate industrial development as designated on County-wide Land Use Plan or determined by criteria*

Response*: Although the subject parcel is master planned Commercial, the proposed development of a substation, classified as a utility/industrial use, is permitted in the NC zone with a CUP. It is worth noting that the subject parcel is located in a largely undeveloped area north of Silver Springs Airport, with undeveloped parcels to the west master planned Employment and zoned Service Industrial. Given that adjacent parcels to the south and west are slated for development with other employment/industrial uses reliant on Nighthawk's construction, locating the substation on site ensures compatible development. Furthermore, the subject site is surrounded by Commercial designated properties to the south and east, so introducing uses such as the proposed substation in this area would not impact nearby properties.*

Future development of the site will comply with Lyon County Development Code standards; specifically, adherence to performance standards for noise, dust, and traffic contribute substantially to land use compatibility.

Goal LU 3: Diverse Economy

Policy LU 3.1*: Diverse Economic Base*

Response: *Reliable substation capacity is foundational to high-value job sectors (data centers, advanced manufacturing). The project enables economic diversification and enhances regional competitiveness.*

Goal FS 5: Utility Corridors

Policy FS 5.1: *Lyon County will create a process for the designation and approval of inter-regional utility corridors, including multi-modal transmission corridors, above ground electrical transmission corridors, and underground utility transmission corridors (i.e., inter-regional corridors within which electric transmission lines with capacities of 200 kV or greater, natural gas pipelines larger than 16 inches in diameter, water transmission pipelines larger than 16 inches, or similar utility infrastructure will be located) in cooperation with the Nevada State Office of Energy, all adjacent counties, the Bureau of Land Management, and any other agency with jurisdiction.*

Policy FS 5.2: *Lyon County will create a process for the designation and approval of aboveground electrical utility corridors with capacities of 60 kV to 199 kV in cooperation with the Nevada State Office of Energy, all adjacent counties, the Bureau of Land Management and NV Energy.*

Policy FS 5.3: *Aboveground utility corridors must not conflict with any existing or planned infrastructure or utility projects and must be located to minimize conflicts with residential and commercial development.*

Policy FS 5.4: *Width of existing and future aboveground utility corridors shall be equivalent to the width of the easement required by the National Electric Safety Code (NESC) plus any additional easement width required by the utility provider to ensure access to the infrastructure.*

Policy FS 5.3: Aboveground utility corridors must not conflict with any existing or planned infrastructure or utility projects and must be located to minimize conflicts with residential and commercial development.

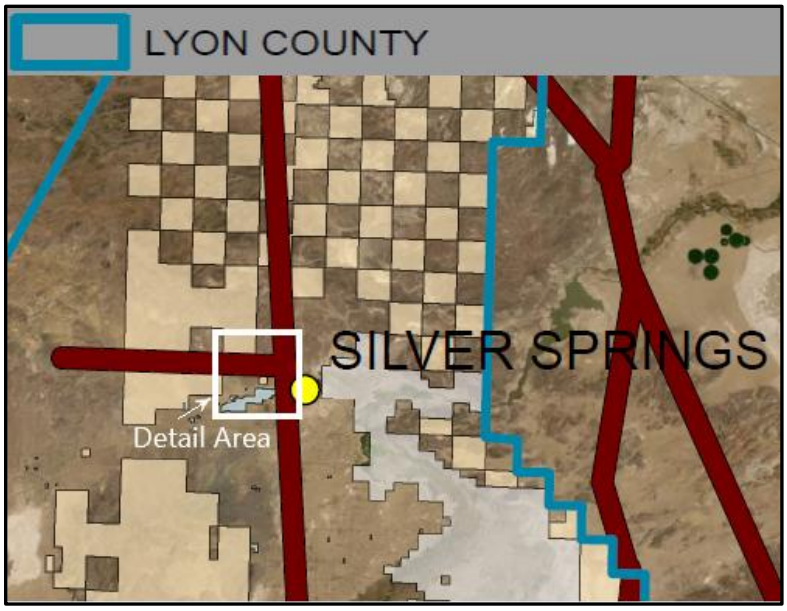
Response: *The proposed substation aligns with the 2020 Master Plan which includes a map that depicts the location of Aboveground Utility Corridors in preparation for high voltage power lines to connect Lyon County to the NV Energy Greenlink project. The Nighthawk project will be located within an established utility corridor, advancing the Master Plan's utility corridor policies by promoting orderly routing for medium- and high-voltage infrastructure.*

Specifically, the proposed Nighthawk Substation is adjacent to complementary uses, including the planned Microsoft Substation to the south and a future data center campus (owned by the Applicant) to the west. Microsoft's Substation will connect with Nighthawk via overhead lines, consistent with corridor planning standards. Nighthawk's proximity to the Walker River and Fort Churchill substations, critical nodes in NV Energy's Greenlink Transmission project, positions Lyon County as a key regional hub for power distribution. While the Nighthawk Substation will primarily serve the adjacent Microsoft Substation and data center campus initially, distribution for homes, businesses and public facilities could be added in the future. In the short term, Nighthawk will ensure utility infrastructure will meet the evolving regional tech-industry demands without creating service interruptions for the broader community. The facility will not conflict with rural residential or agricultural uses and will reinforce planned utility infrastructure across the county. NV Energy will construct, operate, and maintain the proposed transmission substation to meet or exceed NESC requirements.

Staff Comment

Staff believes the Goals above from the 2020 Master Plan (Chapter 3) are appropriately quoted by the applicant for the proposed project. The project area has been the subject of multiple public hearings associated with Master Plan and Zoning changes in addition to mapping exercises. This CUP is part of a larger data center campus for Microsoft over approximately 274 acres in Silver Springs. To the north of the project area is an approved Specific Plan for the Silver Springs Technology Park, another data center project. Both projects have located in the region because of the NV Energy Greenlink Project, which will use 525-kilovolt (kV) transmission lines to traverse Nevada and connect to energy-generating facilities (such as solar arrays). Projects with high energy demands such as data centers have chosen these locations because the 2020 Master Plan delineated "BLM Aboveground Utility Corridors" for connection.

The images below depict the Corridors in the region and the general project location. Within the Corridors, a CUP is not necessary for high voltage power lines and can be reviewed at the staff level. The type of development being proposed in these regions will continue to require infrastructure like electrical power substations and this CUP is part of the larger development footprint of data center uses in Silver Springs.



Staff feels this Finding may be met in the affirmative.

B. The proposed use is compatible with the character and integrity of adjacent development and neighborhoods and includes improvements or modifications either on-site or within the public rights-of-way to mitigate development related adverse impacts, such as traffic, noise, odors, visual nuisances, or other similar adverse effects to adjacent development and neighborhoods;

Applicant's Response

The proposed power substation is located on a vacant parcel within a designated utility corridor, surrounded primarily by undeveloped land, most of which is owned by the Applicant. The site is intentionally positioned adjacent to similar and compatible planned facilities, including a Microsoft Substation and data centers (under separate applications), which substantially enhances land use compatibility. There are no developed residential neighborhoods nearby, ensuring the project avoids impacts to existing neighborhoods.

The substation design incorporates resource-sensitive features, including LID stormwater controls to prevent runoff and support groundwater recharge. It requires no dedicated water or sewer infrastructure and will not affect existing utility capacity. The facility will reduce line losses from lengthy transmission, prevent grid overloading, and enable efficient power distribution to the data center, aligning with energy efficiency and low-impact policies.

To minimize potential adverse impacts, the Applicant will implement measures addressing traffic, noise, dust, and visual concerns. The substation is set back at least 156 feet from the eastern property line to limit effects on adjacent parcels. Construction access will be provided via Deodar Street, which will be improved with temporary paving to maintain safe movement and reduce soil deposition into the public right-of-way. Water trucks will be used as needed to control dust during construction. Long-term access will occur through a new private roadway extending west from Rhyolite Lane to a gated entrance at the substation's western edge, with a secondary paved accessway leading southwest from Deodar Street to another gated point at the substation's southeast corner (see Figure 3 below). The Nighthawk Substation will draw access exclusively from connections to external roadways (Deodar/Rhyolite) and will not connect to the internal roadway network serving the adjacent data center campus.

Operational impacts will be minimal. Traffic will be limited to maintenance personnel, and noise from transformers and inverters is not expected to exceed ambient levels at property lines. Lighting will be restricted to maintenance or emergency visits and designed with full cut-off shielding, directed downward and away from adjacent parcels. An eight (8) ft chain-link security fence will enclose the site at the perimeter. Additionally, a 14-ft reinforced CMU wall will be constructed within the site surrounding the equipment pad, serving as an additional visual and security barrier. These measures, combined with the absence of residential adjacency and compliance with performance standards, demonstrate that the project is compatible with surrounding land uses and the transitional rural-to- suburban character of the area.

Figure 3: Nighthawk Accessways

Staff Comment

To the east is vacant land with applicable zoning of MFR (Multi-Family Residential) and the substation structure is set back over 200 feet from the property boundary, although the fence line is proposed at 173 feet. The location of the subject parcels as part of the larger data center project makes the project, once completed, only part of a larger campus so impacts to the west and south are not applicable. To the north the pending Silver Springs Technology Park will also be a data center campus when constructed.

Staff has included a Condition of Approval related to maximum noise levels permitted for the use, with quotations from Lyon County Code section 15.337.03.H, which reads as follows:

H. Noise: No use in this district shall exceed the maximum environmental noise level at the property line:

1. When adjacent to a commercial or industrial use or zone: Daytime seventy five (75) dBA and nighttime seventy (70) dBA.

2. When adjacent to a Residential Zone: Daytime sixty five (65) dBA and nighttime sixty (60) dBA.

The proposed 14' high CMU wall will also provide a visual barrier to properties to the north and east in addition to providing a secure perimeter.

As Conditioned, staff feels this Finding may be made in the affirmative.

C. The proposed use will not generate vehicular traffic which cannot be accommodated by the existing, planned or conditioned roadway infrastructure;

Applicant's Response

Following construction, vehicular traffic generated by the proposed substation will be limited primarily to maintenance. The substation will operate 24 hours a day 365 days per year but will have zero (0) employees. Aside from improvements to existing roadways in the general vicinity, no new public roadways are needed to accommodate the project. One new private roadway will extend west from Rhyolite Lane to provide access to the Nighthawk Substation at a gated entrance along the substation's eastern edge. A second private paved roadway will extend southwest from Deodar Street and connect to a secondary gated entrance at the substation pad's southeast corner (see Figure 3 above). Given that the site will be improved with two new private roadways serving as access to the site, combined with the fact the site will generate a minimal number of vehicular trips, it is anticipated no adverse impact to either existing or planned roadway infrastructure will occur as a result of the project.

Staff Comment

The site is accessed by existing roadways that do not require any additional improvements but will require maintenance at the applicant's expense. The County has required the applicant to submit a Traffic Impact Study for this review, but since the roadways used are primarily, and practically solely, all NDOT roadways, staff feels that the recommended Conditions of Approval address this Finding.

D. The proposed use incorporates roadway improvements, traffic control devices or mechanisms, or access restrictions to control traffic flow or divert traffic as needed to mitigate the development impacts;

Applicant's Response

As noted previously, vehicular traffic generated solely by the substation post construction will be minimal, with no employees, trips will be limited only to sporadic maintenance activities. Given the limited number of trips generated by the substation and the proposed access improvements and restrictions, no additional traffic control devices or mechanisms are warranted for the project. It is worth noting that the project proposes construction of a chain link fence installed around the project perimeter, as well as a 14-ft-tall CMU wall around the substation pad, which will restrict access to the substation site. Paved vehicular access points will be gated.

As previously discussed, the site will gain primary access via a new private roadway that will extend west from Rhyolite Lane to a gated entrance at the substation's eastern edge. Secondary access will come from a separate paved private roadway which will extend southwest from Deodar Street to a gated entrance at the substations southeast corner (see Figure 3 above). With minimal vehicular traffic anticipated and planned improvements such as private roadways, CMU wall, and controlled access, the site design incorporates all necessary measures to mitigate potential impacts, although none are anticipated.

Staff Comment

The site is accessed by existing roadways that do not require any additional improvements but will require maintenance at the applicant's expense. The County has required the applicant to submit a Traffic Impact Study for this review, but since the roadways used are primarily, and practically solely, all NDOT roadways, staff feels that the recommended Conditions of Approval address this Finding.

E. The proposed use incorporates features to address adverse effects, including visual impacts and noise, of the proposed conditional use on adjacent properties;

Applicant's Response

The construction of the Nighthawk Substation will be limited to within the project boundary, limiting any potential impacts to the surrounding area. As discussed in detail above in the response for Finding B, adjacent parcels are vacant, undeveloped land; therefore, no adverse effects will be imposed as a result of this project. While there may be some noise and/or visual impacts during construction, upon completion of construction, the project has been designed such that it will not generate visual impacts or adverse noise effects on adjacent properties.

Staff Comment

Staff has included a Condition of Approval related to maximum noise levels permitted for the use, with quotations from Lyon County Code section 15.337.03.H, which reads as follows:

H. Noise: No use in this district shall exceed the maximum environmental noise level at the property line:

1. When adjacent to a commercial or industrial use or zone: Daytime seventy five (75) dBA and nighttime seventy (70) dBA.

2. When adjacent to a Residential Zone: Daytime sixty five (65) dBA and nighttime sixty (60) dBA.

The most impactful quality of the project will be visual, but as previously stated, the substation will be part of a larger complex in a region of the County that will be significantly changed as a result of location of BLM Aboveground Corridors as approved in the 2020 Master Plan. The proposed 14' high CMU wall will provide a visual barrier to properties to the north and east in addition to providing a secure perimeter.

Data centers are large projects and they will all have substations and other accessory uses. The Conditions of Approval also require submittal to the County of an approved Form 7460-1 from the FAA to ensure the height of the proposed substation.

As Conditioned, staff feels this Finding may be made in the affirmative.

F. The proposed conditional use complies with all additional standards imposed on it by the particular provisions of this chapter and all other requirements of this title applicable to the proposed conditional use and uses within the applicable base zoning district, including but not limited to, the adequate public facility policies of this title; and

Applicant's Response

As noted previously, power substations are permitted in the NC zoning district with approval of a CUP. As designed the project meets all applicable standards of Title 15, including provisions specific to power substations under Article 336, and complies with the 2020 Master Plan's goals and policies for land use and utility corridors, particularly those supporting Goal FS-5: Utility Corridors, as discussed above in the response for ***Finding A****. These policies promote orderly infrastructure development, and the project's location within a designated utility corridor aligns with that intent.*

The project will not create demand on public facilities such as schools, libraries, community centers, government offices, or emergency services during construction or operation. It also requires no long-term municipal utilities, including water, wastewater, or solid waste services. Water needed for concrete production and dust control during construction will be sourced from existing municipal or commercial suppliers or entities with valid water rights; no new water rights will be required. Wastewater and solid waste will be managed in compliance with local, state, and federal regulations.

By meeting all applicable zoning standards and avoiding impacts to public facilities and utilities, the proposed substation satisfies the requirements of Title 15, Article 336, and the public facility policies contained within, and as such can be found consistent with this finding.

Staff Comment

No sewer or water services are required for the project. The Lyon County Sheriff's Office will provide law enforcement services. The use is consistent with the zoning standards of Title 15 and staff feels this Finding may be met in the affirmative.

G. The proposed conditional use will not be materially detrimental to the public health, safety and welfare, and will not result in material damage or prejudice to other properties in the vicinity.

Applicant's Response

The proposed Nighthawk Substation will enhance the reliability and resilience of the regional electrical grid by supplying power to the Microsoft Substation and supporting the adjacent data center campus, creating the necessary utility infrastructure to supply power to those adjacent land uses without impacting power service to the region. By interconnecting with NV Energy's Greenlink West Transmission Project, Nighthawk plays a role in grid stability. Although initially Nighthawk will only serve the adjacent Microsoft uses, distribution for the communities broader residential and commercial needs can be installed in the future. The improvements associated with this project directly support public health, safety, and welfare by reducing the risk of outages and strengthening the grid's capacity to meet growing energy demands driven by emerging technologies.

The project also contributes to Lyon County's economic vitality by providing essential utility infrastructure for a regional technology hub, positioning the County as a center for data storage and advanced industry. Beyond temporary construction activities, which will comply with dust control and other mitigation measures under required permits, the substation will not generate adverse environmental impacts beyond those typical of construction.

The facility will comply with all applicable provisions of the Lyon County Development Code, which has the explicit purpose to promote public health, safety, convenience, and general welfare (pursuant to WCDC §15.01.02 [Purpose]). By meeting these standards and incorporating best practices for design and operation, the Nighthawk Substation will not be materially detrimental to the public or surrounding properties. Instead, it will provide long-term benefits through improved energy reliability, sustainable infrastructure, and economic development consistent with the County's planning objectives.

Staff Comment

The substation is part of the larger data center project, which itself is also part of an expected regional change to development type in this portion of the County. The presence of the BLM Aboveground Corridors per the approval of the 2020 Master Plan makes Silver Springs an attractive location for data center projects and potentially other high-energy users. As conditioned, staff does not feel the project represents material damages to public health, safety or welfare to residents or properties in the vicinity.

Executive Summary

Applicant:	Microsoft Inc
APN Numbers:	018-551-01, 018-551-02, 018-551-03, 018-551-04, and a portion of 015-141-13[1]
Location:	The project site is located in Silver Springs, north of US Highway 50 and the Silver Springs Airport and west of the intersection with US Highway 95A.

Project Location

The subject site consists of five (5) parcels located approximately 0.5 miles (mi) west of the intersection of US Highway 50 (US 50) and US 95A and 1.15 mi east of the intersection of US 50 and USA Parkway. More specifically, Lyon County currently identifies the subject site as Assessor's Parcel Numbers (APNs) 018-551-01, -02, -03, -04, and a portion of APN 015-141-13 consisting of approximately 32.59 acres[1] (ac). Deodar Street via the US 50 Frontage Road south of the site provides access to the project area.

Background

Greenlink Nevada is NV Energy's flagship transmission initiative designed to strengthen Nevada's electric grid and improve statewide reliability. The project consists of two major 525-kilovolt (kV) transmission lines: Greenlink West, spanning approximately 350 miles from Las Vegas to Yerington, and Greenlink North, covering about 235 miles from Ely to Yerington. Together, these lines will form a high voltage "energy highway" connecting northern and southern Nevada, creating a resilient transmission triangle.

Lyon County plays a central role in this effort, as both lines converge near Yerington at the Fort Churchill Substation, which is undergoing a major expansion, and the new Walker River Substation, a critical component of the project. The Walker River Substation, located adjacent to Fort Churchill, is NV Energy's largest substation project to date and includes a 120-kV yard along with facilities to interconnect the Greenlink West line and multiple smaller transmission lines serving Storey County and the Reno area. Greenlink Nevada is expected to deliver up to 8 GW of energy capacity statewide, improve grid flexibility, and support economic growth by reducing congestion and enhancing reliability for homes, businesses, and future industrial development. As discussed below in *Project Details*, the subject application includes a request for use of the site for a power substation which will connect to and support the Greenlink initiative, further strengthening the utility capacity for the area.

An Administrative Design Review (ADR) application was submitted and is currently under review for construction related to a data center and mass grading associated with future development on the site. The ADR scope included a data center campus with two power substations as well as large scale earthwork, stormwater management facilities, temporary and permanent erosion control measures, and access improvements across all associated parcels. The initial improvements proposed under the ADR establish the grading, drainage and access framework and serve as a precursor to the request herein for one of the planned substations.

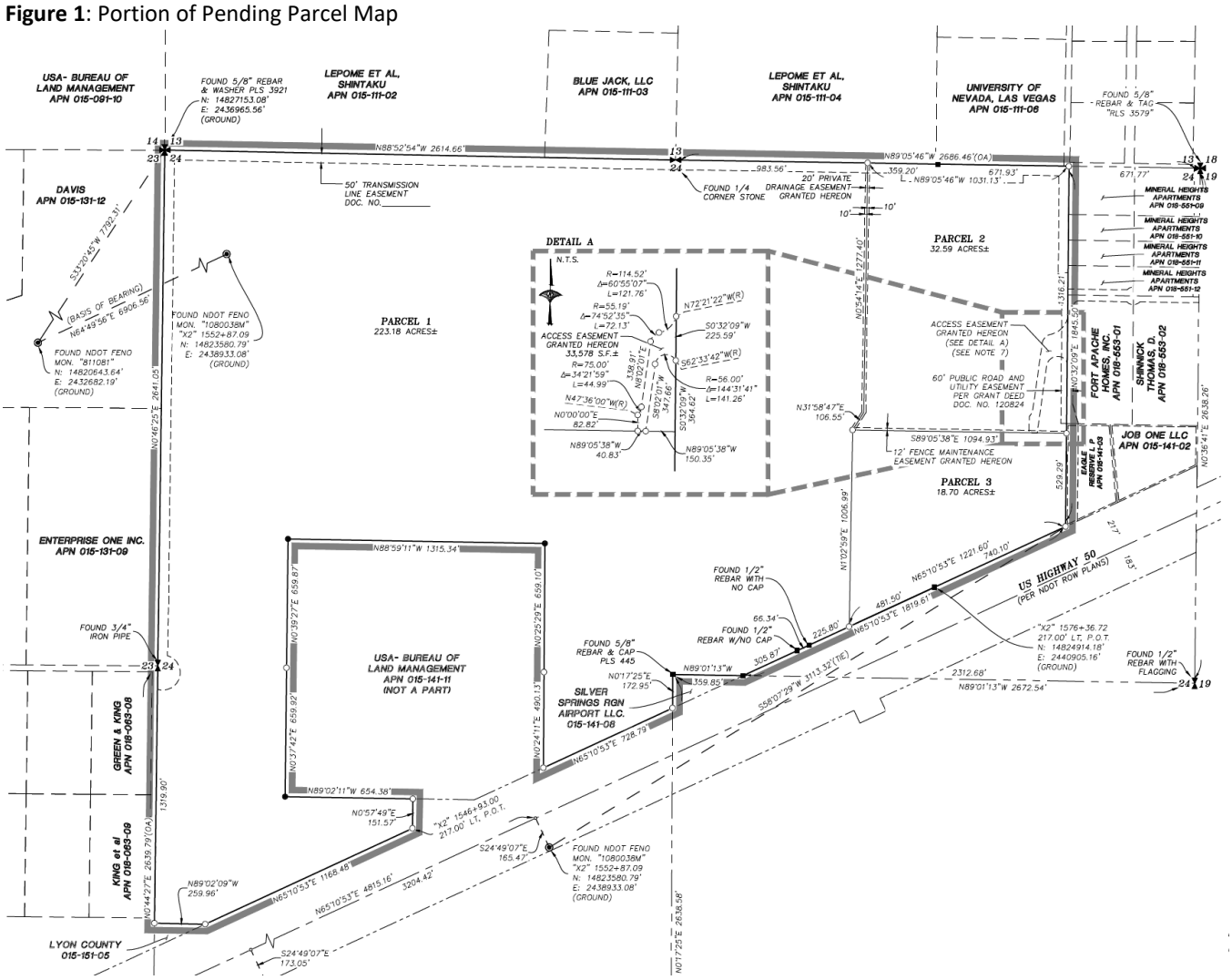
[1] A parcel map has been approved (PLZ-2025-035) and is pending recordation which will expand and establish a new parcel with an updated APN number.

Also in preparation for the campus, a Tentative Parcel Map (PLZ-2025-035) to merge and re-subdivide six parcels into three parcels was approved by the Planning Commission in November, 2025. The three approved resultant parcels will be referred to hereinafter as follows:

- Parcel 1 (±223.18 acres [ac]) – Data Centers
- ***Parcel 2 (±32.59 ac) – Nighthawk Substation (NV Energy)***
- Parcel 3 (±18.70 ac) – Microsoft Substation

As outlined below, the subject request of this application is isolated to only one of the components of the broader planned campus across the parent site. Upon recordation of the aforementioned parcel map, the subject project of this application will be contained on its own parcel (**Parcel 2**) *(refer to **Figure 1** and Parcel Map in Section 3 of this submittal packet)*.

Figure 1: Portion of Pending Parcel Map



Project Request

Included with this application is a request for a Conditional Use Permit (CUP) to construct a new 345/120 kV electric substation, access road, a 345 kV fold, and two HVD lines for NV Energy, referred to herein after as the Nighthawk Substation, 345kV Fold, and HVD Lines (Nighthawk). Lyon County requires a CUP for substations built on private land in all zoning districts to ensure potential impacts to adjacent properties are reviewed and appropriate mitigation measures are identified. The proposed project involves construction of a power substation on private land owned by Microsoft within Silver Springs. The grading and civil improvements, including a 14-foot (ft) Concrete Masonry Unit (CMU) wall around the substation pad and access road to the substation, will be constructed by Microsoft. The Nighthawk 345/120kV Substation, 345 kV Fold, HVD lines and relocation of 602 line will be completed by NV Energy. Following completion of the grading and Civil Improvements by Microsoft, ownership of the Nighthawk parcel (***Parcel 2***) will be transferred to NV Energy prior to any construction by NV Energy.

Master Plan and Zoning

The project area has a Lyon County 2020 Master Plan (Master Plan) designation of Commercial with a zoning designation of Neighborhood Commercial (NC) *(refer to Master Plan and Zoning maps in Section 3 of this submittal packet).* The subject site is within the Suburban Character District per the 2020 Master Plan. Surrounding zoning includes Community Commercial and Multi-Family Residential to the east, Neighborhood Commercial to the south (Microsoft Substation parcel), Service Industrial to the west (Microsoft data center parcel), and Service Industrial to the north.

Site Characteristics

The subject site is bordered in all direction by vacant land, with it noted the parcels to the south and west are slated for development with other components of the data center campus which will be served by the proposed Nighthawk Substation. Site slopes range between 5 percent and 20 percent towards US 50. Surface drainage consists of sheet flow as well as several natural drainages that flow north to south across the subject area. Vegetation is moderate, consisting of brush, weeds, and grasses with several dirt roads crossing the property.

Project Details

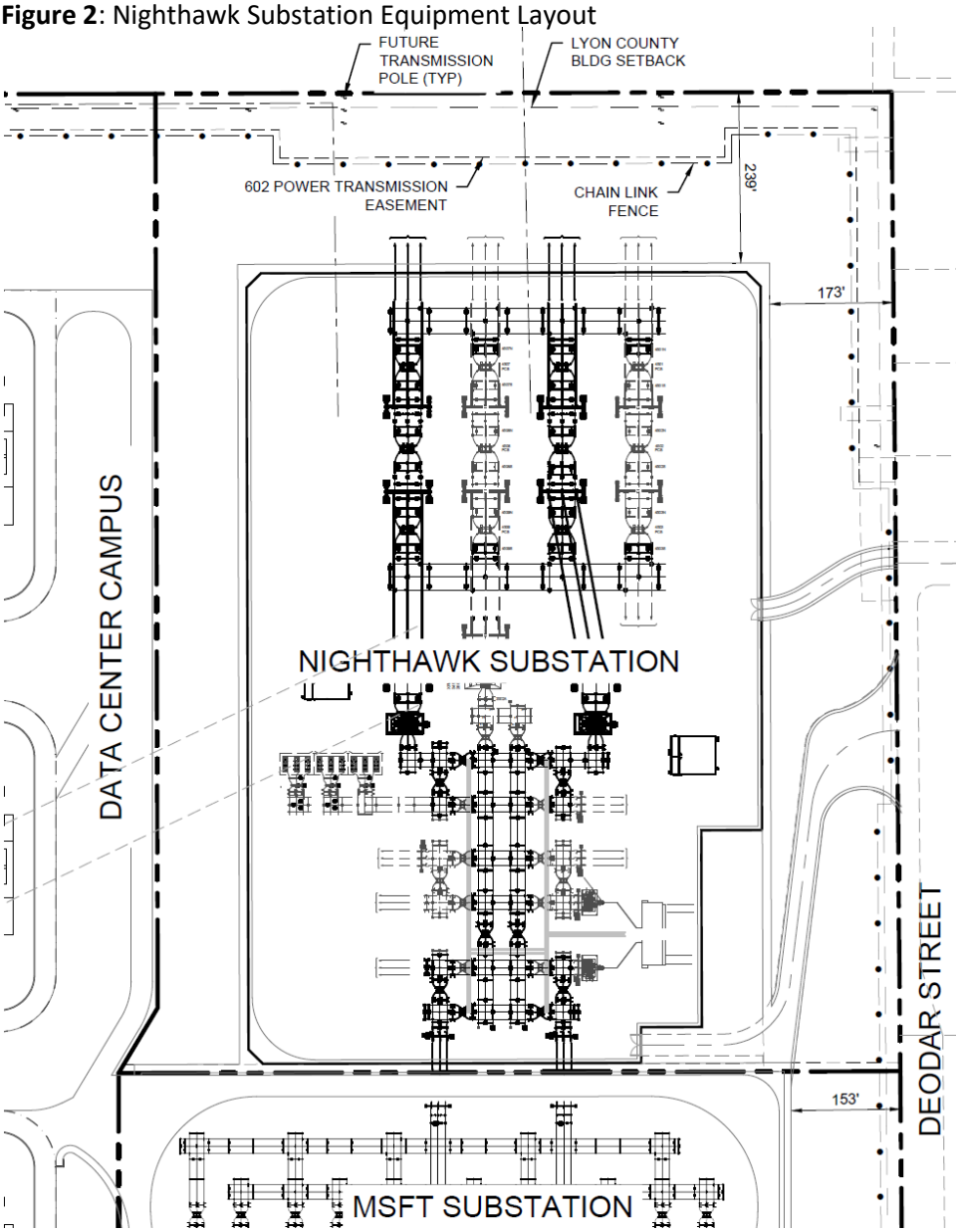
As part of a broader data center campus, the applicant (Microsoft, Inc), in collaboration with NV Energy, plans to construct a 345/120-kilovolt (kV) substation on the project site (Parcel 2) in order to support development of an adjacent data center facility. The Applicant will complete grading, access improvements, and construction of the perimeter wall, following which NV Energy will construct the substation project. The proposed substation and two HVD lines will work in concert with an adjacent private 120 kV substation (also being constructed by the Applicant), both of which will support the broader data center campus. The scope of work for this project includes construction of the new Nighthawk 345/120 kV Substation, a fold of the proposed 345 kV line between the Walker River and Comstock Meadows Substations, two 120 kV service lines from Nighthawk to the adjacent future planned applicant-owned substation, metering and associated communication and protection equipment. The 60kV 602 line currently bisecting the parcels will be relocated on private property along the east, west, and northern property boundary lines to allow for future development.

The Nighthawk Substation will be designed to operate at 345/120 kV, providing a critical node in the regional electrical transmission network. Its primary function is to step down high-voltage electricity from the transmission system to a lower voltage suitable for distribution. Although initially distribution will be solely to the data center campus, distribution to homes, businesses, and public facilities may be available in the future. The facility will include transformers, circuit breakers, control equipment, and a security CMU perimeter wall, all

engineered to meet applicable safety and reliability standards. The Nighthawk Substation, 345 kV Fold, and HVD lines will be owned, operated and maintained by NV Energy.

The equipment needed for this project includes two 345/120kV 280 MVA transformers, circuit breakers, substation bus, telecommunications, metering equipment, equipment enclosure, switches and associated/ancillary facilities that are typically included at this type of facility. It is worth noting 120/25 kV transformers, distribution bus/feeders, and capacitor banks are included as part of the full site build out but will not be installed initially. Further, the substation as designed can accommodate the retermination of the existing 60 kV lines currently at the Silver Springs Substation to 120 kV lines to provide additional capacity to the Silver Springs area.

Figure 2: Nighthawk Substation Equipment Layout



The facility will operate 24 hours per day, 365 days per year. Traffic associated with the project will be most notable during construction, with construction crews typically working six days a week, 7am to 7pm, with some deliveries for equipment occurring outside normal working hours. Construction activities are anticipated to occur from November 2026 to March 2029. The substation itself will have no dedicated employees post construction and it is anticipated it will be visited approximately once a month for general maintenance. The substation will have no public access or services and no changes to traffic service levels are anticipated as a result of the project.

Noise and light mitigation have been provided for nighttime hours during emergency calls. The substation pad will be secured with a 14-ft-tall CMU wall installed around the perimeter for security. In terms of lighting, the substation yard lights are controlled by a manual light switch which is manually activated when personnel are working at the substation. Only the control enclosure exterior lights are controlled by a photocell to turn them on at night and off during the day. The lights will also be mounted as low as possible and include shields aimed down toward the ground and away from adjacent residentially zoned properties to the extent feasible.

Aside from temporary traffic for construction, the project will not result in nuisances such as dust, glare, pollution, odor, or vibrations above regulated levels. Other noise from transformers associated with the substation is not expected to exceed ambient noise at adjacent property lines.

Access and Circulation

Access roads are essential for construction, operation, and maintenance of the project. It is anticipated that large foundation auger equipment, heavily loaded trucks, cranes and specialized construction equipment will be needed for construction, maintenance and emergency activities Note that grading for the access roads is being reviewed as part of the previously submitted (and currently under review) Administrative Design Review (ADR). Access to the NV Energy Nighthawk Substation for construction, operation and long-term maintenance will be off of Deodar Street.

All Project access roads will meet NV Energy's construction road standards, which include the use of a minimum travel surface width of 25 feet depending on the radii of curves to facilitate safe movement of equipment and vehicles. Initially access roadways will be surfaced with asphalt, with gravel used in later phases in accordance with NV Energy standards.

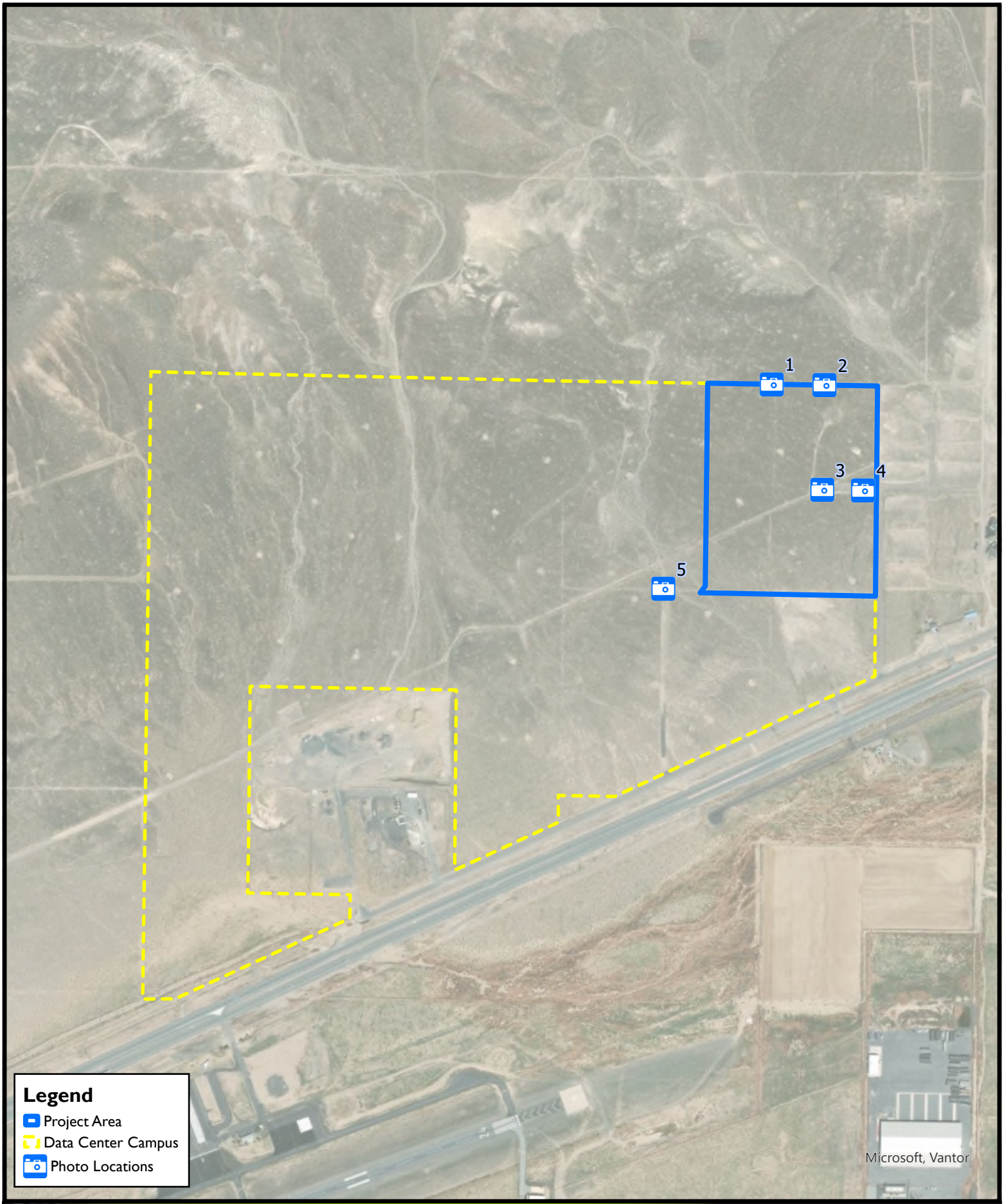


Photo Locations

Microsoft RNO18 - Nighthawk Substation

December 2025

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Boulevard
Reno, NV 89502
Tel: 775.8
Fax: 775.8

J:\Jobs\4150_ARUP\Arup_Silver_Springs\Arup_Silver_Springs_OA\GIS\ArcPro\APNs_01855103_ 01855104_ 01855201_01855202\MSFT_RNO18_Nighthawk_Substation.aprx 12/4/2025 12:32 PM mismith

Photo Locations

Photo Location 1: Northern property boundary - west
Photo Location 2: Northern property boundary - east
Photo Location 3: Rhyolite Lane, near property center
Photo Location 4: Rhyolite Lane, near eastern property boundary
Photo Location 5: West of southwest corner

Photo Index

Photo Location 1
- Photo 1.1: Looking east along northern property boundary
- Photo 1.2: Looking south to parcel center

Photo Location 2
- Photo 2.1: Looking east along northern property boundary
- Photo 2.2: Looking south towards US 50
- Photo 2.3: Looking west along northern property boundary

Photo Location 3
- Photo 3.1: Rhyolite Lane looking northwest across site

Photo Location 4
- Photo 4.1: Looking east along Rhyolite Lane toward eastern property boundary

Photo Location 5
- Photo 5.1: Looking east along southern property boundary

Photo Location 1: Northern Property Boundary - west

Photo 1.1: Looking east along northern property boundary

Photo 1.2: Looking south to parcel center

Photo Location 2: Northern Property Boundary - east

Photo 2.1: Looking east along northern property boundary

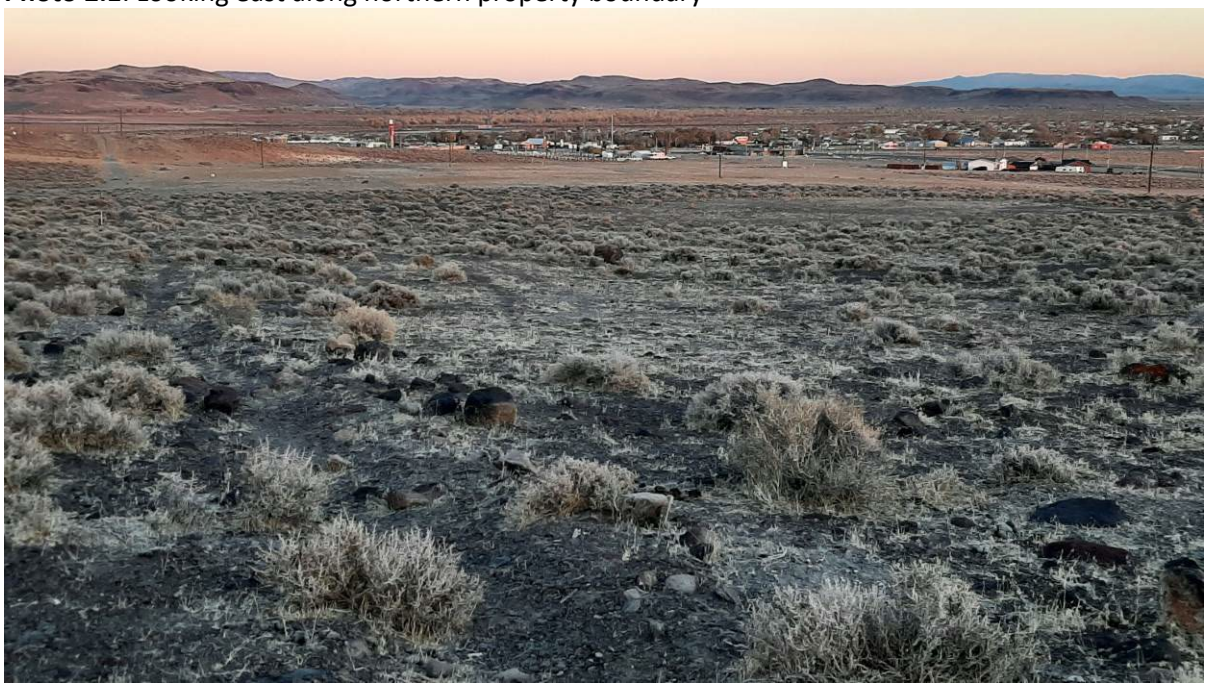


Photo 2.2: Looking south towards US 50

Photo 2.3: Looking west along northern property boundary

Photo Location 3: Rhyolite Lane, near property center

Photo 3.1: Rhyolite lane looking northwest across site

Photo Location 4: Rhyolite Lane, near eastern property boundary

Photo 4.1: Looking east along Rhyolite Lane toward eastern property boundary

Photo Location 5: West of Southwest Corner

Photo 5.1: Looking east along southern property boundary

Gmail

Brandi Lathrop <blathrop@lyon-county.org>

Water and Mega Data Centers

Charles Hamilton <chas909@gmail.com> Tue, Feb 24, 2026 at 3:53 PM
To: countyclerks@lyon-county.org

To: Lyon County Commissioners
From: Nevada Wells Cooperative
Date: 02/24/2026
Subject: Formal Objection to mega-data centers (Monarch, Tract, and Microsoft) depleting our water resources

Dear Commissioners of Lyon County,
We are writing as concerned residents of Lyon County to formally object to the proposed mega-data centers Monarch, Tract, and Microsoft because of their unsustainable water consumption.
The scale of water required to cool modern hyperscale data centers is staggering, with some facilities consuming millions of gallons per day. I am concerned that prioritizing industrial cooling over the needs of residents and agriculture will lead to::

- **Threats to Domestic Wells and our Drinking Water:** Massive withdrawals will deplete the Carson River Basin and Walker River Basin aquifers and dry up residential wells, leaving permitting and costs to the residential well owner.
- **Increased Utility Costs:** Large-scale industrial demand often requires costly infrastructure upgrades that are passed on to residential ratepayers. This includes the Yerington City Public Works.
- **Lack of Transparency:** Many of these agreements are brokered behind non-disclosure agreements, leaving the public in the dark about the true impact on our shared water resources.
- **Environmental Strain:** The return of heated or contaminated water to municipal systems or local waterways will harm ecosystems and may strain wastewater treatment capacities.

We urge you, the County Commissioners of Lyon County, to say **NO** to mega data centers. We support a temporary moratorium until data centers install closed-loop cooling systems, immersion cooling, air cooling, or other systems that will not burden our acquirers. Our community's long-term water security must take precedence over unchecked corporate growth. They have deeper pockets than the county and all residents combined! Corporate America can figure out better cooling systems.
Sincerely,
Charles "Chas" Hamilton, President
Nevada Wells Cooperative
Scenic Ave., Stagecoach, NV
775 291 0615

February 23, 2026

Lyon County Planning Commission & Board of County Commissioners
27 S. Main Street
Yerington, NV 89447

Attn: Community Development Department

Subject: PUBLIC COMMENT Regarding Data Center Development (Monarch, Tract, and Microsoft)

To the Members of the Planning Commission and Board of Commissioners,

As a resident of Lyon County, I am writing to formally submit my concerns and proposed conditions regarding the influx of hyperscale data centers in our region, specifically the **Monarch Data Center** in Mason Valley and the **Tract** development in Silver Springs. While these projects promise economic growth, they pose an existential threat to our most limited resource: water. In a drought-prone area where our farmers and residents rely on the same over-tapped aquifers, "business as usual" permitting is not enough. I request that the following **Conditions of Approval** be legally mandated in any Special Use Permits (SUP) or Development Agreements:

1. Mandatory Zero-Liquid Cooling: Developers have verbally mentioned "waterless" designs. This must be a binding legal requirement. No permit should be granted unless it explicitly prohibits evaporative cooling towers and mandates closed-loop or air-cooled systems for all server operations.

2. Baseline Well Protection & Monitoring: The County must require developers to fund an independent baseline study of all residential and agricultural wells within a five-mile radius. We demand the installation of independent monitoring wells at the project perimeters with real-time, public-facing data. If the water table drops beyond a set safety threshold, the developer must be legally required to cease pumping and/or pay for the deepening of affected local wells.

3. Zero Liquid Discharge (ZLD): To prevent "dirty water" or thermal pollution from entering our soil and aquifers, the County must mandate onsite ZLD systems. All industrial wastewater must be treated and recycled onsite, with zero discharge of chemically treated "blowdown" water into the ground.

4. Local Job & Benefit Accountability: Data centers are notoriously low-employment facilities once built. I ask that any tax abatements be tied to a "Clawback Provision." If the promised number of permanent, full-time local jobs is not met, the developer should be required to pay the full tax rate back to the County.

Our water is not for sale, and our wells cannot be replaced. We expect our elected officials to prioritize the long-term survival of our community over the short-term interests of tech corporations.

Sincerely,

CJ Ainsworth
PO Box 528, Silver Springs, NV 89429
95johncj@gmail.com

Fort Apache Homes Inc.
5560 S. Fort Apache Road, Ste. 100, Las Vegas, NV 89148
Tel: (702) 202-1600; Fax: (702) 202-1601

Lyon County Community Development Department
countyclerks@lyon-county.org

Re: PLZ-2025-109

Dear Commissioners:

This is written to oppose the issuance of a Conditional Use Permit for the Microsoft substation located to the west of Deodar Street and north of Hwy 50 in Silver Springs. The proposed location of the substation is adjacent to our properties, APN 018-553-01 and -02.

A substation is a nuisance which will blight the value of our properties. Some uses like residential or retail will no longer be viable due to the proximity to the substation. Already existing residential nearby will likewise be adversely affected.

The proposed substation should be located farther away from Hwy 50 and developable land. It should be re-sited to the north. In our view the Conditional Use Permit should be denied.

Thank you for your attention to this matter.

Very Truly Yours,

KENT WHEELER, VP

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
14.d

Subject:
For Possible Action: To approve the request from Microsoft Corporation for a Conditional Use Permit to construct a 120-kilovolt electrical substation and other associated infrastructure over approximately 18.70 acres of two parcels with Neighborhood Commercial (NC) zoning located north of US Highway 50 in Silver Springs at 1200 W US Highway 50 (Portion of APN 015-141-13 and 015-141-04); PLZ-2025-110. (Senior Planner Louis Cariola)

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Staff Report
- Project Description
- Site Photos
- Public Comment

LYON COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING • DEVELOPMENT ENGINEERING • PLANNING

27 S. MAIN STREET
YERINGTON, NEVADA 89447
(775) 463-6591
FAX: (775) 463-5305

34 LAKES BOULEVARD
DAYTON, NEVADA 89403
(775) 246-6135
FAX: (775) 246-6147

BOARD OF COUNTY COMMISSIONERS

PLZ-2025-110

Proposed Action	Conditional Use Permit for an electrical power substation
Meeting Date	March 5, 2026
Property Owners	Microsoft Corporation
Applicant	Microsoft Corporation
Representative	Wood Rodgers Inc. / Stacie Huggins
Area Location	North of US Highway 50, Silver Springs at 1200 W Hwy 50
Parcel Numbers	015-141-04 and a portion of 015-141-13
Area	Approximately 18.70 acres
Zoning	NC (Neighborhood Commercial)
Master Plan	Commercial
Case Planner	Louis Cariola

REQUEST

Microsoft requests approval for a Conditional Use Permit to construct an electrical power substation to support a data center campus under separate review.

PLANNING COMMISSION RECOMMENDATION

On February 10, 2026, the Planning Commission heard presentations from staff and the applicants and voted 6-0 (with one abstention – Commissioner Jones) to forward a recommendation of approval to the Board of County Commissioners.

RECOMMENDED MOTION

If the Board of County Commissioners determines that they will approve the request, then the Commission may want to consider a motion similar to the following.

The Lyon County Board of County Commissioners finds that:

A. The proposed use at the specified location is consistent with the policies embodied in the adopted master plan and the general purpose and intent of the applicable district regulations;

B. The proposed use is compatible with the character and integrity of adjacent development and neighborhoods and includes improvements or modifications either on-site or within the public rights-of-way to mitigate

development related adverse impacts, such as traffic, noise, odors, visual nuisances, or other similar adverse effects to adjacent development and neighborhoods;

C. The proposed use will not generate vehicular traffic which cannot be accommodated by the existing, planned or conditioned roadway infrastructure;

D. The proposed use incorporates roadway improvements, traffic control devices or mechanisms, or access restrictions to control traffic flow or divert traffic as needed to mitigate the development impacts;

E. The proposed use incorporates features to address adverse effects, including visual impacts and noise, of the proposed conditional use on adjacent properties;

F. The proposed conditional use complies with all additional standards imposed on it by the particular provisions of this chapter and all other requirements of this title applicable to the proposed conditional use and uses within the applicable base zoning district, including but not limited to, the adequate public facility policies of this title; and

G. The proposed conditional use will not be materially detrimental to the public health, safety and welfare, and will not result in material damage or prejudice to other properties in the vicinity.

Based on the aforementioned Findings, I move that the Board of County Commissioners approve the request from Microsoft Corporation for a Conditional Use Permit to construct a 120-kilovolt electrical substation over approximately 18.70 acres of two parcels with Neighborhood Commercial (NC) zoning located north of US Highway 50 in Silver Springs (Portion of APN 015-141-13 and 015-141-04); PLZ-2025-110.

CONDITIONS OF APPROVAL

1. The project activities shall be constructed and operated in accordance with the conceptual site plan and construction drawings as submitted and reviewed as part of this approval. Any further expansion will require modification of this Conditional Use Permit or an additional Conditional Use Permit and/or other approvals.
2. Any modification, expansion, intensification or material change in use or operation shall require an application for, and public hearings on, an amendment to the Conditional Use Permit use pursuant to Lyon County Code.
3. The applicant shall comply with all state, federal and local government regulations to the satisfaction of the appropriate agencies for the proposed uses. The applicant shall comply with all applicable Fire, building, zoning and improvement code requirements and obtain any necessary public inspections.
4. All construction documents, to include separate applications, must be submitted to Lyon County Utilities, Central Lyon Fire Protection District and Lyon County Building for review and approval to obtain a Building Permit.
5. The applicant is required to submit for a separate and independent Fire Plan review and will be required to comply with the 2024 Northern Nevada Code Amendments package and all applicable NFPA standards.
6. All contractors doing any construction, modifications, or remodel must be licensed in the State of Nevada.
7. The applicant shall maintain a Lyon County business license for the use while occupying the site.
8. The applicant shall receive approval from the Federal Aviation Administration (FAA) of a Form 7460-1 and supply it to the County prior to the issuance of Building Permits.
9. The applicant shall receive approval from the County Roads Department of an encroachment permit to pave access roads to the site prior to initiation of construction and grading on-site.
10. The project area shall be fenced with at least six feet of chain link for security purposes.

11. The operations authorized per this Conditional Use Permit shall not exceed 65 dBA (A-weighted decibel) during daytime hours or 60 dBA during night time hours as averaged from a two-hour monitoring period. The Community Development Director reserves the right to require a sound study to verify sound levels of the functioning operations. If a sound study determines that the use permitted per this Conditional Use Permit exceeds the limit allowed, the authorization may be rescinded at the discretion of the Director.
12. Exterior site and building lighting shall be installed as to eliminate any nuisance to adjoining properties. No unshaded light sources shall be permitted.
13. The applicant shall comply with the Lyon County drainage guidelines (2024 updated edition) to the satisfaction of the County Engineer. The property owner shall be responsible for maintenance of all roads, parking areas and drainage facilities within the parcel, as well as any storm water detention facilities.
14. The substantial failure to comply with the conditions imposed on the issuance of this conditional use permit or the operation of the conditional use in a manner that endangers the health, safety or welfare of Lyon County or its residents or the violation of ordinances, regulations or laws in the conditional use may result in the institution of revocation proceedings. **Failure to initiate the conditional use permit within two (2) years from the date of approval will result in the expiration of the conditional use permit approval.**

Alternative Motions

Alternative Motion for Continuance

If the Board of County Commissioners determines that additional information, discussion and public review are necessary for a more thorough review of the proposed conditional use permit; the Commission should make appropriate findings and move to **continue** the Public Hearing with a specific time period for the applicant to provide additional specific information necessary for the analysis of the request. The Commission may wish to consider a motion similar to the following:

The Planning Commission finds that:

A. Additional information, discussion and public review are necessary for a more thorough review of the proposed Conditional Use Permit.

Based on the above findings and with the applicant's concurrence, I move that the Board of County Commissioners continues the request from Microsoft Corporation for a Conditional Use Permit to construct a 120-kilovolt electrical substation over approximately 18.70 acres of two parcels with Neighborhood Commercial (NC) zoning located north of US Highway 50 in Silver Springs (Portion of APN 015-141-13 and 015-141-04); PLZ-2025-110 for __ days.

Alternative Motion for Denial

If the Board of County Commissioners determines that they should deny the request for a Conditional Use Permit, then they need to make findings supporting a recommendation of denial. The Commissioners may wish to consider a motion similar to the following:

The Board of County Commissioners finds that the proposed use:

A. Will be detrimental to the use, peaceful enjoyment, economic value, or development of surrounding properties or the general neighborhood; and is incompatible with and detrimental to the character and integrity of adjacent development and neighborhoods, nor has the applicant proposed mitigation of adverse impacts such as noise, vibrations, fumes, odors, dust, glare or physical activity related to the proposed project.

B. Will be detrimental to the public health, safety, convenience and welfare; and

C. Will result in material damage or prejudice to other property in the vicinity.

Based on the aforementioned findings, I move that the Board of County Commissioners deny the request from Microsoft Corporation for a Conditional Use Permit to construct a 120-kilovolt electrical substation over approximately 18.70 acres of two parcels with Neighborhood Commercial (NC) zoning located north of US Highway 50 in Silver Springs (Portion of APN 015-141-13 and 015-141-04); PLZ-2025-110.

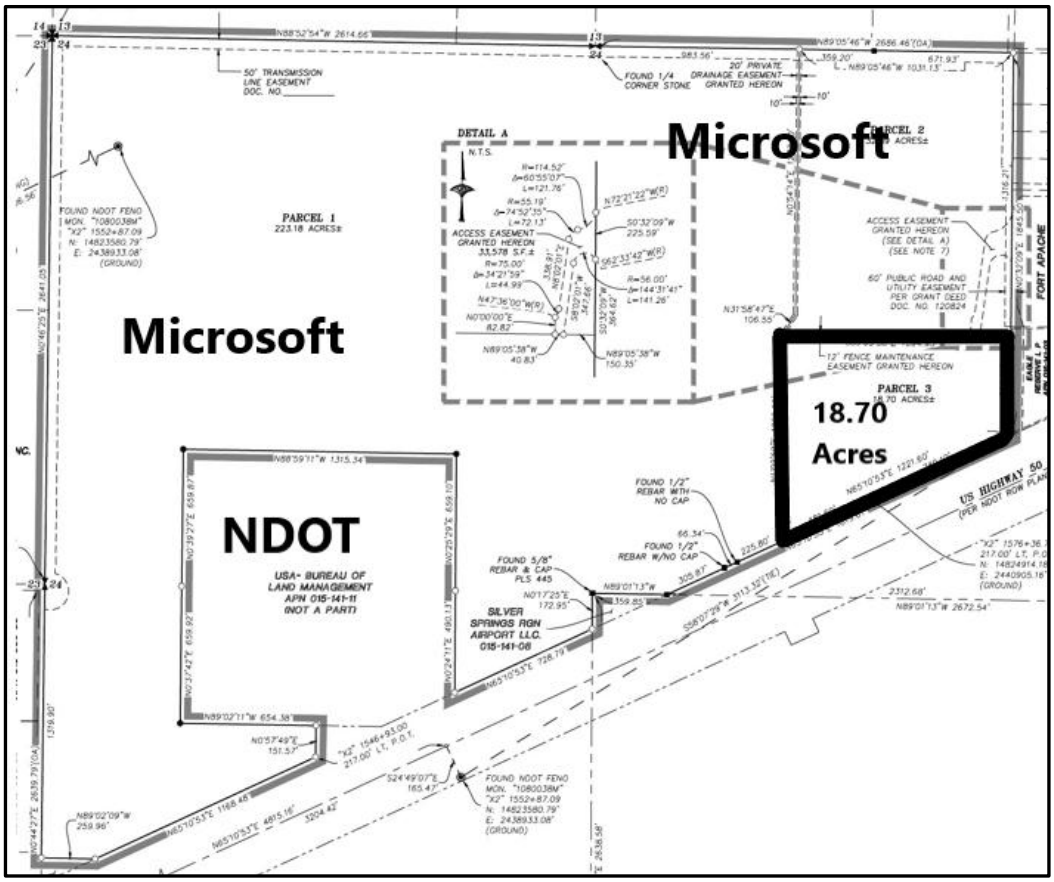
BACKGROUND INFORMATION

Location

The subject parcels are located in Silver Springs, north of US Highway 50 and the Silver Springs Airport. The parcels are approximately 0.5 miles west of the intersection with US Highway 95A and two miles east of the intersection with USA Parkway. The subject parcels include APN 015-141-04 (addressed as 1200 W Hwy 50) and a portion of APN 015-141-13 (unaddressed). The site is vacant.

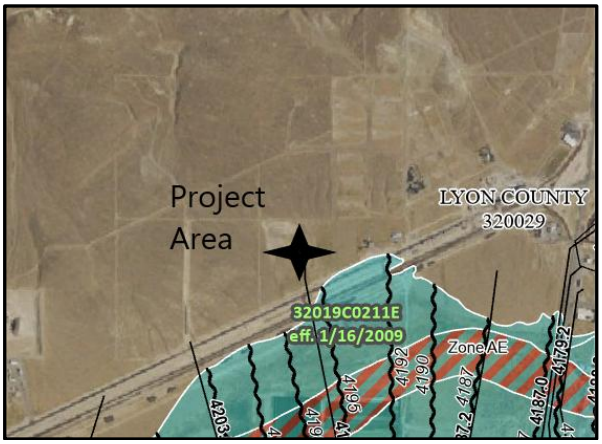
Size

The subject parcels are approximately 10.57 acres and 243.59 acres per the County Assessor. However, the subject parcels are under review by Lyon County for recordation of a Final Map which will create a new single-parcel configuration that will itself encompass the entire project area. The project area is/will be approximately 18.70 acres, as depicted in the image below from the yet-to-be-recorded Final Map. Microsoft also owns the land to the north and west. The western parcel surrounds an NDOT maintenance yard.



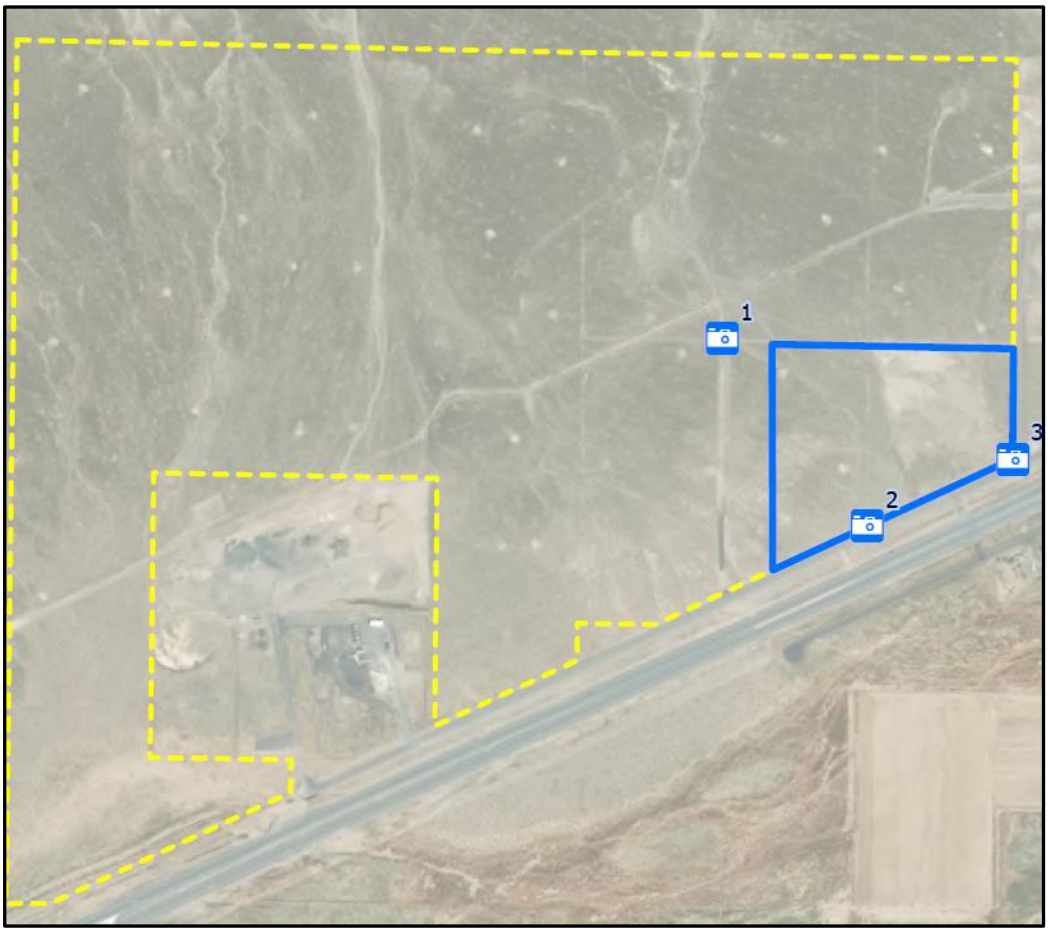
Flood Zone Designation

Per FEMA Flood Insurance Rate Maps (FIRMs) shown below, the subject parcels are located in the X Zone (area of minimal flood hazard). No Floodplain Development permits will be required. Slopes on the site range between 5 percent and 20 percent towards Hwy 50.



Access

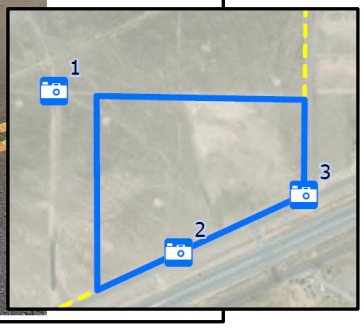
Access to the parcels is via unmaintained and unpaved Deodar Street to the east, which connects to the Highway 50 frontage road Right of Way (ROW). The images that follow are from attachment 2 of this report: pictures provided by the applicant.



Microsoft RNO18
Microsoft Substation
Conditional Use Permit
Photo Exhibit

Photo Location 3: Southeast Corner; Deodar Street/US Highway 50

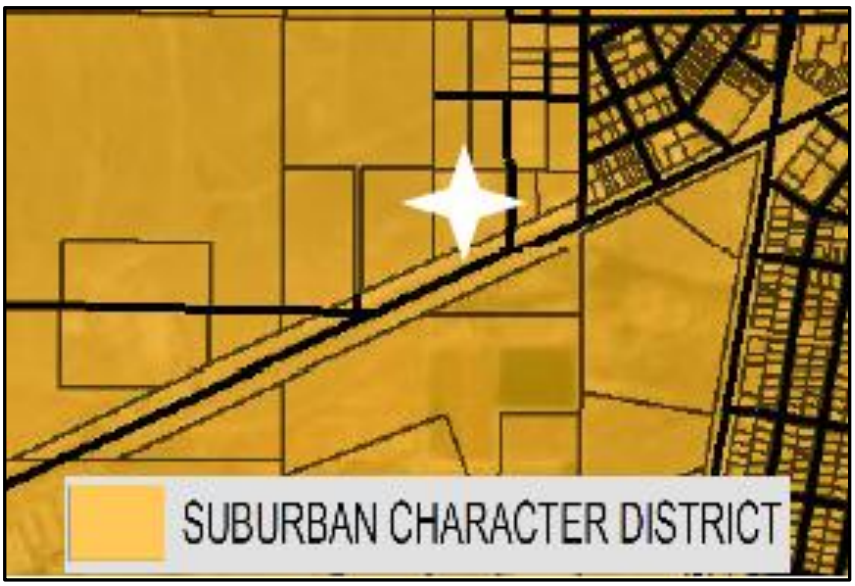
Photo 3.1: Looking north from the US 50 frontage street



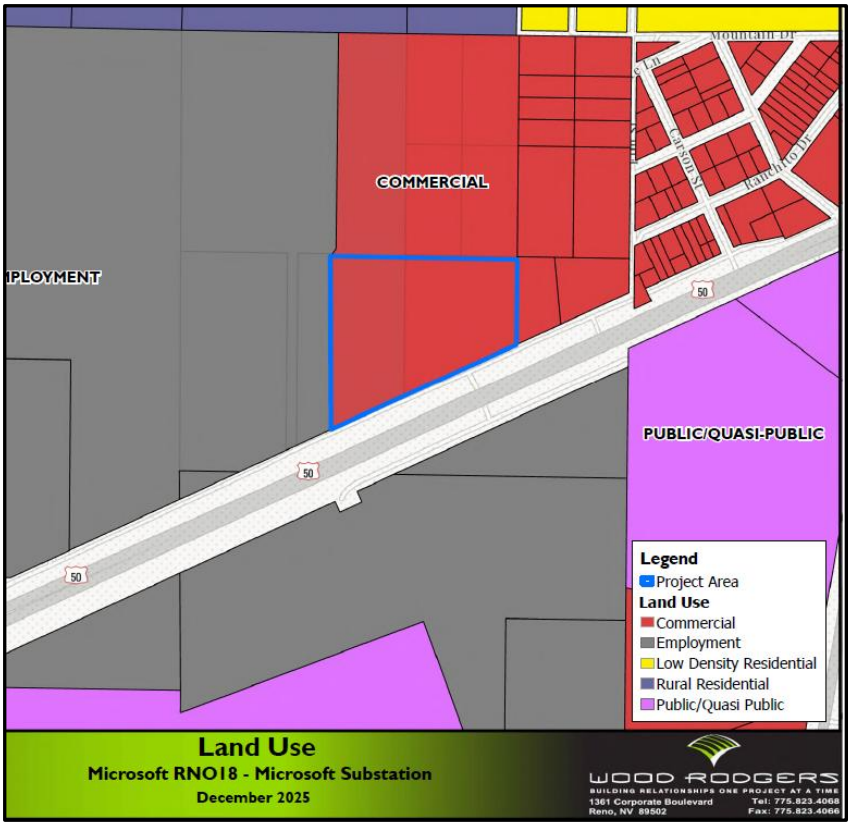
MASTER PLAN AND ZONING

The project area is within a Suburban Character District per the 2020 Master Plan. The project area is designated as Commercial per the 2020 Master Plan for Silver Springs with Neighborhood Commercial zoning.

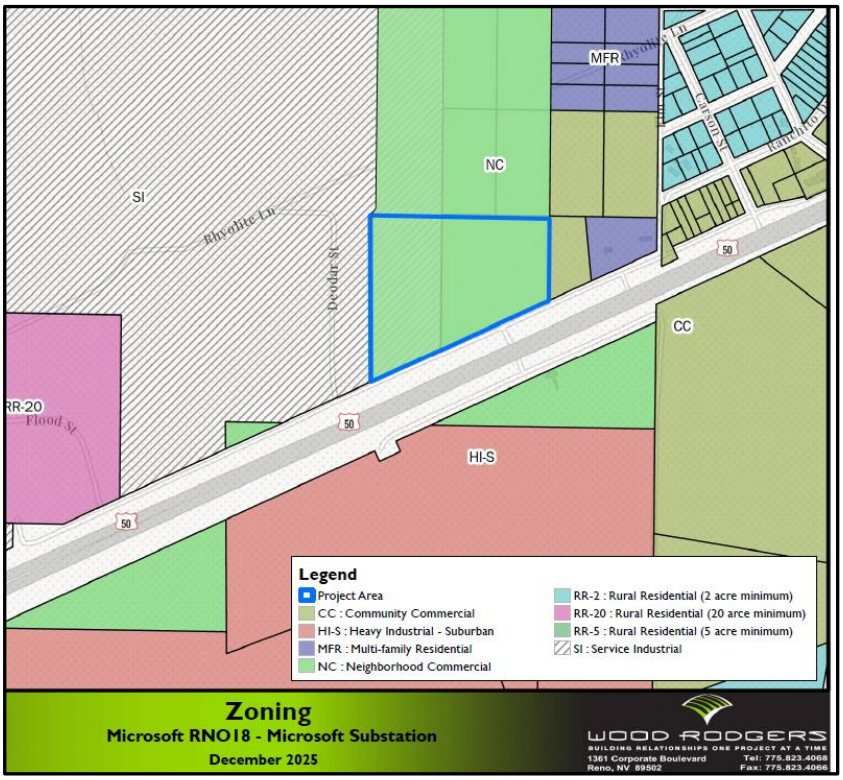
Character District



Master Plan: Commercial - image cropped from the applicant's submittal materials



Zoning: NC (Neighborhood Commercial) - image cropped from the applicant's submittal materials



The use of "*power substation*" requires a Conditional Use Permit (CUP) in the NC district per Table 15.320-2, subject to Code section 15.336.11, copied below the Land Use Table excerpt (with underline added).

TABLE 15.320-2
TABLE OF ALLOWED USES - SUBURBAN RESIDENTIAL, MIXED USE AND COMMERCIAL ZONING DISTRICTS

P = Permitted; C = Conditional use permit required; T = Temporary use permit required; - = Not permitted

Use Category	Use Type	Suburban Residential								Mixed Use/Commercial						Specific Use Regulations (Code Reference)
		SR-2	SR-1	SR-1/2	SR-12000	SR-9000	NR	MFR	RMU	NC	CC	RC	TC-S	CMU-S	HMU-S	
	Power substations	C	C	C	C	C	C	C	C	C	C	C	C	C	C	Section 15.336.11

15.336.11: POWER SUBSTATIONS:

A. Purpose: It is the intent of this section to provide for the delivery of electrical power in an efficient and effective manner to the utility's customers allowing for a timely review process for new power substations to be located within the County.

B. Other Permits: Power substations may be located on either private or public lands in order to tie into other existing or proposed utility infrastructure (e.g., connecting transmission lines). If the power substation project is located on land administered by any agency of the Federal government the applicant shall notify the County of its intent to submit an application concurrent with the Federal review and permit application process, and attend a pre-submittal conference with County staff to discuss the project and specific application requirements. Subsequent to the pre-application meeting, the applicant shall submit as the application the appropriate documents related to the environmental review by State and Federal land management agencies. If the applicant is required to apply for a permit to construct under the Utility Environmental Protection Act from the Public Utilities Commission of Nevada, then the applicant's NEPA application shall constitute the environmental review documents for the conditional use permit application.

C. Conditional Use Permit: A conditional use permit shall be required for a power substation project that is located on private land in order to review, identify and develop mitigation measures that reduce the potential negative impacts to abutting properties. (Ord. 603, 11-1-2018)

STAFF REVIEW AND COMMENTS

Project Details

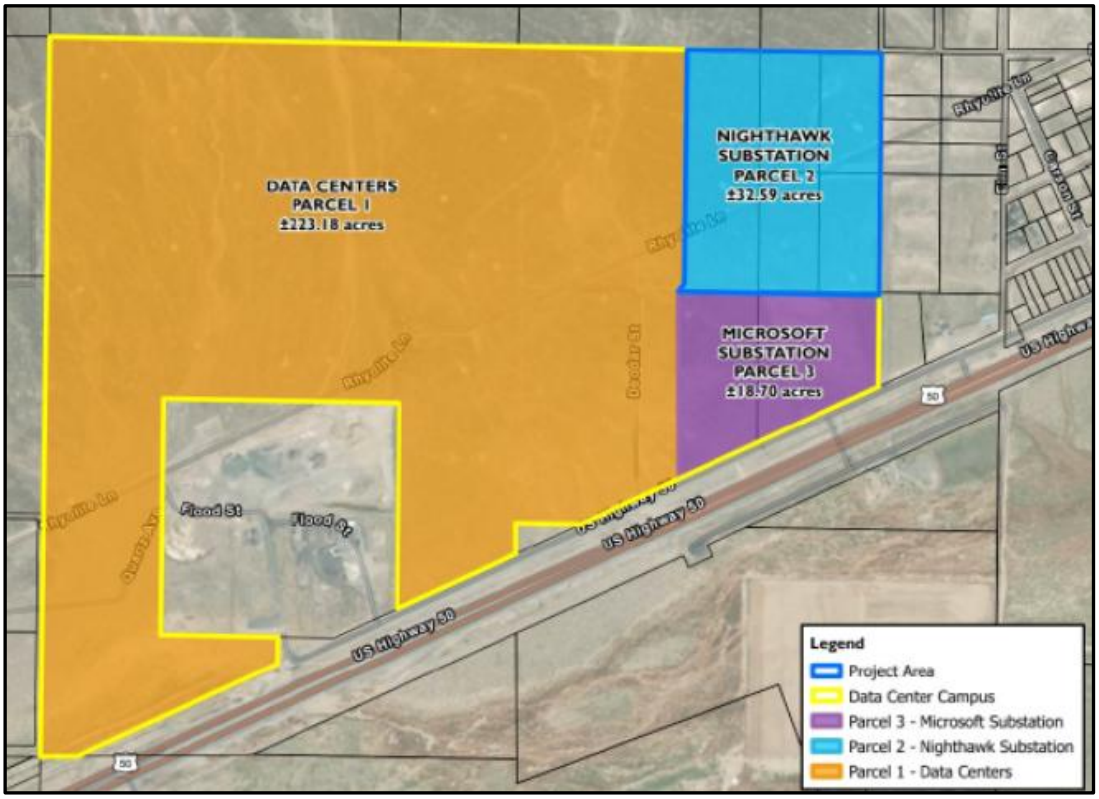
Microsoft corporation has been working closely with the County for over 3 years to successively move through multiple entitlements and mapping exercises. The end goal is the construction of a data center campus with two power substations. This CUP application is for one of two that are concurrently under review by the County. One substation will be operated by Microsoft (this one) the other by NV Energy (which is named "Nighthawk").

Generalized Timeline

- 2022: Initial meeting with Microsoft with County management and staff
- 2023: First round of zoning map amendments (ZMA) and mapping exercises
- 2024: Second round of ZMAs and mapping exercises
- 2025: Third round of ZMAs plus master plan amendment
- 2026: CUPs for substations and ADR (Administrative Design Review) for data center project

The applicant provided a full project description of the proposed use, included as Attachment 1 of this report. The excerpt below is followed by an image that depicts the data center and the substations' locations.

> *"….a parcel map has been approved (PLZ-2025-035) and is pending recordation which will combine all of the parcels and reestablish three new parcels ultimately allowing the data center campus to develop on their own parcels while also establishing two separate parcels for substation development. Upon recordation of the Parcel Map, the larger project site will include three parcels referred to hereinafter as follows:*
>
> - ***Parcel 1** (± 223.18 acres) – Data Centers*
> - ***Parcel 2** (± 32.59 acres) – Nighthawk Substation (NV Energy)*
> - ***Parcel 3** (± 18.70 acres) – Microsoft Substation*



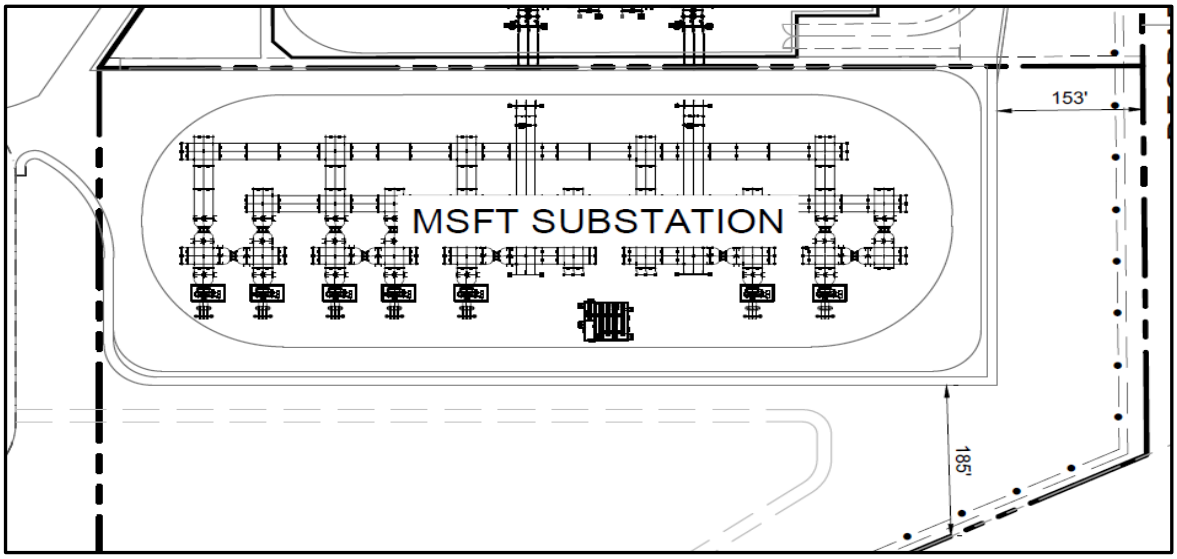
The following is also an expert from Attachment 1 of this report.

Project Details

*As part of a broader data center campus, the applicant (Microsoft, Inc) is seeking to construct a 120-kilovolt electric power substation on the project site (Parcel 3) in order to support development of the adjacent data center facility. The proposed substation will be supported by the adjacent Nighthawk Substation (*submitted concurrently under separate application) and will work in concert to serve the adjacent data campus which will include six (6) one -story data center buildings, two substations, paved parking, and paved roadways.*

The current request is specific only to the Conditional Use Permit (CUP) for the Microsoft Substation, which will draw power from the adjacent planned Nighthawk Substation and will distribute it primarily to the data center buildings

Figure 2: *Microsoft Substation Equipment Layout*



Specifically, the facility will connect to a planned 345-kV Nighthawk Substation (NV Energy) and step down the voltage to 120 kV for distribution via two (2) 120 kV service lines from the Nighthawk Substation. The Microsoft Substation is designed with an initial capacity of approximately 461 MVA, which is sufficient to meet anticipated load requirements. Upon construction the substation will be owned, operated, and maintained by Microsoft.

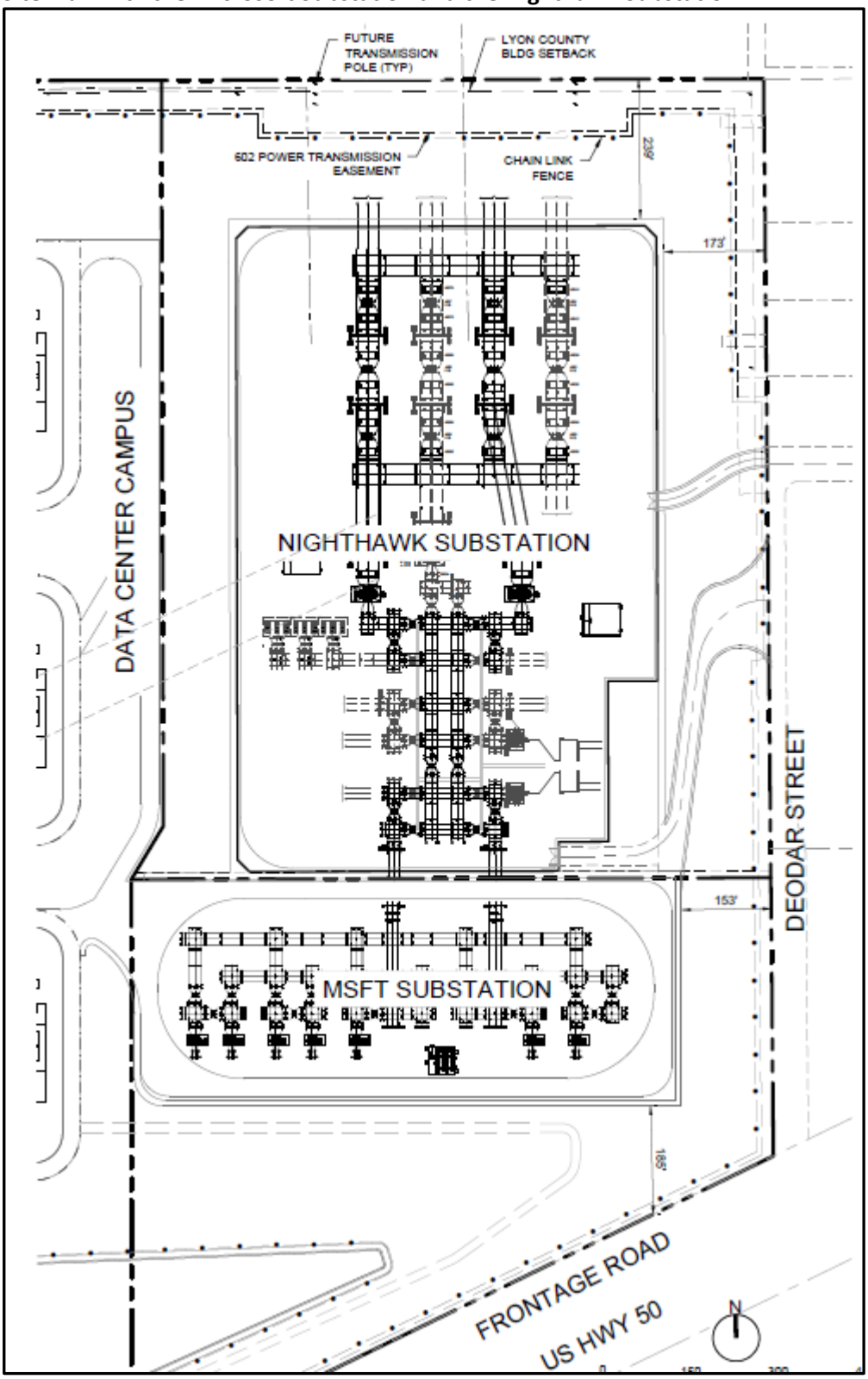
The equipment needed for this substation project includes 6 energized + 1 de-energized reserve + 1 spare transformer, circuit breakers, 2000-amp distributors, equipment enclosure, switches, and associated /ancillary that are typical to a facility of this type (see Figure 2 above).

The substation will operate 24 hours per day, 365 days per year. The substation itself will have no dedicated employees post construction, and it is anticipated it will be visited approximately once a month for general maintenance. The substation will have no public access or services and no changes to traffic service levels are anticipated as a result of the project.

Noise and light mitigation have been provided for nighttime hours during emergency calls. The substation pad will be secured with a 6-foot-tall chain link fence installed around the perimeter for security. In terms of lighting, the substation will include motion censored lighting that comes on when automatically triggered by movement and have a timer for when the movement has stopped so the lights are not on all night. The lights will also be

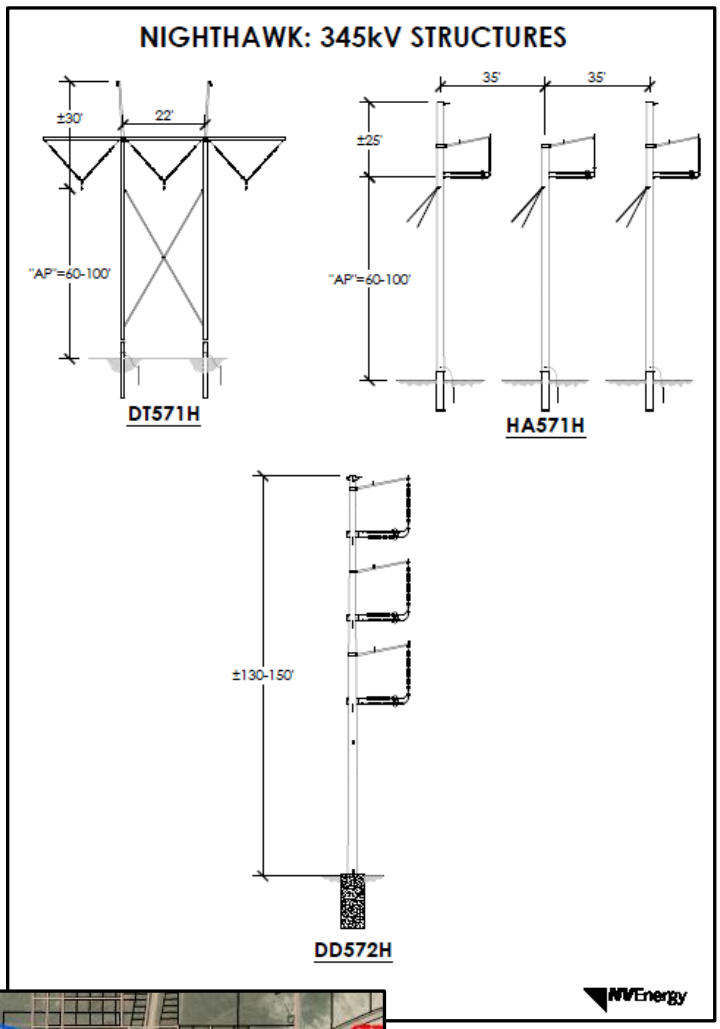
mounted as low as possible and include shields aimed down toward the ground and away from adjacent residentially zoned properties to the extent feasible.

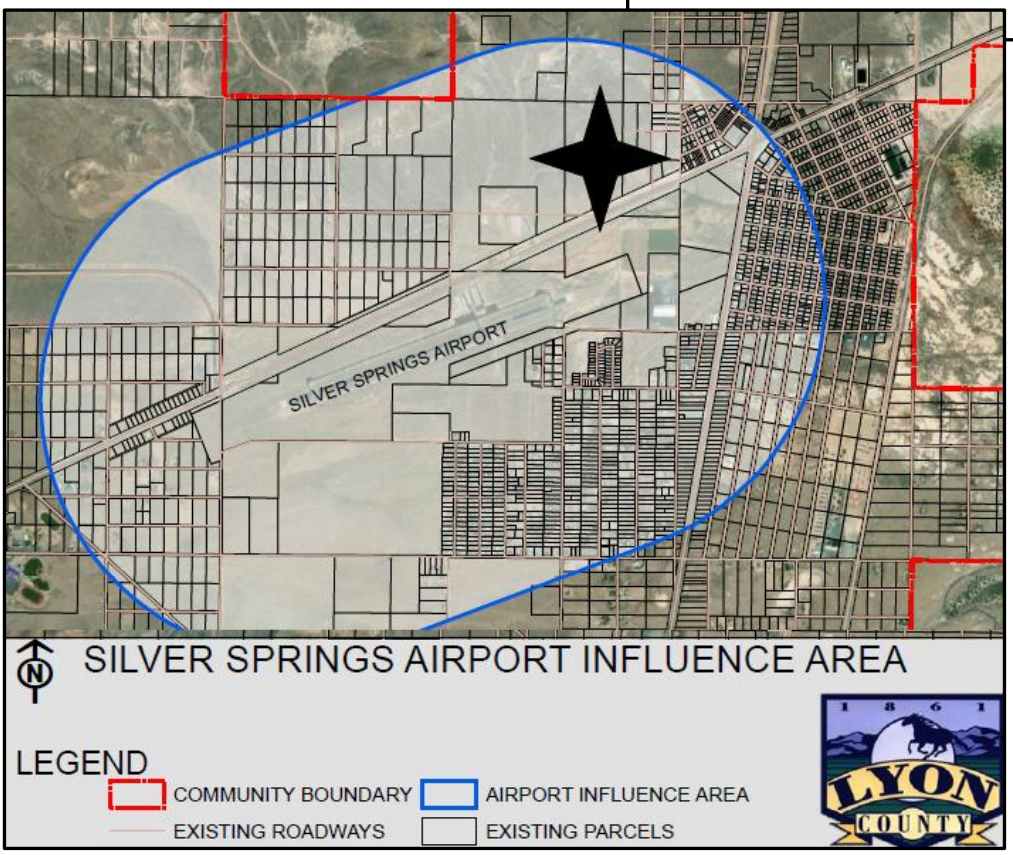
Site Plan with the Microsoft Substation and the Nighthawk Substation



The detail to the right is from NV Energy and was included in the application. It is labeled as being applicable to the Nighthawk substation, which is a larger installation (340 kilovolt), but is representative of this substation's maximum heights.

The height of the substation infrastructure is up to 150 feet. Even though the subject of this CUP is for a smaller substation, staff has included a Condition of Approval requiring that the applicant receive approval from the Federal Aviation Administration (FAA) of a Form 7460-1 for each of the CUPs. This approval from FAA addresses the height of new structures within the Airport Influence Area of the Silver Springs Airport.





FINDINGS

When considering applications for a Conditional Use Permit (CUP), the Commission or Board must evaluate the impact of the conditional use on, and its compatibility with, surrounding properties and neighborhoods to mitigate potential impacts of the use at a particular location and make the following findings from *Chapter 15.230.06: FINDINGS.* Each Finding is listed with the applicant's response and staff's comments.

Finding A: The proposed use at the specified location is consistent with the policies embodied in the adopted master plan and the general purpose and intent of the applicable district regulations;

Applicant's Response

Goal LU 1: Orderly Growth Patterns

Policy LU 1.1: *Follow Development Patterns as established in the Land Use Plan*

Response: *The Lyon County Land Use Plan identifies the subject property, and the properties surrounding it to the north and east as having a Commercial land use designation which supports its Neighborhood Commercial (NC) zoning. The Commercial land use designation serves as a transition between future commercial uses to the east and employment/industrial uses on the adjacent property to the west (also owned by the Applicant) and south.*

While NC zoning permits substations with a Conditional Use Permit (CUP), it does not allow warehouses or data centers like the adjacent parcel to the west, making the site well-suited for a power substation designed exclusively to serve the adjacent data center campus. This relationship reinforces the suitability of locating the substation on this parcel to support the future data center campus. Additionally, the substation is positioned adjacent to employment-designated lands and within the County's planned utility infrastructure framework. By situating essential utility infrastructure near major nonresidential uses, the project furthers Policy LU 1.1 by supporting established development patterns and promoting efficient land use.

Policy LU 1.4*: Locate industrial development as designated on County-wide Land Use Plan or determined by criteria*

Response*: Although the subject parcel is master planned Commercial, the proposed development of a substation, classified as a utility/industrial use, is permitted in the NC zone with a CUP. It is worth noting that the subject parcel is located in a largely undeveloped area north of Silver Springs Airport, with undeveloped parcels to the west master planned Employment and zoned Service Industrial. Given that all of these parcels are owned by the Applicant, locating the proposed substation on this site will ensure compatible development. Furthermore, the subject site is surrounded by Commercial designated properties to the north and east, so introducing uses such as the proposed substation in this area would not impact nearby properties.*

Future development of the site will comply with Lyon County Development Code standards; specifically, adherence to performance standards for noise, dust, and traffic contribute substantially to land use compatibility.

Goal LU 3: Diverse Economy

Policy LU 3.1*: Diverse Economic Base*

Response: *Reliable substation capacity is foundational to high-value job sectors (data centers, advanced manufacturing). The project enables economic diversification and enhances regional competitiveness.*

Goal FS 5: Utility Corridors

Policy FS 5.3*: Aboveground utility corridors must not conflict with any existing or planned infrastructure or utility projects and must be located to minimize conflicts with residential and commercial development.*

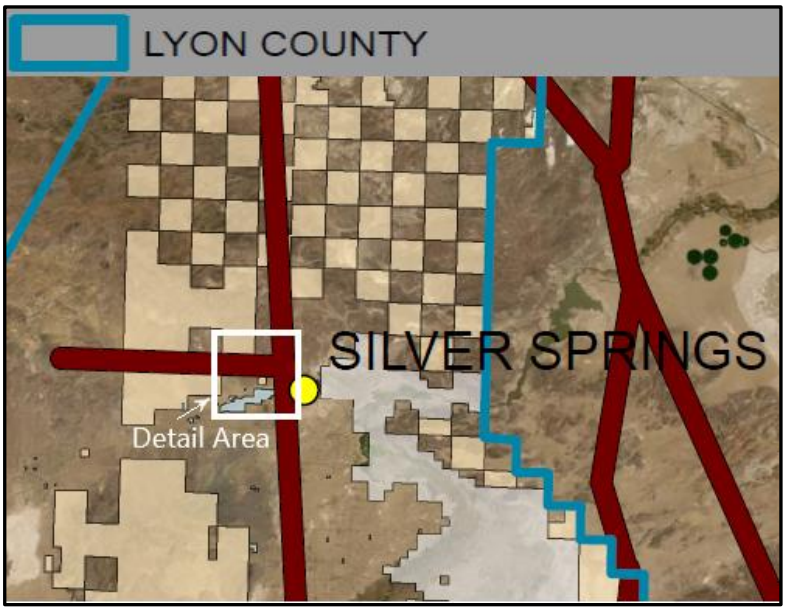
Response: *The proposed substation aligns with the 2020 Master Plan which includes a map that depicts the location of Aboveground Utility Corridors in preparation for high voltage power lines to connect Lyon County to the NV Energy Greenlink project. The NV Energy project will be located within an established utility corridor advancing the Master Plan's utility corridor policies by promoting orderly routing for medium- and high-voltage infrastructure.*

Specifically, the proposed Microsoft substation is adjacent to complementary uses, including the planned NV Energy "Nighthawk" Substation to the north and a future data center campus (owned by the Applicant) to the west. Microsoft's substation will connect with Nighthawk via overhead lines, consistent with corridor planning standards. Nighthawk's proximity to the Walker River and Fort Churchill substations, critical nodes in NV Energy's Greenlink Transmission project, positions Lyon County as a key regional hub for power distribution. Although the Microsoft Substation will only serve the adjacent data center campus, construction of the dedicated substation will ensure no undue draw on the power grid in service to the campus. Although the adjacent planned Nighthawk substation will initially serve the Microsoft Substation solely, installations for service to residential, commercial, or public facilities could be added in the future. While the Microsoft substation primarily serves the adjacent data center, it strengthens Nighthawk's capacity to support future community needs and regional transmission objectives. The facility will not conflict with rural residential or agricultural uses and will reinforce planned utility infrastructure across the county.

Staff Comment

Staff believes the Goals above from the 2020 Master Plan (Chapter 3) are appropriately quoted by the applicant for the proposed project. The project area has been the subject of multiple public hearings associated with Master Plan and Zoning changes in addition to mapping exercises. This CUP is part of a larger data center campus for Microsoft over approximately 274 acres in Silver Springs. To the north of the project area is an approved Specific Plan for the Silver Springs Technology Park, another data center project. Both projects have located in the region because of the NV Energy Greenlink Project, which will use 525-kilovolt (kV) transmission lines to traverse Nevada and connect to energy-generating facilities (such as solar arrays).

Projects with high energy demands such as data centers have chosen these locations because the 2020 Master Plan delineated "BLM Aboveground Utility Corridors" for connection. The images that follow depict the Corridors in the region and the general project location. Within the Corridors, a CUP is not necessary for high voltage power lines and can be reviewed at the staff level. The type of development being proposed in these regions will continue to require infrastructure like electrical power substations and this CUP is part of the larger development footprint of data center uses in Silver Springs.



Staff feels this Finding may be met in the affirmative.

B. The proposed use is compatible with the character and integrity of adjacent development and neighborhoods and includes improvements or modifications either on-site or within the public rights-of-way to mitigate development related adverse impacts, such as traffic, noise, odors, visual nuisances, or other similar adverse effects to adjacent development and neighborhoods;

Applicant's Response

The proposed power substation is located on a vacant parcel surrounded by primarily undeveloped land, most of which is owned by the Applicant. There are no developed residential neighborhoods adjacent to the project site, as such the project will avoid impacting existing neighborhoods. Furthermore, the substation has been designed intentionally adjacent to similar and compatible facilities (planned NV Energy Substation and data centers [under separate applications]), contributing substantially to the compatibility of land use.

The Applicant will minimize project-related adverse impacts, such as traffic, noise, odors and visual nuisances. Specifically, the proposed substation is setback from the eastern property line by a minimum of 156 feet, which will ensure minimum impact the adjacent parcels. In terms of access, the substation will be accessed via the adjacent data center campus. It is worth noting that while there may be some traffic at the substation, access will generally be limited to maintenance personnel only.

The dedicated substation reduces line losses due to lengthy transmission, helps avoid overloading the power grid, and enables efficient power distribution to the data center, aligning with energy efficiency and low - impact policies. The design incorporates LID stormwater design and stormwater control features to prevent runoff and support groundwater recharge.

The site requires no dedicated utility infrastructure like water or sewer and will not result in an impact to existing water or sewer capacity for the area. Lighting for the substation will be limited to only that required for maintenance or emergency service visits. Any lighting needed will be designed to be shielded or recessed with full cut-off screening and directed downward and away from adjacent parcels. Additionally, six (6) ft tall chain security fencing will surround the substation. These improvements, combined with the absence of residential adjacency and compliance with performance standards for noise, dust, and traffic, demonstrate

that the project is compatible with surrounding land use and the transitional rural-to-suburban character of this area.

Staff Comment

To the east is vacant land with applicable zoning of CC (Community Commercial) and the substation structure is set back over 200 feet from the property boundary, although the fence line is proposed at 153 feet. The location of the subject parcels as part of the larger data center project makes the project, once completed, only part of a larger campus so impacts to the north, west, and south are not applicable.

Staff has included a Condition of Approval related to maximum noise levels permitted for the use, with quotations from Lyon County Code section 15.337.03.H, which reads as follows:

H. Noise: No use in this district shall exceed the maximum environmental noise level at the property line:

1. When adjacent to a commercial or industrial use or zone: Daytime seventy five (75) dBA and nighttime seventy (70) dBA.

As Conditioned, staff feels this Finding may be made in the affirmative.

C. The proposed use will not generate vehicular traffic which cannot be accommodated by the existing, planned or conditioned roadway infrastructure;

Applicant's Response

Following construction, vehicular traffic generated by the proposed substation will be limited primarily to maintenance. The substation will operate 24 hours a day 365 days per year but will have zero (0) employees. Aside from improvements to existing roadways in the general vicinity, no new public roadways are needed to accommodate the project. It is worth noting that the data center campus site plan includes a paved internal roadway network serving all portions of the campus, with the northwest corner of the substation site connecting to this internal roadway network.

Staff Comment

As stated by the applicant, the substation will not generate vehicular traffic other than maintenance checks and responses since there will be no employees. The Roads Department will issue an encroachment permit to pave the access road along Deodar Street. This Finding may be met in the affirmative.

D. The proposed use incorporates roadway improvements, traffic control devices or mechanisms, or access restrictions to control traffic flow or divert traffic as needed to mitigate the development impacts;

Applicant's Response

As noted previously, vehicular traffic generated solely by the substation post construction will be minimal, with no employees, trips will be limited only to sporadic maintenance activities. Given the limited number of trips generated by the substation and the proposed access restrictions, no additional traffic control devices or mechanisms are warranted for the project. It is worth noting that the project proposes construction of a chain link fence installed around the project perimeter which will restrict access to the substation site. As previously discussed, the site will be accessed via the internal roadway network that will serve the adjacent data center campus. The private roadway network will provide access to the substation at the northwest corner of the substation parcel.

Staff Comment

The site is accessed by existing roadways that do not require any additional improvements but will require maintenance at the applicant's expense. The recommended Conditions of Approval address this Finding, which is made in the affirmative.

E. The proposed use incorporates features to address adverse effects, including visual impacts and noise, of the proposed conditional use on adjacent properties;

Applicant's Response

*The construction of the Microsoft Substation will be limited to within the project boundary to mitigate for potential impacts to the surrounding area. As discussed in detail above in the response for **Finding B**, adjacent parcels are vacant, undeveloped land; therefore, no adverse effects will be imposed as a result of this project. While there may be some noise and/or visual impacts during construction, upon completion of construction, the project has been designed such that it will not generate visual impacts or adverse noise effects on adjacent properties.*

Staff Comment

Staff has included a Condition of Approval related to maximum noise levels permitted for the use, with quotations from Lyon County Code section 15.337.03.H, which reads as follows:

H. Noise: No use in this district shall exceed the maximum environmental noise level at the property line:

1. When adjacent to a commercial or industrial use or zone: Daytime seventy five (75) dBA and nighttime seventy (70) dBA.

The most impactful quality of the project will be visual, but as previously stated, the substation will be part of a larger complex in a region of the County that will be significantly changed as a result of location of BLM Aboveground Corridors as approved in the 2020 Master Plan. Data centers are large projects and they will all have substations and other accessory uses. The Conditions of Approval also require submittal to the County of an approved Form 7460-1 from the FAA to ensure the height of the proposed substation.

As Conditioned, staff feels this Finding may be made in the affirmative.

F. The proposed conditional use complies with all additional standards imposed on it by the particular provisions of this chapter and all other requirements of this title applicable to the proposed conditional use and uses within the applicable base zoning district, including but not limited to, the adequate public facility policies of this title; and

Applicant's Response

*As noted previously, power substations are permitted in the NC zoning district with approval of a CUP. As designed the project meets all applicable standards of Title 15, including provisions specific to power substations under Article 336, and complies with the 2020 Master Plan's goals and policies for land use and utility corridors, particularly those supporting Goal FS-5: Utility Corridors, as discussed above in the response for **Finding A**. These policies promote orderly infrastructure development, and the project's location within a designated utility corridor aligns with that intent.*

The project will not create demand on public facilities such as schools, libraries, community centers, government offices, or emergency services during construction or operation. It also requires no long-term municipal utilities, including water, wastewater, or solid waste services. Water needed for concrete production and dust control during construction will be sourced from existing municipal or commercial suppliers or entities with valid water rights; no new water rights will be required. Wastewater and solid waste will be managed in compliance with local, state, and federal regulations.

By meeting all applicable zoning standards and avoiding impacts to public facilities and utilities, the proposed substation satisfies the requirements of Title 15, Article 336, and the public facility policies contained within, and as such can be found consistent with this finding.

Staff Comment

No sewer or water services are required for the project. The Lyon County Sheriff's Office will provide law enforcement services. The use is consistent with the zoning standards of Title 15 and staff feels this Finding may be met in the affirmative.

G. The proposed conditional use will not be materially detrimental to the public health, safety and welfare, and will not result in material damage or prejudice to other properties in the vicinity.

Applicant's Response

The proposed Microsoft Substation will enhance the reliability and resilience of the regional electrical grid by supplying power to the adjacent data center campus, creating the necessary utility infrastructure to supply power to those adjacent land uses without impacting power service to the region. By interconnecting with NV Energy's Greenlink West Transmission Project via the adjacent planned Nighthawk substation, the project plays a role in grid stability. Although initially Nighthawk will only serve the adjacent Microsoft uses, distribution for the communities broader residential and commercial needs can be installed in the future. The improvements associated with this project directly support public health, safety, and welfare by reducing the risk of outages and strengthening the grid's capacity to meet growing energy demands driven by emerging technologies.

The requested CUP also represents a strategic land use response to the region's escalating demand for data storage and connectivity. Beyond temporary construction activities, which will follow standard dust control measures under a required permit, the project will not generate adverse environmental impacts beyond those typical of construction. No residential development exists adjacent to the site (nor are the parcels master planned or zoned for residential), eliminating potential conflicts with sensitive uses. These factors demonstrate that the proposed substation will not be materially detrimental to public health, safety, or welfare, nor will it result in damage or prejudice to surrounding properties.

Staff Comment

The substation is part of the larger data center project, which itself is also part of an expected regional change to development type in this portion of the County. The presence of the BLM Aboveground Corridors per the approval of the 2020 Master Plan makes Silver Springs an attractive location for data center projects and potentially other high-energy users. As conditioned, staff does not feel the project represents material damages to public health, safety or welfare to residents or properties in the vicinity.

Executive Summary

Applicant:	Microsoft Inc
APN Numbers:	015-141-04[1] and a portion of APN 015-141-13
Location:	The project site is located in Silver Springs, north of US Highway 50 and the Silver Springs Airport and west of the intersection with US Highway 95A.

Project Location

The subject site consists of one (1) parcel located approximately 0.5 miles west of the intersection of US Highway 50 (US 50) and US 95A and 1.15 miles east of the intersection of US50 and USA Parkway. More specifically, Lyon County currently identifies the subject site as Assessor's Parcel Number (APN) 015-141-04 consisting of approximately 10.57 acres[1]. The Frontage Road along the south side of the project site provides multiple access to the project area.

Background

An Administrative Design Review (ADR) application was submitted and is currently under review for mass grading and associated improvements for future development of a data center campus across the site. The ADR scope included large scale earthwork, stormwater management facilities, temporary and permanent erosion control measures, and access improvements to support construction. The initial improvement will establish the grading, drainage and access framework which serve as the precursor to the request herein for one of the planned substations within the project area.

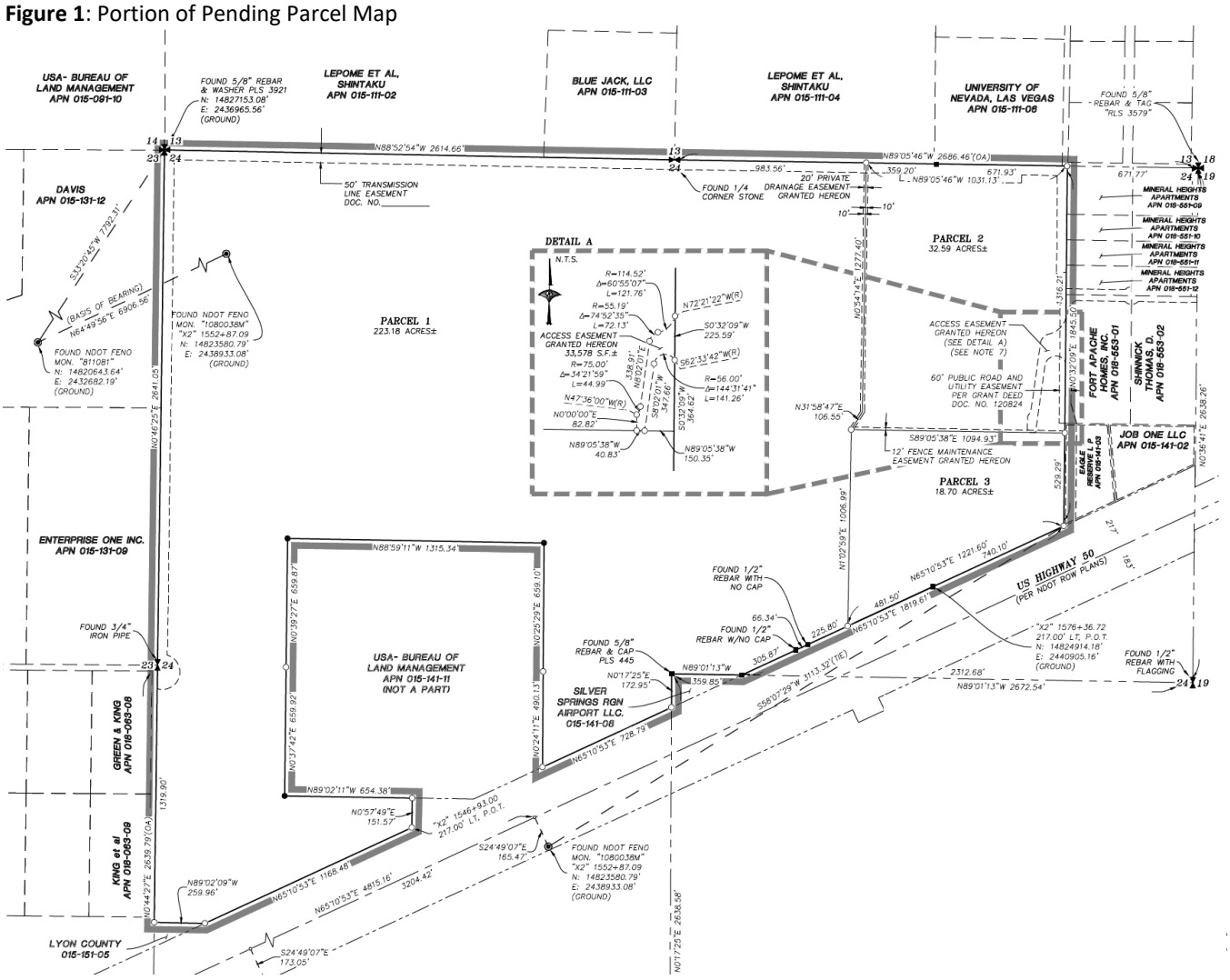
Also in preparation for the campus, a parcel map has been approved (PLZ-2025-035) and is pending recordation which will combine all of the parcels and reestablish three new parcels ultimately allowing the data center campus to develop on their own parcels while also establishing two separate parcels for substation development. Upon recordation of the Parcel Map, the larger project site will include three parcels referred to hereinafter as follows:

- **Parcel 1** (±223.18 acres [ac]) – Data Centers
- **Parcel 2** (±32.59 ac) – Nighthawk Substation (NV Energy)
- **Parcel 3** (±18.70 ac) – Microsoft Substation

As outlined below, the subject request of this application is isolated to only one of the components of the broader planned campus across the parent site. Upon recordation of the aforementioned parcel map, the subject project of this application will be contained on its own parcel (**Parcel 3**) (*refer to Figure 1 and Parcel Map found in Section 3 of this submittal packet)*.

[1] A parcel map has been approved (PLZ-2025-035) and is pending recordation which will expand and establish a new parcel with an updated APN number.

Figure 1: Portion of Pending Parcel Map



Project Request

Included with this application is a request for a Conditional Use Permit (CUP) to construct a power substation. Lyon County requires a CUP for substations built on private land in all zoning districts to ensure potential impacts to adjacent properties are reviewed and appropriate mitigation measures are identified. The proposed project involves construction of a power substation on private land owned by Microsoft within Lyon County.

Master Plan and Zoning

The project area has a master plan designation of Commercial with a zoning designation of Neighborhood Commercial (NC) *(refer to maps in Section 3 of this submittal packet).* The subject site is within the Suburban Character District per the 2020 Master Plan. Surrounding zoning includes Community Commercial to the east, Heavy Industrial to the south, Service Industrial to the west, and Service Industrial to the north.

Site Characteristics

The subject site is bordered by US 50 to the south and undeveloped land to the north, east, and west, with the exception of the BLM site centrally located in the middle and currently being used by NDOT. Site slopes range

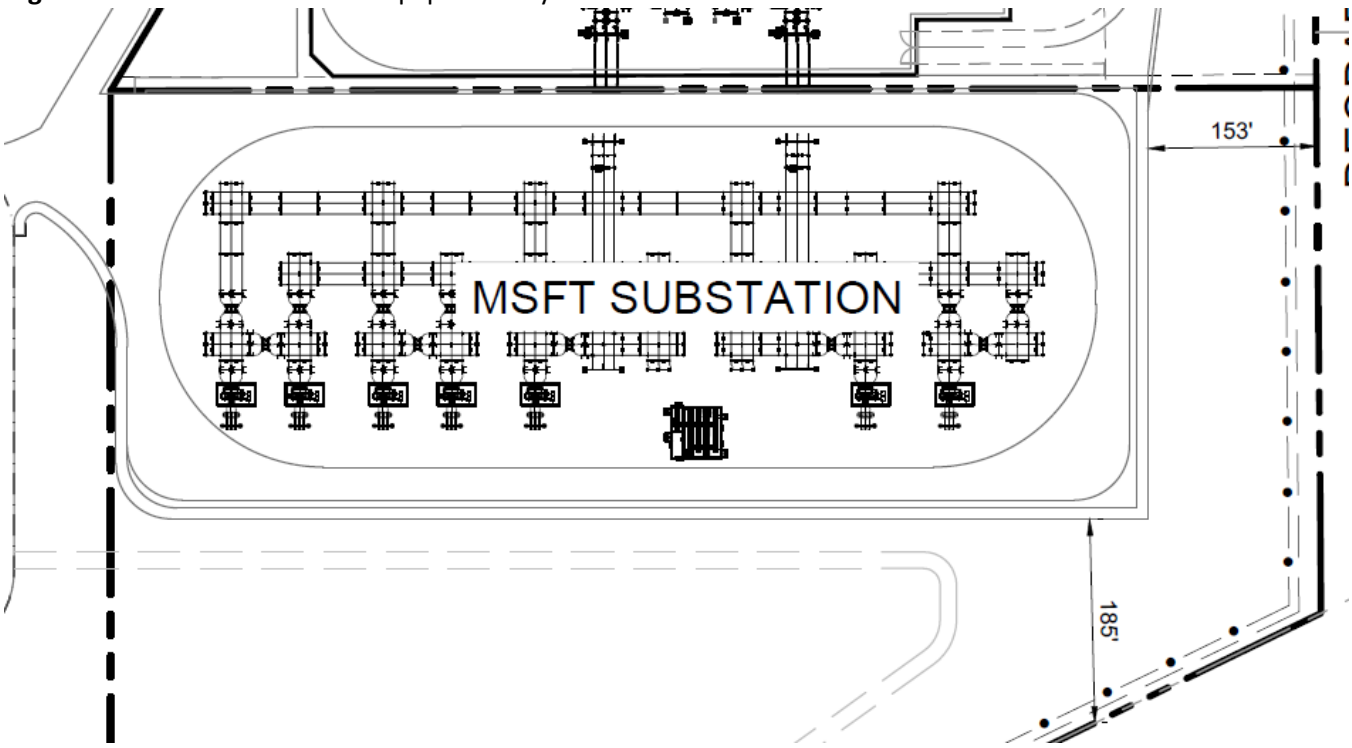
between 5 percent and 20 percent towards US 50. Surface drainage consists of sheet flow as well as several natural drainages that flow north to south across the subject area. Vegetation is moderate, consisting of brush, weeds, and grasses with several dirt roads crossing the property.

Project Details

As part of a broader data center campus, the applicant (Microsoft, Inc) is seeking to construct a 120-kilovolt electric power substation on the project site (Parcel 3) in order to support development of the adjacent data center facility. The proposed substation will be supported by the adjacent Nighthawk Substation *(*submitted concurrently under separate application)* and will work in concert to serve the adjacent data campus which will include six (6) one -story data center buildings, two substations, paved parking, and paved roadways.

The current request is specific only to the Conditional Use Permit (CUP) for the Microsoft Substation, which will draw power from the adjacent planned Nighthawk Substation and will distribute it primarily to the data center buildings.

Figure 2: Microsoft Substation Equipment Layout



Specifically, the facility will connect to a planned 345-kV Nighthawk Substation (NV Energy) and step down the voltage to 120 kV for distribution via two (2) 120 kV service lines from the Nighthawk Substation. The Microsoft Substation is designed with an initial capacity of approximately 461 MVA, which is sufficient to meet anticipated load requirements. Upon construction the substation will be owned, operated, and maintained by Microsoft.

The equipment needed for this substation project includes 6 energized + 1 de-energized reserve + 1 spare transformer, circuit breakers, 2000-amp distributors, equipment enclosure, switches, and associated /ancillary that are typical to a facility of this type (*see **Figure 2** above*).

The substation will operate 24 hours per day, 365 days per year. The substation itself will have no dedicated employees post construction, and it is anticipated it will be visited approximately once a month for general maintenance. The substation will have no public access or services and no changes to traffic service levels are anticipated as a result of the project.

Noise and light mitigation have been provided for nighttime hours during emergency calls. The substation pad will be secured with a 6-foot-tall chain link fence installed around the perimeter for security. In terms of lighting, the substation will include motion censored lighting that comes on when automatically triggered by movement and have a timer for when the movement has stopped so the lights are not on all night. The lights will also be mounted as low as possible and include shields aimed down toward the ground and away from adjacent residentially zoned properties to the extent feasible.

Aside from temporary traffic for construction, the project will not result in nuisances such as dust, glare, pollution, odor, or vibrations above regulated levels. Other noise from transformers and inverters associated with the substation is not expected to exceed ambient noise at adjacent property lines.

Access and Circulation

The subject site can be accessed from several roads that cross the properties connecting to US 50 (refer to the *Aerial Map* in *Section 3* of this submittal packet and *Assessor's Map* in *Section 1* of this submittal packet). NDOT also has a frontage road that extends along the north side of US 50, which the Applicant is proposing to utilize for the project. The applicant understands that this road is owned and maintained by the Nevada Department of Transportation and is coordinating separate review and encroachment permitting through NDOT.

Access roads are essential for construction, operation and maintenance of the Project. Large foundation auger equipment, heavily loaded trucks, cranes and specialized construction equipment will be required for construction, maintenance and emergency activities. To the extent possible, existing roads will be used in their present conditions without improvements. In areas where improvements are necessary, the roads will be graded to provide a smooth all weather travel surface. There will be a keyed access gate where the new roads through the data center campus connect to the substation. Note that grading for the access roads is being reviewed as part of the previously submitted (and under currently under review) Administrative Design Review (ADR).

Improvements that are to be utilized for long-term construction access will be temporarily paved to improve construction movement and reduce long-term soil deposition into the public right-of-way. This 30' wide paving is intended to be maintained in place throughout the entire construction lifecycle of the project.

Traffic

The site plan for the data center campus includes paved parking and paved roadways which will provide access to the power substation via the frontage road adjacent to US 50 or Deodar Street. Internal roadways within the campus will connect to the Microsoft Substation at its northwest corner.

As discussed above it is anticipated there will be minimal trip generation for the substation. Combined with security improvements and the adjacent planned roadway network for the data center campus, the substation will be adequately served and no impact on levels of service for any nearby intersection or roadway will occur.

Utilities

Given the project type, water/sewer services are not used for power substations. Water needs for dust control are small and will be adequately addressed. With on-going growth in the area, infrastructure is available or can be extended in the future.

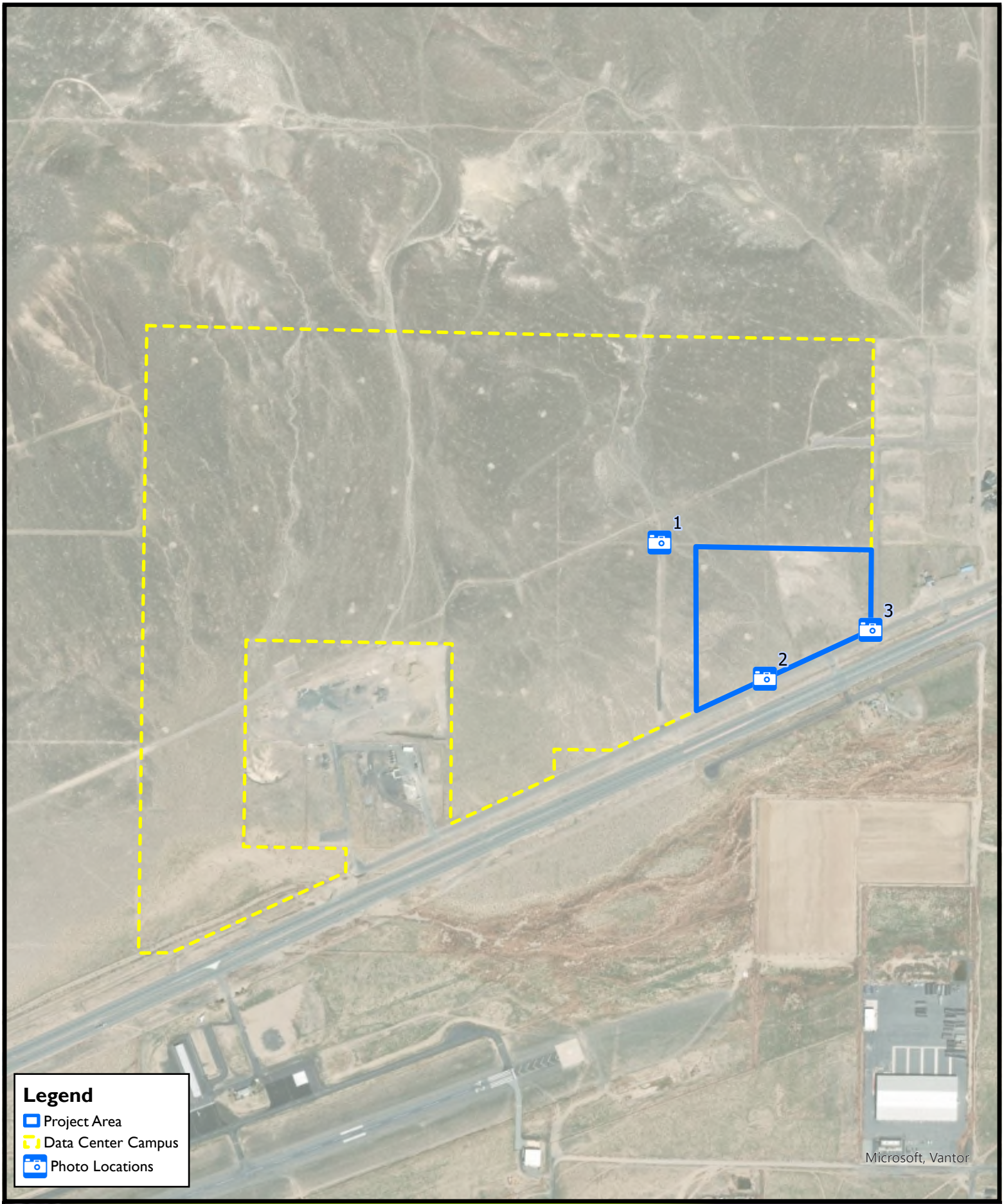


Photo Locations

Microsoft RNO18 - Microsoft Substation

December 2025

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Boulevard
Reno, NV 89502
Tel: 775.8
Fax: 775.8

J:\Jobs\4150_ARUP\Arup_Silver_Springs\Arup_Silver_Springs_OA\GIS\ArcPro\APNs_01855103_ 01855104_ 01855201_01855202\MSFT_RNO18_MSFT_Substation.aprx 12/4/2025 11:12 AM mismith

Photo Locations

Photo Location 1: West of northwest corner
Photo Location 2: Southern property boundary
Photo Location 3: Southeast corner; Deodar Street/US Highway 50

Photo Index

Photo Location 1
- Photo 1.1: Looking east along northern property boundary

Photo Location 2
- Photo 2.1: Looking north to parcel center from southern property boundary
- Photo 2.2: Looking west along southern property boundary

Photo Location 3
- Photo 3.1: Looking north from the US 50 frontage street along eastern property boundary
- Photo 3.2: Looking north from w/in Deodar Street

Photo Location 1: West of Northwest Corner

Photo 1.1: Looking east along northern property boundary

Photo Location 2: Southern Property Boundary

Photo 2.1: Looking north to parcel center from southern property boundary

Photo 2.2: Looking west along southern property boundary

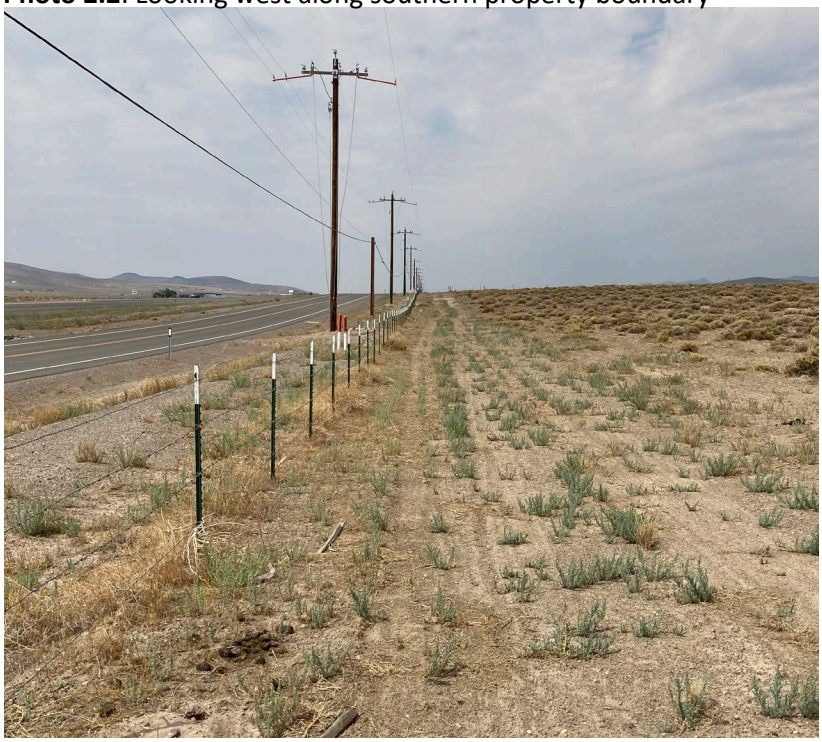


Photo Location 3: Southeast Corner; Deodar Street/US Highway 50

Photo 3.1: Looking north from the US 50 frontage street

Photo 3.2: Looking north from w/in Deodar Street

Water and Mega Data Centers

Charles Hamilton <chas909@gmail.com> Tue, Feb 24, 2026 at 3:53 PM
To: countyclerks@lyon-county.org

To: Lyon County Commissioners
From: Nevada Wells Cooperative
Date: 02/24/2026
Subject: Formal Objection to mega-data centers (Monarch, Tract, and Microsoft) depleting our water resources

Dear Commissioners of Lyon County,
We are writing as concerned residents of Lyon County to formally object to the proposed mega-data centers Monarch, Tract, and Microsoft because of their unsustainable water consumption.
The scale of water required to cool modern hyperscale data centers is staggering, with some facilities consuming millions of gallons per day. I am concerned that prioritizing industrial cooling over the needs of residents and agriculture will lead to::

- **Threats to Domestic Wells and our Drinking Water:** Massive withdrawals will deplete the Carson River Basin and Walker River Basin aquifers and dry up residential wells, leaving permitting and costs to the residential well owner.
- **Increased Utility Costs:** Large-scale industrial demand often requires costly infrastructure upgrades that are passed on to residential ratepayers. This includes the Yerington City Public Works.
- **Lack of Transparency:** Many of these agreements are brokered behind non-disclosure agreements, leaving the public in the dark about the true impact on our shared water resources.
- **Environmental Strain:** The return of heated or contaminated water to municipal systems or local waterways will harm ecosystems and may strain wastewater treatment capacities.

We urge you, the County Commissioners of Lyon County, to say **NO** to mega data centers. We support a temporary moratorium until data centers install closed-loop cooling systems, immersion cooling, air cooling, or other systems that will not burden our acquirers. Our community's long-term water security must take precedence over unchecked corporate growth. They have deeper pockets than the county and all residents combined! Corporate America can figure out better cooling systems.
Sincerely,
Charles "Chas" Hamilton, President
Nevada Wells Cooperative
Scenic Ave., Stagecoach, NV
775 291 0615

February 23, 2026

Lyon County Planning Commission & Board of County Commissioners
27 S. Main Street
Yerington, NV 89447

Attn: Community Development Department

Subject: PUBLIC COMMENT Regarding Data Center Development (Monarch, Tract, and Microsoft)

To the Members of the Planning Commission and Board of Commissioners,

As a resident of Lyon County, I am writing to formally submit my concerns and proposed conditions regarding the influx of hyperscale data centers in our region, specifically the **Monarch Data Center** in Mason Valley and the **Tract** development in Silver Springs. While these projects promise economic growth, they pose an existential threat to our most limited resource: water. In a drought-prone area where our farmers and residents rely on the same over-tapped aquifers, "business as usual" permitting is not enough. I request that the following **Conditions of Approval** be legally mandated in any Special Use Permits (SUP) or Development Agreements:

1. Mandatory Zero-Liquid Cooling: Developers have verbally mentioned "waterless" designs. This must be a binding legal requirement. No permit should be granted unless it explicitly prohibits evaporative cooling towers and mandates closed-loop or air-cooled systems for all server operations.

2. Baseline Well Protection & Monitoring: The County must require developers to fund an independent baseline study of all residential and agricultural wells within a five-mile radius. We demand the installation of independent monitoring wells at the project perimeters with real-time, public-facing data. If the water table drops beyond a set safety threshold, the developer must be legally required to cease pumping and/or pay for the deepening of affected local wells.

3. Zero Liquid Discharge (ZLD): To prevent "dirty water" or thermal pollution from entering our soil and aquifers, the County must mandate onsite ZLD systems. All industrial wastewater must be treated and recycled onsite, with zero discharge of chemically treated "blowdown" water into the ground.

4. Local Job & Benefit Accountability: Data centers are notoriously low-employment facilities once built. I ask that any tax abatements be tied to a "Clawback Provision." If the promised number of permanent, full-time local jobs is not met, the developer should be required to pay the full tax rate back to the County.

Our water is not for sale, and our wells cannot be replaced. We expect our elected officials to prioritize the long-term survival of our community over the short-term interests of tech corporations.

Sincerely,

CJ Ainsworth
PO Box 528, Silver Springs, NV 89429
95johncj@gmail.com

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
14.e

Subject:
For Possible Action: To approve the request from Lux Solar Center, LLC for a Major Variance application to allow for a reduction in setbacks for an expansion to the existing Lux Solar Project approved in 2023, to construct and operate a photovoltaic (PV) solar energy facility, on land subject to Rural Residential, 20 Acre Minimum (RR-20) zoning located in the northern portion of the parcel at 55 Butte Way in Wabuska, Mason Valley on an approximately 280-acre portion of a 1,593-acre parcel (APN 014-091-20); PLZ-2025-096. (Senior Planner Lisa Nash)

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Staff Report
- Backup

LYON COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING * DEVELOPMENT ENGINEERING * PLANNING
CODE ENFORCEMENT * ECONOMIC DEVELOPMENT
27 SOUTH MAIN STREET, YERINGTON, NV 89447
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BOARD OF COUNTY COMMISSIONERS

PLZ-2025-096

Proposed Action:	Major Variance for a reduction in setbacks for an expansion to the existing Lux Solar Project approved in 2023, to construct and operate a photovoltaic (PV) solar energy facility use.
Meeting Date:	March 5, 2026
Property Owner:	Robin Susan Mason et al
Applicant	Lux Solar Center, LLC
Community	Mason Valley
Location	55 Butte Way
Parcel Number	014-091-20
Parcel Size	280-acre portion of a 1,593-acre parcel
Master Plan	Agriculture
Zoning	RR-5 (Fifth Residential District (20 Acres)
Flood Zone(s):	Zone A (1% Annual Chance Flood Hazard) per FIRM 32019C0550E
Case Planner:	Lisa Nash

REQUEST

The Applicant is requesting a Major Variance for the setbacks required for solar arrays. They are requesting a reduction in setbacks from the one-mile lake/intermittent stream setback and in the one-half mile setback from a parcel with an existing residential use. The Major Variance is requested for 280-acres within a 1,593-acre parcel in Mason Valley.

PROJECT SUMMARY

The Applicant's proposal is for a Major Variance from the one-mile (5,280') lake/intermittent stream setback and the one half-mile (2,640') setback from a parcel with an existing residential use, to allow installation of a low-profile photovoltaic (PV) solar array within limited portions of those setback areas on APN 014-091-20.

Approval of the Major Variance is required for the Conditional Use Permit (PLZ-2025-085) that is being heard concurrently with this application.

This property was the subject of a previous Conditional Use Permit (CUP) approved in 2019 (PLZ019-0054) and a time extension for the CUP approved in 2023 (PLZ-2022-210). The total project included the construction and operation of a commercial solar power generating facility over an approximately 1,140-acre area within a four-parcel site totaling 2,462 acres.

PLANNING COMMISSION

The Planning Commission heard the item on February 10, 2026. The Commission forwarded a recommendation of approval, voting 5-1 (5 Ayes; 1 Nays-Commissioner Baker; 0 Abstentions; 1 Absent-Commissioner Ceresola). The recommendation was based on the Findings and Conditions of Approvals listed in the staff report.

RECOMMENDED MOTION

If after review and public comment the Board of County Commissioners determines that they should approve the requested Major Variance application, then the Board should make a motion similar to the following:

The Board of County Commissioners finds that:

A. By reason of exceptional narrowness, shallowness, or shape of the property in question, or by reason of exceptional topographic conditions or other extraordinary and exceptional situation or condition of the property in question, the strict application of the provisions of this title would result in peculiar and exceptional practical difficulties to, or exceptional and undue hardships upon, the applicant;

B. The circumstances or conditions do not apply generally to other properties in the same land use district; and

C. The granting of the variance will not result in material damage or prejudice to other properties in the vicinity, substantial impairment of natural resources or be detrimental to the public health, safety and general welfare.

Based on the aforementioned Findings and the following 8 Conditions of Approval, I move that the Board of County Commissioners approves the request from Lux Solar Center, LLC for a Major Variance application to allow for a reduction in setbacks for an expansion to the existing Lux Solar Project approved in 2023, to construct and operate a photovoltaic (PV) solar energy facility, on land subject to RR-20 (Rural Residential, 20 Acre Minimum) zoning located in the northern portion of the parcel at 55 Butte Way in Wabuska, Mason Valley on an approximately 280-acre portion of a 1,593-acre parcel (APN 014-091-20); PLZ-2025-096.

CONDITIONS OF APPROVAL

1. No change in the terms and conditions of the Major Variance, as approved, shall be undertaken without first submitting the changes to Lyon County Community Development and having them modified in conformance with Lyon County Code.
2. The applicant shall comply with all applicable Fire, building, zoning and improvement code requirements and obtain any necessary public inspections.
3. All construction documents and separate applications must be submitted to the Mason Valley Fire Protection District (MVFPD) and the Lyon County Building Department for review and approval to obtain a Site Improvement, Grading, or Building Permit.
4. The subject property is located within the flood zone A. In accordance with Lyon County Code Chapter 15.800.08(A), the Applicant shall obtain approval of a flood plain development permit prior to any development.
5. The proposed project shall conform to the site plans approved with this Major Variance and the concurrent application for a Conditional Use Permit (PLZ-2025-085).
6. The applicant shall comply with Lyon County's 2024 revised drainage guidelines to the satisfaction of the County Engineer prior to occupancy.

7. The Major Variance shall run concurrently with the Conditional Use Permit (CUP) (PLZ-2025-085) and be subject to all conditions of the CUP.
8. The substantial failure to comply with the conditions imposed on the issuance of this Major Variance or the operation of the proposed use in a manner that endangers the health, safety or welfare of Lyon County or its residents or the violation of ordinances, regulations or laws in the proposed use may result in the institution of revocation proceedings. **The Major Variance shall run with the time established for the associated Conditional Use Permit (PLZ-2025-085).**

ALTERNATIVES TO RECOMMENDATION OF APPROVAL

Alternative Motion for Continuance

If the Board of County Commissioners determines that additional information, discussion and public review are necessary for a more thorough review of the proposed major variance; the Board should make appropriate findings and move to continue the Public Hearing with a specific time period for the applicant to provide additional specific information necessary for the analysis of the request. The Board may wish to consider a motion similar to the following:

The Board of County Commissioners finds that:

Additional information, discussion and public review are necessary for a more thorough review of the proposed Major Variance.

Based on the aforementioned Findings, and with the applicant's concurrence, the Board of County Commissioners continues the Major Variance request from Lux Solar Center, LLC for a Major Variance application to allow for a reduction in setbacks for an expansion to the existing Lux Solar Project approved in 2023, to construct and operate a photovoltaic (PV) solar energy facility, on land subject to RR-20 (Rural Residential, 20 Acre Minimum) zoning located in the northern portion of the parcel at 55 Butte Way in Wabuska, Mason Valley on an approximately 280-acre portion of a 1,593-acre parcel (APN 014-091-20); PLZ-2025-096 for ___ days.

Alternative Motion for Denial

If the Board of County Commissioners determines that they should deny the request for a Major Variance, then the Board needs to make findings supporting a recommendation of denial. The Board may wish to consider a motion similar to the following:

The Board of County Commissioners has considered:

15.203.06: FINDINGS FOR VARIANCES:

…

B. Major Variance Findings: The Board must not approve a major variance unless it finds that:

1. By reason of exceptional narrowness, shallowness, or shape of the property in question, or by reason of exceptional topographic conditions or other extraordinary and exceptional situation or condition of the property in question, the strict application of the provisions of this title would result in peculiar and exceptional practical difficulties to, or exceptional and undue hardships upon, the applicant;
2. The circumstances or conditions do not apply generally to other properties in the same land use district; and
3. The granting of the variance will not result in material damage or prejudice to other properties in the vicinity, substantial impairment of natural resources or be detrimental to the public health, safety and general welfare.

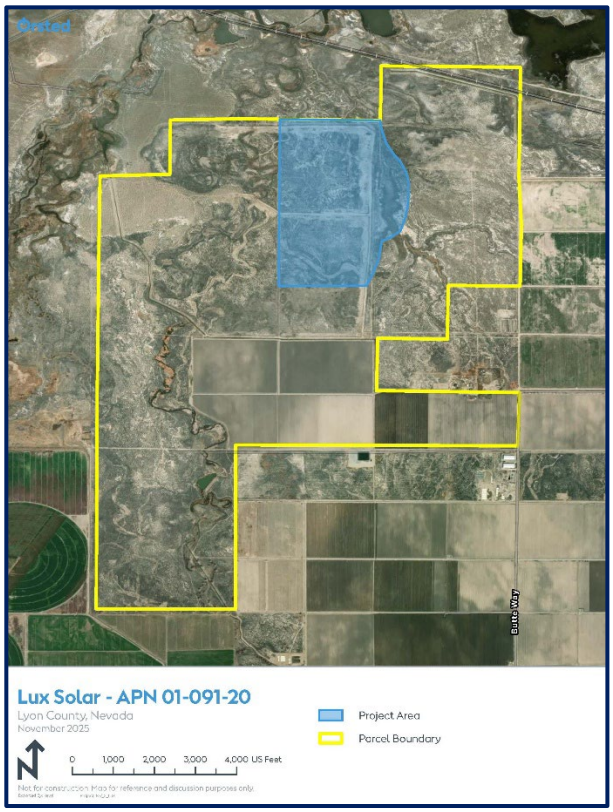
After consideration of the above-listed Findings, I move that the Board of County Commissioners has determined that the Major Variance would <u>not</u> be in conformance with the above-listed considerations and <u>denies</u> the request from Lux Solar Center, LLC to allow for a reduction in setbacks for an expansion to the existing Lux Solar Project approved in 2023, to construct and operate a photovoltaic (PV) solar energy facility, on land subject to RR-20 (Rural Residential, 20 Acre Minimum) zoning located in the northern portion of the parcel at 55 Butte Way in Wabuska, Mason Valley on an approximately 280-acre portion of a 1,593-acre parcel (APN 014-091-20); PLZ-2025-096.

BACKGROUND INFORMATION

<u>Location and Size</u>

The subject property (APN 014-091-20) is generally located west of the intersection of US 95A and the Union Pacific railroad tracks in the northern portion of Mason Valley. The entire site encompasses APNs 014-091-02, -03, -20, and -021 (outlined in red below). The proposed expansion to the existing CUP is an approximately 280-acre portion of a 1,593-acre parcel (shaded in green below).

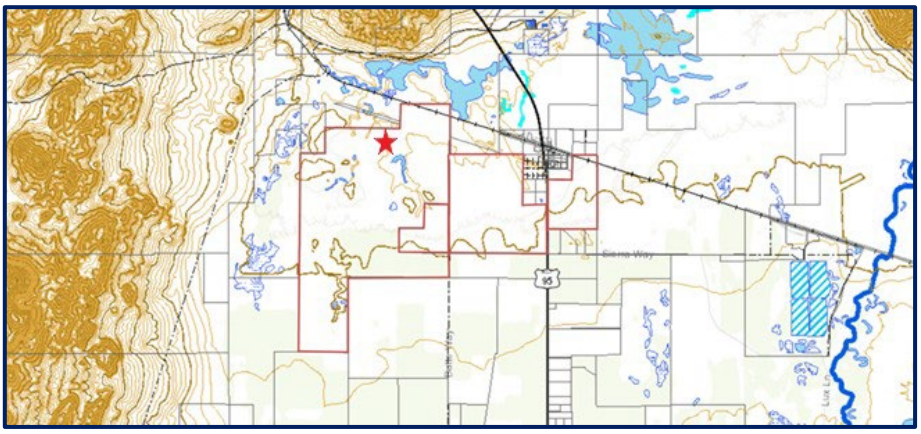
Vicinity Map



Project Area Map

<u>Topography</u>

The subject site lies on the floor of Mason Valley. There are no significant topographic features such as steep slopes, ridges, or intrusive dikes that would limit or restrict the proposed development/use of the subject site as shown on the following page (red star delineates approximate expansion site location).



Topo Map

Site Photos

The three images below and on the following page were provided by the Applicant.

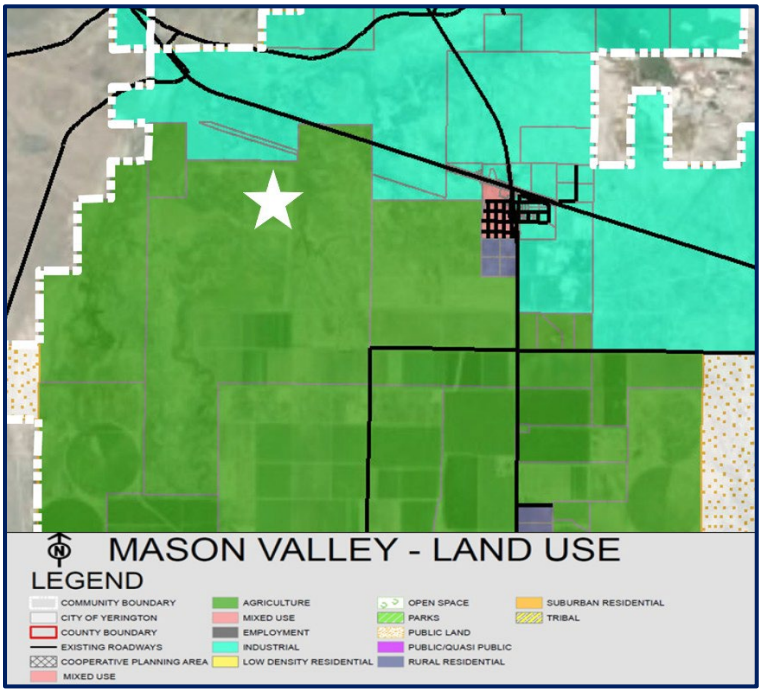
Photo from southern boundary of the project area facing north

Photo from center of the project area facing east

Photo from northwest corner of the project area facing southeast

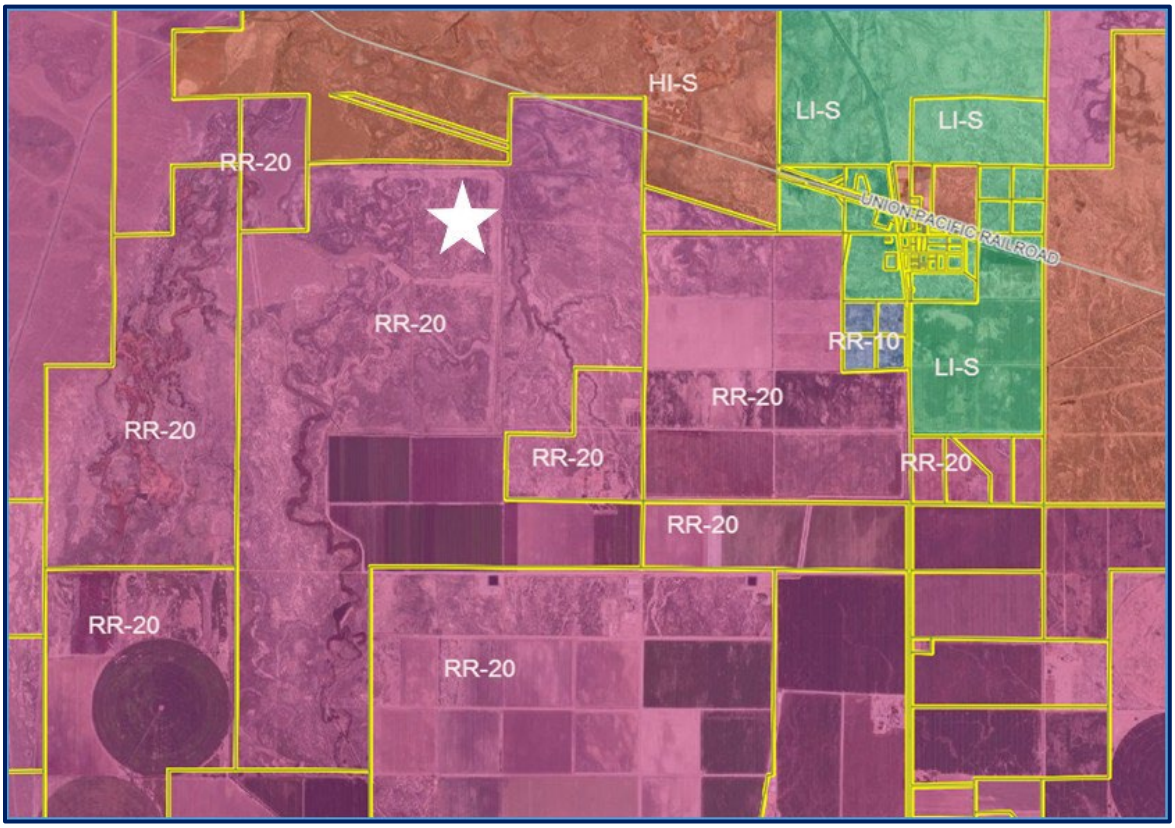
Master Plan and Zoning

The Master Plan designation for the site is Agriculture as shown in the Mason Valley Land Use Plan below. The parcel is located in the Mason Valley Rural Character District.



Mason Valley Land Use Plan

The zoning is Fifth Rural Residential, 20 acre minimum (RR-5), under the County's expired Development Code, Title 10. Per the Zoning Consistency Matrix, adopted in 2018 with Title 15, the corresponding district in Title 15 is Rural Residential – 20 acre minimum (RR-20). The zoning map for the project area is shown on the following page.



Zoning Plan

Flood Zone Designation

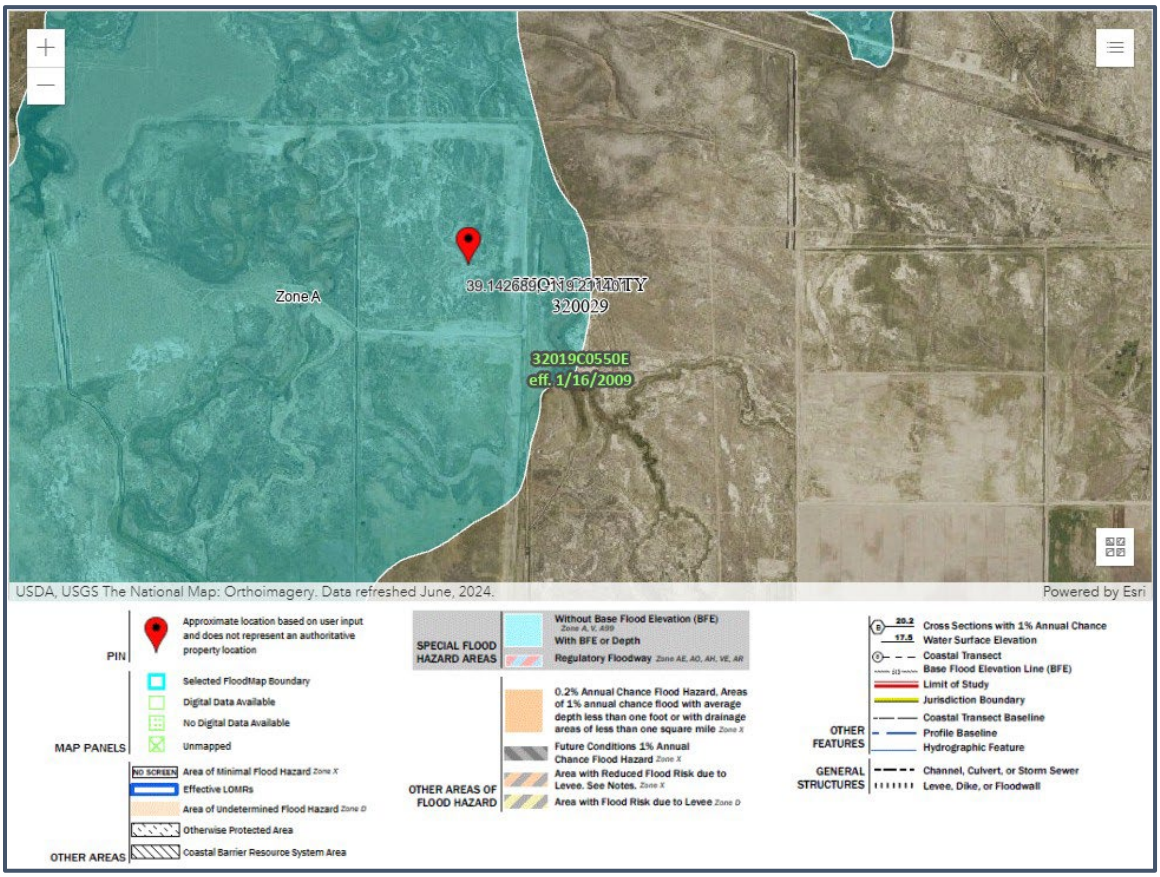
The subject site is located within the FEMA Flood Insurance Rate Map (FIRM) 32019C0550E (effective date: 1/16/2009): Zone A (1% Annual Chance Flood Hazard). See the FEMA Flood Map image below.

Section 15.800.08(A) of the Lyon County Code states that a floodplain development permit must be approved before construction or development is allowed to begin within any area of special flood hazard established in subsection 15.800.07(A).

The floodplain development permit is required for all structures as well as for all development including fill and other activities as defined in 15.1200. “Development Activity” is defined within section 15.1200.05 as:

> “An improvement that is allowed and permitted and completed on a lot, parcel, or tract of land by a developer or property owner. The term "development activity" shall include zoning, subdivision, planned unit development, building permit issuance, construction, alterations, land grading, excavating, and clearing. As used in chapter 800 of this title, development means any manmade change to improved or unimproved real estate including, but not limited to, buildings or other structures, mining, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials located within the area of special flood hazard.”

In accordance with 15.800.08(A) and as a Condition of Approval for the proposed project, the Applicant shall obtain approval of a flood plain development permit prior to any development on the property.



FEMA Firm Map

Concurrent and Future Permitting

The applicant has submitted two applications concurrently: this application for a Major Variance (PLZ-2025-096) and a Conditional Use Permit (PLZ-2025-085). These items will be heard by the Planning Commission on February 10, 2026. Both applications are scheduled to proceed to the Board of County Commissioners for consideration on March 5, 2026, for a final decision.

PROJECT DESCRIPTION

The Applicant's proposal is for a Major Variance to allow for reduction in setbacks from the one-mile (5,280') lake setback and the one half-mile (2,640') setback from a parcel with an existing residential use, to allow installation of a low-profile photovoltaic (PV) solar array within limited portions of those setback areas on APN 014-091-20.

Based upon comprehensive review and analysis of available data, the subject watercourse is appropriately designated as an intermittent stream not a lake. This determination is supported by field observations, hydrologic assessment, and data obtained from the Walker River Irrigation District, the Nevada Department of Environmental Protection (NDEP) Geographic Information System (GIS) database, and well records from the Nevada Division of Water Resources (NDWR).

The channel exhibits non-perennial characteristics, with surface water present only during limited seasonal periods that coincide with precipitation events and controlled discharges from nearby agricultural wells. According to NDWR records, two authorized agricultural wells supply a combined total of approximately 230 acre-feet of water per year for beneficial agricultural use, contributing to temporary flow conditions within the drainage feature as the site requires the well be pumped to demonstrate beneficial use.

The NDEP does not classify this water body as a lake or river under its current regulatory framework. This aligns with the observed hydrologic behavior and supports the characterization of the channel as intermittent. The

drainage course traverses the natural corridor of Churchill Canyon, which periodically conveys flow toward the Carson River during times of sufficient discharge or seasonal runoff.

This designation does not alter or affect the applicant's pending request for deviation associated with the Major Variance application. The information provided herein is intended solely to accurately identify and document the categorical representation of the water body for purposes of hydrologic classification and regulatory consistency.

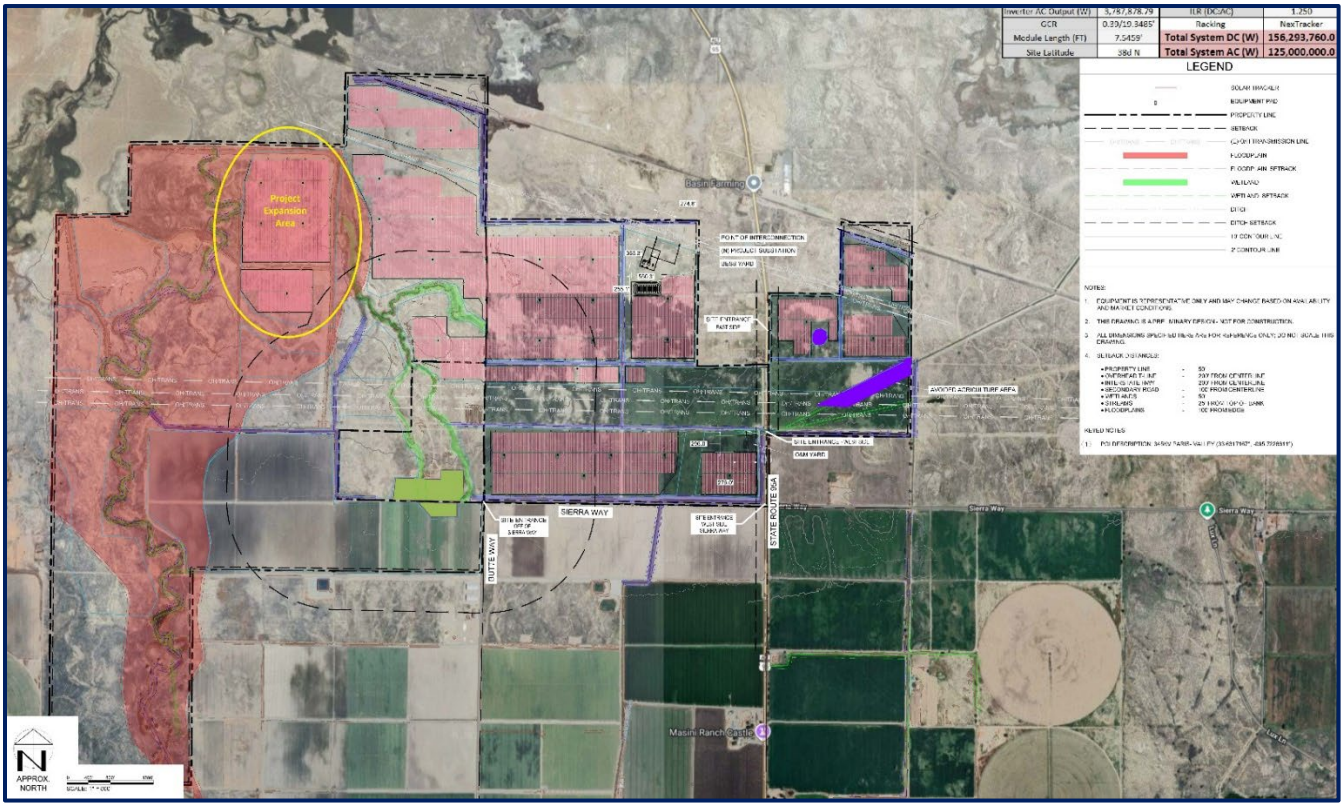
Section 15.339.09 (E.2) of the Lyon County Code states that, "*…commercial SECS array must be set a minimum of one half mile (2,640 Feet) from a trail easement, highway and/or adjacent properties with an existing residential use. Setback increases to one mile (5,280 Feet) from an airport, river, perennial or intermittent stream, and/or lake. An SECS may be placed closer than 2,640 Feet from a property with an existing residential use, trail easement, or highway if it is separated by a geologic feature or building of a height sufficient to completely obstruct views of the commercial SECS from a point sixteen (16) vertical feet above the boundary of any Residential Zoning District.*"

Per the applicant, the proposed project is described as follows:

> *Specifically, we are requesting approval of a Major Variance to allow limited installation of photovoltaic (PV) arrays and associated equipment within portions of (i) the one-mile lake setback and (ii) the one half-mile setback measured from the boundary of a parcel with an existing residential use. This variance request is necessary to modestly shift and expand the previously permitted project footprint to replace buildable acreage lost due to NV Energy's GreenLink West transmission corridor realignment.*
>
> *Prior CUP approvals for Lux Solar Center (originally approved in 2019 under PLZ-19-0054 and renewed and extended in 2023 under PLZ-2022-210) are included as supporting documentation to this variance application. As a supplement to an existing CUP application for the variance area, the variance does not seek to change the permitted uses approved and requested; rather, it seeks relief from specific setback requirements to shift facility infrastructure to new acreage made necessary by the GreenLink West expansion.*
>
> *Due to circumstances unforeseen at the time of prior applications, the planned GreenLink West transmission corridor now bisects the originally permitted project area, eliminating previously permitted buildable acreage. To maintain project viability while minimizing new impacts, the project boundary must be adjusted to include roughly 280 additional acres, entirely within parcels previously permitted under PLZ-2022-210. The requested variance acreage is the minimum necessary to afford relief.*
>
> *This request focuses on authorizing limited PV arrays and associated equipment within portions of the one-mile lake setback and one half-mile residential-parcel setback to replace buildable acreage lost to the GreenLink West corridor alignment. The revised footprint and array layout within the variance area are designed to minimize new impacts and maintain separation from sensitive receptors relative to the previously permitted project, with array consolidated behind the legacy PV corridor that forms a physical and visual buffer from the lake and residential parcel.*
>
> *In conclusion, the adoption of the one-mile lake setback and the 2,640-foot residential-parcel setback after CUP PLZ-2022-210 created exceptional, legacy conditions on this 1,593-acre tract. Strict application would impose peculiar and exceptional practical difficulties by fragmenting feasible, contiguous PV development, stranding interconnection efficiencies, and forcing unnecessary new disturbance. The requested variance is narrowly tailored to additional acreage located farther from the lake and separated by PV infrastructure under the previously permitted project, shares access roads with no additional roads required, and maintains substantial separation from the residence (approximately 3,700 feet), despite being near or within the one half-mile setback—greater than distances associated with infrastructure under the previously permitted project, both on the residential parcel and on a separate neighboring parcel. With the robust protections and mitigations described, the request meets the conditions of the Lyon County Code § 15.203.06 and supports approval of a major variance, and we respectfully seek approval.*

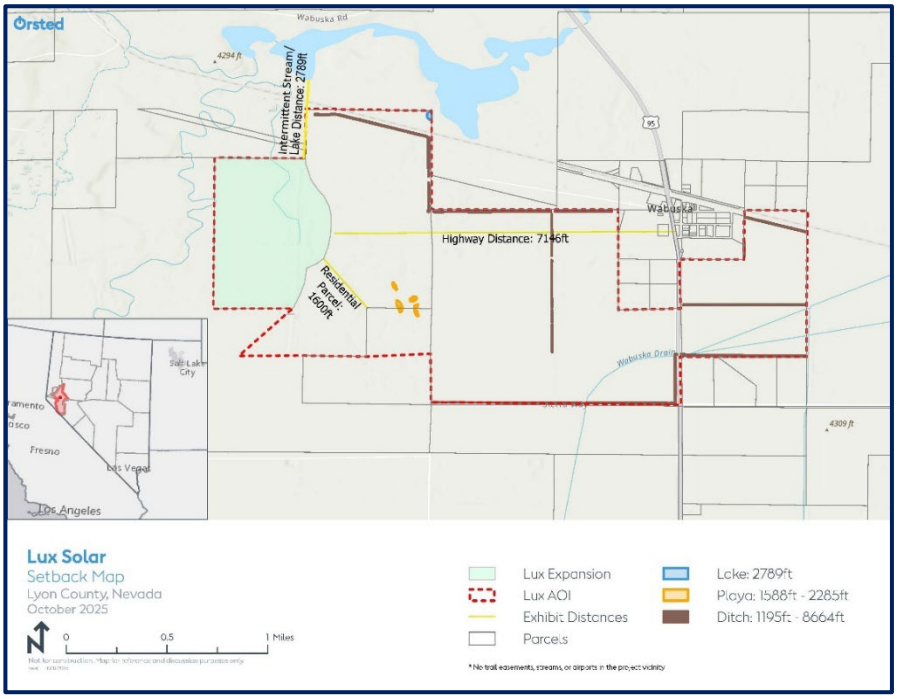
Conceptual Site Plans

The conceptual site plan (with staff additions) shows the overall project with the expansion area circled in yellow and the proposed entrances to the site shown.



Conceptual Site Plan

The images that follow were included in the applicant's submittal. The Setbacks Map (with staff additions) below shows the setback variances the applicant is requesting.



Setbacks Map

MAJOR VARIANCE REQUEST

Per Section 15.203.02, a Major Variance, as opposed to a Minor Variance, is required for setback variances greater than ten percent (10%). Major Variances require approval by the Board of County Commissioners. The following table shows the requested variances and details.

Variance Requested	Proposed Setback (feet)	Statutory Setback (feet)	Variance (%)	Notes
Intermittent Stream Setback	2,789	5,280	47	
Residential Setback	1,600	2,640	39	Actual distance to residence is ~3700 ft (same property owner)

Per Section 15.203.02, a Major Variance, as opposed to a Minor Variance, is required for setback variances greater than ten percent (10%). When considering applications for a Major Variance, the Board must not approve a Major Variance unless if finds that by reason of exceptional topographic or other extraordinary conditions with the property in question, the strict application of the provisions of Lyon County Title 15 would result in peculiar and exceptional practical difficulties to, or exceptional and undue hardships upon, the applicant. As stated in the Applicant's Findings later in this report, the justification for the proposed expansion location of the additional 280 acres of solar fields are based on fragmentation and duplication, necessitating new linear infrastructure and roads in uplands (otherwise avoided by reusing existing roads), increasing disturbance to surrounding areas, with expanded grading and additional infrastructure. Additionally, pushing facilities entirely outside both setbacks would expand visual spread and require additional clearing/earthwork, resulting in more edge effects than consolidating development behind the existing PV buffer.

STAFF REVIEW AND COMMENTS

The proposed major variance request is reviewed by staff and the Planning Commission, which forward recommendations to the Board of Commissioners, for final action.

FINDINGS FOR REVIEWING A MAJOR VARIANCE REQUEST

Chapter 15.203.06 (B) of Lyon County Code states that when considering approval of a major variance, three Findings must be considered and supported by a statement of evidence, facts and conclusions. Staff has included those three Findings in **bold type** below. Each Finding is listed with the applicant's response in *italics* and then staff's comments.

Finding 1: By reason of exceptional narrowness, shallowness, or shape of the property in question, or by reason of exceptional topographic conditions or other extraordinary and exceptional situation or condition of the property in question, the strict application of the provisions of this title would result in peculiar and exceptional practical difficulties to, or exceptional and undue hardships upon, the applicant;

Applicant's Response

- *Extraordinary and exceptional situation/condition:*
  - *Legacy approvals vs. later-adopted setbacks: CUP PLZ-2022-210 (4/28/2023) lawfully entitles PV up to the boundary line of the neighboring lake parcel. The subsequent adoption of the one-mile lake setback and the one half-mile residential-parcel setback for SECS overlays areas that are functionally organized around the legacy PV corridor and interconnection infrastructure.*
  - *GreenLink West bisecting corridor: The updated GreenLink West transmission corridor path now bisects the original project area, eliminating buildable acreage under the previously permitted project and fragmenting the original, contiguous layout. This infrastructure change is external to and not controlled by the applicant.*

- *Practical difficulties/undue hardship from strict application:*
  - *Fragmentation and duplication: Strict adherence to setbacks considering the GreenLink West bisecting corridor would prevent contiguous expansion behind the established corridor, necessitating new linear infrastructure and roads in uplands (otherwise avoided by reusing existing roads), increasing disturbance, grading, and cost.*
  - *But-for condition: But for the updated GreenLink West corridor path, the original project boundary under PLZ-2022-210 would have been sufficient to meet project needs without variance acreage, demonstrating that the hardship is directly caused by an external infrastructure realignment.*
  - *Greater impacts compared to consolidated siting: Pushing facilities entirely outside both setbacks would expand visual spread and require additional clearing/earthwork, resulting in more edge effects than consolidating development behind the existing PV buffer.*
- *Minimum variance necessary to afford relief and alternatives:*
  - *The variance areas are narrowly tailored to the smallest practicable footprints within the setbacks, located farther from the lake than previously permitted PV and sited to maximize distance (approximately 3,700 feet) to the residence structure.*
  - *No new access roads are required; the project shares existing roads with PLZ-2022-210 to avoid new disturbance.*
  - *Alternatives considered (relocating entirely outside the setbacks, dispersing to distant uplands, downsizing array blocks) would either be infeasible from interconnection and access perspectives or would cause greater land disturbance and infrastructure redundancy than the proposed, consolidated approach.*

Staff Comment

The subject parcel's location provides challenges due to the location of the previously approved project and the need to stay within a distance to utilize shared infrastructure (roads and grading). The expansion area is located directly to the west of the existing CUP areas and is thus not adding an additional visual impact that would likely result if the site were pushed further out to meet all setbacks. Requiring the setbacks would result in practical difficulties to the project. This Finding is met.

Finding 2. The circumstances or conditions do not apply generally to other properties in the same land use district; and

Applicant's Response

- *Unique, combined conditions not general to the district:*
  - *A large (1,593-acre) lake-adjacent parcel with a previously permitted project authorizing PV to the boundary of the parcel containing the lake (PLZ-2022-210);*
  - *Overlap of the later-adopted one-mile lake setback with the one half-mile residential-parcel setback;*
  - *Co-applicant ownership of the adjacent residential parcel, which itself allows legacy PV under the previously permitted project, resulting in an existing PV corridor that both buffers the lake and lies between the residence and portions of the proposed variance area.*
- *Most properties do not share this legacy-overlay combination nor rely on an existing PV/interconnection corridor established pre-setback. These unique constraints materially differentiate the subject parcel from others.*

Staff Comment

When compared with other properties in the Rural Residential district, the subject parcel is uniquely shaped and located with respect to the existing intermittent stream and prior CUP approvals. The subject property and the adjacent residential property have the same land owner and the setback to the existing residence is 2,650 feet. This Finding is met.

Finding 3. The granting of the variance will not result in material damage or prejudice to other properties in the vicinity, substantial impairment of natural resources or be detrimental to the public health, safety and general welfare.

Applicant's Response

- *Lake and natural resources protection:*
  - *The variance area lies farther from the lake than the legacy PV corridor under the previously permitted project and is separated from the shoreline by that existing infrastructure. Construction BMPs and a SWPPP will control erosion and sedimentation; no refueling or staging will occur near the shoreline.*
  - *PV panels over vegetated groundcover retain infiltration; stormwater will be managed to avoid increases in peak flows or pollutant loading. Grading is minimized and confined to essential areas.*
  - *Wildlife-friendly fencing, retained vegetative corridors, and native plantings enhance habitat connectivity and reduce edge effects.*
- *Residential compatibility and welfare (one half-mile setback area):*
  - *While the distance from the proposed variance area and the residential parcel is roughly 1,600 feet, substantial separation will exist between the PV array and the residence itself: The proposed variance area maintains approximately 3,700 feet of separation from the residence—significantly larger than both the one half-mile setback radius and distances from infrastructure under the previously permitted project: ~2,100 feet (on the residential parcel) and less than 1,500 feet (on a separate neighbor parcel).*
  - *Screening and line-of-sight: Arrays are positioned behind existing PV corridor; supplemental native planting may be installed where views are open to further visibility.*
  - *Equipment siting, noise, and glare: The design meets or exceeds County standards. Operations will not produce discernible ground vibration beyond the property line, nor odors, dust, smoke, excessive noise, or liquid or airborne pollutants.*
  - *Lighting and operations: No continuous nighttime lighting; any necessary lighting is full cutoff, shielded, and motion-activated. Construction will adhere to daytime hours with dust control and traffic management; operations traffic is limited to periodic maintenance.*
- *Traffic and access: No new access roads are required; access roads established under the previously permitted project will be shared, minimizing disturbance, dust, and traffic generation. Additionally, Ørsted commissioned a traffic study for the project. The results of the study include recommendations for several improvements to nearby roads during the construction phase to address impacts to public roadways. Additional detail is provided in the study.*
- *No material damage or prejudice: The variance adjusts the facility location within a permitted use context; it does not increase allowable intensity. With separation provided by the legacy PV corridor, adherence to buffers, reuse of existing infrastructure, and the mitigation measures described, there will be no material damage to neighboring properties (including the commonly owned residential parcel), no substantial impairment of natural resources, and no detriment to public health, safety, or general welfare.*

Staff Comment

While the proposed expansion area would not be located the full one-mile from the intermittent stream and the one-half mile from the property with an existing residential use as required, the setback from the intermittent stream would be 2,789 feet and the setback from the residential property would be approximately 1,600 feet. These separations, along with the existing approvals for the solar arrays that are closer to the residence and the intermittent stream, would help to ensure that the proposed project would be compatible with the existing character of the area. The proposed use would not result in material damage or prejudice to other properties in the vicinity nor substantial impairment of natural resources nor would it be detrimental to the public health, safety and general welfare. This Finding is met.

November 21, 2025

Lyon County Planning Department
27 South Main Street
Yerington, NV 89447
RE: Major Variance Application — Lux Solar Center, LLC, Lyon County Code § 15.203.06

Ørsted is pleased to submit the Major Variance application for Lux Solar Center, LLC, a solar energy facility located in the Mason Valley. Specifically, we are requesting approval of a Major Variance to allow limited installation of photovoltaic (PV) arrays and associated equipment within portions of (i) the one-mile lake setback and (ii) the one half-mile setback measured from the boundary of a parcel with an existing residential use. This variance request is necessary to modestly shift and expand the previously permitted project footprint to replace buildable acreage lost due to NV Energy's GreenLink West transmission corridor realignment.

Prior CUP approvals for Lux Solar Center (originally approved in 2019 under PLZ-19-0054 and renewed and extended in 2023 under PLZ-2022-210) are included as supporting documentation to this variance application. As a supplement to an existing CUP application for the variance area, the variance does not seek to change the permitted uses approved and requested; rather, it seeks relief from specific setback requirements to shift facility infrastructure to new acreage made necessary by the GreenLink West expansion.

Due to circumstances unforeseen at the time of prior applications, the planned GreenLink West transmission corridor now bisects the originally permitted project area, eliminating previously permitted buildable acreage. To maintain project viability while minimizing new impacts, the project boundary must be adjusted to include roughly 280 additional acres, entirely within parcels previously permitted under PLZ-2022-210. The requested variance acreage is the minimum necessary to afford relief.

This request focuses on authorizing limited PV arrays and associated equipment within portions of the one-mile lake setback and one half-mile residential-parcel setback to replace buildable acreage lost to the GreenLink West corridor alignment. The revised footprint and array layout within the variance area are designed to minimize new impacts and maintain separation from sensitive receptors relative to the previously permitted project, with array consolidated behind the legacy PV corridor that forms a physical and visual buffer from the lake and residential parcel.

By way of background, below is a brief introduction to Ørsted's experience.

- **Development Experience:** Ørsted has extensive experience developing, operating, and financing utility-scale renewable projects across the U.S. with approximately 11.5 GW in operation, under construction, or in development.

- **Community Relationships:** Ørsted takes our relationship with the community seriously. We take pride in a methodical and experienced project development approach, beginning with careful site selection, consideration of environmental and technical issues to minimize project impacts, and engagement of community stakeholders.

- **Balance Sheet Strength:** Ørsted is a leading global renewable energy company which finances the development and construction of solar projects on balance sheet and our proposals are not contingent on external financing.

Given our proven track record and development expertise, Ørsted can ensure we comply with all County standards and requirements. We thank Lyon County for evaluating this application for an Approval Condition Amendment and look forward to your responseappreciate Lyon County's consideration of this Major Variance application and look forward to your response.

If you have any additional questions or requests regarding this application, please contact Thomas Gentry at tgent@orsted.com or 847-909-2694.

Sincerely,

Thomas Gentry

Manager, Development

Project Description/Narrative

Lux Solar Center, LLC requests a Major Variance to allow a photovoltaic (PV) solar energy facility within limited portions of (i) the one-mile lake setback and (ii) the 2,640-foot setback measured from the boundary of a parcel with an existing residential use under common ownership. This standalone variance application modestly shifts and expands the footprint of the project previously permitted in 2023 (PLZ-2022-210) to replace buildable acreage lost due to NV Energy's GreenLink West transmission corridor realignment. The updated corridor bisects the original project area and eliminates previously permitted buildable acreage; but for this external infrastructure change, the original PLZ-2022-210 boundary would have been sufficient to meet project needs. The requested variance acreage is the minimum necessary to maintain project feasibility and interconnection efficiencies while minimizing new impacts. The proposed arrays are sited further from the lake and residential parcel than PV infrastructure under the previously permitted project.

Technology and layout: The Project will utilize UL-listed, commercially available crystalline silicon or thin-film PV modules mounted on single-axis tracking (SAT) structures supported by driven pile foundations. Trackers rotate east in the morning and west in the afternoon along a north–south axis to maximize energy production. The top edge of the panels will not exceed fifteen feet (15') above ground level. PV modules will use anti-reflective glass to maximize electrical output and reduce reflectance relative to typical residential and commercial glazing. Layout within variance areas is consolidated behind the legacy, permitted PV corridor to minimize visual spread and leverage existing disturbed corridors.

Interconnection: The point of interconnection is the Walker River Substation, located within the previously permitted project area. Because the project substation was included with PLZ-2022-210, no new substation is proposed with this variance application. The variance adjusts facility location; it does not increase permitted use intensity.

Siting and visual considerations: The additional land included in this variance application is more than one-half mile from the nearest public roads (the intersection of Butte Way and Sierra Way) and over one mile from U.S. Highway 95. The previously permitted project also allows PV arrays between these roads and the expansion area; therefore, visual effects to the public will be comparable to, and no greater than, those already evaluated and permitted under PLZ-2022-210. The revised footprint and array layout are designed to minimize new impacts and maintain or increase separation from sensitive receptors relative to the previously permitted project.

Electrical equipment and collection: Inverters and associated pad-mounted transformers may be distributed across the site on concrete equipment pads. Power will be collected via cabling and distributed to the previously permitted project substation for delivery to the grid. Equipment siting within the residential-parcel setback area prioritizes distance from the residence (placing inverters/transformers farther than panels where feasible and uses anti-reflective modules to avoid glare hazards.

Civil works and ground disturbance: The proposed variance area will share access roads and disturbed corridors established under the previously permitted project, avoiding new road construction wherever feasible. Best management practices will be implemented to control dust, manage stormwater, and protect adjacent resources during construction; a SWPPP will be prepared and followed.

Security and lighting: The site perimeter will be enclosed with a six-foot-high security fence, using wildlife-friendly design where applicable. Project lighting will meet code and provide the minimum illumination necessary for safety and security; all lighting will be downward-facing and shielded to focus illumination on intended areas only. No continuous nighttime lighting is proposed.

Operations: The variance does not alter the permitted interconnection or increase project intensity; it allows limited location adjustments within setback areas to replace acreage lost to the GreenLink West corridor realignment. The Project will comply with applicable federal, state, and local requirements throughout construction, operation, and decommissioning, including noise standards at nearby receptors and glare assessments where required.

Variance consistency summary

Extraordinary and exceptional conditions: The later-adopted one-mile lake and one half-mile residential-parcel setbacks overlay a large, lake-adjacent parcel organized around a previously permitted project: PLZ-2022-210. The updated GreenLink West corridor now bisects the original layout, eliminating previously permitted buildable acreage—an external constraint beyond the applicant's control.

Minimum variance necessary to afford relief: The requested acreage is the smallest practicable area needed to maintain feasibility and interconnection efficiencies, sited farther from the lake and residential parcel than legacy PV and will share legacy roads under the previously permitted project to avoid new disturbance.

No material damage or prejudice: With separation provided by the legacy PV corridor as part of the previously permitted project, adherence to buffers, and implementation of BMPs, the variance will not result in material damage to neighboring properties, substantial impairment of natural resources, or detriment to public health, safety, or welfare.

Justifications and Findings

Lux Solar Center respectfully requests approval of a Major Variance from (1) the one-mile (5,280') lake setback and (2) the one half-mile (2,640') setback from a parcel with an existing residential use, to allow installation of a low-profile photovoltaic (PV) solar array within limited portions of those setback areas on 014-091-20. The requested variance applies only to additional array acreage that is farther from the lake than PV infrastructure already permitted to the boundary line under Conditional Use Permit PLZ-2022-210 (issued April 28, 2023), which pre-dates adoption of the new setbacks. The PV infrastructure under the previously permitted project forms a physical and visual separation between the lake shoreline and residential parcel and the proposed variance area. The neighboring residential parcel, 014-091-21, is under co-applicant ownership and includes permitted PV infrastructure authorized under the previously permitted project; the proposed improvements within the residential-parcel setback will be sited and designed to ensure no material adverse effects to residential use.

Project and Property Overview

- Parcel size and setting: Approximately 1,593 acres; the subject parcel's boundary abuts a lake on a neighboring parcel, 014-081-01, and a residential parcel, 014-091-21.
- Existing approvals: CUP PLZ-2022-210, issued April 28, 2023 (prior to adoption of the new setbacks for SECS), authorizes PV infrastructure up to the northern boundary line of the parcel. Portions of that legacy PV corridor are buildable.
- Requested relief:
    - Lake: Authorization for additional PV array acreage within the one-mile lake setback, sited farther from the lake than the already PV from the previously permitted project and separated from the shoreline by that legacy infrastructure.
    - Residential: Authorization for PV array and associated appurtenances within portions of the 2,640-foot setback measured from the boundary of a neighboring parcel with an existing residential use owned by the co-applicant for the project. The layout maximizes distance to the residence structure and leverages the existing PV corridor and landscape for screening.
- Access and construction: No new access roads are required. Existing roads and disturbed corridors established under PLZ-2022-210 will be shared, minimizing new disturbance, vegetation removal, and construction traffic.
- Design and operations: Low-profile racking (approximately 15 feet at maximum tilt); anti-reflective modules; underground collection, where applicable; inverters/transformers sited away from the lake and residence. The project will comply with applicable building, electrical, fire, grading, and stormwater standards.

Distances and Key Quantities

- Proposed variance area to residence: Approximately 1,600 feet to the residential parcel and roughly 3,700 feet from the nearest panel edge to the residence structure.
    - It is possible that PV array may be modified slightly to conform to existing setbacks; however, a large portion of the variance area is within the one half-mile residential setback requirement.
- Existing permitted infrastructure context:
    - Separate neighbor parcel: Infrastructure under the previously permitted project is already approved at much smaller distances: less than 200 feet from the boundary of the residential parcel and less than 1,500 feet from the residence itself, which is owned by the project's co-applicant..

    - Residential parcel (co-applicant ownership): Infrastructure under the previously permitted project is approved on the residential parcel is approximately 2,100 feet from the residence.
- Proposed variance area relative to residential-parcel setback: The proposed facilities are located within the one half-mile setback measured from the residential parcel boundary, but they maintain approximately 3,700 feet of direct separation from the residence itself due to parcel geometry and facility siting.
- Nearest panel edge to the shoreline of the lake: 2,789 feet; proposed area remains farther from the lake than the PV corridor nearer the parcel boundary under the previously permitted project.

As listed in Lyon County Code section 15.203.06, the following justification is provided to detail how the project addresses findings needed for a Major Variance.

Specifically, the code stipulates that “The Board must not approve a major variance unless it finds that:”

Finding 1 — By reason of extraordinary and exceptional situation or condition of the property, strict application would result in peculiar and exceptional practical difficulties or undue hardship;

- Extraordinary and exceptional situation/condition:
    - Legacy approvals vs. later-adopted setbacks: CUP PLZ-2022-210 (4/28/2023) lawfully entitles PV up to the boundary line of the neighboring lake parcel. The subsequent adoption of the one-mile lake setback and the one half-mile residential-parcel setback for SECS overlays areas that are functionally organized around the legacy PV corridor and interconnection infrastructure.
    - GreenLink West bisecting corridor: The updated GreenLink West transmission corridor path now bisects the original project area, eliminating buildable acreage under the previously permitted project and fragmenting the original, contiguous layout. This infrastructure change is external to and not controlled by the applicant.
- Practical difficulties/undue hardship from strict application:
    - Fragmentation and duplication: Strict adherence to setbacks considering the GreenLink West bisecting corridor would prevent contiguous expansion behind the established corridor, necessitating new linear infrastructure and roads in uplands (otherwise avoided by reusing existing roads), increasing disturbance, grading, and cost.
    - But-for condition: But for the updated GreenLink West corridor path, the original project boundary under PLZ-2022-210 would have been sufficient to meet project needs without variance acreage, demonstrating that the hardship is directly caused by an external infrastructure realignment.
    - Greater impacts compared to consolidated siting: Pushing facilities entirely outside both setbacks would expand visual spread and require additional clearing/earthwork, resulting in more edge effects than consolidating development behind the existing PV buffer.
- Minimum variance necessary to afford relief and alternatives:
    - The variance areas are narrowly tailored to the smallest practicable footprints within the setbacks, located farther from the lake than previously permitted PV and sited to maximize distance (approximately 3,700 feet) to the residence structure.
    - No new access roads are required; the project shares existing roads with PLZ-2022-210 to avoid new disturbance.
    - Alternatives considered (relocating entirely outside the setbacks, dispersing to distant uplands, downsizing array blocks) would either be infeasible from interconnection

and access perspectives or would cause greater land disturbance and infrastructure redundancy than the proposed, consolidated approach.

Finding 2 — The circumstances or conditions do not apply generally to other properties in the same land use district;

- Unique, combined conditions not general to the district:
  - A large (1,593-acre) lake-adjacent parcel with a previously permitted project authorizing PV to the boundary of the parcel containing the lake (PLZ-2022-210);
  - Overlap of the later-adopted one-mile lake setback with the one half-mile residential-parcel setback;
  - Co-applicant ownership of the adjacent residential parcel, which itself allows legacy PV under the previously permitted project, resulting in an existing PV corridor that both buffers the lake and lies between the residence and portions of the proposed variance area.
- Most properties do not share this legacy-overlay combination nor rely on an existing PV/interconnection corridor established pre-setback. These unique constraints materially differentiate the subject parcel from others.

Finding 3 — Granting the variance will not result in material damage or prejudice to other properties, substantial impairment of natural resources, or be detrimental to public health, safety, and general welfare.

- Lake and natural resources protection:
  - The variance area lies farther from the lake than the legacy PV corridor under the previously permitted project and is separated from the shoreline by that existing infrastructure. Construction BMPs and a SWPPP will control erosion and sedimentation; no refueling or staging will occur near the shoreline.
  - PV panels over vegetated groundcover retain infiltration; stormwater will be managed to avoid increases in peak flows or pollutant loading. Grading is minimized and confined to essential areas.
  - Wildlife-friendly fencing, retained vegetative corridors, and native plantings enhance habitat connectivity and reduce edge effects.
- Residential compatibility and welfare (one half-mile setback area):
  - While the distance from the proposed variance area and the residential parcel is roughly 1,600 feet, substantial separation will exist between the PV array and the residence itself: The proposed variance area maintains approximately 3,700 feet of separation from the residence—significantly larger than both the one half-mile setback radius and distances from infrastructure under the previously permitted project: ~2,100 feet (on the residential parcel) and less than 1,500 feet (on a separate neighbor parcel).
  - Screening and line-of-sight: Arrays are positioned behind existing PV corridor; supplemental native planting may be installed where views are open to further visibility.
  - Equipment siting, noise, and glare: The design meets or exceeds County standards. Operations will not produce discernible ground vibration beyond the property line, nor odors, dust, smoke, excessive noise, or liquid or airborne pollutants.
  - Lighting and operations: No continuous nighttime lighting; any necessary lighting is full cutoff, shielded, and motion-activated. Construction will adhere to daytime hours with dust control and traffic management; operations traffic is limited to periodic maintenance.
- Traffic and access: No new access roads are required; access roads established under the previously permitted project will be shared, minimizing disturbance, dust, and traffic generation. Additionally, Ørsted commissioned a traffic study for the project. The results of

the study include recommendations for several improvements to nearby roads during the construction phase to address impacts to public roadways. Additional detail is provided in the study.

- No material damage or prejudice: The variance adjusts the facility location within a permitted use context; it does not increase allowable intensity. With separation provided by the legacy PV corridor, adherence to buffers, reuse of existing infrastructure, and the mitigation measures described, there will be no material damage to neighboring properties (including the commonly owned residential parcel), no substantial impairment of natural resources, and no detriment to public health, safety, or general welfare.

In conclusion, the adoption of the one-mile lake setback and the 2,640-foot residential-parcel setback after CUP PLZ-2022-210 created exceptional, legacy conditions on this 1,593-acre tract. Strict application would impose peculiar and exceptional practical difficulties by fragmenting feasible, contiguous PV development, stranding interconnection efficiencies, and forcing unnecessary new disturbance. The requested variance is narrowly tailored to additional acreage located farther from the lake and separated by PV infrastructure under the previously permitted project, shares access roads with no additional roads required, and maintains substantial separation from the residence (approximately 3,700 feet), despite being near or within the one half-mile setback—greater than distances associated with infrastructure under the previously permitted project, both on the residential parcel and on a separate neighboring parcel. With the robust protections and mitigations described, the request meets the conditions of the Lyon County Code § 15.203.06 and supports approval of a major variance, and we respectfully seek approval.

Please contact me at 847-909-2694 or by e-mail at tgent@orsted.com with any questions or if additional information is needed.

Not-Applicable Letter

Ørsted has reviewed the Development Application Submittal Requirements for a Conditional Use Permit and has provided the applicable items as requested. The following item has not been included with the application as they don't apply:

Requirement:

2 Site Plan (full sized)

3 Reduced Site Plan (11" x 17")

4a Floor Plan

4b Building Elevations

5 Map (full sized)

6 Reduced Map (11" x 17")

10 Vicinity Map

12 Property Legal Description / Vesting Deed

13 Photographs (min. set of four photos)

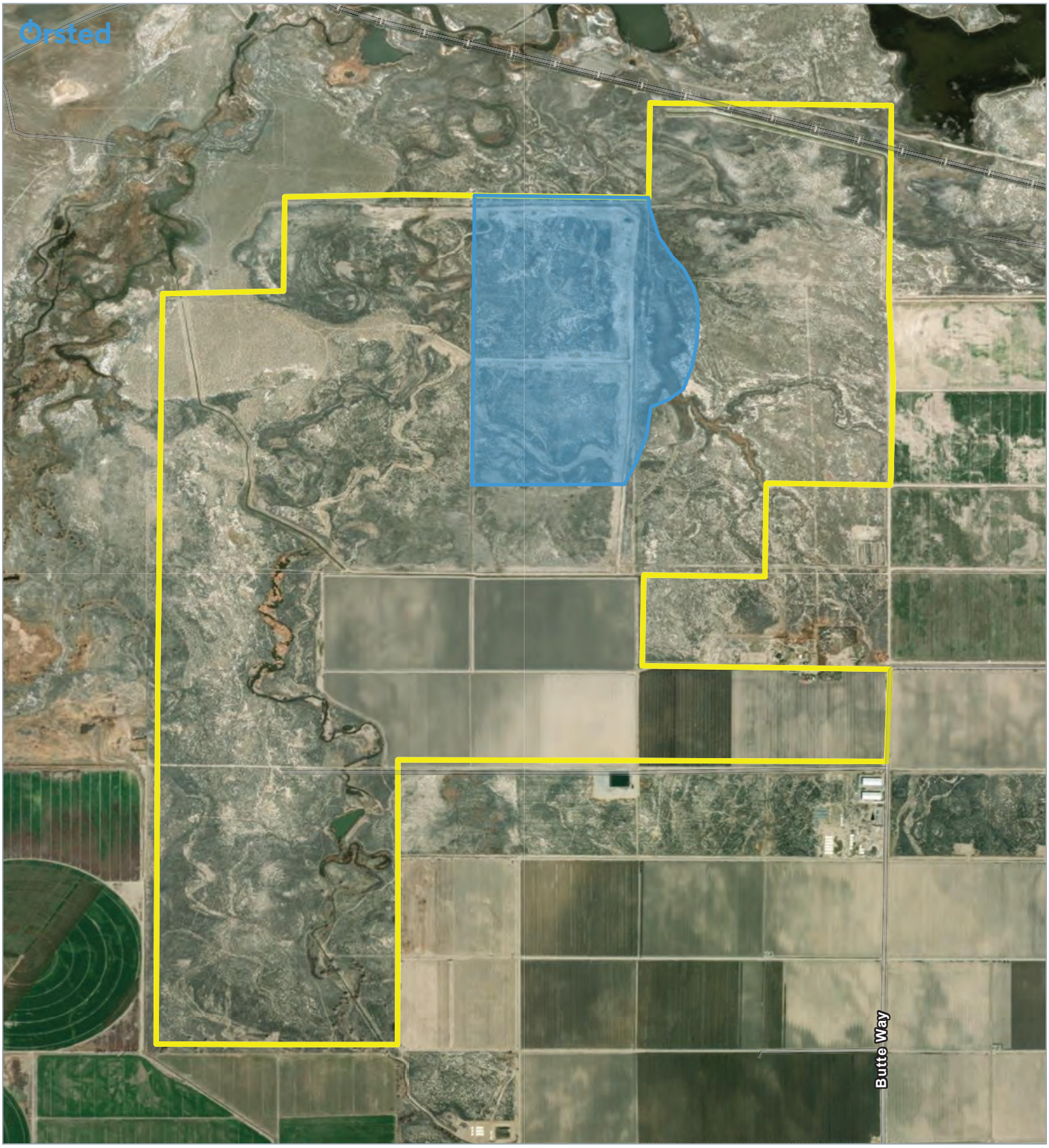
Reason for not providing items: The majority of items were previously submitted under CUP application PLZ-2025-085 and are incorporated herein. Also, no buildings are proposed as part of the project.

DEVELOPMENT APPLICATION SUBMITTAL REQUIREMENTS

Application Type / Submittal Requirements (Fees and number of copies needed for required information & materials are shown for each application type)	Abandonment	Administrative Design Review / Permit	Appeal of Administrative Decision	Appeal of Planning Commission Decision [5]	Approval Condition Amendment	Conditional Use Permit	Development Agreement	Development Agreement, Revision	Extension of Time Request	Hardship Exception Permit (admin. Review)	Master Plan Map Amendment	Master Plan Text Amendment	Planning Commission Determination	Pre-Application Conference (for Final Subdiv. Maps & SIPs only)	Reimbursement Agreement	Specific Plan ♦	Temporary Use Permit‡	Variance, Administrative (Minor [5])	Variance (Major)	Wireless Communication Facility	Wireless Communication Facility, Modification	Zoning Determination	Zoning Map Change	Zoning Text Change
☐ Application Fee	$1750	$1750	$750	$1500	$2000	$2500	$4000	$2000	$750	$850	$4250	$4250	$500	$750	$3250	$3750 [1, 2]	$500	$1000	$2000	$1500	$1250	$400	$2800 [3, 4]	$2750
☐ 1.Application Form (signed & notarized)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
☐ 2.Site Plan (full sized)		1			1*○	1*○		1	1	1	1*○						1*	1	1	1	1		1*○	
☐ 3.Reduced Site Plan (11" x 17")		1			1	1		1	1	1	1						1*	1	1	1	1			
☐ 4. A. Floor Plan		1*			1*	1*				1							1*	1*	1*	1	1			
☐ 4. B. Building Elevations		1*			1*	1*												1*	1*	1	1			
☐ 5. Map (full sized)					1*○	1*○					1*○		1	1		1○	1*	1*	1*○			1	1*○	
☐ 6. Reduced Map (11" x 17")					1*						1		1	1		1	1*	1*	1*			1	1	
☐ 7. Complete appl. - Digital (PDF only for now)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
☐ 8. Project Description / Narrative	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
☐ 9. Justification / Findings	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
☐ 10. Vicinity Map	1	1				1				1				1		1	1	1	1	1	1	1	1	
☐ 11. Title Report	1	1				1														1	1			
☐ 12. Property Legal Description/ Vesting Deed	1	1				1				1	1		1	1		1	1	1	1	1	1	1	1	
☐ 13. Photographs (min. set of four photos)	1	1			1	1				1	1		1	1		1		1	1	1	1	1	1	
☐ 14. Project Approval Letter with Conditions			1*	1*	1				1*					1*										
☐ 15. Additional Required Documents/ Information	✓	✓	✓		✓	✓		✓	✓*	✓*	✓		✓	✓		✓	✓	✓	✓	✓	✓		✓*	
☐ 16. Engineering Review Fees May Apply	❖	*			❖				❖		❖		❖	❖	❖	❖			❖			❖	❖	❖
☐ 17. Not-Applicable Letter	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
☐ 18. Complete appl. PDF /Entered to SAGE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

* If applicable and/or dependent on the type of project. ✓ Specific addl. information is required (Check with Comm. Devel. staff) ♦ Addl. information is required for Specific Plan & PUD (Check with Comm. Devel. staff) ✪ Additional copies may be required. ❖ Engineering Review Fees - Actual cost of engineering review in addition to the application fee.

1. $40 additional fee for each dwelling unit over 50. 2. $2,750 application fee if filed and heard concurrently with PUD. 3. $500 additional fee for each adjacent parcel with same ownership.
4. $1,750 plus $250 fee for each adj. parcel with same ownership if filed with MPA.
5. Zero fee for MINV for manufactured home size



Lux Solar - APN 01-091-20

Lyon County, Nevada
November 2025

Project Area
Parcel Boundary

0 1,000 2,000 3,000 4,000 US Feet

Not for construction. Map for reference and discussion purposes only.

Exported By: kevsi Project: NV_S_Lux

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PRELIMINARY
NOT FOR CONSTRUCTION

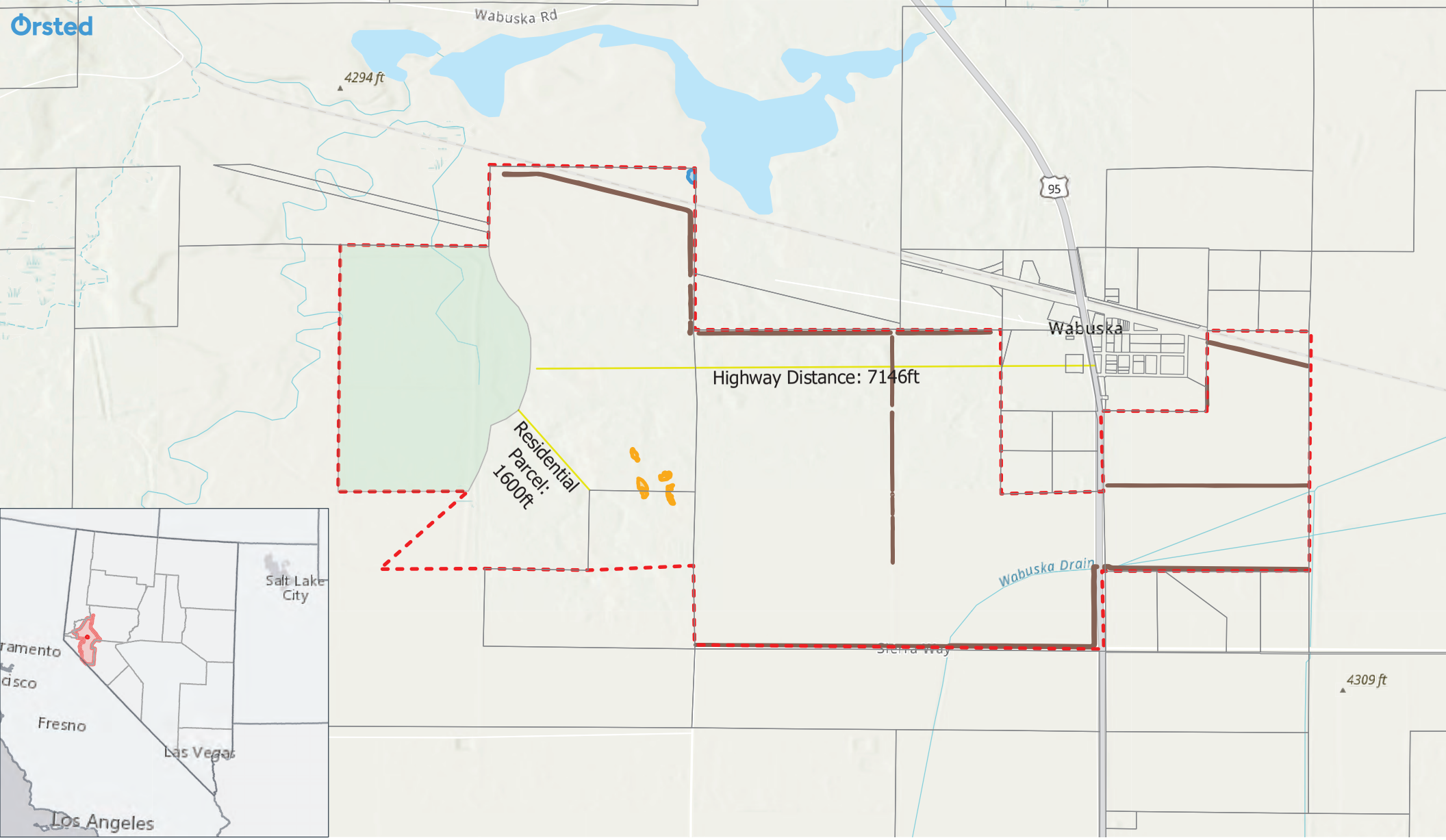
Ørsted

DESCRIPTION	DATE	BY
PRELIMINARY	11.06.2025	MJW

PRINTED: 11/06/2025
FILE NAME: LUX-WJ111-VS-EXPA-11-VSEXPANSION.dwg
PROJECT: LUX-WJ111-VS-EXPA
LEVEL: 1
DEV ENG: NB
DRAWN: MJW
- INTERNAL USE ONLY -

PROJECT: LUX SOLAR CENTER, LLC
LUX, NEVADA
DRAWING TITLE: ARRAY PLAN EXPANSION
DRAWING NO.: WJ111

ARCH D SIZE - 24"X36" © ØRSTED



Lux Solar

Lyon County, Nevada
October 2025

0 0.5 1 Miles

N 505

or construction. Map for reference and discussion purposes only.
10/11/2025

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* No trail easements, streams, or airports in the project vicinity

Photos of the Project Area

1. Photo from Northwest corner of the project area facing east

2. Photo from Northwest corner of the project area facing southeast

3. Photo from Southwest corner of the project area facing east

4. Photo from Southwest corner of the project area facing north

5. Photo from southern boundary of the project area facing west

6. Photo from southern boundary of the project area facing north

7. Photo from center of the project area facing east

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
14.f

Subject:
For Possible Action: To approve the request from Lux Solar Center, LLC for a Conditional Use Permit for an expansion to the existing Lux Solar Project approved in 2023, to construct and operate a photovoltaic (PV) solar energy facility, on land subject to Rural Residential, 20 Acre Minimum (RR-20) zoning located in the northern portion of the parcel at 55 Butte Way in Wabuska, Mason Valley on an approximately 280-acre portion of a 1,593-acre parcel (APN 014-091-20); PLZ-2025-085. (Senior Planner Lisa Nash)

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Staff Report
- Backup

LYON COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING * DEVELOPMENT ENGINEERING * PLANNING
CODE ENFORCEMENT * ECONOMIC DEVELOPMENT
27 SOUTH MAIN STREET, YERINGTON, NV 89447
PHONE: 775-463-6592 FAX: 775-463-5305
WEBSITE: www.lyon-county.org

BOARD OF COUNTY COMMISSIONERS

PLZ-2025-085

Proposed Action	Conditional Use Permit for a Photovoltaic (PV) Solar Energy Facility
Meeting Date	March 5, 2026
Property Owner	Robin Susan Mason et al
Applicant	Lux Solar Center, LLC
Community	Mason Valley
Location	55 Butte Way
Parcel Number	014-091-20
Parcel Size	280-acre portion of a 1,593-acre parcel
Master Plan	Agriculture
Zoning	RR-5 (Fifth Residential District (20 Acres)
Flood Zone(s)	Zone A per FIRM 32019C0550E (effective date: 1/16/2009)
Case Planner	Lisa Nash

REQUEST

The Applicant is requesting a Conditional Use Permit for a 280-acre expansion to the existing Lux Solar Project approved in 2019 and 2023, to construct and operate a photovoltaic (PV) solar energy facility.

PROJECT SUMMARY

The proposed project involves the addition of approximately 280 acres to the construction and operation of a commercial solar power generating facility. A previous Conditional Use Permit (CUP) approved in 2019 (PLZ019-0054) and a time extension for the CUP approved in 2023 (PLZ-2022-210) allowed for a project that included the construction and operation of a commercial solar power generating facility over an approximately 1,140-acre area within a four-parcel site totaling 2,462 acres.

The Applicant has also requested a Major Variance (PLZ-2025-096) from the one-mile (5,280') lake/intermittent stream setback and the one half-mile (2,640') setback from a parcel with an existing residential use, to allow installation of a low-profile photovoltaic (PV) solar array within limited portions of those setback areas on APN 014-091-20.

PLANNING COMMISSION

The Planning Commission heard the item on February 10, 2026. The Commission forwarded a recommendation of approval, voting 5-1 (5 Ayes; 1 Nays-Commissioner Baker; 0 Abstentions; 1 Absent-Commissioner Ceresola). The recommendation was based on the Findings and Conditions of Approvals listed in the staff report.

RECOMMENDED MOTION

If after review and public comment the Board of County Commissioners determines that they should approve the requested Conditional Use Permit application, then the Board should make a motion similar to the following:

The Board of County Commissioners finds that:

A. The proposed use at the specified location is consistent with the policies embodied in the adopted master plan and the general purpose and intent of the applicable district regulations;

B. The proposed use is compatible with the character and integrity of adjacent development and neighborhoods and includes improvements or modifications either on-site or within the public rights-of-way to mitigate development related adverse impacts, such as traffic, noise, odors, visual nuisances, or other similar adverse effects to adjacent development and neighborhoods;

C. The proposed use will not generate vehicular traffic which cannot be accommodated by the existing, planned or conditioned roadway infrastructure;

D. The proposed use incorporates roadway improvements, traffic control devices or mechanisms, or access restrictions to control traffic flow or divert traffic as needed to mitigate the development impacts;

E. The proposed use incorporates features to address adverse effects, including visual impacts and noise, of the proposed conditional use on adjacent properties;

F. The proposed conditional use complies with all additional standards imposed on it by the particular provisions of this chapter and all other requirements of this title applicable to the proposed conditional use and uses within the applicable base zoning district, including but not limited to, the adequate public facility policies of this title; and

G. The proposed conditional use will not be materially detrimental to the public health, safety and welfare, and will not result in material damage or prejudice to other properties in the vicinity.

Based on the aforementioned Findings, I move that the Board of County Commissioners approves the request from Lux Solar Center, LLC for a Conditional Use Permit for an expansion to the existing Lux Solar Project approved in 2023, to construct and operate a photovoltaic (PV) solar energy facility, on land subject to Rural Residential, 20 Acre Minimum (RR-20) zoning located in the northern portion of the parcel at 55 Butte Way in Wabuska, Mason Valley on an approximately 280-acre portion of a 1,593-acre parcel (APN 014-091-20); PLZ-2025-085, subject to the 24 Conditions of Approval.

CONDITIONS OF APPROVAL

1. No change in the terms and conditions of the Conditional Use Permit (CUP), as approved, shall be undertaken without first submitting the changes to Lyon County Community Development and having them modified in conformance with Lyon County Code.
2. The Applicant shall comply with all applicable Fire, building, zoning and improvement code requirements and obtain any necessary public inspections.
3. All construction documents and separate applications must be submitted to the Central Lyon County Fire Protection District and the Lyon County Building Department for review and approval prior to obtaining a Building Permit.

4. All contractors doing any construction, modifications, or remodels must be licensed in the State of Nevada.
5. The Applicant shall maintain a Lyon County business license for the use while occupying the site.
6. The Applicant will be held to the decommissioning plan required as a part of the conditional use permit submittal materials in CUP (PLZ-2019-0054).
7. The project is within the jurisdiction of the Nevada Department of Transportation (NDOT) District II. The applicant is required to submit a Traffic Impact Study (TIS) to NDOT and Lyon County. The TIS will need to be reviewed and approved by NDOT and Lyon County to meet NDOT Access Management and other applicable standards before site improvement, grading, and building permits will be issued.
8. Prior to commencement of the use, the Applicant shall ensure the satisfactory completion of all required access, driveway and parking improvements to County and International Fire Code standards, as required by the Lyon County Planning Department, the Lyon County Road Department and Yerington/Mason Valley Fire Protection District.
9. The Applicant shall enter into a road maintenance agreement with the County for the maintenance and dust control of the West and East Sierra Way during the construction period of the project. Once the construction of the project is completed, the amount of traffic generated by the project is minimal and the road maintenance agreement may expire.
10. The applicant shall design, construct, and install all traffic mitigation improvements identified as necessary in the Nevada Department of Transportation (NDOT) and County-approved Traffic Impact Study (TIS). All such improvements shall be completed at the applicant's sole cost and expense, with no cost or financial responsibility to Lyon County. Construction of the improvements shall be subject to review and approval by NDOT and the County, and shall comply with all applicable standards, specifications, and permitting requirements.
11. The applicant shall be responsible for constructing or otherwise implementing any transportation improvements determined by Lyon County to be necessary to mitigate project-specific or cumulative traffic impacts that are not identified in the approved Traffic Impact Study and are not otherwise required by the Nevada Department of Transportation (NDOT). Such responsibility may be satisfied by constructing the required improvements directly or, where the improvements are constructed by another developer or entity, by participating in a County-approved reimbursement agreement to pay the applicant's proportional (pro rata) share of the costs per 15.120 of Lyon County Code. Lyon County may participate in the review, approval, and administration of any reimbursement agreement. Any improvements located within NDOT right-of-way shall be reviewed, approved, and permitted by NDOT and constructed in accordance with applicable NDOT standards and requirements.
12. West Sierra Way from US Hwy 95A to Butte Way shall be constructed with a minimum pavement section consisting of four (4) inches of asphalt concrete over eight (8) inches of Type II aggregate base, or an engineered equivalent pavement section, designed and constructed to the satisfaction of the County Road Department. A geotechnical report, prepared by a licensed geotechnical engineer, shall be submitted for review and approval by the County prior to final design, providing recommendations for pavement section design, subgrade preparation, and compaction requirements. The pavement shall be constructed in accordance with the report's recommendations and County standards, and shall be fully inspected and accepted by the County prior to final approval.
13. The Applicant shall submit for a fire/life safety plan review to the Mason Valley Fire Protection District prior to the issuance of a site improvement permit/building permit for the project.

14. Any proposed onsite sewage disposal system must be approved by the Nevada Division of Environmental Protection and evidence of such approval must be provided to the Lyon County Planning Department prior to approval of any building permit for any sanitary facilities.

15. Any proposed water usage is subject to approval of the proposed use of water and/or all necessary water rights by the Nevada Division of Water Resources and submission of approval documentation to the Lyon County Planning Department.

16. The Applicant shall obtain the approval of the Walker River Irrigation District for a development/improvement plan, as required by the district, prior to application for and approval of any site improvement permit and/or building permits from Lyon County Community Development Department.

17. All outdoor lighting shall comply with the outdoor lighting performance standards of Chapter 15.357 of the Lyon County Code, shall include cut-off shields that direct the illumination down and reduce glare to the satisfaction of the Community Development Department.

18. The applicant shall comply with the Storm Drainage Guidelines for Lyon County, dated September 20, 2024 to the satisfaction of the County Engineer prior to issuance of a Site Improvement Permit, Grading Permit, and/or Building Permit. Drainage report and plans must be submitted concurrently with any Site Improvement Plans, Grading Plans, and/or Building Permit applications.

19. If the applicant proposes to place fill in wetlands or water features under the jurisdiction of the U.S. Army Corps of Engineers, the applicant shall obtain a "No Permit Required" letter, Jurisdictional Determination, Nationwide Permit, or other applicable federal authorization prior to commencing work. The applicant shall also coordinate with the State of Nevada to determine whether wetlands or water features under state jurisdiction are present and shall obtain any required state permits or approvals. No construction, grading, or fill activities shall occur within federally or state-regulated wetlands or water features until all applicable permits or authorizations have been obtained and copies provided to the County for review and verification.

20. Prior to issuance of a Floodplain Development Permit for any development involving the alteration or relocation of a watercourse, the applicant shall obtain and submit to the County Floodplain Administrator a Conditional Letter of Map Revision (CLOMR) approved by the Federal Emergency Management Agency (FEMA), or such other FEMA-approved map revision application or determination deemed applicable to the proposed development. Following completion of the authorized work, the applicant shall obtain and submit a Letter of Map Revision (LOMR), or other applicable FEMA approval or determination, documenting the as-built conditions. No grading, construction, or watercourse alteration shall occur until the required FEMA approval has been received and accepted by the County, and final FEMA documentation shall be provided prior to final inspection or project closeout, as applicable.

21. Any exterior signage will require a separate building permit, through the Lyon County Building Department.

22. The substantial failure to comply with the conditions imposed on the issuance of this conditional use permit or the operation of the conditional use in a manner that endangers the health, safety or welfare of Lyon County or its residents or the violation of ordinances, regulations or laws in the conditional use may result in the institution of revocation proceedings. **Failure to initiate the conditional use permit by 2030 and satisfy all conditions by 2032 will result in the expiration of the conditional use permit approval unless an extension is obtained in accordance with the provisions of 15.13.02 of the Lyon County Code.**

23. This conditional use permit shall run concurrently with the Major Variance application (PLZ-2025-096) and be subject to all conditions of the Major Variance.

24. **The Major Variance shall run with the time established for the associated Conditional Use Permit (PLZ-2025-085).**

ALTERNATIVES TO RECOMMENDATION OF APPROVAL

Alternative Motion for Continuance

If the Board of County Commissioners determines that additional information, discussion and public review are necessary for a more thorough review of the proposed major variance; the Board should make appropriate findings and move to continue the Public Hearing with a specific time period for the applicant to provide additional specific information necessary for the analysis of the request. The Board may wish to consider a motion similar to the following:

The Board of County Commissioners finds that:

Additional information, discussion and public review are necessary for a more thorough review of the proposed Major Variance.

Based on the aforementioned Findings, and with the applicant's concurrence, the Board of County Commissioners continues the request from Lux Solar Center, LLC for a Conditional Use Permit for an expansion to the existing Lux Solar Project approved in 2023, to construct and operate a photovoltaic (PV) solar energy facility, on land subject to Rural Residential, 20 Acre Minimum (RR-20) zoning located in the northern portion of the parcel at 55 Butte Way in Wabuska, Mason Valley on an approximately 280-acre portion of a 1,593-acre parcel (APN 014-091-20); PLZ-2025-085 for ___ days.

Alternative Motion for Denial

If the Board of County Commissioners determines that they should deny the request for a Conditional Use Permit, then the Board needs to make findings supporting a recommendation of denial. The Board may wish to consider a motion similar to the following:

The Board of County Commissioners has considered:

15.230.06: FINDINGS:

When considering applications for a Conditional Use Permit, the commission or Board, where applicable, must evaluate the impact of the conditional use on and its compatibility with surrounding properties and neighborhoods to mitigate potential impacts of the use at a particular location and make the following findings:

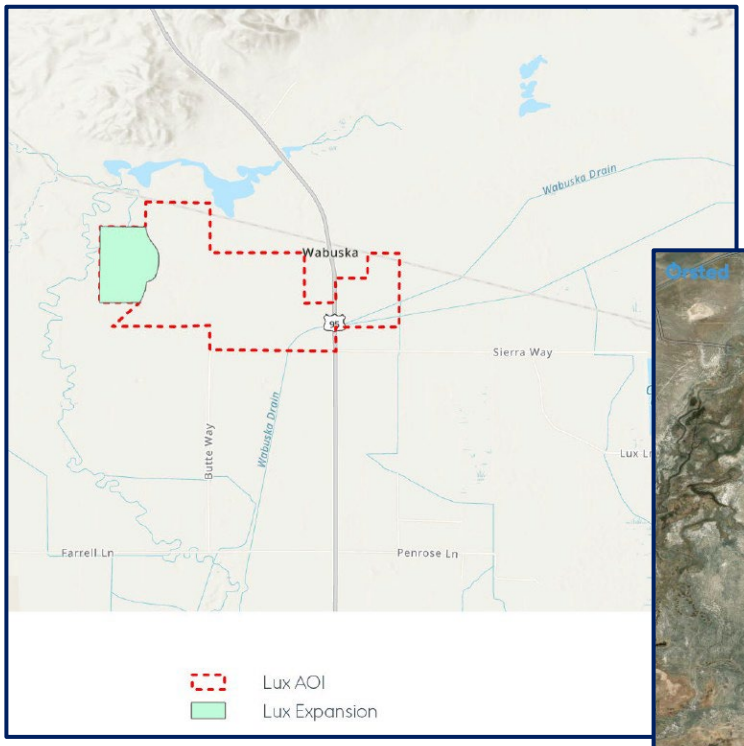
A. The proposed use at the specified location is consistent with the policies embodied in the adopted master plan and the general purpose and intent of the applicable district regulations;
B. The proposed use is compatible with the character and integrity of adjacent development and neighborhoods and includes improvements or modifications either on-site or within the public rights-of-way to mitigate development related adverse impacts, such as traffic, noise, odors, visual nuisances, or other similar adverse effects to adjacent development and neighborhoods;
C. The proposed use will not generate vehicular traffic which cannot be accommodated by the existing, planned or conditioned roadway infrastructure;
D. The proposed use incorporates roadway improvements, traffic control devices or mechanisms, or access restrictions to control traffic flow or divert traffic as needed to mitigate the development impacts;
E. The proposed use incorporates features to address adverse effects, including visual impacts and noise, of the proposed conditional use on adjacent properties;
F. The proposed conditional use complies with all additional standards imposed on it by the particular provisions of this chapter and all other requirements of this title applicable to the proposed conditional use and uses within the applicable base zoning district, including but not limited to, the adequate public facility policies of this title; and
G. The proposed conditional use will not be materially detrimental to the public health, safety and welfare, and will not result in material damage or prejudice to other properties in the vicinity.

After consideration of the above-listed Findings, I move that the Board of County Commissioners has determined that the Conditional Use Permit would <u>not</u> be in conformance with the above-listed considerations and <u>denies</u> the request from Lux Solar Center, LLC for an expansion to the existing Lux Solar Project approved in 2023, to construct and operate a photovoltaic (PV) solar energy facility, on land subject to Rural Residential, 20 Acre Minimum (RR-20) zoning located in the northern portion of the parcel at 55 Butte Way in Wabuska, Mason Valley on an approximately 280-acre portion of a 1,593-acre parcel (APN 014-091-20); PLZ-2025-085.

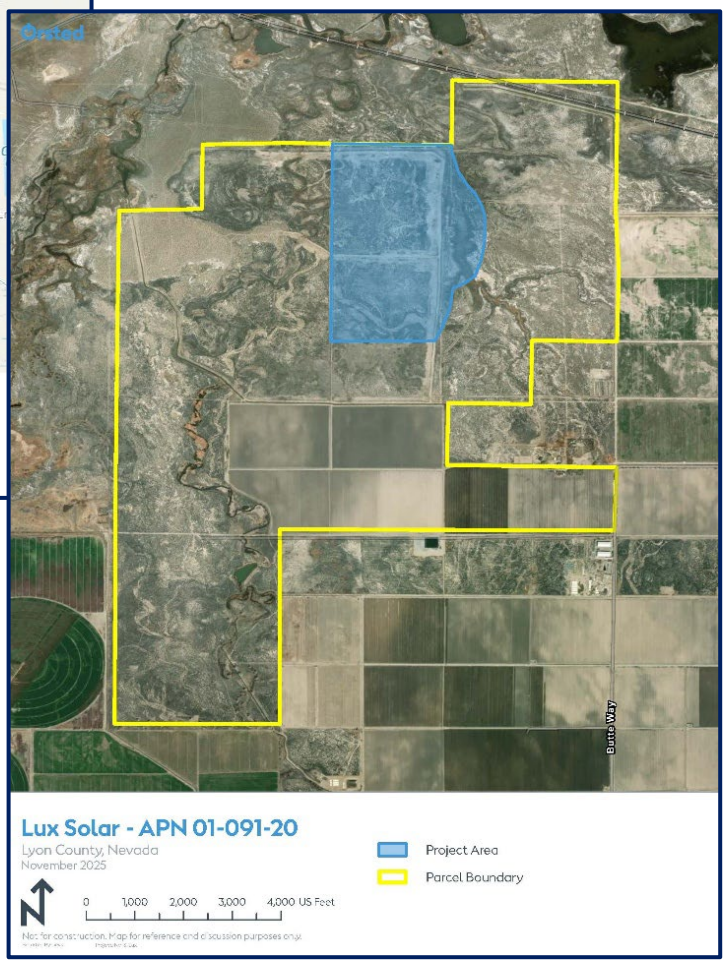
BACKGROUND INFORMATION

<u>Location and Size</u>

The subject property (APN 014-091-20) is generally located west of the intersection of US 95A and the Union Pacific railroad tracks in the northern portion of Mason Valley. The entire site encompasses APNs 014-091-02, -03, -20, and -021 (outlined in red below). The proposed expansion to the existing CUP is an approximately 280-acre portion of a 1,593-acre parcel (shaded in green below).



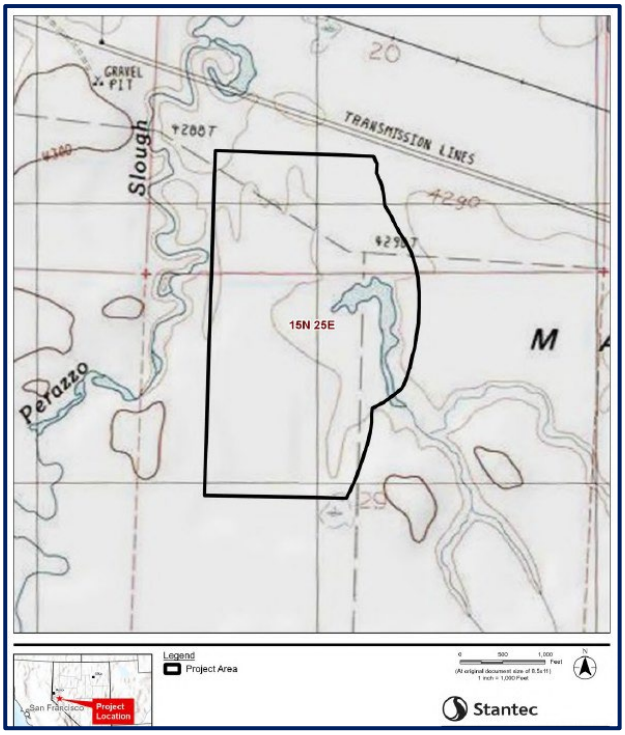
Vicinity Map



Project Area Map

Topography

The subject site lies on the floor of Mason Valley. There are no significant topographic features such as steep slopes, ridges, or intrusive dikes that would limit or restrict the proposed development/use of the subject site as shown below (red star delineates approximate expansion site location).



Topography Map

Site Photos

The three images below and on the following page were provided by the Applicant.

Photo from southern boundary of the project area facing north

Photo from center of the project area facing east

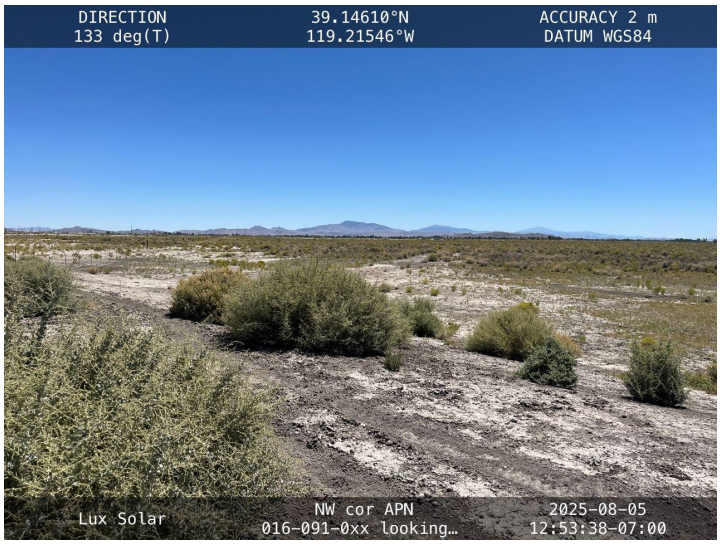


Photo from northwest corner of the project area facing southeast

Flood Zone Designation

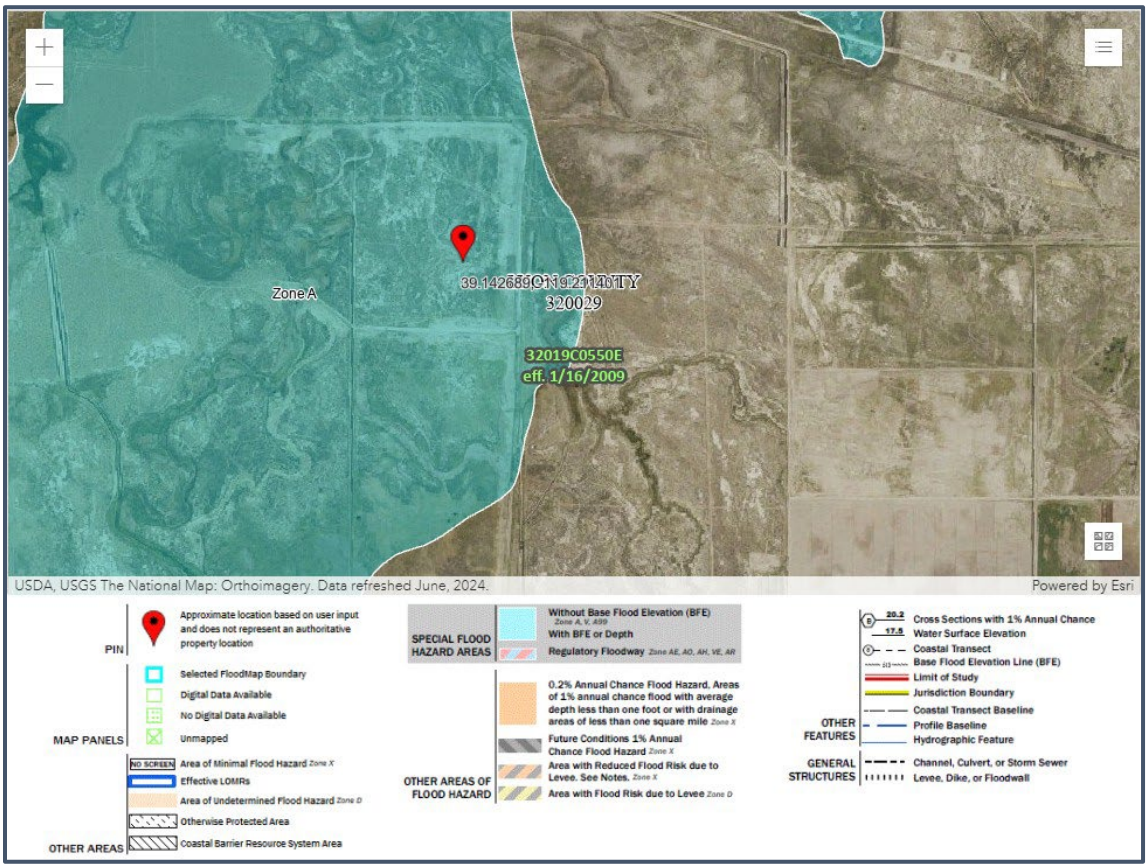
The subject site is located within the FEMA Flood Insurance Rate Map (FIRM) 32019C0550E (effective date: 1/16/2009): Zone A (1% Annual Chance Flood Hazard). See the FEMA Flood Map image below.

Section 15.800.08(A) of the Lyon County Code states that a floodplain development permit must be approved before construction or development is allowed to begin within any area of special flood hazard established in subsection 15.800.07(A).

The floodplain development permit is required for all structures as well as for all development including fill and other activities as defined in 15.1200. “Development Activity” is defined within section 15.1200.05 as:

> “An improvement that is allowed and permitted and completed on a lot, parcel, or tract of land by a developer or property owner. The term "development activity" shall include zoning, subdivision, planned unit development, building permit issuance, construction, alterations, land grading, excavating, and clearing. As used in chapter 800 of this title, development means any manmade change to improved or unimproved real estate including, but not limited to, buildings or other structures, mining, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials located within the area of special flood hazard.”

In accordance with 15.800.08(A) and as a Condition of Approval for the proposed project, the Applicant shall obtain approval of a flood plain development permit prior to any development on the property.



FEMA Firm Map

Public Facilities

Lyon County Utilities Department has no sewer or water services available within the areas of the subject parcel. The proposed development expansion will not include any need for water or sewer services.

Previous, Concurrent and Future Permitting

The applicant has submitted two applications concurrently: this application for a Conditional Use Permit (PLZ-2025-085) and an application for a Major Variance (PLZ-2025-096). These items were heard by the Planning Commission on February 10, 2026.

The Major Variance application is requesting a variance from the one-mile (5,280 ft) intermittent stream/lake setback to 2,789 ft and the one half-mile (2,640 ft) setback from a parcel with an existing residential use to 1,600 ft, to allow installation of a low-profile photovoltaic (PV) solar array within limited portions of those setback areas on APN 014-091-20.

Based upon comprehensive review and analysis of available data, the subject watercourse is appropriately designated as an intermittent stream not a lake. This determination is supported by field observations, hydrologic assessment, and data obtained from the Walker River Irrigation District, the Nevada Department of Environmental Protection (NDEP) Geographic Information System (GIS) database, and well records from the Nevada Division of Water Resources (NDWR).

This designation does not alter or affect the applicant's pending request for deviation associated with the Major Variance application. The information provided herein is intended solely to accurately identify and document the categorical representation of the water body for purposes of hydrologic classification and regulatory consistency.

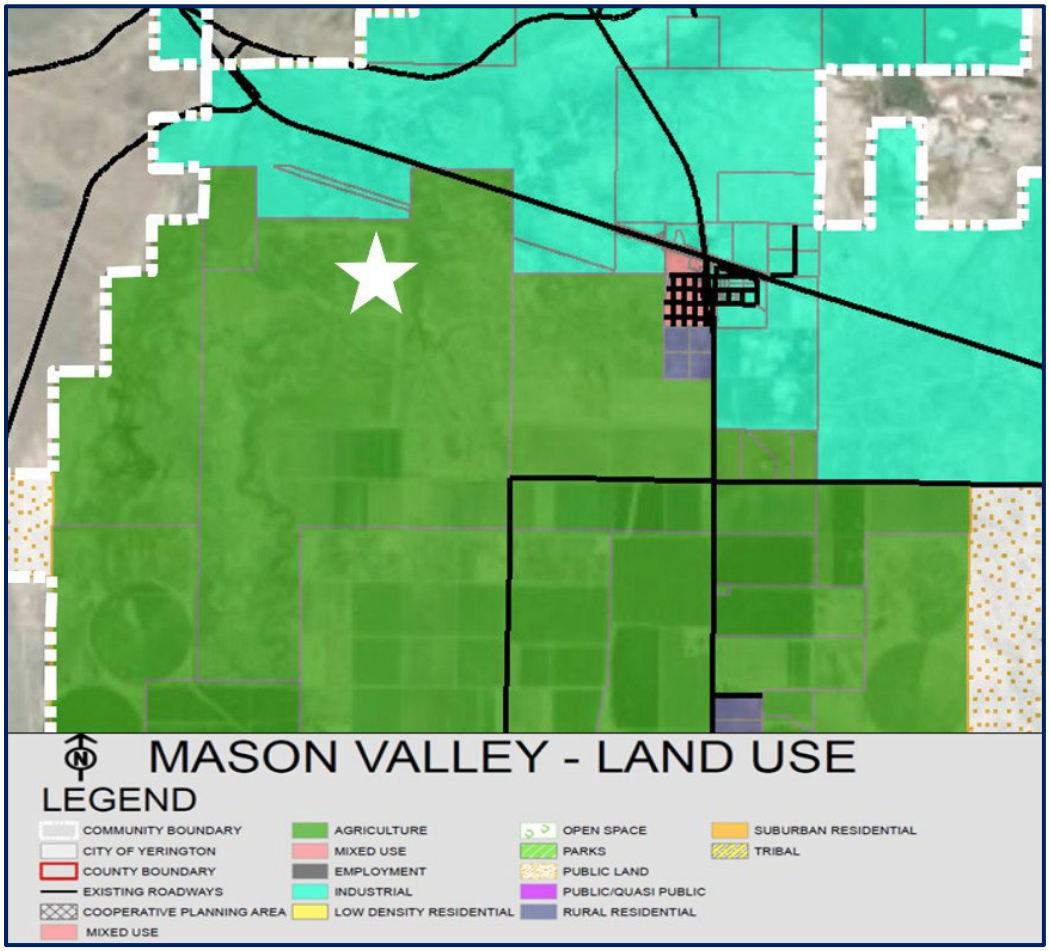
Approval of the Major Variance is required for this Conditional Use Permit (PLZ-2025-085) to be approved.

Portions of this property were the subject of a previous Conditional Use Permit (CUP) approved in 2019 (PLZ019-0054) and a time extension for the CUP approved in 2023 (PLZ-2022-210). The total project included the construction and operation of a commercial solar power generating facility over an approximately 1,140-acre area within a four-parcel site totaling 2,462 acres.

MASTER PLAN AND ZONING

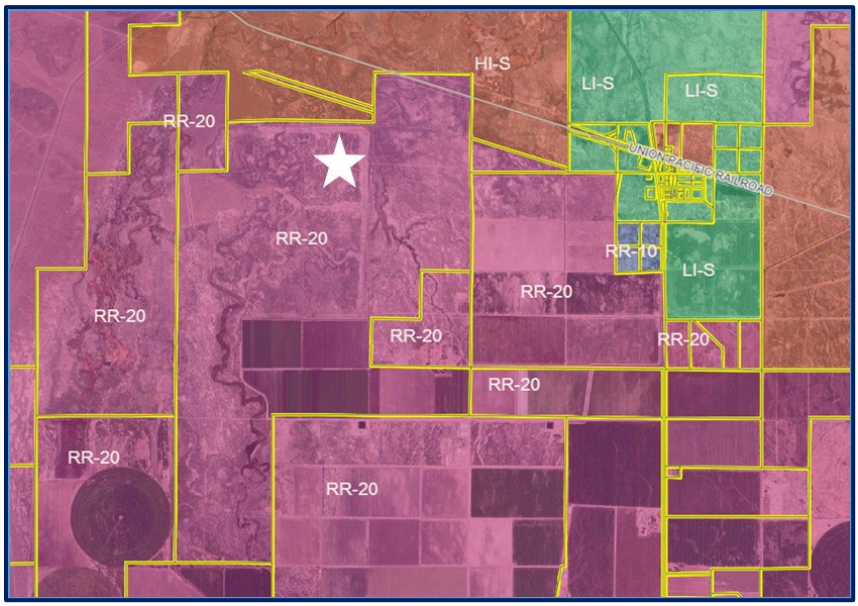
Master Plan

The Master Plan designation for the site is Agriculture as shown in the Mason Valley Land Use Plan below. The parcel is located in the Mason Valley Rural Character District.



Mason Valley Land Use Plan

The zoning is Fifth Rural Residential, 20 acre minimum (RR-5), under the County's expired Development Code, Title 10. Per the Zoning Consistency Matrix, adopted in 2018 with Title 15, the corresponding district in Title 15 is Rural Residential – 20 acre minimum (RR-20). The zoning map for the project area is shown on the following page.



Zoning Plan

PROJECT DESCRIPTION

The Applicant's proposal is for a Conditional Use Permit (CUP) for an additional 280 acres of a low-profile photovoltaic (PV) solar array project. Prior CUP approvals for Lux Solar Center (originally approved in 2019 under PLZ-19-0054 and renewed and extended in 2023 under PLZ-2022-210) are included as backup for this CUP application.

Per the applicant, the proposed project is described as follows:

> *Specifically, we are requesting approval of a new Conditional Use Permit application to supplement an existing CUP, originally approved in 2019, expired in 2021, and re-opened and extended in 2023. For reference, prior CUP approvals for Lux Solar Center are included and made a part of this application. Due to circumstances unforeseen to the project development at the time of prior applications, the project boundary needs to be adjusted to include roughly 280 additional acres on parcels already included under the previous permits to accommodate the GreenLink West path.*
>
> *The project timeline is dependent upon grid infrastructure upgrades by Nevada Energy (NVE), which are currently anticipated in 2028. Due to recent NVE planning regarding their GreenLink West infrastructure in Lyon County, the project is seeking approval to build on additional land that was not subject to the original permit. This request will be focused on the additional land not previously subject to the existing CUP, while also providing project status and process updates of the overall submission.* and
>
> *Lux Solar Center, LLC proposes to construct and operate a photovoltaic (PV) solar energy facility on approximately 280 acres of private land. This standalone application shifts and modestly expands the footprint of a project permitted in 2023 (PLZ-2022-210) to accommodate NV Energy's Greenlink project. A planned Greenlink transmission corridor would bisect the previously permitted project area, necessitating the use of additional adjacent private land, including portions of a parcel previously permitted, to maintain project viability while minimizing new impacts.*
>
> *Technology and layout: The Project will utilize UL-listed, commercially available crystalline silicon or thin-film PV modules mounted on single-axis tracking (SAT) structures supported by driven pile foundations. Trackers rotate east in the morning and west in the afternoon along a north–south axis to maximize energy production. The top edge of the panels will not exceed fifteen feet (15') above ground level. PV modules will use anti-reflective glass to maximize electrical output and reduce reflectance relative to typical residential and commercial glazing.*

Interconnection: The point of interconnection for the Project is the Walker River Substation, located within the previously permitted project area. Because the project substation was included with the previously permitted project, no new substation is included with this application.

Siting and visual considerations: The additional land included in this application is more than one-half mile from the nearest public roads (the intersection of Butte Way and Sierra Way) and over one mile from U.S. Highway 95. The previously permitted project also allows PV arrays between these roads and the expansion area; therefore, visual effects to the public will be comparable to, and no greater than, those already evaluated and permitted. The revised project footprint and array layout are designed to minimize new impacts and maintain or increase separation from sensitive receptors relative to the prior approval.

Electrical equipment and collection: Inverters and associated pad-mounted transformers will be distributed across the site and installed on concrete equipment pads. Power will be collected via cabling to the previously permitted onsite substation with delivery to the grid.

Civil works and ground disturbance: Within the current application footprint, impervious areas will be limited to pile foundations, equipment pads, and access roads. Minimal ground disturbance is anticipated due to driven pile foundations; grading will be limited to areas required for equipment pads and access roads. Best management practices will be implemented to control dust, manage stormwater, and protect adjacent resources during construction.

Security and lighting: The site perimeter will be enclosed with a six-foot-high security fence. Project lighting will be designed to code to provide the minimum illumination necessary for safety and security and will be downward-facing and shielded to focus illumination on intended areas only.

Operations: The Project will be operated as an unattended facility with periodic maintenance. Impervious surfaces are limited, supporting onsite infiltration and minimizing runoff. The Project will comply with applicable federal, state, and local requirements throughout construction, operation, and decommissioning.

Conceptual Site Plans

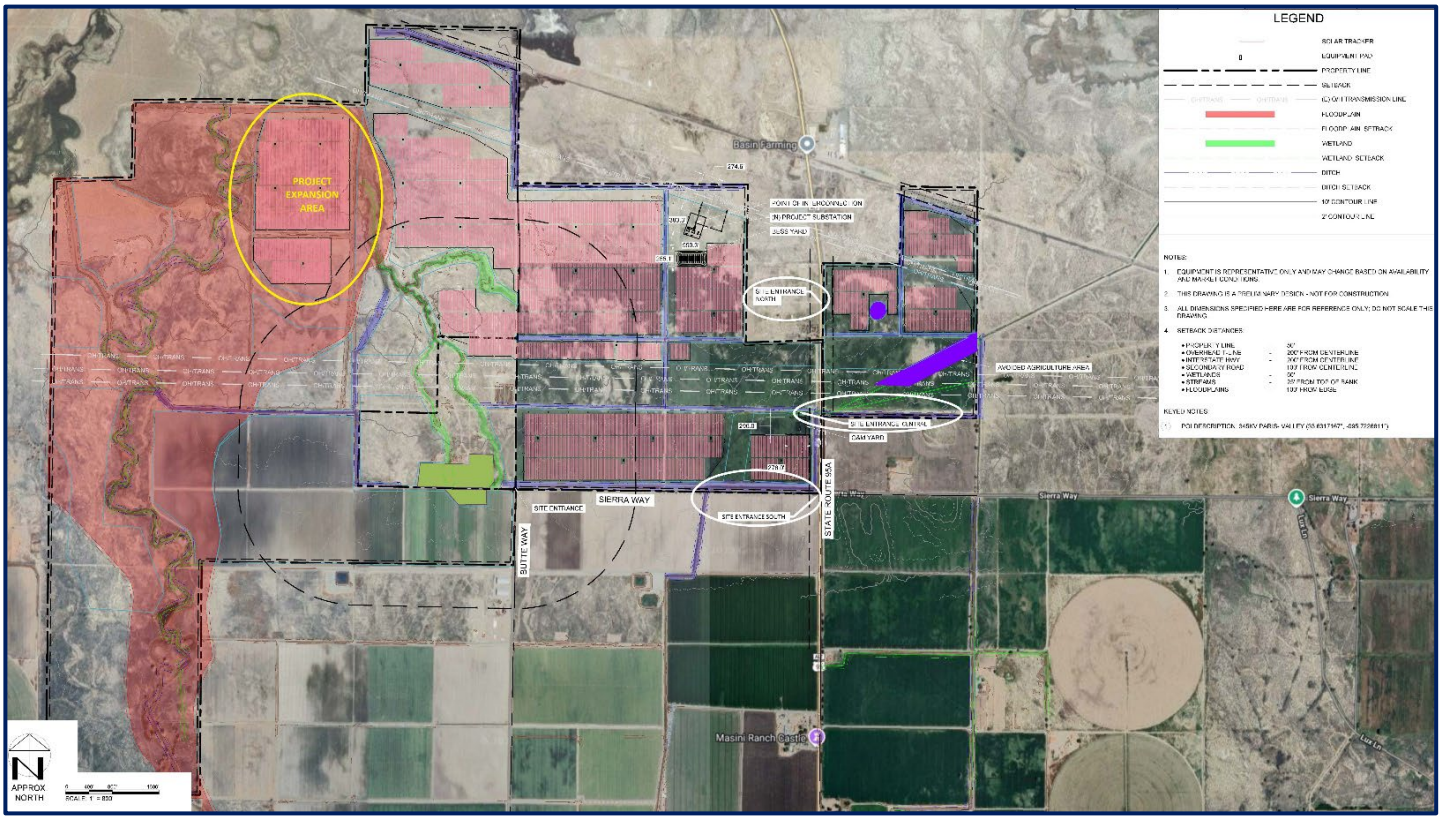
The conceptual site plan (with staff additions) on the following page shows the overall project with the additional 280-acre expansion area circled in yellow. The proposed entrances to the site are shown circled in in white. This is a conceptual site plan and would be subject to building permit review.

The proposed expansion under this CUP includes all of the conditions imposed by the two former CUPs as well as site specific conditions of approval. The project expansion will include the same layout conditions as for the former CUPs. The perimeter of the subject site would be surrounded with a 6-foot tall security fence. Where the subject site abuts residentially-zoned property, a 16-foot high barrier wall would be installed per the requirements of Lyon County Code (Chapter 15.336.09 (D) (2) unless rezoned to a nonresidential zoning district.

Any on-site lighting shall comply with Code requirements to provide only the illumination necessary for safe operations and security and would be downward-facing and shielded to focus the light only on the areas of concern.

Once the facility is constructed and operational, the applicant would clean and maintain of the facility by visiting the site for visual inspections, equipment servicing, and minor repairs. Power electronics are anticipated to require servicing annually or biannually. For any major repair or replacement of a piece of equipment, the presence of additional workers may be required. There would be no full-time employees located at the site.

As part of their application process, the Applicant has been in contact with the Walker River Irrigation District.



Conceptual Site Plan

Drainage:

The Walker River Irrigation District (WRID) holds blanket easements to construct, operate and maintain irrigation and drainage ditches, flumes, pipe lines and other conduits over and across the parcels on which the project is located as may be necessary to for the irrigation and drainage of lands located within the District's boundaries, including ingress and egress onto properties where those easements are situated. As such, the WRID will continue to work with the applicant to review the project as it progresses toward development to make sure the two parties can operate in a mutually acceptable arrangement. The General Manager of WRID has stated that WRID must approve any future development plans for the project prior to issuance of a site improvement permit/building permit for the project.

The project will be required to meet the 2024 Drainage Guidelines adopted by Lyon County.

Traffic Plan

The applicant has also provided a Traffic Impact Study (TIS). The applicant has had meetings with NDOT and Staff and the following outlines the timeline.

- October 16, 2025: Scoping meeting with NDOT. NDOT identified intersections to be analyzed for the TIS.
- December 17, 2025: TIS was submitted to Lyon County and NDOT.
- January 13, 2026: Review comments from NDOT received.
- January 22, 2026: Applicant submitted a response letter and updated TIS to NDOT and the County.
- February 20, 2026: Additional review comments from NDOT received.

Final approval from NDOT has not been granted at this time. The NDOT review letters, Applicant response letter and updated TIS (January 22, 2026) are attached to this report.

The project proposes three primary accesses to the site, as shown on the Conceptual Site Plan on the previous page. The north access will serve the small portion of the site that is on the east side of Hwy 95A. The central access will provide access to the bulk of the central portion of the site that is part of the previous CUPs. The south access site is to the west, off of Sierra Way, at the intersection with Butte Way.

As reviewed by staff, the Traffic Impact Study (TIS) submitted for the project does provide a comprehensive analysis of regional traffic impacts. The study evaluates intersections at Sierra Way, Ramsey Weeks Cutoffs and four potential Project Access Drives. At NDOTs request, the TIS update included the addition of the Monarch Data Center constructions traffic. The analyses also included looking at the addition of left turn lanes and a temporary traffic signal at Hwy 95A And Sierra Way. Their conclusions were that the temporary traffic signal at Hwy 95A and Sierra Way is recommended to increase safety and improve traffic operations during high volume construction periods due to the high speed on US-95A.

Visual Impact Study

The images that follow are from the Visual Simulation Report. The entire Visual Impact Assessment Memo is attached to this report and depicts the existing landscape and second renderings of the same picture with the project simulated in the image.

KOP 1 Original Image: Sierra Way and Butte Way, looking north

KOP 1 Simulation: Sierra Way and Butte Way, looking north

KOP 2 Original Image: Hwy 95A and Site Entrance Central, looking southwest

KOP 2 Simulation: Hwy 95A and Site Entrance Central, looking southwest

Construction and Operation

The projected construction period is estimated to be about 13 months, with the applicant estimating a peak of 350 construction workers during this time (700 daily trips) and 66 truck trips daily. During the operations phase, approximately 1 or 2 people are expected to be sufficient to operate/maintain the facility and will be using predominately passenger vehicles.

Decommissioning

Per the applicant, the lifespan of the project is approximately 20 to 35 years. The applicant has an existing decommissioning plan associated with the prior CUPs and as a Condition of Approval for this CUP, will be required to conform with the plan. Regular maintenance and replacement schedules are expected for equipment and buildings. The County, the State, and other entities will require submittal of full decommissioning plans as part of the site improvement, grading, and building permit authorizations.

STAFF REVIEW AND COMMENTS

The proposed Conditional Use Permit application is reviewed by staff and the Planning Commission, which forward recommendations to the Board of Commissioners, for final action.

FINDINGS FOR REVIEWING A CONDITIONAL USE PERMIT

When considering applications for a CUP, staff, the Planning Commission, and the Board must evaluate the impact of the conditional use on, and its compatibility with, surrounding properties and neighborhoods in order to mitigate potential impacts of the use at a particular location and make the following Findings from Chapter 15.230.06 and the Siting Requirements from Chapter 15.336.09 (D). Staff has included those Findings and Siting Requirements in **bold type** below. Each Finding is listed with the applicant's response in *italics* and then staff's comments.

FINDINGS

Finding A: The proposed use at the specified location is consistent with the policies embodied in the adopted master plan and the general purpose and intent of the applicable district regulations;

Applicant's Response

Response: Under Title 15, which implements the adopted Master Plan, commercial solar energy conversion systems (SECS) are permitted in rural residential and industrial zoning districts subject to a Conditional Use Permit. The proposed Lux Solar Center is sited and designed to be compatible with adjacent lands and uses and to mitigate potential impacts through setbacks, placement of facilities, and adherence to performance standards and conditions of approval.

The proposal supports Master Plan goals and policies by:

- *Locating generation in an area that avoids adverse impacts on established residential settlements.*
- *Advancing economic diversification through renewable energy generation and delivery to existing and planned energy infrastructure, including the Walker River Substation.*
- *Utilizing a large parcel with minimal permanent ground disturbance and limited operational traffic and noise.*

This finding is met.

Staff Comment

Under Title 15, which implements the adopted Master Plan, commercial solar generating power facilities are allowed in rural residential districts, subject to the approval of a CUP. Compatibility with adjacent lands and uses and the mitigation of potential negative impacts is achieved for this proposed project through its design, placement, and the conditions of approval.

The proposed development is consistent with the following Lyon County Master Plan Policies, as it would be located in an area that would not adversely impact existing residential settlements and supports economic diversification through the capture and distribution of renewable energy to existing and planned energy facilities. This finding is met.

LU1.4 – Locate industrial development as designated on County-wide Land Use Plan or determined by criteria. *Industrial uses, including extractive industries, will occur in areas that are designated on the Land Use Plan. New industrial uses should only be located in areas that do not adversely impact existing residential settlements.*

LU 3.1 – Diverse Economic Base *– The County will continue to support a diverse base of jobs to provide for a broader range of employment opportunities that are geographically distributed to be near to population centers. The county will support economic diversification throughout the county to more fully utilize the broad range of skills, knowledge and abilities inherent in our workforce.*

LU 3.2 – Business and Industry Locations that are Consistent with Future Land Use Plan – Encourage commercial and industrial development to locate in designated locations shown on the Land Use Plan, where public facilities exist or are planned to accommodate such development cost-effectively. The Land Use Plan will reserve adequate lands for jobs and industry.

Finding B. The proposed use is compatible with the character and integrity of adjacent development and neighborhoods and includes improvements or modifications either on-site or within the public rights-of-way to mitigate development related adverse impacts, such as traffic, noise, odors, visual nuisances, or other similar adverse effects to adjacent development and neighborhoods;

Applicant's Response

Chapter 15.336.09 (D) of the Lyon County Code lists the siting requirements for commercial solar power generating facilities that are intended to encourage the development of commercial solar energy conversion systems while protecting the public health, safety, and general welfare. The previously permitted project on the same ownership is closer to both the nearest residence and the nearest lake than the proposed project; therefore, the proposed layout would result in fewer new impacts than those already approved.

15.336.09: SOLAR GENERATION, COMMERCIAL:

1. Parcel Size: A minimum parcel size of ten (10) acres net is required. No part of the commercial SECS shall be located within or over drainage, utility or other established easements.

Response: The proposed project is 280 acres in size which exceeds the minimum standard of 10 acres.

2. Setback: Each commercial SECS array must be set a minimum of one half mile (2,640 Feet) from a trail easement, highway and/or adjacent properties with an existing residential use. Setback increases to one mile (5,280 Feet) from an airport, river, perennial or intermittent stream, and/or lake. An SECS may be placed closer than 2,640 Feet from a property with an existing residential use, trail easement, or highway if it is separated by a geologic feature of a height sufficient to completely obstruct views of the commercial SECS from a point sixteen (16) vertical feet above the boundary of any Residential Zoning District.

Response: The proposed project complies with all setback requirements with the exception of the residential property line and lake setbacks, which are further detailed below.

Feature	Required Setback	Project Setback
Trail Easement	Half mile (2,640')	> Half mile (there is no trail easement in the vicinity of the project)
Highway	Half mile (2,640')	Approx. 7,146'
Adjacent property with an existing residential use	Half mile (2,640')	**Approx. 1,600' to the project boundary and 2,650' to the array (Variance requested)**
Airport	One mile (5,280')	> 1 mile (there is no airport in the vicinity of the project)
River	One mile (5,280')	> 1 mile (there is no river in the vicinity of the project)
Perennial or Intermittent Stream	One mile (5,280')	> 1 mile (there is no perennial or intermittent stream in the vicinity of the project)
Lake	One mile (5,280')	**2,789' (Variance requested)**

Ørsted is requesting a variance from the County's residential setback requirement. As depicted in the project materials, the nearest residential property line is located on a parcel approximately 1,600' feet from the project boundary and 2,650' from the nearest point of the array. The property and residence are owned by the

individuals who also own the property the proposed project is located on, as well as the property the previously permitted solar project is located on. That is the only residence in the vicinity of the proposed project. Since the previously permitted project is closer to the residence than the proposed project, the proposed layout would result in fewer new impacts than those already approved.

Ørsted is requesting a variance from the lake setback requirement. The nearest lake is located approximately 2,789' north of the project area. Since the previously permitted project is closer to the lake than the proposed project, the proposed layout would result in fewer new impacts than those already approved.

3. Components: All components of the commercial SECS must be set back from the property boundary a minimum of thirty feet (30').

Response: The Site Plan shows the proposed array well outside of the 50' setback Ørsted maintains from the property line (which exceeds the 30' setback the County requires).

4. Comstock Historic District: In addition to all other requirements, all proposed commercial SECS located within the Comstock Historic District, as established by the Comstock 38 Historical Commission pursuant to Nevada Revised Statutes chapter 4, shall receive a review, approval and a certificate of appropriateness from the Comstock Historic District Commission prior to submitting an application for a conditional use permit.

Response: The project is not located within the Comstock Historic District.

5. Height: Unless otherwise approved the total extended height of a commercial SECS shall not exceed twenty-four feet (24'). The system must be in compliance with FAA regulations regarding height and lighting.

Response: The proposed panels will not exceed a total height of 15' at maximum tilt which is meets the maximum limit of 24'.

6. Minimum Standards: Standards for access, noise, design and installation, etc., shall meet or exceed the requirements of chapter 337, "Performance Requirements For Industrial Uses", of this title. However, conditions placed on the conditional use permit may be more restrictive than the minimum standards provided in this chapter.

Response: The design meets or exceeds Chapter 337 standards. Operations will not produce discernible ground vibration beyond the property line, nor odors, dust, smoke, excessive noise, or liquid or airborne pollutants. As such, this finding is met.

7. Building Permit: A permit from the County Building Department is required to install a commercial SEC system in Lyon County. In evaluating whether to approve a building permit, the building official may request and consider:

a. Supporting technical data,

b. Test reports, and

c. Appropriate documentation from approved sources.

Response: Ørsted will secure a Building Permit for the project prior to installation of the proposed SEC system.

8. Road Impacts:

a. Developer shall be responsible for all roadway improvements necessary to support all construction and ongoing operations of the SECS, to the satisfaction of the Lyon County Road Director.

b. The project shall require two separate traffic studies: one traffic study for the construction phase of the project and a second traffic study for the operations and maintenance phase of the project. Traffic studies shall be provided at the time of application for the Conditional Use Permit.

c. SECS projects shall not block, re-route, or restrict access to public roads, including but not limited to RS 2477 roads, which provide access to public lands. The developer may propose an alternate route as a part of the Conditional Use Permit process which the Board may approve at their sole discretion. Factors considered when determining approval of an alternate route include but are not limited to changes in travel distance/time, terrain, maintenance, granting of right-of-way, and impact to surrounding properties.

Response: Ørsted commissioned a traffic study for the project which was submitted with the applications materials. The results of the study include recommendations for several improvements to nearby roads during the construction phase to address impacts to public roadways. Additional detail is provided in the study.

9. Visual Appearance: Placement of facilities shall minimize the visual impact of the development from surrounding properties and public rights-of-way. SECSs shall be constructed and/or screened as to not unreasonably infringe upon the use and enjoyment of the surrounding properties and rights-of-way. There shall be no reflection or glare permitted to impact any public rights-of-way. Developers shall submit a visual impact study to the Community Development Department at the time of the Conditional Use Permit application.

Response: Visual impacts are minimized through setbacks, equipment placement, and perimeter screening. A visual impact study was completed for the project, which included four Key Observation Points It indicates no or low visual contrast from highways and residences, and no mitigation was recommended. Glare is not anticipated due to anti-reflective panels and solar tracking, and aviation receptors are more than 10 miles away.

10. Drainage: All improvements, including necessary road improvements, shall comply with the most recent version of the Lyon County Drainage Guidelines.

Response: The project includes the installation of PV solar arrays within a 280-acre area on the property. The proposed impervious areas will be limited to pile foundations, equipment pads, and access roads. Minimal ground disturbance is anticipated due to driven pile foundations and grading will be limited to areas required for equipment pads and access roads. Ørsted commissioned a traffic study for the project, which was submitted with the applications materials. Additional detail relating to drainage from the project is provided in the study.

11. Fire Protection: All SECS projects located outside of the boundaries of a Fire Protection District must enter into an agreement with the nearest Fire Protection District to provide fire protection, inspection, and emergency medical services.

Response: Ørsted will secure approval from the Yerington/Mason Valley Fire Protection District prior to construction and implement required fire protection measures.

12. Decommission and Reclamation Plan: Developer shall submit a reclamation plan to the department as a part of a Conditional Use Permit application. The reclamation plan shall identify the life expectancy of the project and a decommissioning timeline with milestones and shall comply with all requirements in L.C.C. 15.336.12.

Response: The project will implement decommissioning measures outlined in the approved reclamation plan for the previously approved project. As such, this finding is met.

13. Reclamation: The project must be reclaimed in accordance with the reclamation plan once the project has reached the end of its useful life. If the project owner takes steps to increase the useful life of the project, the project owner must notify the Department in writing and submit a new reclamation plan reflecting the increased project life.

Response: The project will implement decommissioning measures outlined in the approved reclamation plan for the previously approved project. As such, this finding is met.

14. Variance: Deviations from the standards established by this chapter shall require a 43 variance in accordance with chapter 203 of this title.

Response: Ørsted is requesting a variance from the County's residential and lake setback requirements as detailed in Section B above.

Staff Comment

Chapter 15.336.09 (D) of the Lyon County Code, as shown in the applicant response above, lists the siting requirements for commercial solar power generating facilities that are intended to encourage the development of commercial solar energy conversion systems while protecting the public health, safety, and general welfare.

1. The proposed project is 280 acres out of a 1,593-acre parcel, meeting this requirement.
2. The applicant has requested a Major Variance (PLZ-2025-096) in order to address the setbacks. That application is being heard concurrently with the CUP.
3. The conceptual site plan has a 50-foot setback, exceeding this requirement.
4. The subject site is not located within the Comstock Historic District boundaries and, therefore, is not subject to review and approval by the Comstock Historic District Commission.
5. The proposed height of the solar panels would not exceed fifteen (15) feet, well below the maximum allowable height of twenty-four (24) feet per the newly adopted ordinance.
6. The ongoing operation of the commercial solar power generating facility would not generate odors, dust, dirt, smoke, or excessive noise.
7. The Conditions of Approval for this application require building permits to be obtained.
8. The applicant has submitted the Traffic Impact Study to NDOT and it is under review. The TIS includes both construction and operation and maintenance phases.
9. The applicant has submitted a Visual Impact Study and meets this requirement.
10. Compliance with the 2024 Lyon County Drainage Guidelines is required in the Conditions of Approval and as such, this is requirement is met.
11. The project is within the Mason Valley Fire Protection District (MVFPD) and would require the approval of a fire/life safety plan review by the MVFPD prior to the commencement of any construction on-site.
12. The applicant has a decommissioning plan, attached to this application.
13. Any extension of the planned useful life of the project will require a new decommissioning/reclamation plan.
14. The applicant has requested a Major Variance as described in item 2 above. variance from the County's residential and intermittent stream setback requirements as detailed in Section B above.

This finding is met.

Finding C. The proposed use will not generate vehicular traffic which cannot be accommodated by the existing, planned or conditioned roadway infrastructure;

Applicant's Response

With the exception of the initial construction phase, the proposed use will not generate vehicular traffic that cannot be accommodated by the existing, planned or conditioned roadway infrastructure. The CUP for the previously-approved project includes a condition of approval that would require the Applicant to enter into a road maintenance agreement with the County for the maintenance and dust control of the Sierra Way improved right-of-way during the construction period of the project. As such, this finding is met.

Staff Comment

As stated by the Applicant, the construction phase may generate vehicular traffic that requires improvements in terms of turning lanes and a temporary traffic signal. With these requirements, the traffic can be accommodated by the existing, planned or conditioned roadway infrastructure. Additionally, the CUP includes conditions requiring a road maintenance agreement with the County and dust control of the Sierra Way improved right-of-way during the construction phase. As such, this finding is met.

D. The proposed use incorporates roadway improvements, traffic control devices or mechanisms, or access restrictions to control traffic flow or divert traffic as needed to mitigate the development impacts;

Applicant's Response

As noted in the comment for Finding C, this finding is met.

Staff Comment

As noted in staff's comment for Finding C, this Finding is met in the affirmative as the project would be required to enter into a road maintenance agreement during the construction period, to the satisfaction of the County. This finding is met.

E. The proposed use incorporates features to address adverse effects, including visual impacts and noise, of the proposed conditional use on adjacent properties;

Applicant's Response

The proposed project incorporates features that address potential adverse impacts, including visual impacts on adjoining properties through property line setbacks, a 16-foot high perimeter wall where abutting residential-zoned parcels, and the location of the proposed transfer substation away from residentially-zoned properties. This finding is met.

Staff Comment

The application does incorporate features that address potential adverse impacts. This includes visual impacts and noise impacts on the adjoining residential property to the south through property line setbacks, the 16-foot high perimeter wall where abutting residential-zoned parcels, etc. This finding is met.

F. The proposed conditional use complies with all additional standards imposed on it by the particular provisions of this chapter and all other requirements of this title applicable to the proposed conditional use and uses within the applicable base zoning district, including but not limited to, the adequate public facility policies of this title; and

Applicant's Response

Our review of the regulations as well as the responses from outside reviewing agencies indicate that the proposed use complies with the additional standards required for commercial solar power generating facilities. This finding is met.

Staff Comment

Staff's review of the regulations as well as the responses from outside reviewing agencies (WRID, MVFPD, NDOT) indicate that the proposed use complies with the additional standards required for commercial solar power generating facilities.

G. The proposed conditional use will not be materially detrimental to the public health, safety and welfare, and will not result in material damage or prejudice to other properties in the vicinity.

Applicant's Response

The proposed commercial solar power generating facility would comply with County requirements intended to ensure the proposed conditional use would not be detrimental to the public health, safety, and welfare or result in material damage or prejudice to other properties in the vicinity. This finding is met.

Staff Comment

Staff has not found any facet of the proposed commercial solar power generating facility application that indicates the proposed conditional use would be detrimental to the public health, safety, and welfare or result in material damage or prejudice to other properties in the vicinity. This finding is met.

November 10, 2025

Lyon County Planning Department
27 South Main Street
Yerington, NV 89447
RE: Application Submittal : PLZ-2025-085: Lux Solar – Conditional Use Permit

Dear Lyon County Planning Department,

Ørsted is in receipt of your letter dated October 22, 2025 notifying us that our application is incomplete. Please accept the response below and attached items as requested.

1. Application Form (Signed & Notarized). Please provide documentation that the signer for the applicant is authorized to sign for Lux Solar Center, LLC and/or Orsted Onshore Devco LLC as they are listed as the managing member of Lux Solar Center, LLC. The signer could not be verified via the NV Secretary of State website.

Response: Please find the attached letter authorizing Amy Shanahan as a signatory for Lux Solar Center, LLC. For context, Lux Solar Center, LLC has no officers, and Orsted Onshore DevCo, LLC is the managing member of Lux Solar Center, LLC. Orsted Onshore North America, LLC is the direct parent of Orsted Onshore DevCo, LLC. The attached authorization letter is signed by an officer of Orsted Onshore North America, LLC.

2. Photographs: A minimum of 4 photographs of the site and any existing structures. The submittal needs one more photograph, preferably of the expansion area on the western portion of the project.

Response: Please find the attached photos of the project area, including views from the western portion of the project.

3. Justification/Findings: Additional information for the Justification/Findings written narrative is required to address the CUP Findings as listed in Lyon County Code section 15.235.04. The justification for the findings needs to address project specific details as to how the project meets the findings not just that the applicant is in compliance with the findings.

Response: A justification/findings narrative will be provided in a subsequent submittal.

4. Not-Applicable Letter: For any items that are required on the submittal requirement checklist, but not included with the application, the applicant shall provide a letter stating the reason for not providing the item (ex. Floor plans or building elevations would not be included in this application as there is no building proposed).

Response: Please find the attached Not-Applicable Letter stating the reason for items not included on the submittal requirement checklist.

5. Traffic Study: A traffic study that provides an estimate for and analyzes the impacts of the increase in traffic that would be associated with the construction phase and new business operations.

Response: Orsted submitted a traffic impact study to the County on November 3, 2025 for the proposed project (Kimley Horn, October 2025).

6. Drainage Report: A drainage study for the expansion area.

Response: A drainage study is being prepared for the project area and will be provided in a subsequent submittal.

7. Visual Impact Study: A visual impact study showing how this project would be viewed from the highway and surrounding areas.

Response: A visual impact study is being prepared for the project area and will be provided in a subsequent submittal.

8. Project Area: The narrative, maps and exhibits do not clearly show the project area for this CUP application. Please provide the following:

a. Mapping that shows the portion of APN 014-091-20 that is under consideration for this application. This should be delineated as a portion of the overall lot so the area can be easily identified.

   Response: Please find the attached Project Area Map delineating the proposed project within the overall parcel.

b. Narrative information related only to the expanded area. This is a separate CUP and in order to be able to convey this to the reviewing departments and boards, please provide only the information related to the expanded area. Referencing the previous CUP is a good background item, however, should not be lumped together at this stage.

   Response: Please find the attached revised Project Description/Narrative referencing the proposed project only (as separate from the previously permitted solar project).

c. A site plan that specifically address the expanded area to the west, not just the entire site that includes the previous CUP area.

   Response: Please find the attached updated site plan.

d. Please include the distance measurements from the setback items (property boundaries, waterways, ditches, roadways, etc.) for the expansion footprint on its own exhibit/map.

   Response: Please find the attached Setback Map showing distances to nearby features. The proposed project complies with all setback requirements, with the exception of the residential property line and lake setbacks which are further detailed below. We are requesting variances from these setback requirements.

Feature	Required Setback	Project Setback
Trail Easement	Half mile (2,640')	> Half mile (there is no trail easement in the vicinity of the project)
Highway	Half mile (2,640')	Approx. 7,146'
Adjacent property with an existing residential use	Half mile (2,640')	**Approx. 1,600' to the project boundary and 2,650' to the array (Variance requested)**
Airport	One mile (5,280')	> 1 mile (there is no airport in the vicinity of the project)
River	One mile (5,280')	> 1 mile (there is no river in the vicinity of the project)
Perennial or Intermittent Stream	One mile (5,280')	> 1 mile (there is no perennial or intermittent stream in the vicinity of the project)
Lake	One mile (5,280')	**2,789' (Variance requested)**

Ørsted is requesting a variance from the County's residential setback requirement. As depicted in the project materials, the nearest residential property line is located on a parcel approximately 1,600' feet from the project boundary and 2,650' from the nearest point of the array. The property and residence are owned by the individuals who also own the property the proposed project is located on, as well as the property the previously permitted solar project is located on. That is the only residence in the vicinity of the proposed project. Since the previously permitted project is closer to the residence than the proposed project, the proposed layout would result in fewer new impacts than those already approved.

Ørsted is requesting a variance from the lake setback requirement. The nearest lake is located approximately 2,789' north of the project area. Since the previously permitted project is closer to the lake than the proposed project, the proposed layout would result in fewer new impacts than those already approved.

Please note that the attached Site Plan shows the proposed array well outside of the 50' setback Ørsted maintains from the property line (which exceeds the 30' setback the County requires).

If you have any additional questions or requests regarding this application, please contact Thomas Gentry at tgent@orsted.com or 847-909-2694.

Sincerely,

Thomas Gentry

Manager, Development

Project Description/Narrative

Overview and purpose: Lux Solar Center, LLC proposes to construct and operate a photovoltaic (PV) solar energy facility on approximately 280 acres of private land. This standalone application shifts and modestly expands the footprint of a project permitted in 2023 (PLZ-2022-210) to accommodate NV Energy's Greenlink project. A planned Greenlink transmission corridor would bisect the previously permitted project area, necessitating the use of additional adjacent private land, including portions of a parcel previously permitted, to maintain project viability while minimizing new impacts.

Technology and layout: The Project will utilize UL-listed, commercially available crystalline silicon or thin-film PV modules mounted on single-axis tracking (SAT) structures supported by driven pile foundations. Trackers rotate east in the morning and west in the afternoon along a north–south axis to maximize energy production. The top edge of the panels will not exceed fifteen feet (15') above ground level. PV modules will use anti-reflective glass to maximize electrical output and reduce reflectance relative to typical residential and commercial glazing.

Interconnection: The point of interconnection for the Project is the Walker River Substation, located within the previously permitted project area. Because the project substation was included with the previously permitted project, no new substation is included with this application.

Siting and visual considerations: The additional land included in this application is more than one-half mile from the nearest public roads (the intersection of Butte Way and Sierra Way) and over one mile from U.S. Highway 95. The previously permitted project also allows PV arrays between these roads and the expansion area; therefore, visual effects to the public will be comparable to, and no greater than, those already evaluated and permitted. The revised project footprint and array layout are designed to minimize new impacts and maintain or increase separation from sensitive receptors relative to the prior approval.

Electrical equipment and collection: Inverters and associated pad-mounted transformers will be distributed across the site and installed on concrete equipment pads. Power will be collected via cabling to the previously permitted onsite substation with delivery to the grid.

Civil works and ground disturbance: Within the current application footprint, impervious areas will be limited to pile foundations, equipment pads, and access roads. Minimal ground disturbance is anticipated due to driven pile foundations; grading will be limited to areas required for equipment pads and access roads. Best management practices will be implemented to control dust, manage stormwater, and protect adjacent resources during construction.

Security and lighting: The site perimeter will be enclosed with a six-foot-high security fence. Project lighting will be designed to code to provide the minimum illumination necessary for safety and security and will be downward-facing and shielded to focus illumination on intended areas only.

Operations: The Project will be operated as an unattended facility with periodic maintenance. Impervious surfaces are limited, supporting onsite infiltration and minimizing runoff. The Project will comply with applicable federal, state, and local requirements throughout construction, operation, and decommissioning.

Not-Applicable Letter

Ørsted has reviewed the Development Application Submittal Requirements for a Conditional Use Permit and has provided the applicable items as requested. The following item has not been included with the application as they don't apply:

Requirement:

4a Floor Plan

4b Building Elevations

Reason for not providing items: No buildings are proposed as part of the project.

DEVELOPMENT APPLICATION SUBMITTAL REQUIREMENTS

Application Type / Submittal Requirements (Fees and number of copies needed for required information & materials are shown for each application type)	Abandonment	Administrative Design Review / Permit	Appeal of Administrative Decision	Appeal of Planning Commission Decision [5]	Approval Condition Amendment	Conditional Use Permit	Development Agreement	Development Agreement, Revision	Extension of Time Request	Hardship Exception Permit (admin. Review)	Master Plan Map Amendment	Master Plan Text Amendment	Planning Commission Determination	Pre-Application Conference (for Final Subdiv, Maps & SIPs only)	Reimbursement Agreement	Specific Plan ◆	Temporary Use Permit	Variance, Administrative (Minor [5])	Variance (Major)	Wireless Communication Facility	Wireless Communication Facility, Modification	Zoning Determination	Zoning Map Change	Zoning Text Change
☐ Application Fee	$1750	$1750	$750	$1500	$2000	$2500	$4000	$2000	$750	$850	$4250	$4250	$500	$750	$3250	$3750 [1, 2]	$500	$1000	$2000	$1500	$1250	$400	$2800 [3, 4]	$2750
☐ 1.Application Form (signed & notarized)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
☐ 2.Site Plan (full sized)		1			1*°	1*°		1	1	1	1*°						1*	1	1	1	1		1*°	
☐ 3.Reduced Site Plan (11" x 17")		1			1	1		1	1	1	1						1*	1	1	1	1			
☐ 4. A. Floor Plan		1*			1*	1*				1							1*	1*	1*	1	1			
☐ 4. B. Building Elevations		1*			1*	1*												1*	1*	1	1			
☐ 5. Map (full sized)					1*°	1*°					1*°		1	1		1°	1*	1*	1*°			1	1*°	
☐ 6. Reduced Map (11" x 17")					1*						1		1	1		1	1*	1*	1*			1	1	
☐ 7. Complete appl. - Digital (PDF only for now)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
☐ 8. Project Description / Narrative	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
☐ 9. Justification / Findings	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
☐ 10. Vicinity Map	1	1				1				1				1		1	1	1	1	1	1	1	1	
☐ 11. Title Report	1	1				1														1	1			
☐ 12. Property Legal Description/ Vesting Deed	1	1				1				1	1		1	1		1	1	1	1	1	1	1	1	
☐ 13. Photographs (min. set of four photos)	1	1			1	1				1	1		1	1		1		1	1	1	1	1	1	
☐ 14. Project Approval Letter with Conditions			1*	1*	1				1*					1*										
☐ 15. Additional Required Documents/ Information	✓	✓	✓		✓	✓		✓	✓*	✓*	✓		✓	✓		✓	✓	✓	✓	✓	✓		✓*	
☐ 16. Engineering Review Fees May Apply	◆	*			◆				◆		◆		◆	◆	◆	◆			◆			◆	◆	◆
☐ 17. Not-Applicable Letter	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
☐ 18. Complete appl. PDF /Entered to SAGE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

* If applicable and/or dependent on the type of project. ✓ Specific addl. information is required (Check with Comm. Devel. staff) ♦ Addl. information is required for Specific Plan & PUD (Check with Comm. Devel. staff) ✪ Additional copies may be required. ◆ Engineering Review Fees - Actual cost of engineering review in addition to the application fee.
1. $40 additional fee for each dwelling unit over 50. **2.** $2,750 application fee if filed and heard concurrently with PUD. **3.** $500 additional fee for each adjacent parcel with same ownership.
4. $1,750 plus $250 fee for each adj. parcel with same ownership if filed with MPA.
5. Zero fee for MINV for manufactured home size

Justifications and Findings

As listed in Lyon County Code section 15.235.04, the following narrative is provided to detail how the project addresses findings needed for a Conditional Use Permit (CUP).

Specifically, the code stipulates that "When considering applications for design review, the Director shall evaluate the impact of the design on and its compatibility with surrounding properties and neighborhoods to mitigate potential impacts of the development and make the following findings:"

A. The proposed development is consistent with the goals and policies embodied in the adopted master plan and the general purpose and intent of the applicable zoning district regulations;

Response: Under Title 15, which implements the adopted Master Plan, commercial solar energy conversion systems (SECS) are permitted in rural residential and industrial zoning districts subject to a Conditional Use Permit. The proposed Lux Solar Center is sited and designed to be compatible with adjacent lands and uses and to mitigate potential impacts through setbacks, placement of facilities, and adherence to performance standards and conditions of approval.

The proposal supports Master Plan goals and policies by:

- *Locating generation in an area that avoids adverse impacts on established residential settlements.*
- *Advancing economic diversification through renewable energy generation and delivery to existing and planned energy infrastructure, including the Walker River Substation.*
- *Utilizing a large parcel with minimal permanent ground disturbance and limited operational traffic and noise.*

This finding is met.

The proposed development is compatible with the character and integrity of adjacent development and neighborhoods and includes improvements or modifications either on-site or within the public rights-of-way to mitigate development related adverse impacts, such as traffic, noise, odors, visual nuisances, or other similar adverse effects to adjacent development and neighborhoods;

Response: Chapter 15.336.09 (D) of the Lyon County Code lists the siting requirements for commercial solar power generating facilities that are intended to encourage the development of commercial solar energy conversion systems while protecting the public health, safety, and general welfare. The previously permitted project on the same ownership is closer to both the nearest residence and the nearest lake than the proposed project; therefore, the proposed layout would result in fewer new impacts than those already approved.

15.336.09: SOLAR GENERATION, COMMERCIAL:

1. Parcel Size: A minimum parcel size of ten (10) acres net is required. No part of the commercial SECS shall be located within or over drainage, utility or other established easements.

Response: The proposed project is 280 acres in size which exceeds the minimum standard of 10 acres.

2. Setback: Each commercial SECS array must be set a minimum of one half mile (2,640 Feet) from a trail easement, highway and/or adjacent properties with an existing residential use. Setback increases to one mile (5,280 Feet) from an airport, river, perennial or intermittent stream, and/or lake. An SECS may be placed closer than 2,640 Feet from a property with an existing residential use, trail easement, or highway if it is separated by a geologic feature of a height sufficient to

completely obstruct views of the commercial SECS from a point sixteen (16) vertical feet above the boundary of any Residential Zoning District.

Response: The proposed project complies with all setback requirements with the exception of the residential property line and lake setbacks, which are further detailed below.

Feature	Required Setback	Project Setback
Trail Easement	Half mile (2,640')	> Half mile (there is no trail easement in the vicinity of the project)
Highway	Half mile (2,640')	Approx. 7,146'
Adjacent property with an existing residential use	Half mile (2,640')	**Approx. 1,600' to the project boundary and 2,650' to the array (Variance requested)**
Airport	One mile (5,280')	> 1 mile (there is no airport in the vicinity of the project)
River	One mile (5,280')	> 1 mile (there is no river in the vicinity of the project)
Perennial or Intermittent Stream	One mile (5,280')	> 1 mile (there is no perennial or intermittent stream in the vicinity of the project)
Lake	One mile (5,280')	**2,789' (Variance requested)**

Ørsted is requesting a variance from the County's residential setback requirement. As depicted in the project materials, the nearest residential property line is located on a parcel approximately 1,600' feet from the project boundary and 2,650' from the nearest point of the array. The property and residence are owned by the individuals who also own the property the proposed project is located on, as well as the property the previously permitted solar project is located on. That is the only residence in the vicinity of the proposed project. Since the previously permitted project is closer to the residence than the proposed project, the proposed layout would result in fewer new impacts than those already approved.

Ørsted is requesting a variance from the lake setback requirement. The nearest lake is located approximately 2,789' north of the project area. Since the previously permitted project is closer to the lake than the proposed project, the proposed layout would result in fewer new impacts than those already approved.

3. Components: All components of the commercial SECS must be set back from the property boundary a minimum of thirty feet (30').

Response: The Site Plan shows the proposed array well outside of the 50' setback Ørsted maintains from the property line (which exceeds the 30' setback the County requires).

4. Comstock Historic District: In addition to all other requirements, all proposed commercial SECS located within the Comstock Historic District, as established by the Comstock 38 Historical Commission pursuant to Nevada Revised Statutes chapter 4, shall receive a review, approval and a certificate of appropriateness from the Comstock Historic District Commission prior to submitting an application for a conditional use permit.

Response: The project is not located within the Comstock Historic District.

5. Height: Unless otherwise approved the total extended height of a commercial SECS shall not exceed twenty four feet (24'). The system must be in compliance with FAA regulations regarding height and lighting.

Response: The proposed panels will not exceed a total height of 15' at maximum tilt which is meets the maximum limit of 24'.

6. Minimum Standards: Standards for access, noise, design and installation, etc., shall meet or exceed the requirements of chapter 337, "Performance Requirements For Industrial Uses", of this title. However, conditions placed on the conditional use permit may be more restrictive than the minimum standards provided in this chapter.

Response: The design meets or exceeds Chapter 337 standards. Operations will not produce discernible ground vibration beyond the property line, nor odors, dust, smoke, excessive noise, or liquid or airborne pollutants. *As such, this finding is met.*

7. Building Permit: A permit from the County Building Department is required to install a commercial SEC system in Lyon County. In evaluating whether to approve a building permit, the building official may request and consider:

a. Supporting technical data,

b. Test reports, and

c. Appropriate documentation from approved sources.

Response: Ørsted will secure a Building Permit for the project prior to installation of the proposed SEC system.

8. Road Impacts:

a. Developer shall be responsible for all roadway improvements necessary to support all construction and ongoing operations of the SECS, to the satisfaction of the Lyon County Road Director.

b. The project shall require two separate traffic studies: one traffic study for the construction phase of the project and a second traffic study for the operations and maintenance phase of the project. Traffic studies shall be provided at the time of application for the Conditional Use Permit.

c. SECS projects shall not block, re-route, or restrict access to public roads, including but not limited to RS 2477 roads, which provide access to public lands. The developer may propose an alternate route as a part of the Conditional Use Permit process which the Board may approve at their sole discretion. Factors considered when determining approval of an alternate route include but are not limited to changes in travel distance/time, terrain, maintenance, granting of right-of-way, and impact to surrounding properties.

Response: Ørsted commissioned a traffic study for the project which was submitted with the applications materials. The results of the study include recommendations for several improvements to nearby roads during the construction phase to address impacts to public roadways. Additional detail is provided in the study.

9. Visual Appearance: Placement of facilities shall minimize the visual impact of the development from surrounding properties and public rights-of-way. SECSs shall be constructed and/or screened as to not unreasonably infringe upon the use and enjoyment of the surrounding properties and rights-of-way. There shall be no reflection or glare permitted to impact any public rights-of-way. Developers shall submit a visual impact study to the Community Development Department at the time of the Conditional Use Permit application.

Response: Visual impacts are minimized through setbacks, equipment placement, and perimeter screening. A visual impact study was completed for the project, which included four Key Observation Points It indicates no or low visual contrast from highways and residences, and no mitigation was recommended. Glare is not anticipated due to anti-reflective panels and solar tracking, and aviation receptors are more than 10 miles away.

10. Drainage: All improvements, including necessary road improvements, shall comply with the most recent version of the Lyon County Drainage Guidelines.

Response: The project includes the installation of PV solar arrays within a 280-acre area on the property. The proposed impervious areas will be limited to pile foundations, equipment pads, and access roads. Minimal ground disturbance is anticipated due to driven pile foundations and grading will be limited to areas required for equipment pads and access roads. Ørsted commissioned a traffic study for the project, which was submitted with the applications materials. Additional detail relating to drainage from the project is provided in the study.

11. Fire Protection: All SECS projects located outside of the boundaries of a Fire Protection District must enter into an agreement with the nearest Fire Protection District to provide fire protection, inspection, and emergency medical services.

Response: Ørsted will secure approval from the Yerington/Mason Valley Fire Protection District prior to construction and implement required fire protection measures.

12. Decommission and Reclamation Plan: Developer shall submit a reclamation plan to the department as a part of a Conditional Use Permit application. The reclamation plan shall identify the life expectancy of the project and a decommissioning timeline with milestones and shall comply with all requirements in L.C.C. 15.336.12.

Response: The project will implement decommissioning measures outlined in the approved reclamation plan for the previously approved project. As such, this finding is met.

13. Reclamation: The project must be reclaimed in accordance with the reclamation plan once the project has reached the end of its useful life. If the project owner takes steps to increase the useful life of the project, the project owner must notify the Department in writing and submit a new reclamation plan reflecting the increased project life.

Response: The project will implement decommissioning measures outlined in the approved reclamation plan for the previously approved project. As such, this finding is met.

14. Variance: Deviations from the standards established by this chapter shall require a 43 variance in accordance with chapter 203 of this title.

Response: Ørsted is requesting a variance from the County's residential and lake setback requirements as detailed in Section B above.

C. The proposed development will not generate vehicular traffic which cannot be accommodated by the existing, planned or conditioned roadway infrastructure;

Response: With the exception of the initial construction phase, the proposed use will not generate vehicular traffic that cannot be accommodated by the existing, planned or conditioned roadway infrastructure. The CUP for the previously-approved project includes a condition of approval that would require the Applicant to enter into a road maintenance agreement with the County for the maintenance and dust control of the Sierra Way improved right-of-way during the construction period of the project. As such, this finding is met.

D. The proposed development incorporates roadway improvements, traffic control devices, mechanisms or access restrictions to control traffic flow or divert traffic as needed to mitigate the development impacts;

Response: As noted in the comment for Finding C, this finding is met.

E. The proposed development incorporates features to address adverse effects, including visual impacts, of the proposed development on adjacent properties;

Response: The proposed project incorporates features that address potential adverse impacts, including visual impacts on adjoining properties through property line setbacks, a 16-foot high

perimeter wall where abutting residential-zoned parcels, and the location of the proposed transfer substation away from residentially-zoned properties. This finding is met.

F. The proposed development complies with all additional standards imposed on it by the particular provisions of this title, the Lyon County Design Criteria and Improvement Standards and all other requirements of this title applicable to the proposed development and uses within the applicable base zoning district, including but not limited to, the adequate public facility policies of chapter 110 of this title; and

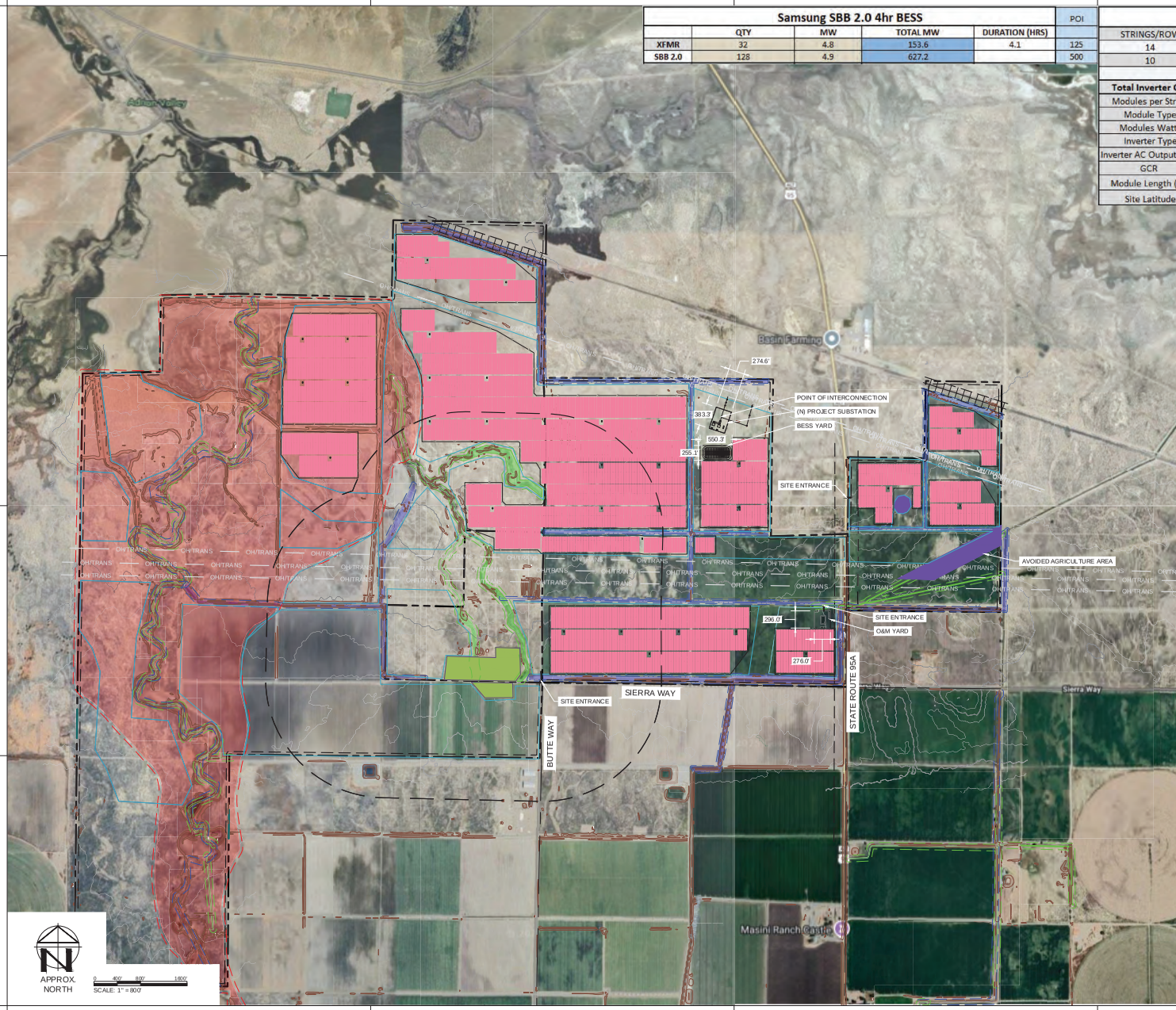
Response: Our review of the regulations as well as the responses from outside reviewing agencies indicate that the proposed use complies with the additional standards required for commercial solar power generating facilities. This finding is met.

G. The proposed development will not be materially detrimental to the public health, safety, and welfare, or result in material damage or prejudice to other properties in the vicinity. (Ord. 603, 11-1-2018)

The proposed commercial solar power generating facility would comply with County requirements intended to ensure the proposed conditional use would not be detrimental to the public health, safety, and welfare or result in material damage or prejudice to other properties in the vicinity. This finding is met.

Samsung SBB 2.0 4hr BESS					POI
	QTY	MW	TOTAL MW	DURATION (HRS)	
XFMR	32	4.8	153.6	4.1	125
SBB 2.0	128	4.9	627.2		500

(Overall) LUX			
STRINGS/ROW	Modules/ROW	Row Qty	Module Qty
14	84	3084	259,056
10	60	334	20,040
Total Inverter Qty	**33**	**Total Module Qty**	**279,096**
Modules per String	6	Total Strings	46,516.0
Module Type	FSLR-S7	Strings per Inverter	1,409.6
Modules Watts	560	Modules per Inverter	8,457.5
Inverter Type	PE FS4200M	DC per Inverter (W)	4,736,174.5
Inverter AC Output (W)	3,787,878.79	ILR (DC:AC)	1.250
GCR	0.39/19.3485'	Racking	NexTracker
Module Length (FT)	7.5459'	**Total System DC (W)**	**156,293,760.0**
Site Latitude	38d N	**Total System AC (W)**	**125,000,000.0**



LEGEND

- SOLAR TRACKER
- EQUIPMENT PAD
- PROPERTY LINE
- SETBACK
- (E) O/H TRANSMISSION LINE
- FLOODPLAIN
- FLOODPLAIN SETBACK
- WETLAND
- WETLAND SETBACK
- DITCH
- DITCH SETBACK
- 10' CONTOUR LINE
- 2' CONTOUR LINE

NOTES:

1. EQUIPMENT IS REPRESENTATIVE ONLY AND MAY CHANGE BASED ON AVAILABILITY AND MARKET CONDITIONS.
2. THIS DRAWING IS A PRELIMINARY DESIGN - NOT FOR CONSTRUCTION.
3. ALL DIMENSIONS SPECIFIED HERE ARE FOR REFERENCE ONLY; DO NOT SCALE THIS DRAWING.
4. SETBACK DISTANCES:
   - PROPERTY LINE - 50'
   - OVERHEAD T-LINE - 200' FROM CENTERLINE
   - INTERSTATE HWY - 200' FROM CENTERLINE
   - SECONDARY ROAD - 100' FROM CENTERLINE
   - WETLANDS - 50'
   - STREAMS - 25' FROM TOP OF BANK
   - FLOODPLAINS - 100' FROM EDGE

KEYED NOTES:

1. POI DESCRIPTION: 345KV PARIS - VALLEY (33.6317167°, -095.7226611°)

Ørsted

PRELIMINARY
NOT FOR CONSTRUCTION

- INTERNAL USE ONLY -	
DRAWN	MJW
DEV ENG	NB
LEVEL	I
PROJECT:	LUX-W1
FILE NAME:	—
PRELIMINARY	01.26.2026 MJW
DESCRIPTION	DATE BY
PRINTED:	01/26/2026

PROJECT: LUX SOLAR CENTER, LLC
LUX, NEVADA

DRAWING TITLE: ARRAY PLAN

DRAWING NO. WJ111

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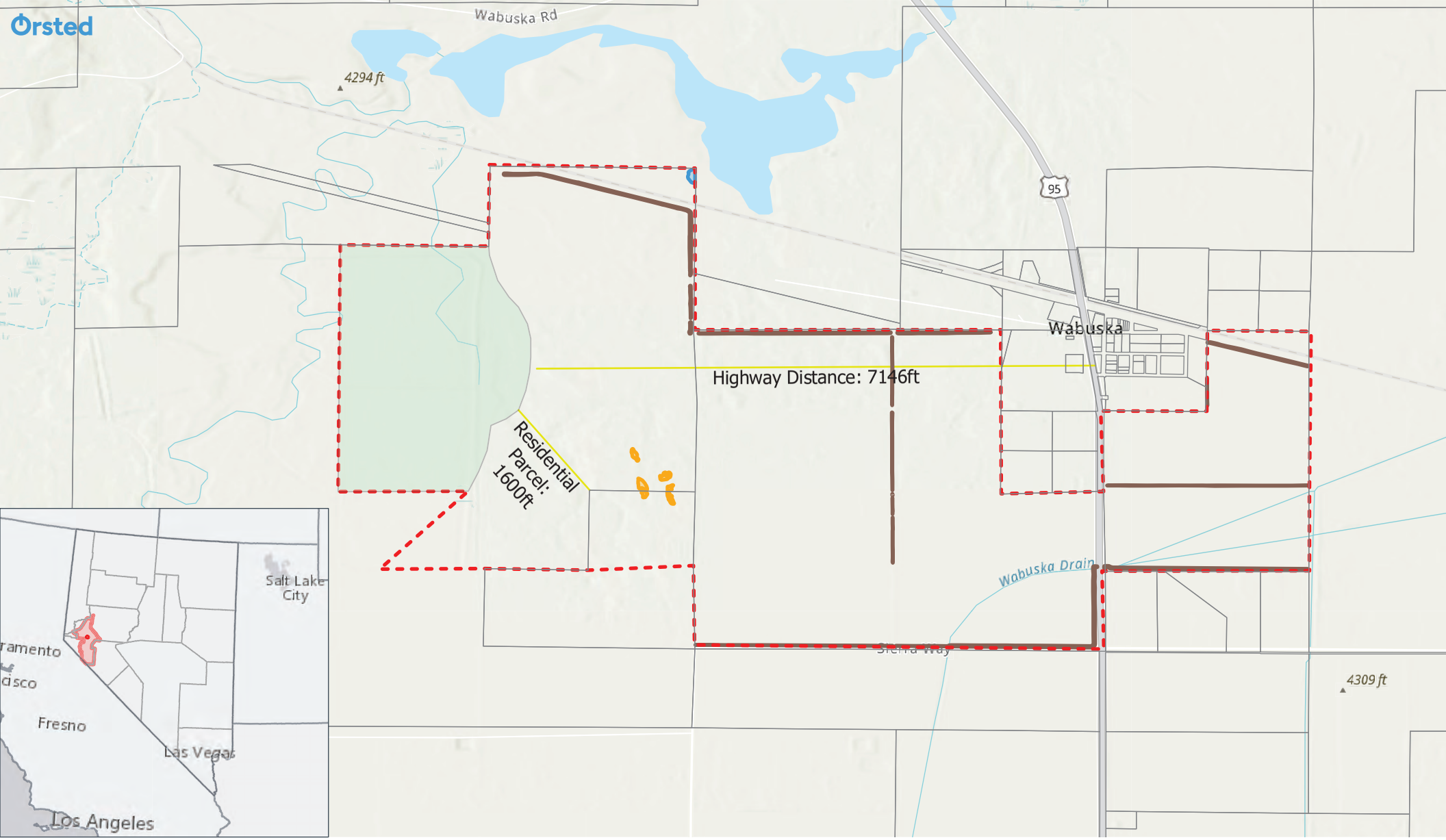
ARCH D SIZE - 24"x36" © ØRSTED


Ørsted
Wabuska Rd
4294 ft
95
Wabuska
Highway Distance: 7146ft
Residential Parcel: 1600ft
Wabuska Drain
4309 ft
Salt Lake City
Fresno
Las Vegas
Los Angeles

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547

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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
310 Galletti Way
Sparks, Nevada 89431

Joe Lombardo
Governor

Tracy Larkin-Thomason, P.E., Director

February 20, 2026

Kimley-Horn and Associates, Inc.
7900 Rancharrah Pkwy, Suite 100
Reno, NV 89511
Attention: David Giacomin, P.E.

SENT VIA ELECTRONIC EMAIL

RE: Lux Solar – Traffic Impact Study (12/27/26)

Dear Mr. Giacomin,

The Nevada Department of Transportation (NDOT) has reviewed the traffic impact study prepared by Kimley-Horn and Associates, dated January 17th, 2026, for the above-referenced project. Upon review, NDOT has the following comments and/or revision requests:

1. It is stated, "However, construction-related traffic is temporary in nature and does not warrant the construction of auxiliary deceleration lanes where operation-related traffic does not meet the applicable warrant criteria."

   NDOT requires adherence to the Access Management System and Standards for traffic generated by the project site, regardless of the project phase. For the safety of the traveling public, the developer will be required to construct any applicable deceleration or acceleration lanes as required by the AMSS.

2. Why is only half the construction traffic showing up during peak hour? Please justify and document the deviation of construction traffic from peak hour.

3. As stated in the previous revision request letter: "Per NDOT AMSS, an acceleration lane may be warranted on roads that do not meet the criteria of greater than 45 mph and 10,000 vehicles per day if there are insufficient gaps for traffic to safely enter. This issue can be addressed through a queue analysis for those movements. Please include a queue analysis for project movements at the analyzed intersections."

   The response refers to Section 4.4.1, which provides storage bay analysis for left turns at two of the intersections. Please include the queue analysis for all the turning movements from the project, including right turns, for all the intersections analyzed.

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4. For Table 13 of the study and Table 1 of the response letter, please verify the movement for the auxiliary lane and the volumes used for analysis. For example, the southbound-to-eastbound movement is a left turn, but the table shows evaluations of left- and right-turn deceleration lanes for this movement.

NDOT reserves the right to incorporate further changes and/or comments as the project implementation progresses. If you have any questions, please feel free to contact Jeff Graham at (775) 834-8382.

Sincerely,

Signed by
Kelly Gaworski
[illegible]

Kelly Gaworski, PE
Engineering Services Manager
NDOT District II

KG:jg

Enclosure: Lux Solar – Traffic Impact Study (1/27/26)
Lux Solar - Response to NDOT Comments and Revision Request (1/27/26)

Cc: Gavin Henderson – Lyon County
Alex Tang - Kimley-Horn and Associates, Inc.
Bhupinder Sandhu – District Engineer
Kevin Verre – Chief NDOT Planning
Andrew Lawrence – Assistant District Engineer
Christopher Bell – NDOT Traffic Operations
NDOT District II Traffic Engineering
NDOT District II Permits Office
File

Kimley»Horn

January 27, 2026

Kelly Gaworski, PE
NDOT District II
310 Galletti Way
Sparks, Nevada 89431

RE: ***Response to Nevada Department of Transportation Comments and Revision Request***
Project Name: Lux Solar Traffic Impact Study
Project Location: Lyon County, Nevada

Dear Ms. Gaworski,

This letter has been prepared as an item-by-item response to comments and revision requests from the Nevada Department of Transportation (NDOT) dated January 13, 2026 for the Lux Solar Traffic Impact Study. The project is located in Lyon County, NV. The NDOT comment and revision request letter is included in **Attachment A**.

Comment 1: *Please conduct an analysis according to NDOT's Access Management System and Standards (AMSS) for all proposed access points along US 95A. This should include an examination of required access types, design vehicle requirements, access spacing, auxiliary lane warrant analysis, and other considerations for construction traffic and build-out scenarios.*

Response 1: The updated traffic impact study now analyzes NDOT's AMSS for all proposed access points along US 95A. It should be noted that after discussion with the client, Project Access Drive C will no longer be pursued for access. Project Access B and Project Access Drive D are proposed to be full access driveways and meet the spacing requirements defined in the NDOT AMSS. Driveway throat width and curb radius should be designed to the standards outlined in Table 4-28 and 4-29 of the NDOT AMSS.

Deceleration lane warrants were evaluated where project traffic is expected to impact the road network. Left turn deceleration warrants were evaluated using Table 4-13 of the AMSS. Right turn deceleration warrants were evaluated using Table 4-17 of the AMSS. Deceleration lane warrants were evaluated for the 2028 and 2048 background plus project scenarios and the 2028 background plus construction scenario. A summary of the auxiliary lane analysis is provided in **Table 1**.

Table 1 – Summary of NDOT AMSS Auxiliary Deceleration Lane Analysis

Intersection	Scenario	Movement	Auxiliary Left-Turn Lane	Auxiliary Right-Turn Lane
US-95A and Project Access Drive B	2028 and 2048 Background Plus Project	Southbound to Eastbound	May be Required	May be Required
	2028 Background Plus Construction	Southbound to Eastbound	Required	May be Required
US-95A and Project Access Drive D	2028 and 2048 Background Plus Project	Northbound to Westbound	May be Required	May be Required
		Southbound to Eastbound	May be Required	May be Required
	2028 Background Plus Construction	Northbound to Westbound	Required	Required
		Southbound to Eastbound	May be Required	Required
US-95A and Sierra Way	2028 and 2048 Background Plus Project	Northbound to Westbound	Required	May be Required
	2028 Background Plus Construction	Northbound to Westbound	Required	Required

It should be noted that the operations of a solar field are minimal and are not expected to pose a significant safety risk on the US 95A corridor. Additionally, the vehicle type accessing the site during the operations phase is anticipated to be predominantly passenger vehicles and would not impose any additional risk that heavy vehicles may impose. During the construction phase of the project, intermittent heavy-vehicle traffic will access the site at the proposed project access drives. However, construction-related traffic is temporary in nature and does not warrant the construction of auxiliary deceleration lanes where operation-related traffic does not meet the applicable warrant criteria.

Project Access Drive B is anticipated to serve sporadic construction phase project trips. As such, no auxiliary deceleration lanes are recommended at Project Access Drive B. The west leg of Project Access Drive D is anticipated to serve significant construction phase traffic originating from the north. As such, a southbound to westbound right-turn lane is recommended to be constructed. US-95A and Sierra Way (#3) is anticipated to serve as the project's main entry point, a northbound to westbound left-turn lane and a southbound to westbound right-turn lane are recommended to be constructed for the safety of traffic during the operations phase.

Comment 2: *Per NDOT AMSS, an acceleration lane may be warranted on roads that do not meet the criteria of greater than 45 mph and 10,000 vehicles per day if there are insufficient gaps for traffic to safely enter. This issue can be addressed through a queue analysis for those movements. Please include a queue analysis for project movements at the analyzed intersections.*

Response 2: A queue analysis for the project access driveways is included in Section 4.4.1 of the updated traffic impact study. Upon review of all proposed accesses on US-95A, a maximum 95th percentile queue of two vehicles was identified during the construction phase. Based on this and the LOS analysis, there is anticipated to be sufficient gaps for vehicles to enter US-95A from the project access driveways during the construction and operation phase.

Comment 3: *Please include the proposed Monarch Data Center construction trips for the analysis of the construction phase.*

Response 3: The updated traffic impact study includes the Monarch Data Center construction trips in the 2028 background plus construction scenario. The following recommendation has been added to the report: In the event peak construction for this project occurs concurrently with peak construction for the Monarch Data Center project, it is recommended that Lyon County work with the NDOT to identify additional temporary mitigation as necessary at the intersections of:

- US-50 and Ramsey Weeks Cutoff (#1)
- US-95A and Ramsey Weeks Cutoff (#2)

Comment 4: *Please address the project construction phasing, with the proposed beginning and end dates.*

Response 4: Construction will begin March 2027 and end March 2028.

Comment 5: *NDOT typically does not permit temporary construction access when alternative access is available to the site. Please address the need for additional access points via temporary construction access and address why the permanent access points would not suffice.*

Response 5: The updated traffic impact study now analyzes Construction Access (D) as Project Access Drive (D) and will be a permanent access point. Project Access Drive C is no longer being pursued for this project. As documented in the revised study, Project Access Drive (D) is compliant with NDOT AMSS.

Comment 6: *For the project trip generation estimates, please perform an analysis with all of the workers arriving during the peak hour. This is consistent with traffic studies for similar projects in the area.*

Response 6: The previously submitted traffic impact study erroneously stated that the 183 AM peak hour construction trips and the 123 PM peak hour construction trips shown in Table 2 were not related to worker arrival and departure from the construction

site. After discussions with the client, the 183 AM trips and 123 PM trips are anticipated to be the maximum number of workers arriving during the respective peak hour. The volume of daily traffic of 766 is expected to be the highest volume generated during solar facility construction and is not expected to last for the duration of the project (one year).

Please contact me at 775-200-1981 or david.giacomin@kimley-horn.com should you have any questions or need any additional information.

Sincerely,

David J Giacomin, P.E., PTOE, RSP_1
Project Engineer

Attachments:
Attachment A – NDOT Comment and Revision Request Letter

ATTACHMENT A

NDOT Comment and Revision Request Letter

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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
310 Galletti Way
Sparks, Nevada 89431

Joe Lombardo
Governor

Tracy Larkin-Thomason, P.E., *Director*

January 13, 2026

Kimley-Horn and Associates, Inc.
7900 Rancharrah Pkwy Suite 100
Reno, NV 89511
Attention: David Giacomin, P.E.

SENT VIA ELECTRONIC EMAIL

RE: Lux Solar – Traffic Impact Study (12/17/25)

Dear Mr. Giacomin,

The Nevada Department of Transportation (NDOT) has reviewed the traffic impact study prepared by Kimley-Horn and Associates, dated December 17th, 2025, for the above-referenced project. Upon review, NDOT has the following comments and/or revision requests:

1. Please conduct an analysis according to NDOT's Access Management System and Standards (AMSS) for all proposed access points along US 95A. This should include an examination of required access types, design vehicle requirements, access spacing, auxiliary lane warrant analysis, and other considerations for construction traffic and build-out scenarios.

2. Per NDOT AMSS, an acceleration lane may be warranted on roads that do not meet the criteria of greater than 45 mph and 10,000 vehicles per day if there are insufficient gaps for traffic to safely enter. This issue can be addressed through a queue analysis for those movements. Please include a queue analysis for project movements at the analyzed intersections.

3. Please include the proposed Monarch Data Center construction trips for the analysis of the construction phase.

4. Please address the project construction phasing, with the proposed beginning and end dates.

5. NDOT typically does not permit temporary construction access when alternative access is available to the site. Please address the need for additional access points via temporary construction access and address why the permanent access points would not suffice.

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6. For the project trip generation estimates, please perform an analysis with all of the workers arriving during the peak hour. This is consistent with traffic studies for similar projects in the area.

NDOT reserves the right to incorporate further changes and/or comments as the project implementation progresses. If you have any questions, please feel free to contact Jeff Graham at (775) 834-8382.

Sincerely,

Signed by:
Kelly Gaworski
0B63A74DA2BE4A8...

Kelly Gaworski, PE
Engineering Services Manager
NDOT District II

KG:jg

Enclosure: Lux Solar – Traffic Impact Study (12/17/25)

Cc: Gavin Henderson – Lyon County
Louis Cariola – Lyon County
Alex Tang - Kimley-Horn and Associates, Inc.
Bhupinder Sandhu – District Engineer
Kevin Verre – Chief NDOT Planning
Andrew Lawrence – Assistant District Engineer
Christopher Bell – NDOT Traffic Operations
NDOT District II Traffic Engineering
NDOT District II Permits Office
File

TRAFFIC IMPACT STUDY

LUX SOLAR

LYON COUNTY, NEVADA

APNs: 014-091-20, 014-091-21, 014-091-02, and 014-091-03

Prepared for:
Orsted Onshore North America, LLC
401 North Michigan Avenue, Suite 501
Chicago, IL 60611

Prepared by:
Kimley»Horn

January 2026
292187000
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TRAFFIC IMPACT STUDY

FOR

LUX SOLAR

Prepared for:
Orsted Onshore North America, LLC
401 North Michigan Avenue, Suite 501
Chicago, IL 60611

Prepared by:
Kimley-Horn and Associates, Inc.
7900 Rancharrah Parkway
Suite 100
Reno, Nevada 89511
(775) 200-1981

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Appendix I Site Plan

1. INTRODUCTION

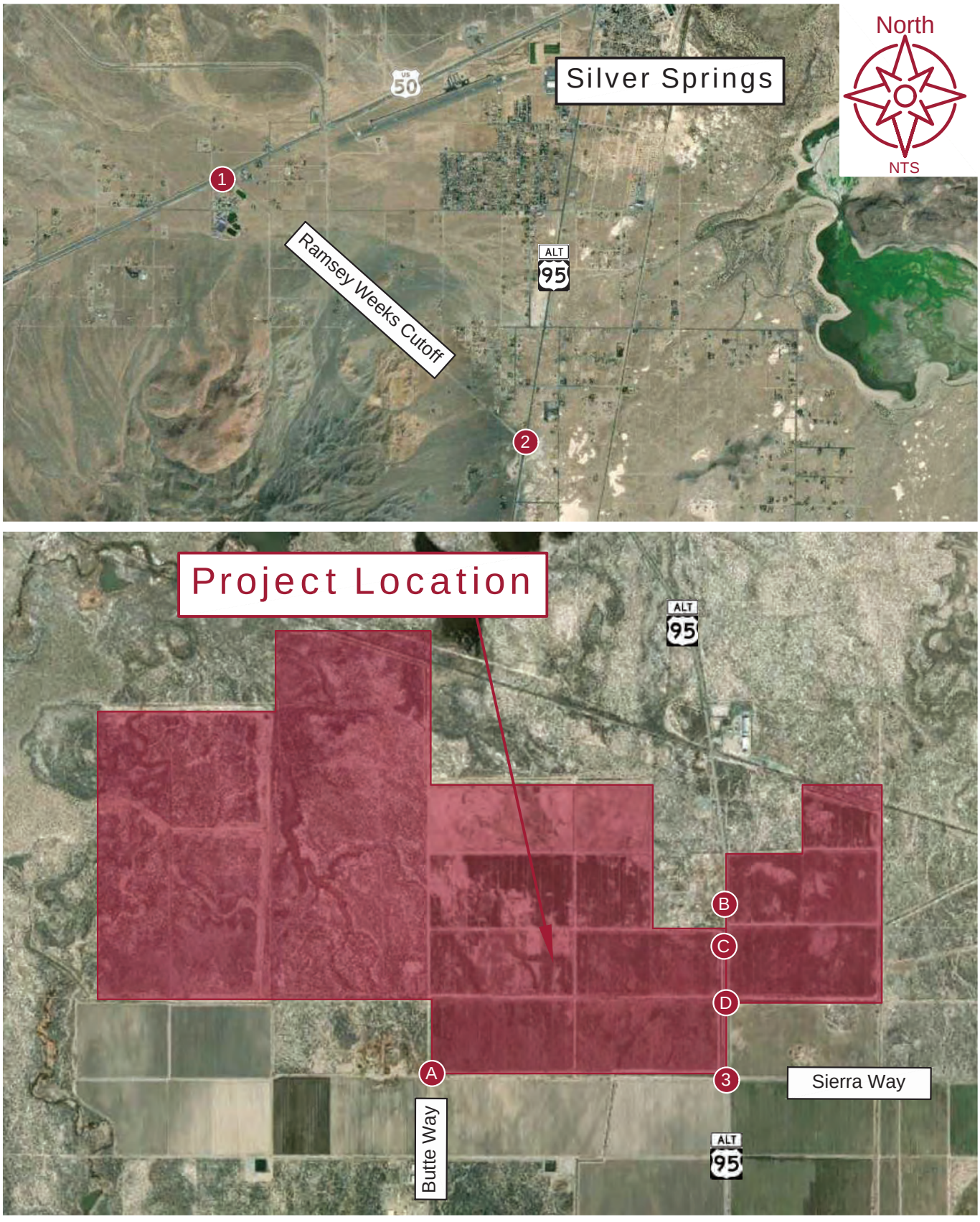
Kimley-Horn has been retained by Orsted Onshore North America, LLC to prepare a traffic impact study for the proposed Lux Solar development. The purpose of this traffic impact study is to identify the project's trip generation characteristics, potential traffic-related impacts on the local street network and develop mitigation measures recommended for the identified impacts.

The proposed project is located approximately 10 miles north of Yerington, Nevada, with 90 percent on the northwest and 10 percent on the northeast corners of the intersection of United States Route 95 Alternate (US-95A) and Sierra Way. The project is on approximately 1,700 acres within APNs 014-091-20, -21, and 014-091-02, -03, in Lyon County, Nevada. Upon project completion, the project is anticipated to consist of a 125 megawatt (MW) photovoltaic (PV) solar project and 125 MW of battery energy storage. The project site currently consists of both undeveloped land and undeveloped agricultural land. The location of the proposed development with respect to the City of Yerington is shown in **Figure 1**. The site plan is located in **Appendix I**.

US-95A provides both regional and primary access to the project site. Direct access to the site is provided by three full access drives, two on US-95A north of Sierra Way and one on Sierra Way.

The scope by the Nevada Department of Transportation (NDOT) District II provided in **Appendix A** identified the following intersections for full analysis:

- US-50 and Ramsey Weeks Cutoff (#1)
- US-95A and Ramsey Weeks Cutoff (#2)
- US-95A and Sierra Way (#3)
- Sierra Way and Project Access Drive (A)
- US-95A and Project Access Drive (B)
- US-95A and Project Access Drive (C)
- US-95A and Project Access Drive (D)



Lux Solar
Vicinity Map

Figure 1

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Path: C:\Users\sydney.binkley\KH\Giacomin, David – Reno Civil\292187 – Orsted\000 – Lyon Solar\Figures\Figures\2025-10-15 Lux Solar Figure 1.dwg

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2. EXISTING CONDITIONS

This section of the report details existing conditions near the project site.

2.1. Study Area Intersections

A scoping meeting was held with the Nevada Department of Transportation (NDOT) District II and Lyon County on October 16, 2025, and the agencies identified the following intersections for full analysis:

- US-50 and Ramsey Weeks Cutoff (#1)
- US-95A and Ramsey Weeks Cutoff (#2)
- US-95A and Sierra Way (#3)
- Sierra Way and Project Access Drive (A)
- US-95A and Project Access Drive (B)
- US-95A and Project Access Drive (C)
- US-95A and Project Access Drive (D)

2.2. Existing Land Uses

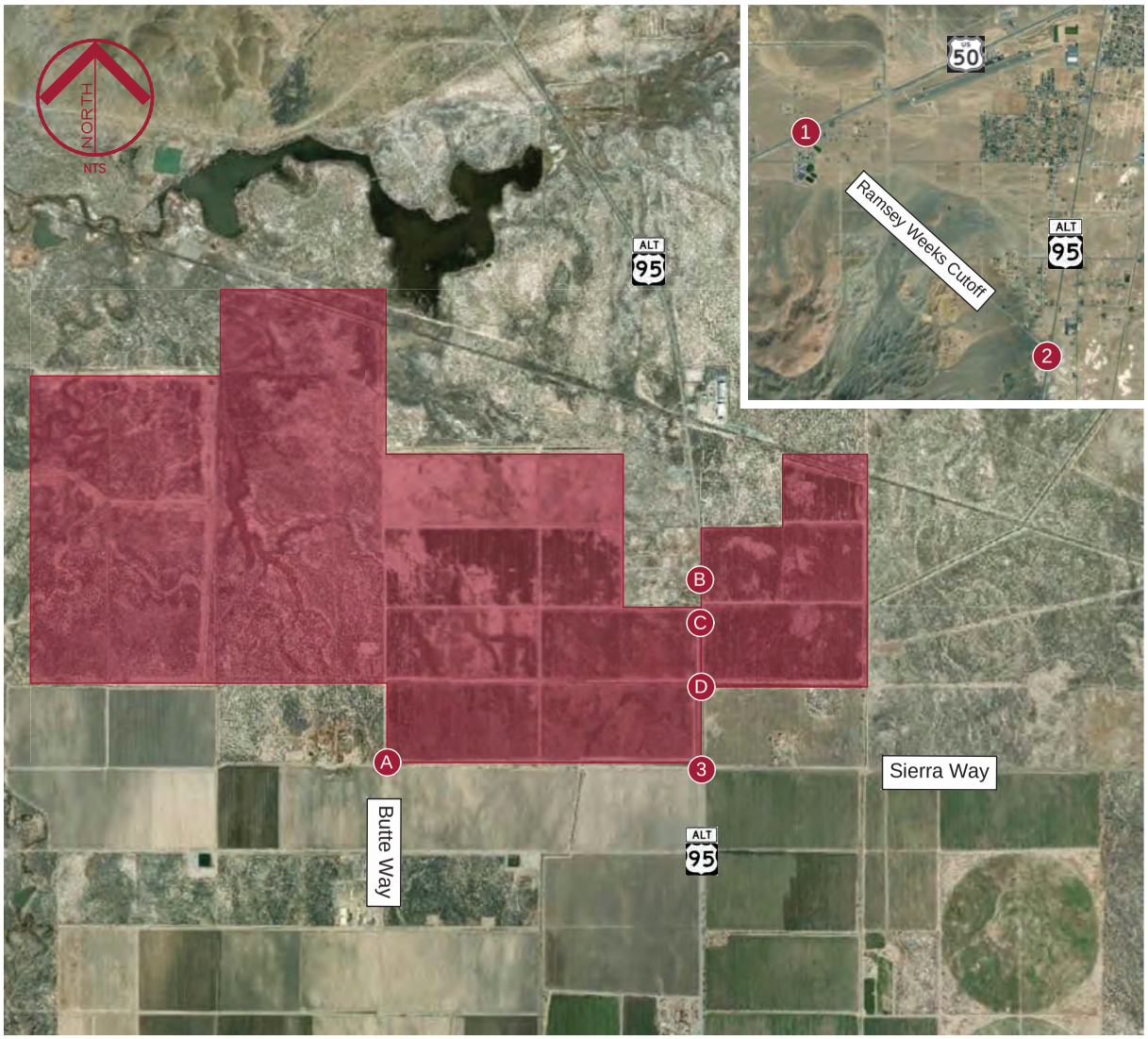
The location of the proposed project is currently undeveloped and agricultural land. The land uses surrounding the project site includes industrial, residential, agricultural, and undeveloped land uses. The location of the project site, study area intersections, and existing land uses are shown on **Figure 2**.

2.3. 2025 Existing Lane Configuration and Control

US-95A provides both regional and primary access to the project site. Existing speed limits, lane configurations, and traffic control at the time of this study are illustrated in **Figure 3**.

2.4. Existing Turning Movements

Existing AM and PM peak hour turning movement data was field counted for the study area intersections identified in **Section 2.1** on Tuesday, October 22, 2025. Data was collected for 24-hours for each intersection. For conservative analysis, the highest peak hour in the AM and PM were used to analyze the conditions at peak traffic on the street network. A summary of the peak hour count data at the study area intersections is shown in **Figure 4** and the count data sheets are provided in **Appendix B**. It should be noted that existing vehicle trips at the intersections of Sierra Way and Project Access (A), US-95A and Project Access Drive (B), US-95A and Project Access Drive (C), and US-95A and Project Access Drive (D) were interpolated based on collected data at the intersection of US-95A and Sierra Way (#3).



Source: Nearmap US, Inc. Image Date: October 2025

Study Area Intersections

1. US-50 and Ramsey Weeks Cutoff (#1)
2. US-95A and Ramsey Weeks Cutoff (#2)
3. US-95A and Sierra Way (#3)
4. Sierra Way and Project Access Drive (A)
5. US-95A and Project Access Drive (B)
6. US-95A and Project Access Drive (C)
7. US-95A and Project Access Drive (D)

Legend

- (#) Study Area Key Intersection
- (X) Project Access Drive

Lux Solar Traffic Impact Study
Study Area

Figure 2

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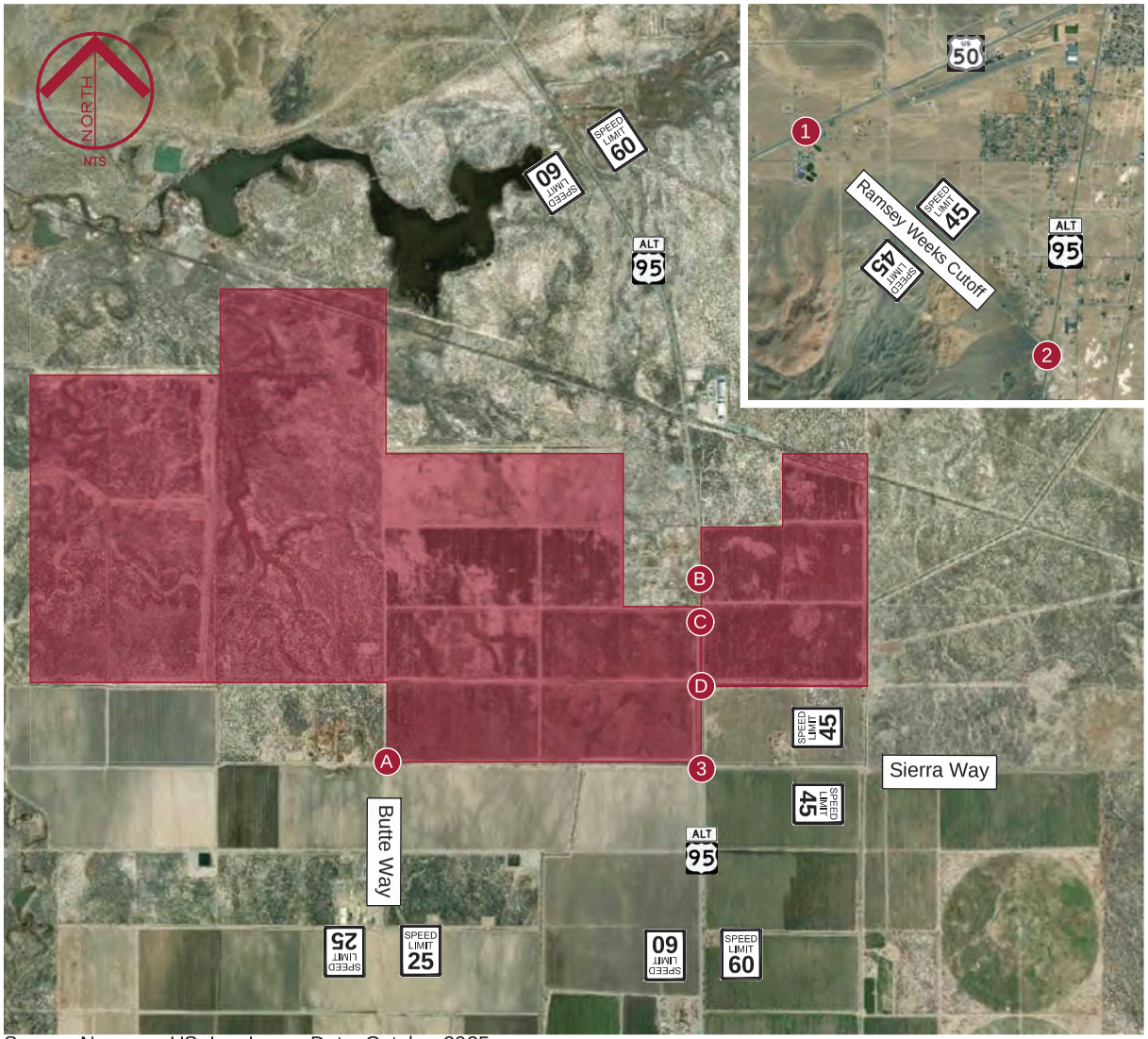
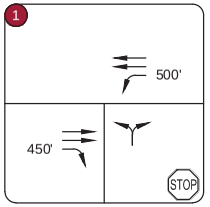
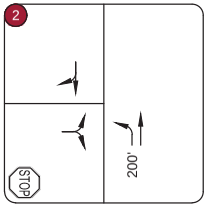
Date: January 27, 2026 – 11:57am / User: Sydney.Binkley
Path: C:\Users\sydney.binkley\KH\Giacomin, David – Reno Civil\292187 – Orsted\000 – Lyon Solar\Figures\Figures\2026-01-26 Lux Solar TIS.dwg / Xref: 2023 CC MC Street Network;2023 CC CL Street Network



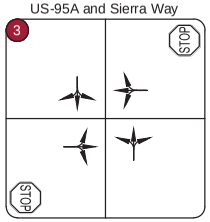
US-50 and Ramsey Weeks Cutoff



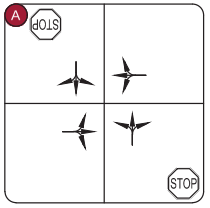
US-95A and Ramsey Weeks Cutoff



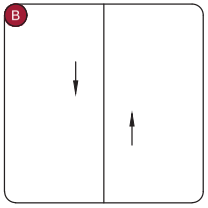
US-95A and Sierra Way



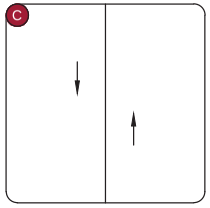
Sierra Way and Project Access Drive A



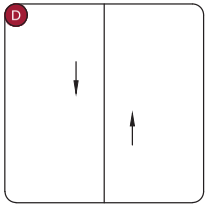
US-95A and Project Access Drive B



US-95A and Project Access Drive C



US-95A and Construction Access Drive



Legend

- Study Area Key Intersection
- Project Access Drive
- Roadway Speed Limit
- Stop Controlled Approach
- Existing Approach

Source: Nearmap US, Inc. Image Date: October 2025

Lux Solar Traffic Impact Study
2025 Existing Lane Configuration and Control

Figure 3

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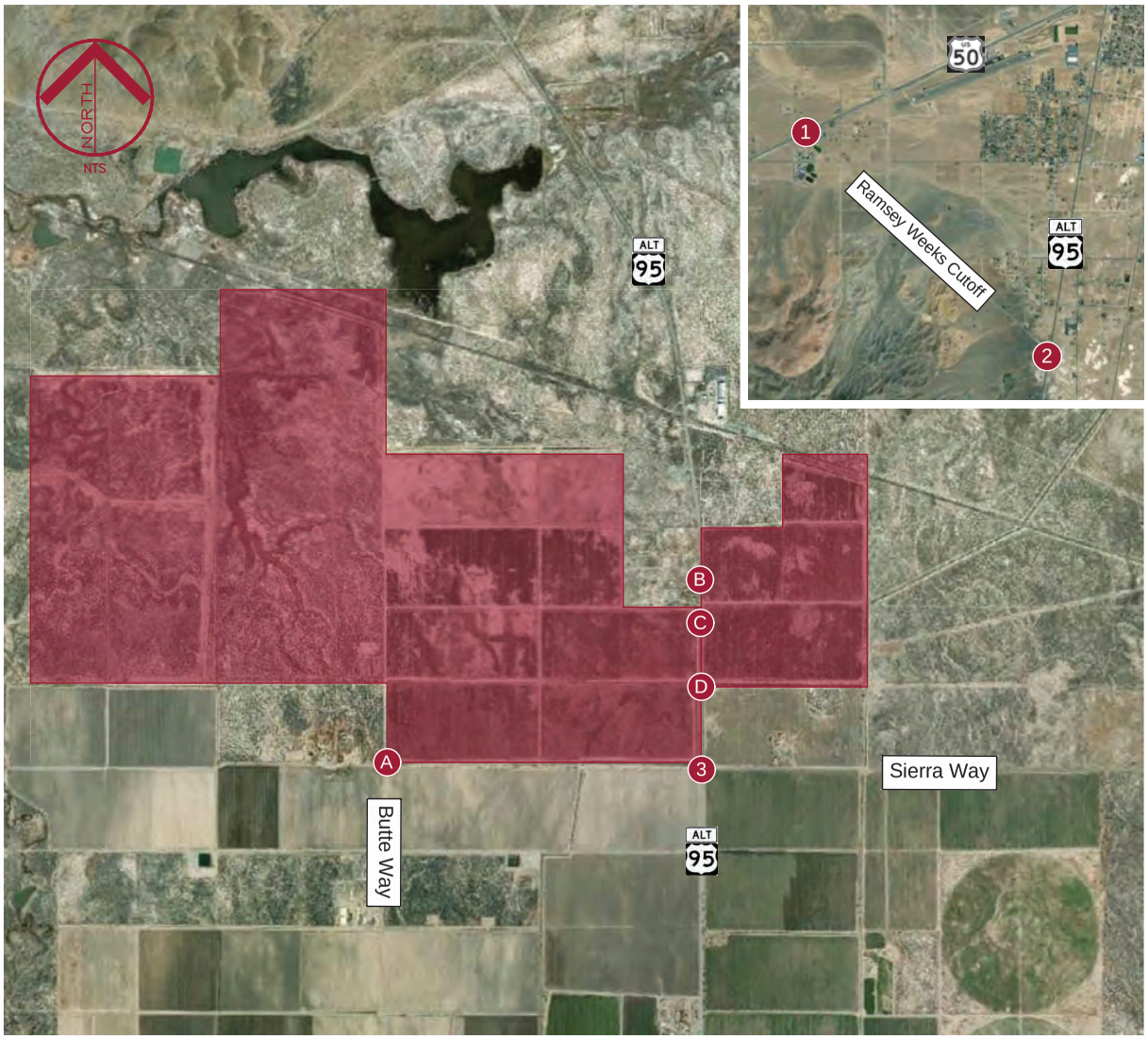

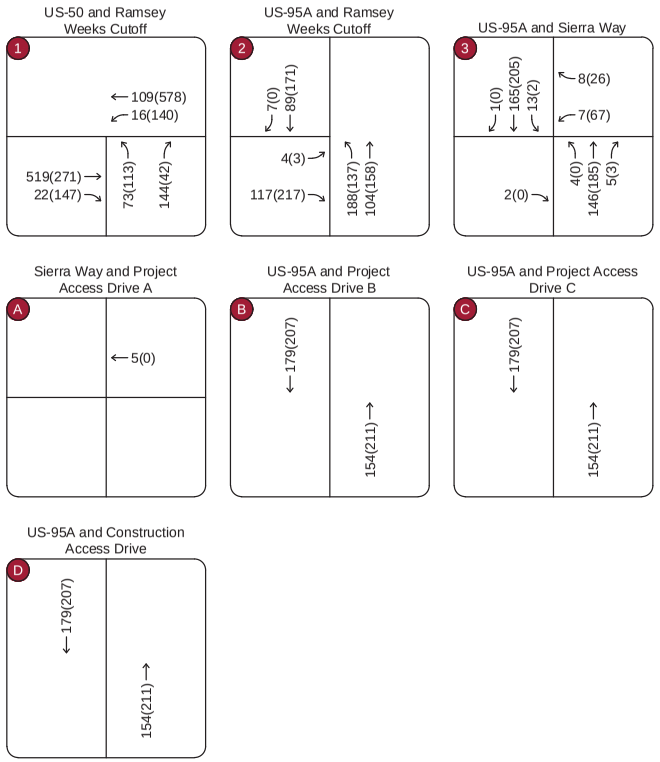

Source: Nearmap US, Inc. Image Date: October 2025

Lux Solar Traffic Impact Study
2025 Existing Peak Hour Traffic Volumes

Legend

#	Study Area Key Intersection
X	Project Access Drive
← xx (xx)	AM(PM) Peak Hour Volume

Figure 4

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3. FUTURE CONDITIONS

This section of the report details conditions that are expected in the future at the time the proposed project is expected to be completed.

3.1. 2028 Background Lane Configuration and Control

Expected speed limits, lane configuration, and traffic control in 2028 as a result of adjacent developments are shown in **Figure 6**. Changes to the existing conditions include the addition of deceleration lanes on US-95A to accommodate turning movements onto the westbound approach of US-95A and Sierra Way (#3).

3.2. 2028 Background Traffic Volumes

The operational trips of the Monarch Data Center on the east side of US-95A and Sierra Way (#3) have been included in the background traffic volumes of this analysis. Temporary construction and expected operation trips for the Monarch Data Center development are shown in **Table 1**. During the temporary construction phase, the data center project will generate 1,121 AM construction trip and 1,268 PM construction trips at peak levels. During regular operations, the data center project is anticipated to generate 506 AM and 414 PM peak hour trips. The trip generated by regular operations of the data center are reflected in the 2028 background, 2028 background plus project, and 2048 background plus project analysis of this study. At the request of NDOT, the Monarch Data Center construction trips are reflected in the 2028 background plus construction scenario.

Table 1 – Background Development Trip Generation

ITE Code	Description	Size	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
NA	Data Center Construction	4.6 million SF	1,163	58	1,121	81	1,188	1,268
160	Data Center Operations	4.6 million SF	278	228	506	124	290	414

To accurately determine the impact of project traffic, it is necessary to establish future baseline traffic volumes along roadways near the proposed development site. An annual growth rate of approximately one percent was obtained from the evaluation of four Nevada Department of Transportation (NDOT) count stations:

- US-95A, 0.45 miles North of Sierra Way (0190048)
- Sierra Way, 0.5 miles East of US-95A (0191627)
- Penrose Lane, 100ft W of US-95A (0191602)
- US-95A, 330ft N of SR 339 (0190051)

Growth rate calculations are included in **Appendix C**. The 2025 peak hour traffic volumes were grown at one percent annual growth rate for three years to obtain future background traffic volumes in 2028 when the proposed project is anticipated to be completed. The 2028 background traffic volumes are illustrated in **Figure 5**.

3.3. 2028 Background Plus Project Lane Configuration and Control

Lane configuration and control upon project completion in 2028 with the buildout of the project access road is shown in **Figure 6**. Direct access to the site is provided by four access drives. Three access driveways will be on US-95A north of Sierra Way, and one full access unsignalized driveway on Sierra Way.

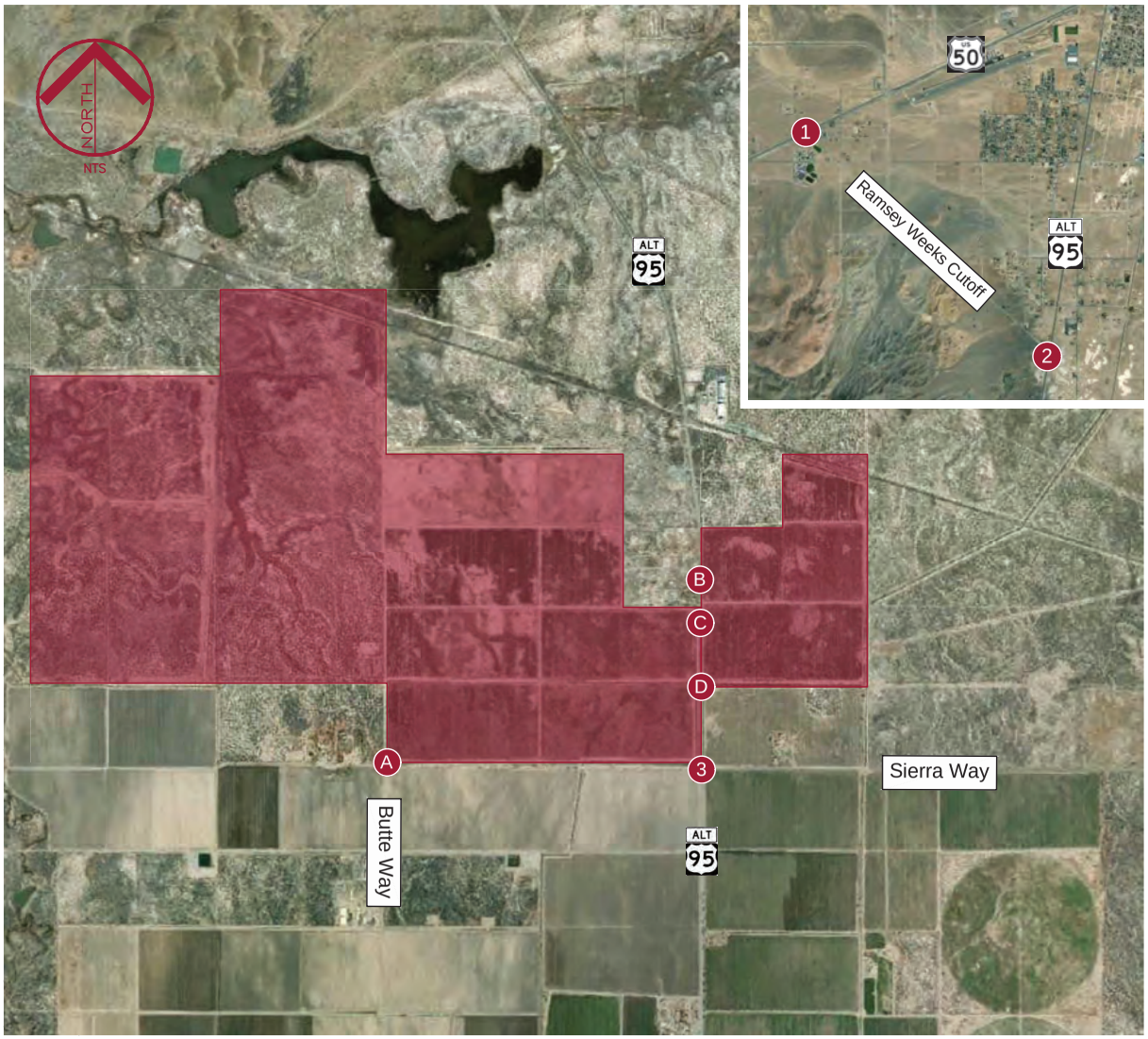
3.4. 2048 Background Lane Configuration and Control

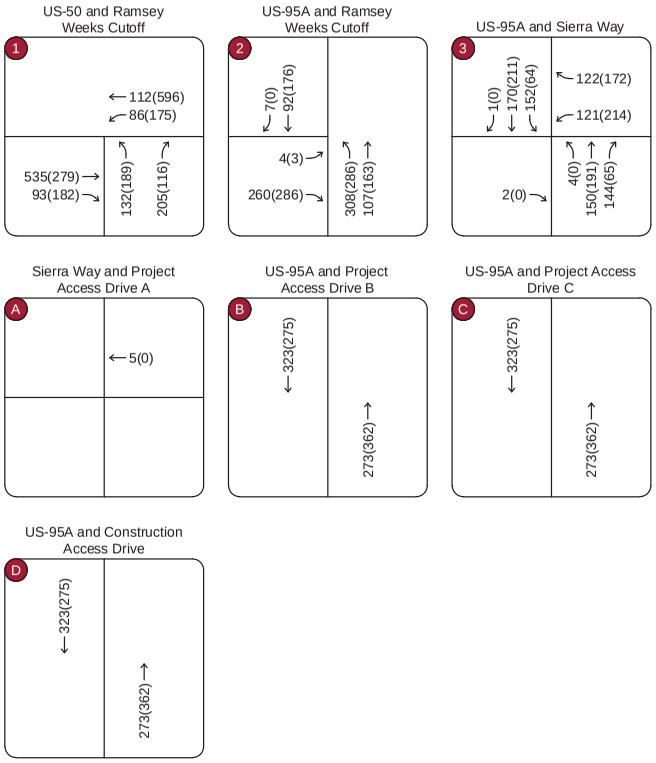
Expected speed limits, lane configuration, and traffic control in 2048 are expected to remain the same as the 2028 background with project speed limits, lane configuration, and traffic control as shown in **Figure 6**.

3.5. 2048 Background Traffic Volumes

Following the same methodology discussed in **Section 3.2**, the 2028 peak hour traffic volumes were grown for 20 years at a one percent annual growth rate to obtain future background year traffic volumes in 2048. The 2048 background peak hour traffic volumes are illustrated in **Figure 7**. The following trips were analyzed in these scenarios:

- Trips generated by typical operations of Monarch Data Center





Legend

#	Study Area Key Intersection
X	Project Access Drive
← xx (xx)	AM(PM) Peak Hour Volume

Source: Nearmap US, Inc. Image Date: October 2025

Lux Solar Traffic Impact Study
2028 Background Peak Hour Traffic Volumes

Figure 5

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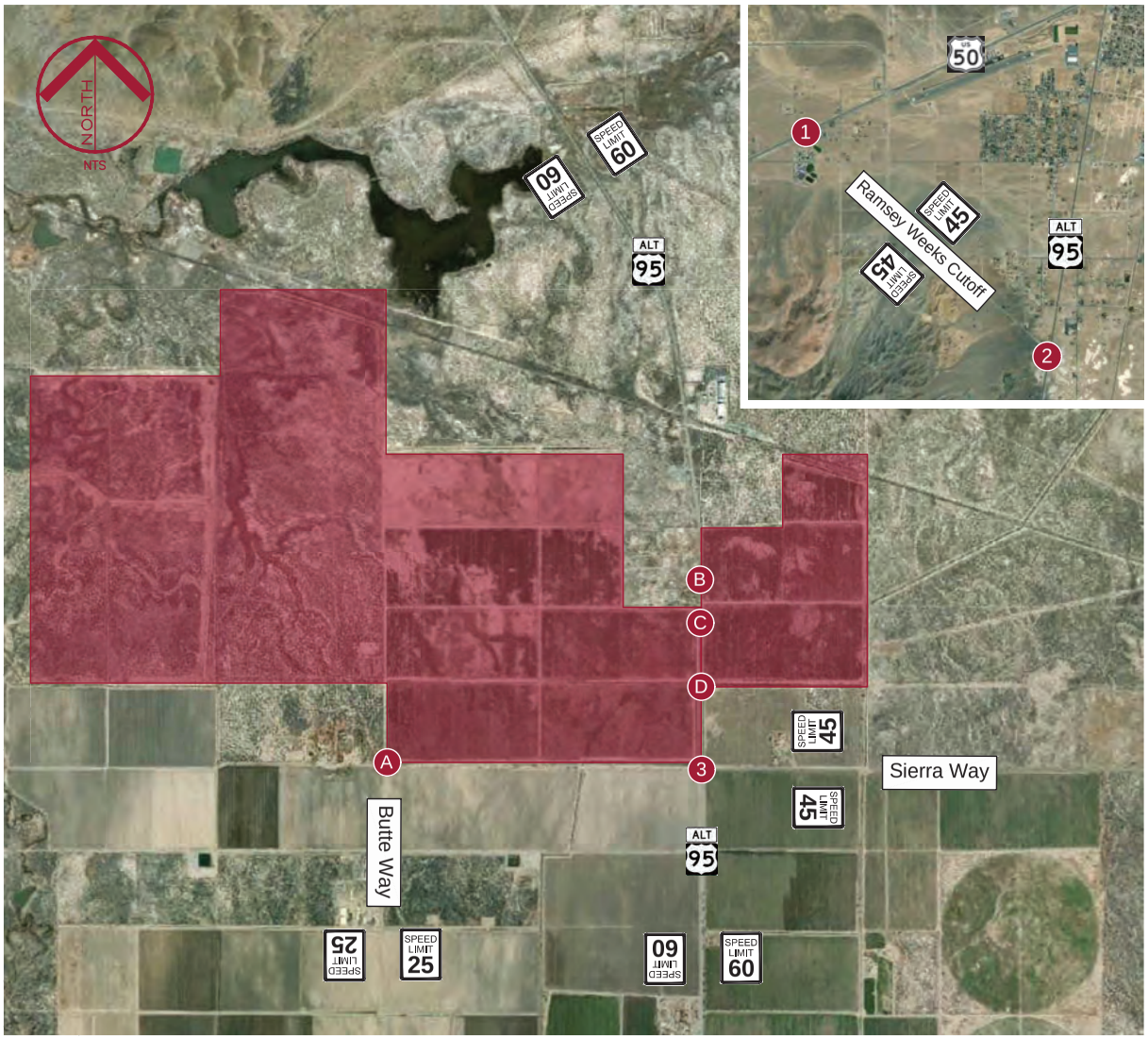

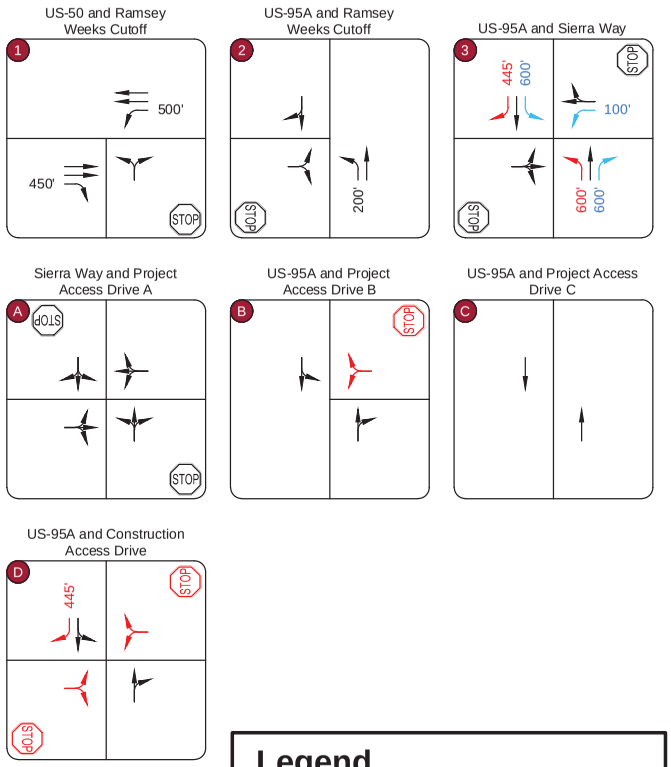

Legend

- Study Area Key Intersection
- Project Access Drive
- Roadway Speed Limit
- Stop Controlled Approach
- Existing Approach
- Background Improvement (by others)
- Project Improvement

Source: Nearmap US, Inc. Image Date: October 2025

Lux Solar Traffic Impact Study
2028 Background Plus Project Lane Configuration and Control

Figure 6

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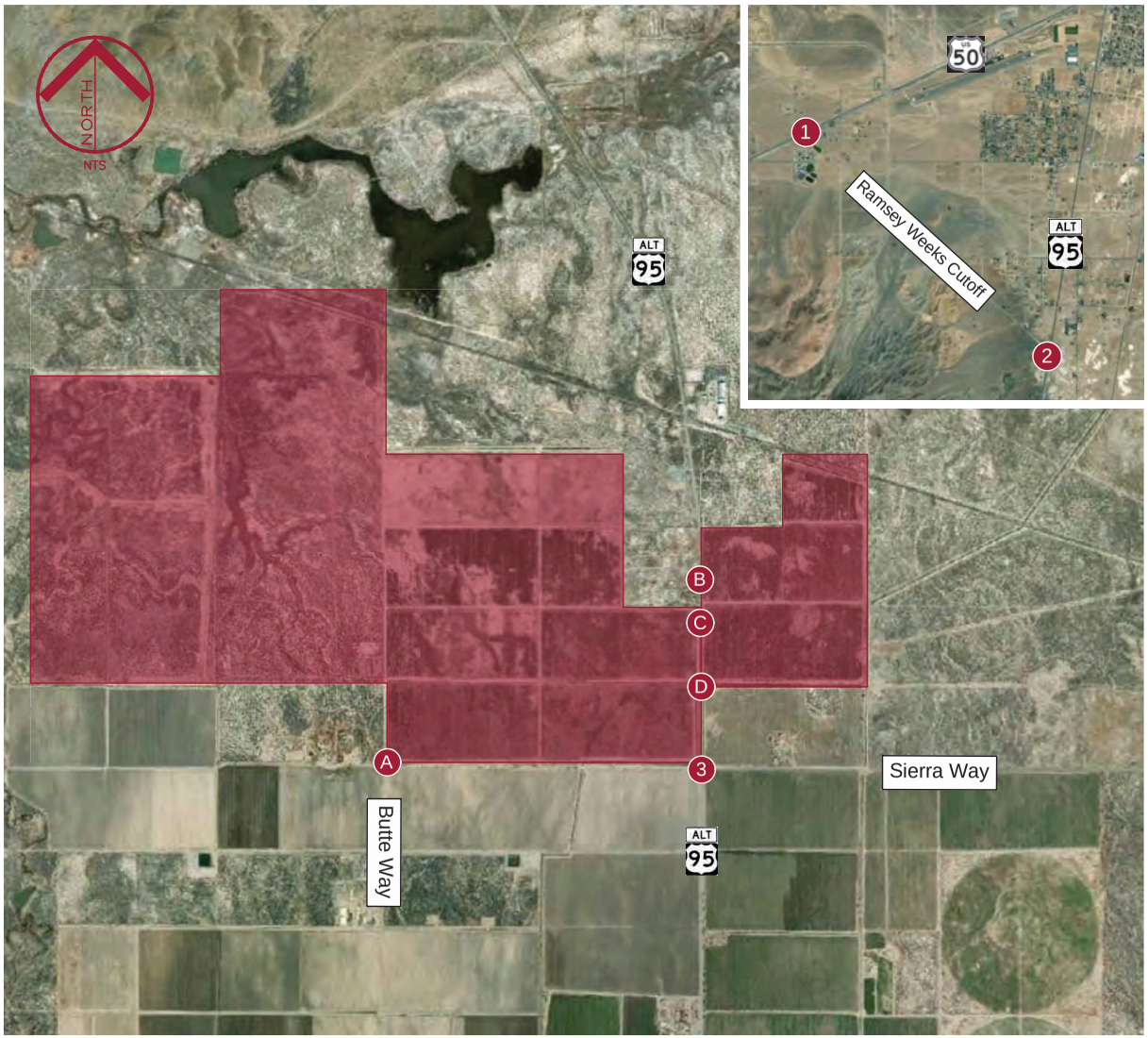

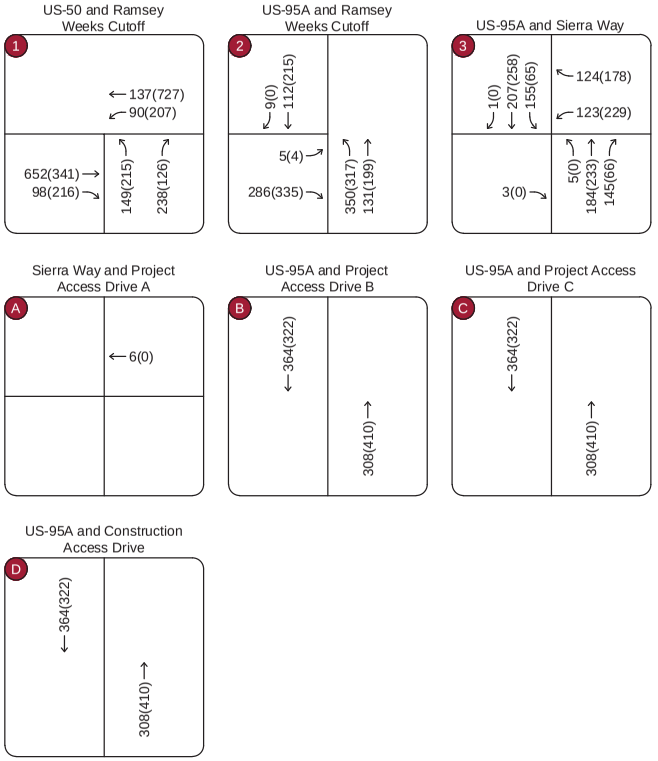

Source: Nearmap US, Inc. Image Date: October 2025

Legend

#	Study Area Key Intersection
X	Project Access Drive
← xx (xx)	AM(PM) Peak Hour Volume

Lux Solar Traffic Impact Study
2048 Background Peak Hour Traffic Volumes

Figure 7

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3.6. Trip Generation

The proposed Lux Solar is expected to have more trip generation during the construction phase than after full project buildout. At the request of NDOT and Lyon County, trip generation calculations and analysis were conducted for the project in both the construction phase and project buildout.

3.6.1. Peak Hour Construction Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual, 12th Edition does not have an applicable land use code for a solar field. As such, data from the contractor and from previously completed studies for solar projects was used. The construction trip generation used in those studies was scaled appropriately for Lux Solar based on overall project acreage and energy capacity.

Data provided by the contractor indicates there will be approximately 9,425 truck trips to the site over the course of the 13-month construction period. Assuming 22 working days a month, there are anticipated to be 66 truck trips per day. The contractor indicated that there would be a peak of 350 construction workers (700 daily trips). Anticipated peak construction volumes are shown in **Table 2**. Excerpts from studies used to estimate trip generation during construction and detailed calculations of peak construction volumes are included in **Appendix D**.

Table 2 – Project Trip Generation (Construction Phase)

User	Weekday Vehicles Trips						
	Daily	AM Peak Hour			PM Peak Hour		
	Trips	In	Out	Total	In	Out	Total
Total Trucks	66	6	1	7	1	4	5
Passenger Vehicles (350 construction workers)	700	175	1	176	1	117	118
Total Vehicles	**766**	**181**	**2**	**183**	**2**	**121**	**123**

As shown in **Table 2**, it is anticipated that up to 183 AM trips and 123 PM trips may occur during the AM and PM peak hours due to construction traffic. Construction trips were estimated using material delivery information and construction worker data specific to the project provided in **Appendix D**. AM and PM peak hour trip rates were scaled proportionately to a 279 MW facility with similar truck trip and construction worker count to obtain anticipated AM and PM peak hour construction trip data. It should be noted that these estimates are for traffic expected during traditional peak hour periods.

3.6.2. Lux Solar Project Trips During Operation Phase

The Institute of Transportation Engineers (ITE) Trip Generation Manual, 12th Edition does not have an applicable land use code for a solar field. As such, data collected from solar sites of similar size was used to calculate trip generation for the proposed project.

After the Lux Solar project has been constructed, the number of trips generated by the solar plant is expected to be significantly less than during the construction period. The project will be an unmanned facility with weekly site visits by operational personnel. On the occasion site visit it is anticipated that on the proposed 125 MW solar field and 125 MW battery energy storage is anticipated to be two employees entering and exiting throughout the day. A summary of the peak hour trips during operations is shown in **Table 3**.

Table 3 – Project Trip Generation (Operation Phase)

ITE Code	Description	Size	Total Trips					
			AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
NA	Solar Field	125 MW	2	0	2	0	2	2
Total Trips			**2**	**0**	**2**	**0**	**2**	**2**

3.7. Trip Distribution

The study area street network characteristics, including existing traffic patterns, expected street network, access to the regional facility (US-95A), and engineering judgment, were used to determine the distribution of construction generated traffic. The directional distribution of traffic is a means to quantify the percentage of site-generated construction traffic that approaches the site from a given direction and departs the site in the same or different direction.

It is anticipated that the trip distribution for temporary construction traffic and typical operations traffic after project completion will differ. **Figure 8** shows the trip distribution at the study area intersections and project access drive for construction traffic. **Figure 9** shows the trip distribution at the study area intersections and project access drive for typical operations.

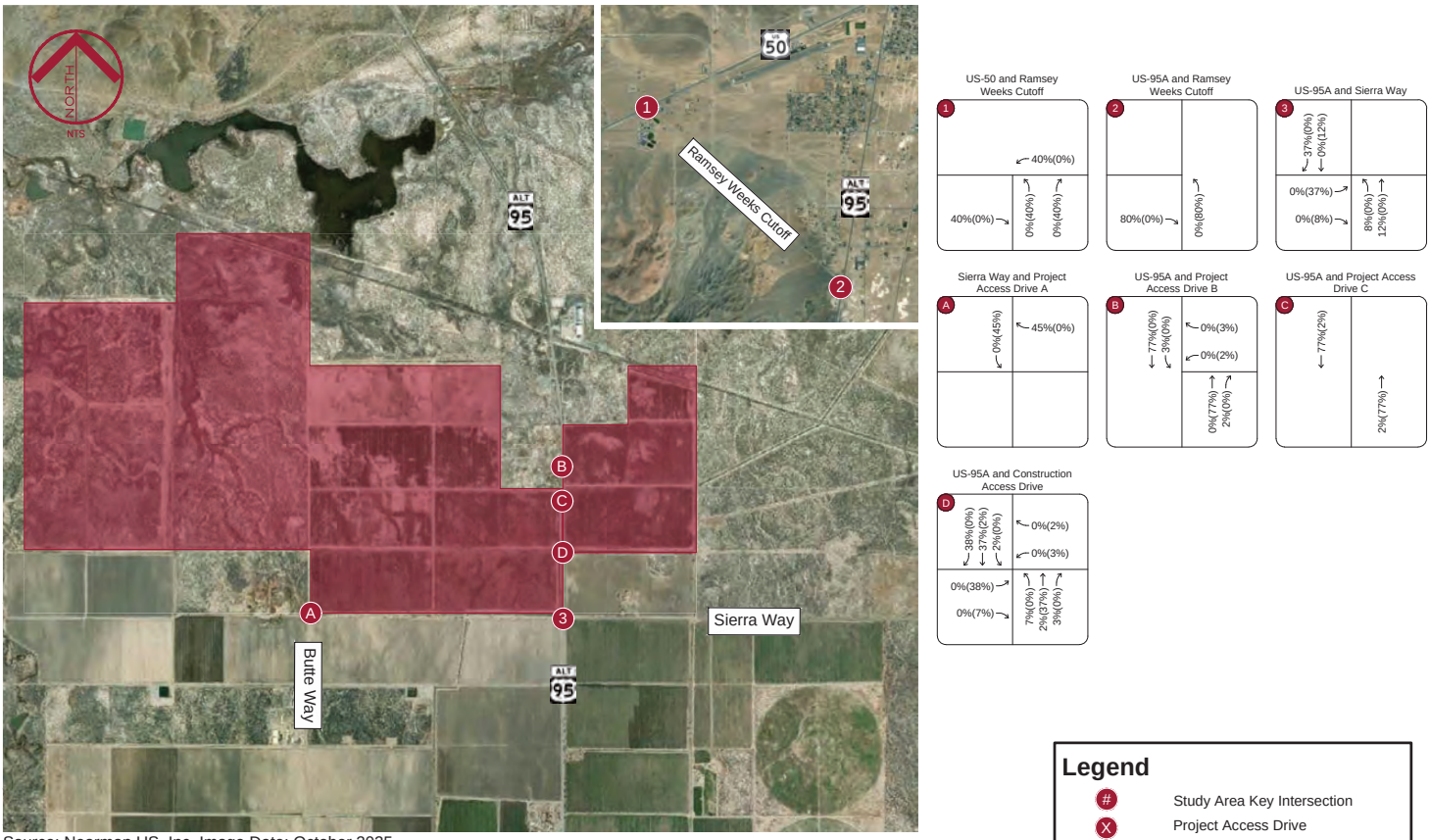
3.8. Traffic Assignment

3.8.1. Construction Traffic Assignment

Assignment of project construction traffic was obtained by applying the developed trip distribution in **Figure 8** to the estimated construction traffic generation in **Table 1**. The construction traffic assignment is illustrated in **Figure 10** for the study area intersections and project access drive. It should be noted that the entering and exiting trips at the construction and project access drives were rounded up to the nearest whole number. Therefore, the number of trips assigned to the construction and project driveways in **Figure 10** may differ slightly from the total trip generation.

3.8.2. Typical Operations Traffic Assignment

Assignment of typical operations project traffic was obtained by applying the developed trip distribution in **Figure 9** to the estimated full buildout typical operations traffic generation in **Table 3**. The typical operation traffic assignment is illustrated in **Figure 11** for the study area intersections and project access drive. It should be noted that the entering and exiting trips at the project access drives were rounded up to the nearest whole number. Therefore, the number of trips assigned to the project driveways in **Figure 11** may differ slightly from the total trip generation.



Source: Nearmap US, Inc. Image Date: October 2025

Lux Solar Traffic Impact Study
Project Trip Distribution - Construction

Figure 8

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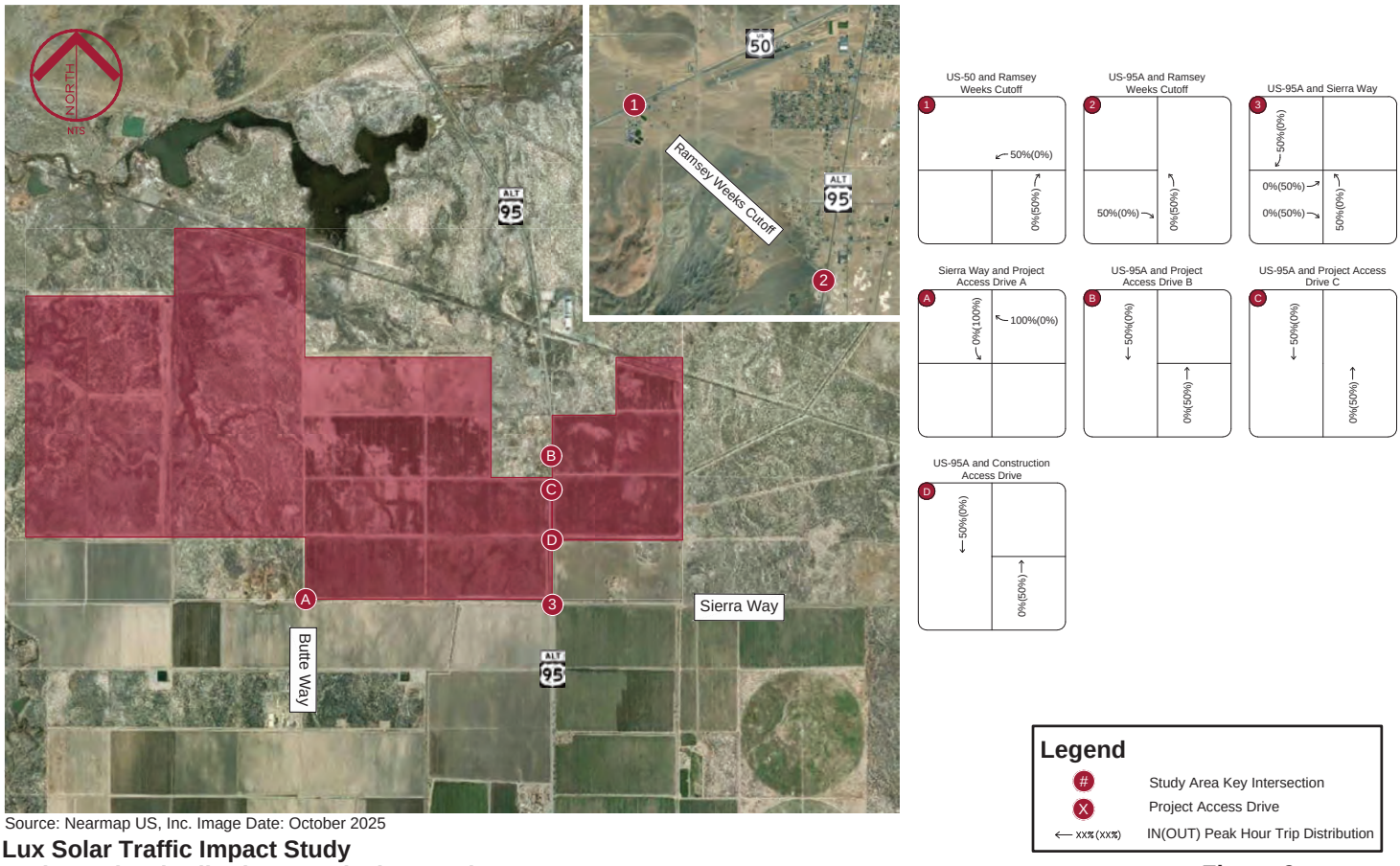

Source: Nearmap US, Inc. Image Date: October 2025

Lux Solar Traffic Impact Study
Project Trip Distribution - Typical Operations

Figure 9

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Lux Solar Traffic Impact Study
Project Traffic Assignment - Construction

Source: Nearmap US, Inc. Image Date: October 2025

Legend

- # Study Area Key Intersection
- X Project Access Drive
- ⟵ xx (xx) AM(PM) Peak Hour Volume

Figure 10

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Lux Solar Traffic Impact Study
Project Traffic Assignment - Typical Operations

Source: Nearmap US, Inc. Image Date: October 2025

Legend

- Study Area Key Intersection
- Project Access Drive
- xx (xx) ← AM(PM) Peak Hour Volume

Figure 11

Kimley»Horn

3.9. 2028 Background Plus Project Traffic Volumes

3.9.1. 2028 Background Plus Construction Traffic Volumes

The project generated construction traffic volumes shown in **Figure 10** were added to the 2028 background peak hour traffic volumes in **Figure 5** to represent estimated traffic conditions during project construction. The 2028 background plus construction traffic volumes for the study area intersections and project access drive are illustrated in **Figure 12**. The following trips were analyzed in these scenarios:

- Trips generated by construction of Monarch Data Center
- Trips generated by construction of Lux Solar.

3.9.2. 2028 Background Plus Project Traffic Volumes

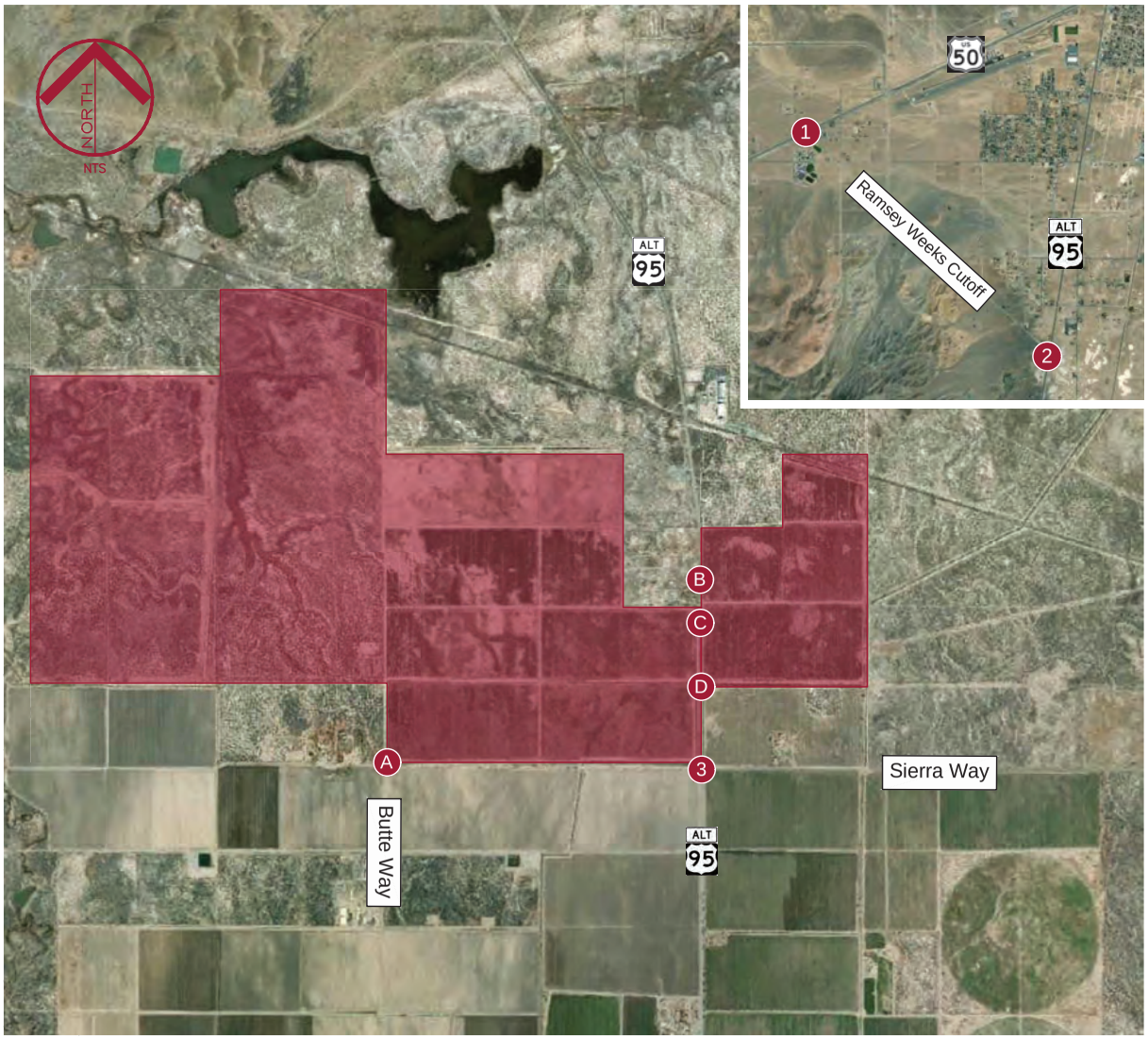
The project generated traffic volumes in **Figure 11** were added to the 2028 background traffic volumes in **Figure 5** to represent estimated traffic conditions for the project completion in 2028. The 2028 background plus project total traffic volumes for the study area intersections and project access drive are illustrated in **Figure 13**. The following trips were analyzed in these scenarios:

- Trips generated by typical operations of Monarch Data Center
- Trips generated by typical operations of Lux Solar.

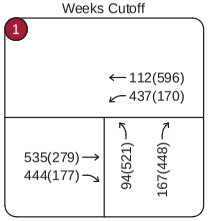
3.10. 2048 Background Plus Project Traffic Volumes

The project generated traffic volumes in **Figure 11** were added to the 2048 background traffic volumes in **Figure 7** to represent estimated traffic conditions for 2048. The 2048 background plus project total traffic volumes for the study area intersections and project access drive are illustrated in **Figure 14**. The following trips were analyzed in these scenarios:

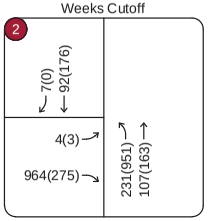
- Trips generated by typical operations of Monarch Data Center
- Trips generated by typical operations of Lux Solar.



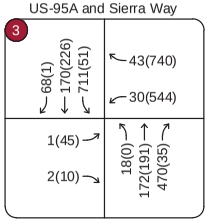
US-50 and Ramsey Weeks Cutoff



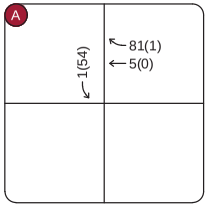
US-95A and Ramsey Weeks Cutoff



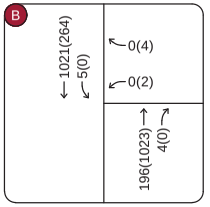
US-95A and Sierra Way



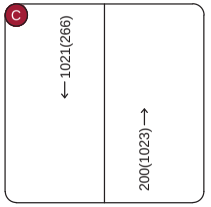
Sierra Way and Project Access Drive A



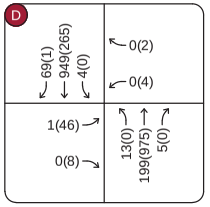
US-95A and Project Access Drive B



US-95A and Project Access Drive C



US-95A and Construction Access Drive



Legend

#	Study Area Key Intersection
X	Project Access Drive
← xx (xx)	AM(PM) Peak Hour Volume

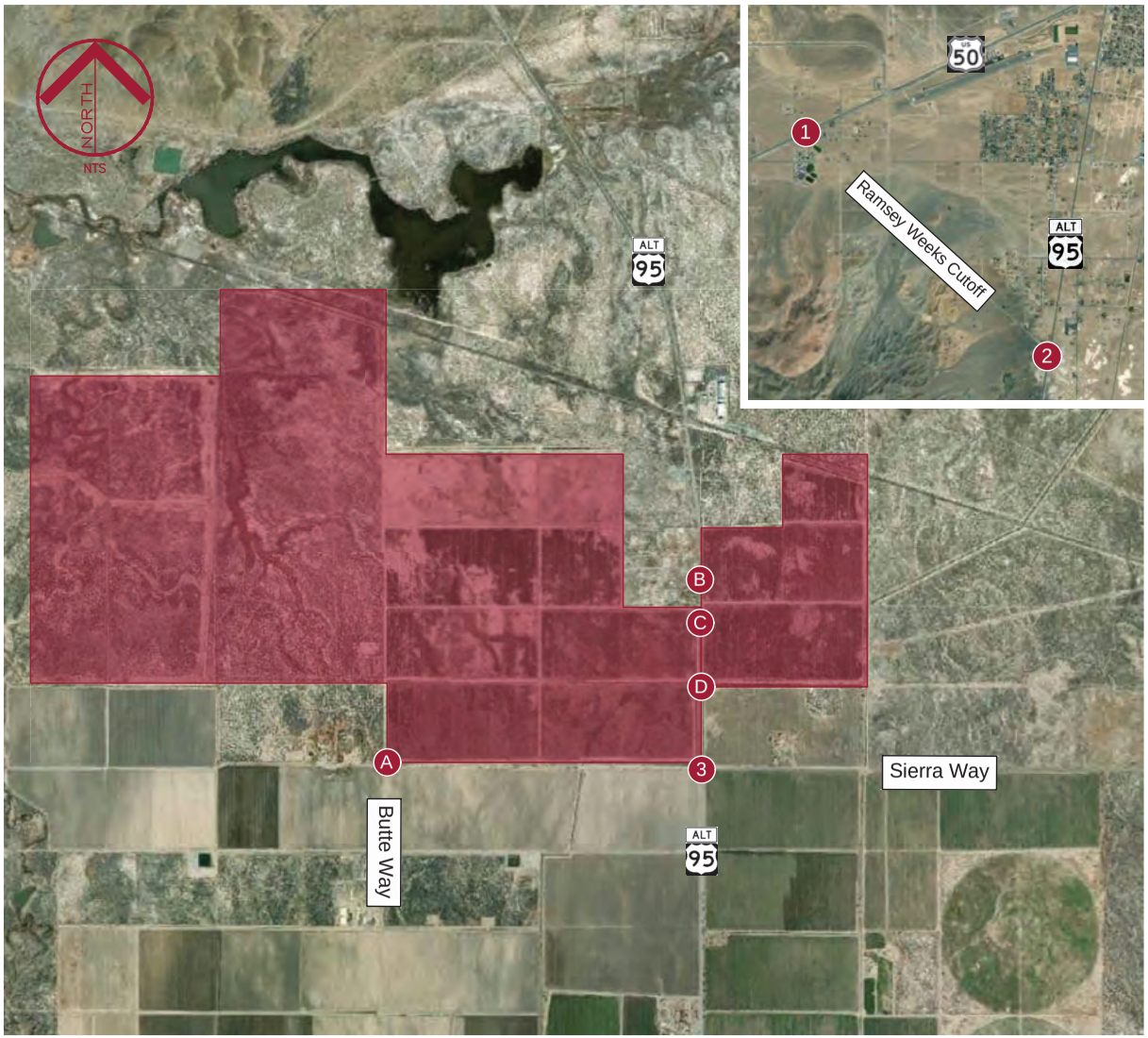
Source: Nearmap US, Inc. Image Date: October 2025

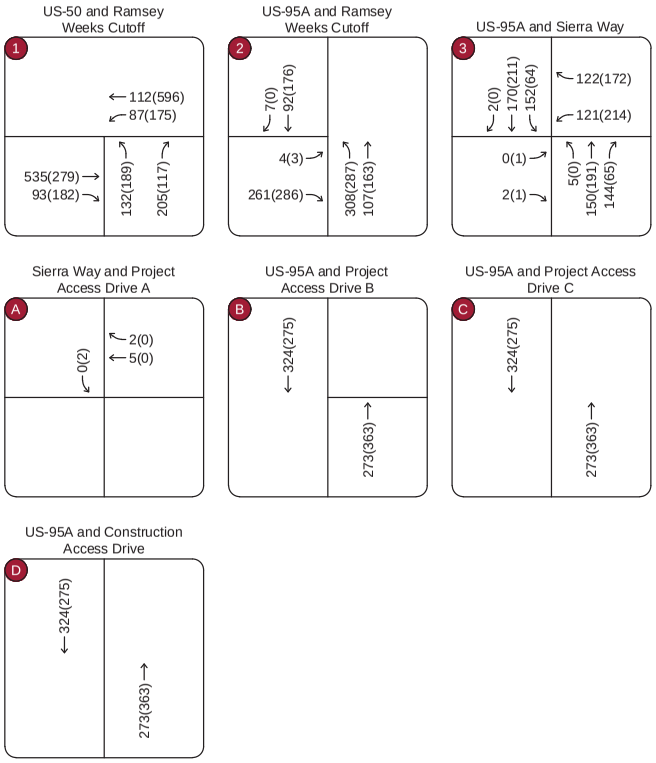
Lux Solar Traffic Impact Study
2028 Background Plus Construction Peak Hour Traffic Volumes

Figure 12

Kimley»Horn

Date: January 27, 2026 – 11:59am / User: Sydney.Binkley
Path: C:\Users\sydney.binkley\KH\Giacomin, David – Reno Civil\292187 – Orsted\000 – Lyon Solar\Figures\Figures\2026-01-26 Lux Solar TIS.dwg / Xref: 2023 CC MC Street Network;2023 CC CL Street Network





Source: Nearmap US, Inc. Image Date: October 2025

Lux Solar Traffic Impact Study
2028 Background Plus Project Peak Hour Traffic Volumes

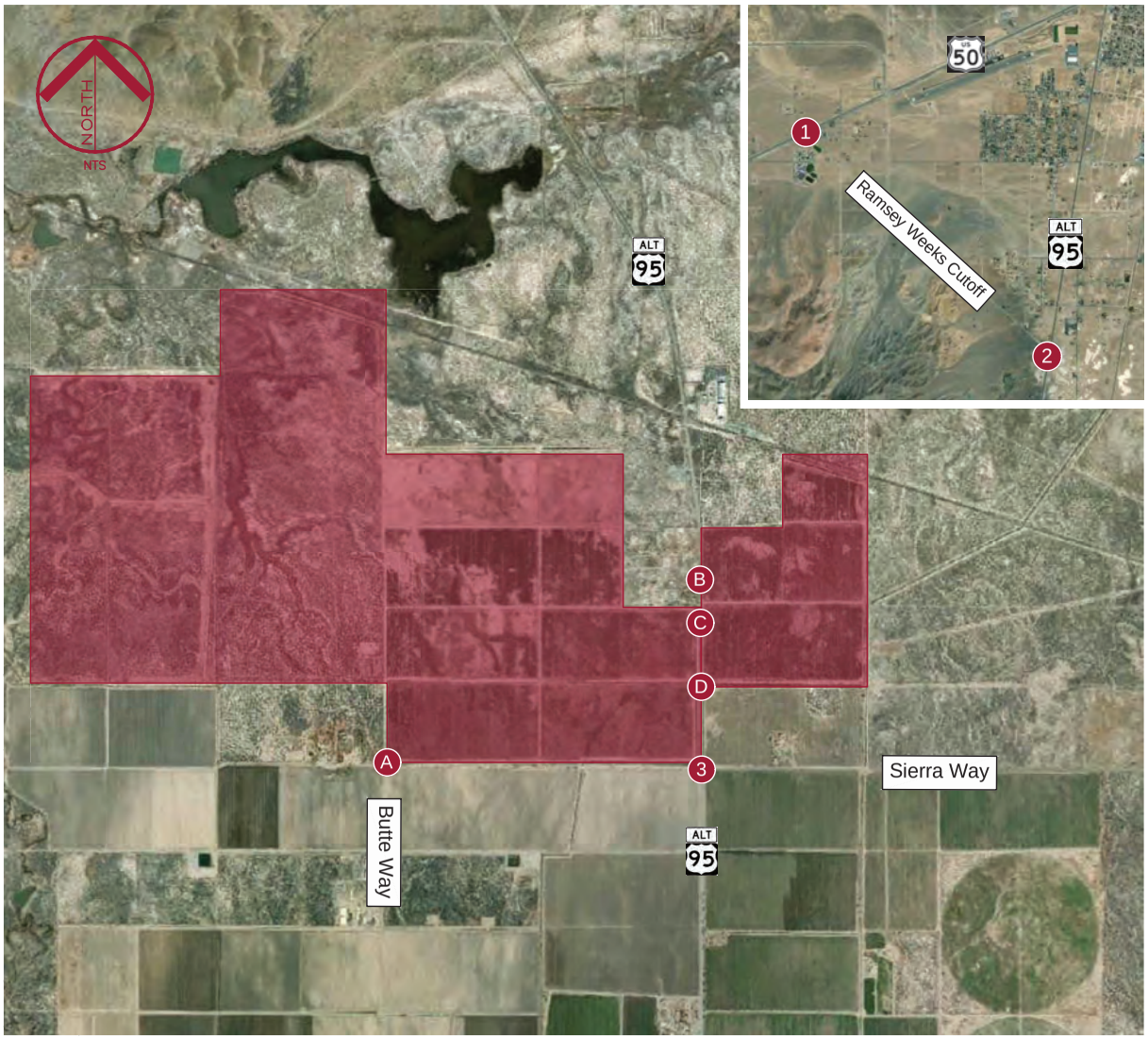
Legend

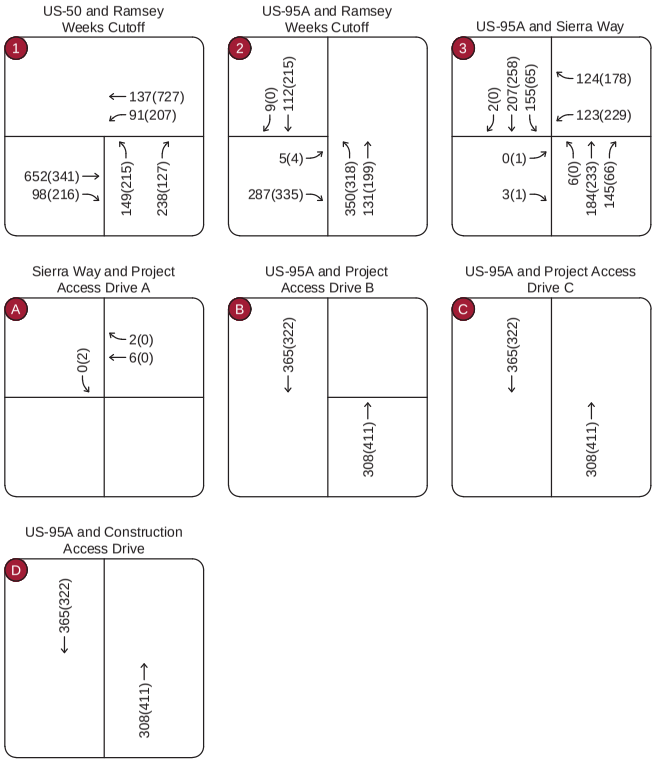
#	Study Area Key Intersection
X	Project Access Drive
← xx (xx)	AM(PM) Peak Hour Volume

Figure 13

Kimley»Horn

Date: January 27, 2026 – 11:59am / User: Sydney.Binkley
Path: C:\Users\sydney.binkley\KH\Giacomin, David – Reno Civil\292187 – Orsted\000 – Lyon Solar\Figures\Figures\2026-01-26 Lux Solar TIS.dwg / Xref: 2023 CC MC Street Network;2023 CC CL Street Network





Legend

#	Study Area Key Intersection
X	Project Access Drive
← xx (xx)	AM(PM) Peak Hour Volume

Source: Nearmap US, Inc. Image Date: October 2025

Lux Solar Traffic Impact Study
2048 Background Plus Project Peak Hour Traffic Volumes

Figure 14

Kimley»Horn

Date: January 27, 2026 – 11:59am / User: Sydney.Binkley
Path: C:\Users\sydney.binkley\KH\Giacomin, David – Reno Civil\292187 – Orsted\000 – Lyon Solar\Figures\Figures\2026-01-26 Lux Solar TIS.dwg / Xref: 2023 CC MC Street Network;2023 CC CL Street Network

4. TRAFFIC IMPACT ANALYSIS

Intersection analyses for the following scenarios were conducted at the identified key intersections to determine possible existing and/or future deficiencies in the street network:

- 2025 Existing
- 2028 Background
- 2028 Background Plus Construction
- 2028 Background Plus Project
- 2048 Background
- 2048 Background Plus Project

4.1. Analysis Methodology

The study area intersections and project access drives were analyzed using the methodologies for unsignalized intersections presented in the Transportation Research Board's "Highway Capacity Manual" 7th Edition. For the unsignalized intersections, the level of service (LOS) for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. **Table 4** shows the LOS criteria for intersections.

Table 4 – Level of Service Criteria

Level of Service	Four-way Stop Control Average Control Delay (sec/veh)	Unsignalized Intersection Average Control Delay (sec/veh)
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Criteria are from the Highway Capacity Manual, 7th Edition, Transportation Research Board.

Synchro 12 was used to analyze the LOS at the study area intersection and project access drives. Synchro is an interactive computer program that enables planners and engineers to forecast the traffic impacts of new developments, conduct area-wide traffic forecasting studies, test different mitigation measures, and compare different traffic scenarios. Synchro 12 utilizes the HCM 7 methodology to analyze intersection delay and LOS.

The analysis scenarios are based on the lane configuration, intersection control, and peak-hour traffic volumes summarized in **Table 5**.

Table 5 – Scenarios

Scenario	Lane Configuration and Control	Volumes
2025 Existing	**Figure 3**	**Figure 4**
2028 Background	**Figure 3**	**Figure 5**
2028 Background Plus Construction	**Figure 6**	**Figure 12**
2028 Background Plus Project	**Figure 6**	**Figure 13**
2048 Background	**Figure 6**	**Figure 7**
2048 Background Plus Project	**Figure 6**	**Figure 14**

4.2. Key Intersection Operational Analysis

The results of the Key Intersection LOS Analysis are shown in **Table 6** for the 2025 existing, 2028 background, 2028 background plus construction, and 2028 background plus project scenarios. The 2048 background and 2048 background plus project scenarios are shown in **Table 7**. Calculations are located in **Appendix E**. The study area intersections are expected to operate at acceptable LOS except for:

- The northbound approach at US-50 and Ramsey Weeks Cutoff (#1) in the 2028 background plus construction, 2048 background, and 2048 background plus project scenarios.
- The eastbound approach at US-95A and Ramsey Weeks Cutoff (#2) in the 2028 background plus construction scenario.
- At US-95A and Sierra Way (#3):
  - The eastbound approach in the 2028 background plus construction scenario
  - The westbound approach in the 2028 background plus construction, 2048 background, and the 2048 background plus project scenarios.
  - The southbound left-turn in the 2028 background plus construction AM scenario.

It should be noted that the delay on the westbound approach at US-95A and Sierra Way (#3) is not associated with project traffic for the Lux Solar development. To mitigate unacceptable LOS in the 20-year background scenarios, NDOT should evaluate the US-95A corridor for capacity improvements in the future. Furthermore, the northbound movements at US-50 and Ramsey Weeks Cutoff (#1) are at a failing LOS is due to the construction and background trips generated from Monarch project site. NDOT should monitor the US-50 and Ramsey Weeks Cutoff (#1) intersection for capacity improvements. Improvements include adding a dedicated northbound left-turn lane and a dedicated northbound right-turn lane.

Table 6 – Existing and Buildout Key Intersection Peak Hour LOS Analysis

Intersection	2025 Existing		2028 Background		2028 Background Plus Construction		2028 Background Plus Project	
	AM	PM	AM	PM	AM	PM	AM	PM
	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)
US-50 and Ramsey Weeks Cutoff (#1)								
High-T Intersection								
Northbound	15.2 (C)	14.4 (B)	26.3 (D)	22.1 (C)	***** (F)**	***** (F)**	27.9 (D)	22.1 (C)
Westbound Left	8.8 (A)	8.8 (A)	9.6 (A)	9.1 (A)	27.9 (D)	9.0 (A)	9.6 (A)	9.1 (A)
US-95A and Ramsey Weeks Cutoff (#2)								
Two-Way Stop-Control								
Northbound Left	8.0 (A)	8.0 (A)	8.4 (A)	8.5 (A)	8.1 (A)	16.1 (C)	8.4 (A)	8.5 (A)
Eastbound	10.0 (A)	11.2 (B)	11.5 (B)	12.4 (B)	**143 (F)**	**45.2 (E)**	11.5 (B)	12.4 (B)
US-95A and Sierra Way (#3)								
Two-Way Stop-Control								
Northbound Left	7.8 (A)	0.0 (A)	7.8 (A)	0 (A)	8.0 (A)	0.0 (A)	7.8 (A)	0.0 (A)
Eastbound	9.4 (B)	0.0 (A)	9.5 (B)	-	***** (F)**	0.0 (A)	9.5 (A)	13.6 (B)
Westbound Left	-	-	28.8 (D)	29.6 (D)	***** (F)**	**292 (F)**	29.0 (D)	29.7 (D)
Westbound Thru/Right	-	-	10.2 (B)	10.9 (B)	9.6 (A)	**60.9 (F)**	10.2 (B)	10.9 (B)
Westbound	10.6 (B)	12.8 (B)	19.5 (C)	21.3 (C)	*** **(F)**	**159 (F)**	19.5 (C)	21.3 (C)
Southbound Left	7.8 (A)	7.8 (A)	8.7 (A)	8.1 (A)	**38.8 (E)**	8.0 (A)	8.7 (A)	8.1 (A)
Signalized	-	-	-	-	54.9 (D)	18.6 (B)	-	-

**** Delay exceeds 300 seconds*

Table 7 – 20-Year Background Key Intersection Peak Hour LOS Analysis

Intersection	2048 Background		2048 Background Plus Project	
	AM	PM	AM	PM
	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)
US-50 and Ramsey Weeks Cutoff (#1)				
High-T Intersection				
Northbound	**53.4 (F)**	**37.3 (E)**	**53.6 (F)**	**37.4 (F)**
Westbound Left	10.3 (B)	9.8 (A)	10.3 (B)	9.8 (A)
US-95A and Ramsey Weeks Cutoff (#2)				
Two-Way Stop-Control				
Northbound Left	8.7 (A)	8.8 (A)	8.7 (A)	8.8 (A)
Eastbound	12.6 (B)	14.5 (B)	12.7 (B)	14.5 (B)
US-95A and Sierra Way (#3)				
Two-Way Stop-Control				
Northbound Left	7.9 (A)	0.0 (A)	7.9 (A)	0.0 (A)
Eastbound	9.7 (A)	0.0 (A)	9.7 (A)	15.1 (C)
Westbound Left	**37.3 (E)**	**48.8 (E)**	**37.5 (E)**	**49.0 (E)**
Westbound Through/Right	10.5 (B)	11.5 (B)	10.5 (B)	11.5 (B)
Westbound	23.8 (C)	32.5 (C)	24.0 (C)	32.6 (D)
Southbound Left	8.9 (A)	8.3 (A)	8.9 (A)	8.3 (A)

4.3. Access Drives Operational Analysis

The results of the Access Drives LOS Analysis are shown in **Table 8**. Calculations are located in **Appendix F**. The proposed project access drive are expected to operate at an acceptable LOS in all scenarios.

Table 8 – Access Drives Peak Hour LOS Analysis

Intersection	2028 Background Plus Construction		2028 Background Plus Project		2048 Background		2048 Background Plus Project	
	AM	PM	AM	PM	AM	PM	AM	PM
	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)	Delay (LOS)
Sierra Way and Project Access (A)								
Two-Way Stop-Control								
Northbound	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)
Eastbound	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)
Westbound	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)
Southbound	8.9 (A)	8.8 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	8.6 (A)
US-95A and Project Access Drive (B)								
Two-Way Stop-Control								
Westbound	0.0 (A)	24.4 (C)	0.0 (A)	0.0 (B)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)
Southbound Left	7.8 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)	0.0 (A)
US-95A and Project Access Drive(D)								
Two-Way Stop-Control								
Westbound	0.0 (A)	32.1 (D)	0.0 (A)	0.0 (A)	-	-	0.0 (A)	0.0 (A)
Eastbound	33.9 (D)	54.3 (F)	0.0 (A)	0.0 (A)	-	-	0.0 (A)	0.0 (A)
Northbound Left	11.3 (B)	0.0 (A)	0.0 (A)	0.0 (A)	-	-	0.0 (A)	0.0 (A)
Southbound Left	7.8 (A)	0.0 (A)	0.0 (A)	0.0 (A)	-	-	0.0 (A)	0.0 (A)

4.4. Left Turn Storage Analysis

Left-turn storage analysis was conducted for left-turn storage bays. The analysis was performed using the HCM 7 95-percent queue reported in the LOS reports located in **Appendix E**. The left turn storage bay calculations include AM and PM peak volumes. The length of the desired storage per lane was taken to be the maximum of the two peak hours. The results of the analysis are provided in **Table 9**.

Table 9 – Left Turn Storage Bay Analysis Results

Intersection Left Turn Movement	Control and Storage Length	Desired Storage Per Lane					
		2025 Existing	2028 Background	2028 Background Plus Construction	2028 Background Plus Project	2048 Background	2048 Background Plus Project
US-50 and Ramsey Weeks Cutoff (#1)							
High-T Intersection							
Northbound Left	-	50’	140’	185’	140’	265’	265’
Westbound Left	*500’*	< 25’	< 25’	< 25’	< 25’	< 25’	< 25’
US-95A and Ramsey Weeks Cutoff (#2)							
Two-Way Stop-Control							
Northbound Left	*200’*	< 25’	25’	33	25’	33’	33’
Eastbound Left	-	30’	48’	85	48’	70’	70’
US-95A and Sierra Way (#3)							
Two-Way Stop-Control							
Northbound Left	***600’***	< 25’	< 25’	< 25’	< 25’	< 25’	< 25’
Eastbound Left	***-***	< 25’	< 25’	< 25’	< 25’	< 25’	< 25’
Westbound Left	***100’***	< 25’	**105’**	**860’**	**105’**	**165’**	**165’**
Southbound Left	***600’***	< 25’	< 25’	**348’**	< 25’	< 25’	< 25’
Signalized							
Northbound Left	***600’***	-	-	30’	-	-	-
Eastbound Left	***-***	-	-	45’	-	-	-
Westbound Left	***100’***	-	-	**215’**	-	-	-
Southbound Left	***600’***	-	-	**650’**	-	-	-

Existing Storage
Future Storage (by others)

Impacted left turn storage bays were calculated to have adequate storage to accommodate in all scenarios with the exception of the intersection of US-95A and Sierra Way (#3). No traffic from the project is distributed from the westbound left approach or southbound left approach at the US-95A and Sierra Way (#3) intersection. Additional monitoring of storage requirements at this intersection may be warranted in the future to ensure ongoing operational efficiency.

4.4.1. Project Access Drive Storage Bay Analysis

Left-turn storage analysis was conducted for left-turn storage bays at the project access driveways. The analysis was performed using the HCM 7 95-percent queue reported in the LOS reports located in **Appendix E**. The left turn storage bay calculations include AM and PM peak volumes. The length of the desired storage per lane was taken to be the maximum of the two peak hours. The results of the analysis are provided in **Table 9**.

Table 10 – Project Access Drive Left Turn Storage Bay Analysis Results

Intersection Left Turn Movement	Control and Storage Length	Desired Storage Per Lane		
		2028 Background Plus Construction	2028 Background Plus Project	2048 Background Plus Project
US-95A and Project Access Drive B				
Two-Way Stop Control				
Northbound Left	-	<25’	<25’	<25’
Westbound Left	-	<25’	<25’	<25’
US-95A and Project Access Drive D				
Two-Way Stop-Control				
Northbound Left		<25’	<25’	<25’
Westbound Left	-	<25’	<25’	<25’
Eastbound Left	-	53’	<25’	<25’

Existing Storage
Future Storage (by others)

Impacted left turn storage bays were calculated to have adequate storage to accommodate in all scenarios for the project access driveways.

4.5. Signal Warrant Analysis

Traffic control signals are used to assign the right-of-way to each direction of travel at an intersection. The determination to install a traffic control signal should be based on an engineering study of existing traffic conditions, pedestrian characteristics, and the geometry of the intersection in question.

The Manual on Uniform Traffic Control Devices for Street and Highways (MUTCD), provides a series of signal warrants that define the minimum conditions under which the installation of a traffic control signal should be considered. The installation of a traffic control signal, even when justified by existing conditions, can be improperly designed, placed, and operated, causing excessive delay, driver disregard and increases in collision frequency. The MUTCD states; “The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.” As such, consideration should be given, when possible, to providing alternative, less restrictive, forms of traffic control, including the installation of multi-way STOP sign control, roundabouts, and turning movement restrictions.

According to the MUTCD, a traffic signal is warranted at a given intersection if the conditions at the intersection meet at least one of the MUTCD signal warrants. For this signal warrant analysis, only the peak hour traffic was used to evaluate these intersections.

A traffic signal warrant analysis was conducted based on the expected construction scenario and buildout traffic at the intersection of US-95A and Sierra Way (#3). The results of the signal warrant analysis is summarized in **Table 11**. Detailed signal warrant evaluation results are included in **Appendix G**.

Table 11 – Temporary Signal Warrant Evaluation Results – US-95A and Sierra Way (#1)

Condition	Name	Satisfied
2028 Background plus Construction	Peak Hour Warrant	Yes

This finding supports the installation of a temporary traffic signal at US-95A and Sierra Way (#3) in the 2028 Background Plus Construction scenario. Considerations for alternative operation of a temporary traffic signal outside the expected peak hours during construction or during non-construction periods include turning the signal away from the roadway such that the intersection operates as a two-way stop-control (TWSC) intersection, or adjusting the signal such that the major roadway has a flashing yellow indication, while the minor roadway has a flashing red indication, again operating the intersection as a TWSC intersection. The temporary traffic signal is recommended to increase safety and improve traffic operations during high volume construction periods due to the high speed on US-95A.

5. NDOT Access Management Systems and Standards

This section evaluates deceleration and acceleration lane warrants along US-95A per NDOT requirements stipulated by the Traffic Engineering Division of NDOT in the 2017 policy entitled "Access Management System and Standards" (AMSS).

5.1. Spacing Standards Analysis

Chapter 4: Design Standards and Specifications of the NDOT AMSS details design and construction standards and specifications for access to sites via major and minor roadways. Table 4-1 of the NDOT AMSS specifies access spacing for driveways based on roadway class (i.e., interstate freeways, expressways, arterials, and collectors), posted speed limits, and access scenarios (i.e., full-access or limited access). Information from Table 4-1 is summarized in **Table 12**. The functional classification for Stead Boulevard was determined according to a map on the NDOT website:

https://www.dot.nv.gov/home/showpublisheddocument/6614/636449705184370000

Table 12 – Summary of NDOT Access Spacing Standards for Project Site

Roadway Class	Location/Posted Speed Limit	Full-Access		Limited Access	
		Signalized Intersection Uniform Spacing	Unsignalized Intersection/ Roundabout Minimum Spacing	Left-in/Right-in/Right-out only Minimum Spacing	Right-in/ Right-out only Minimum Spacing
4: Minor Arterials	60 mph	2,640'	1,320'	660'	350' – 600'

Source: Nevada Department of Transportation Access Management System and Standards, 2017 Edition

US-95A is functionally classified as a "minor arterial" with a posted speed limit of 60 miles per hour adjacent to the project site. According to **Table 12**, 1,640' feet is required between any two adjacent accesses for an unsignalized full access driveway, 1,320' feet between any two adjacent accesses for a left-in/right-in/right-out only driveway, and 800' feet between any right-in/right-out only driveway. Based on the minimum spacing requirements, the proposed Project Access Drive D and Project Access Drive B along US-95A satisfies the minimum spacing requirements for unsignalized full access spacing.

Driveway throat width and curb radius should be designed to the standards outlined in Table 4-28 and 4-29 of the NDOT AMSS. Considerations should be made for heavy vehicles that will ingress and egress project access driveways during the 2028 background plus construction phase. During the 2028 background plus project phase, no heavy vehicles are anticipated to ingress and egress the site.

5.2. Deceleration Lanes

Deceleration lane warrants were evaluated where project traffic is expected to impact the road network. Left turn deceleration warrants were evaluated using Table 4-13 of the AMSS (included in **Appendix H**). Right turn deceleration warrants were evaluated using Table 4-17 of the AMSS (included in **Appendix H**). Deceleration lane warrants were evaluated for the 2028 and 2048 background plus project scenarios and the 2028 background plus construction scenario. A summary of the auxiliary lane analysis is provided in **Table 13**.

Table 13 – Summary of NDOT AMSS Auxiliary Deceleration Lane Analysis

Intersection	Scenario	Movement	Auxiliary Left-Turn Lane	Auxiliary Right-Turn Lane
US-95A and Project Access Drive B	2028 and 2048 Background Plus Project	Southbound to Eastbound	May be Required	May be Required
	2028 Background Plus Construction	Southbound to Eastbound	Required	May be Required
US-95A and Project Access Drive D	2028 and 2048 Background Plus Project	Northbound to Westbound	May be Required	May be Required
		Southbound to Eastbound	May be Required	May be Required
	2028 Background Plus Construction	Northbound to Westbound	Required	Required
		Southbound to Eastbound	May be Required	Required
US-95A and Sierra Way	2028 and 2048 Background Plus Project	Northbound to Westbound	Required	May be Required
	2028 Background Plus Construction	Northbound to Westbound	Required	Required

It should be noted that the operations of a solar field are minimal and are not expected to pose a significant safety risk on the US 95A corridor. Additionally, the vehicle type accessing the site during the operations phase is anticipated to be predominantly passenger vehicles and would not impose any additional risk that heavy vehicles may impose. During the construction phase of the project, intermittent heavy-vehicle traffic will access the site at the proposed project access drives. However, construction-related traffic is temporary in nature and does not warrant the construction of auxiliary deceleration lanes where operation-related traffic does not meet the applicable warrant criteria.

Project Access Drive B is anticipated to serve minimal operational and construction phase project trips. As such, no auxiliary deceleration lanes are recommended at Project Access Drive B. The west leg of Project Access Drive D is anticipated to serve significant construction phase traffic originating from the north. As such, a southbound to westbound right-turn lane is recommended to be constructed. US-95A and Sierra Way (#3) is anticipated to serve as the project's main entry point, a northbound to westbound left-turn lane and a southbound to westbound right-turn lane are recommended to be constructed for the safety of traffic during the operations phase.

5.2.1. Auxiliary Left-Turn Lane Warrants

Based on Table 4-13 (summarized in **Table 14**) in the AMSS, as the speed limit on US-95A is 60 mph, there are five turning vehicles expected to make a northbound to westbound left turn from US-95A onto Sierra Way. Since there are 150 vehicles in the adjacent through lane, **a left turn lane is required**. Design shall comply with standards outlined in the NDOT AMSS.

During the construction phase, there are five turning vehicles expected to make a southbound to eastbound left turn from US-95A onto Project Access Drive B and 1,021 in the adjacent through lane. **A left turn lane is required**. During the construction phase, there are less than five turning vehicles expected to make a southbound to eastbound left turn from US-95A onto Project Access Drive D. **A left turn lane may be required**. During the construction phase, there are 13 turning vehicles anticipated to make a northbound to westbound left turn from US-95A onto Project Access Drive D and 199 vehicles in the adjacent through lane. **A left-turn lane is required**. During the construction phase, there 18 turning vehicles expected to make a northbound to westbound left turn from US-95A onto Sierra Way and 172 in the adjacent through lane. **A left turn lane is required**. Design shall comply with standards outlined in the NDOT AMSS.

Table 14 – Summary of NDOT AMSS Table 4-13: Left-Turn Lane Warrants at Unsignalized Intersections, Two-Lane Roadways in Rural Areas

Turning Volume	Minimum Direction in the Through Lane			
	≤ 30 mph	35 to 40 mph	45 to 55 mph	≥ 60 mph
<5	Not Required	May be Required	May be Required	May be Required
5	400	220	120	60
10	240	140	80	40
13*	192	116	68	Required
15	160	100	60	Required
18*	112	76	Required	Required
20	120	80	Required	Required

Source: Nevada Department of Transportation Access Management System and Standards, 2017 Edition
**Values for the minimum direction in the through lane obtained via linear interpolation*

5.2.2. Auxiliary Right-Turn Lane Warrants

Based on Table 4-17 (summarized in **Table 15**) in the AMSS, as the speed limit on US-95A is 60 mph, there are less than five turning vehicles expected to make a southbound to westbound right turn from US-95A onto Sierra Way (#3) during the 2028 background plus project and 2048 background plus project scenarios. **A right turn lane may be required** during the operational phase.

During the construction phase, less than five vehicles are anticipated to me a northbound to eastbound right turn from US-95A onto Project Access B. **A right turn lane may be required**. During the construction phase, 69 vehicles are anticipated to make a southbound to westbound right turn from US-95A onto Project Access D. **A right turn lane is required**. During the construction phase, there are five vehicles anticipated to make a northbound to eastbound right turn from US-95A onto Project Access D and 199 vehicles and the adjacent through lane. **A right-turn lane is required**. During the construction phase 68 vehicles are anticipated to make a southbound to westbound right turn from US-95A on Sierra Way (#3). **A right turn lane is required**. Design shall comply with standards outlined in the NDOT AMSS.

Table 15 – Summary of NDOT AMSS Table 4-17: Right-Turn Lane Warrants at Unsignalized Intersections, Two-Lane Roadways in Rural Areas

Turning Volume	Minimum Direction in the Through Lane			
	≤ 30 mph	35 to 40 mph	45 to 55 mph	≥ 60 mph
<5	Not Required	May be Required	May be Required	May be Required
5	800	460	270	160
≥ 31	Required	Required	Required	Required

Source: Nevada Department of Transportation Access Management System and Standards, 2017 Edition

5.3. Acceleration Lanes

Acceleration lane warrants were evaluated in the study area where project traffic is expected to impact the road network. Acceleration lanes are warranted on high speed (greater than 45 mph) and high volume (greater than 10,000 vehicles per day) roadways.

As US-95A has an AADT lower than 10,000 vehicles per day (5,550 vehicles per day per NDOT TRINA), and the LOS reported in **Table 8** and the 95th percentile queues reported in **Table 10** indicate that there are sufficient gaps for vehicles to enter US-95A from the project access driveways, **acceleration lanes are not warranted for this project**.

6. CRASH DATA SUMMARY

Crash data was requested for the three existing study intersections from the NDOT Safety Engineering Division for the most recently available five-year period (January 2019 - December 2023). The crash data for the study intersections is summarized in **Table 16**.

Table 16 – Crash Data Summary

Intersection Name	Total Crashes	Property Damage Only	Injury	Fatal
US-50 and Ramsey Weeks Cutoff (#1)	24 (63%)	10 (42%)	14 (58%)	0 (0%)
US-95A and Ramsey Weeks Cutoff (#2)	11 (29%)	6 (55%)	5 (45%)	0 (0%)
US-95A and Sierra Way (#3)	3 (8%)	2 (67%)	1 (33%)	0 (0%)
Total	**38 (100%)**	**18 (47%)**	**20 (53%)**	**0 (0%)**

A total of thirty-eight crashes were recorded at the study intersections in the most recently available five-year period. Out of the thirty-eight crashes, eighteen crashes were property damage only crashes (47%), and twenty crashes were an injury crash (53%). No fatal crashes were reported for the three existing study intersections.

7. RECOMMENDATIONS

The proposed Lux Solar traffic is anticipated to be accommodated on the surrounding street network expected to exist in the background year of 2028 and results in the following recommendations:

- The developer is recommended to install an R1-1 “STOP” sign with appropriate pavement markings for egress onto Sierra Way and onto US-95A at the proposed full-access driveways.
- All on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings and conform to the Lyon County and NDOT Standards as well as the current MUTCD, as applicable.
- It is recommended that the developer not pursue Project Access Drive C in order to comply with NDOT AMSS policies to maintain full unsignalized access at Project Access Drive B and Project Access Drive D.
- It is recommended that Project Access Drive B tie in with the existing unpaved residential driveway 3,250 feet north of Sierra Way.
- It is recommended that the existing intersection at Project Access Drive D be improved to include the following:
  - A southbound right turn deceleration lane.
- In order to comply with NDOT AMSS, the developer is recommended to install a southbound right turn deceleration lane at the intersection of US-95A and Sierra Way (#3).
- In order to comply with NDOT AMSS, the developer is recommended to install a northbound left turn deceleration lane at the intersection of US-95A and Sierra Way (#3).
- It is recommended that NDOT continues to monitor traffic volumes US-50 and Ramsey Weeks Cutoff (#1) in the 20-year horizon.
- In the event peak construction for this project occurs concurrently with peak construction for the Monarch Data Center project, it is recommended that Lyon County work with the NDOT to identify additional temporary mitigation as necessary at the intersections of:
  - US-50 and Ramsey Weeks Cutoff (#1)
  - US-95A and Ramsey Weeks Cutoff (#2)

Stantec

Memo

To:	Amy Shanahan Director, Development Ørsted Onshore North America	From:	Meghan Cronin, PE Alexandra Oran Lynda Manden Reno, NV
Project/File:	203723857	Date:	November 14, 2025

Reference: Lux Solar Center Expansion Area Drainage Memo

Stantec is pleased to provide this memo evaluating the drainage at the expansion area of the Lux Solar Center (Project) located in Lyon County, Nevada. This memo serves as a desktop review of existing information about the Project site drainage area and features.

The proposed Lux Solar Center is a 125 MW solar farm array and 125 MW BESS energy center located in Lyon County, NV. Facilities are expected to include photovoltaic (PV) panels comprising the solar array, battery energy storage containers, collector substation adjacent to the planned point of connection, associated cabling and infrastructure, and access roads, as needed. The expansion area (Project), the subject of this memo, is located on the western end of the Solar Center and covers 280 acres of the total site.

1 Existing Project Site

The proposed Project site is located on private land and is currently undeveloped. The Project site can be accessed via State Road 95 Alternate and Sierra Way. It is located within the United States Geological Survey (USGS) Wabuska, NV 7.5-minute topographic quadrangle, in the Mt. Diablo Meridian, and crosses Public Land Survey System township 15N, range 25E, and sections 22 and 29 (Figure 1).

1.1 Area Topography

The Project site is located north of Yerington, Nevada, in the Mason Valley, to the west of the Walker River. The elevation of the study area is approximately 4,320 feet. The existing topography of the site is relatively flat, as shown in Figure 2.

Notes

1. Coordinate System: NAD 1983 UTM Zone 11N
2. Data Sources: USGS, Stantec, Orsted
3. Background:Vantor, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, USGS

Legend

Project Area

0 500 1,000 Feet

(At original document size of 8.5x11)
1 inch = 1,000 Feet

N

Stantec

Project Location
Lyon County, NV

Prepared by JB on 11/14/2025
TR by LM on 11/14/2025
IR by xx on 11/14/2025

Client/Project
203723857

Orsted North America, Inc.
Lux CIA Additional Services

Figure No.
1

Title
Project Site

U:\203\203723857\03_data\gis_cad\gis\ArcPro\Lux_181213\Lux_181213.aprx Revised: 2025-11-14 By: jbarber

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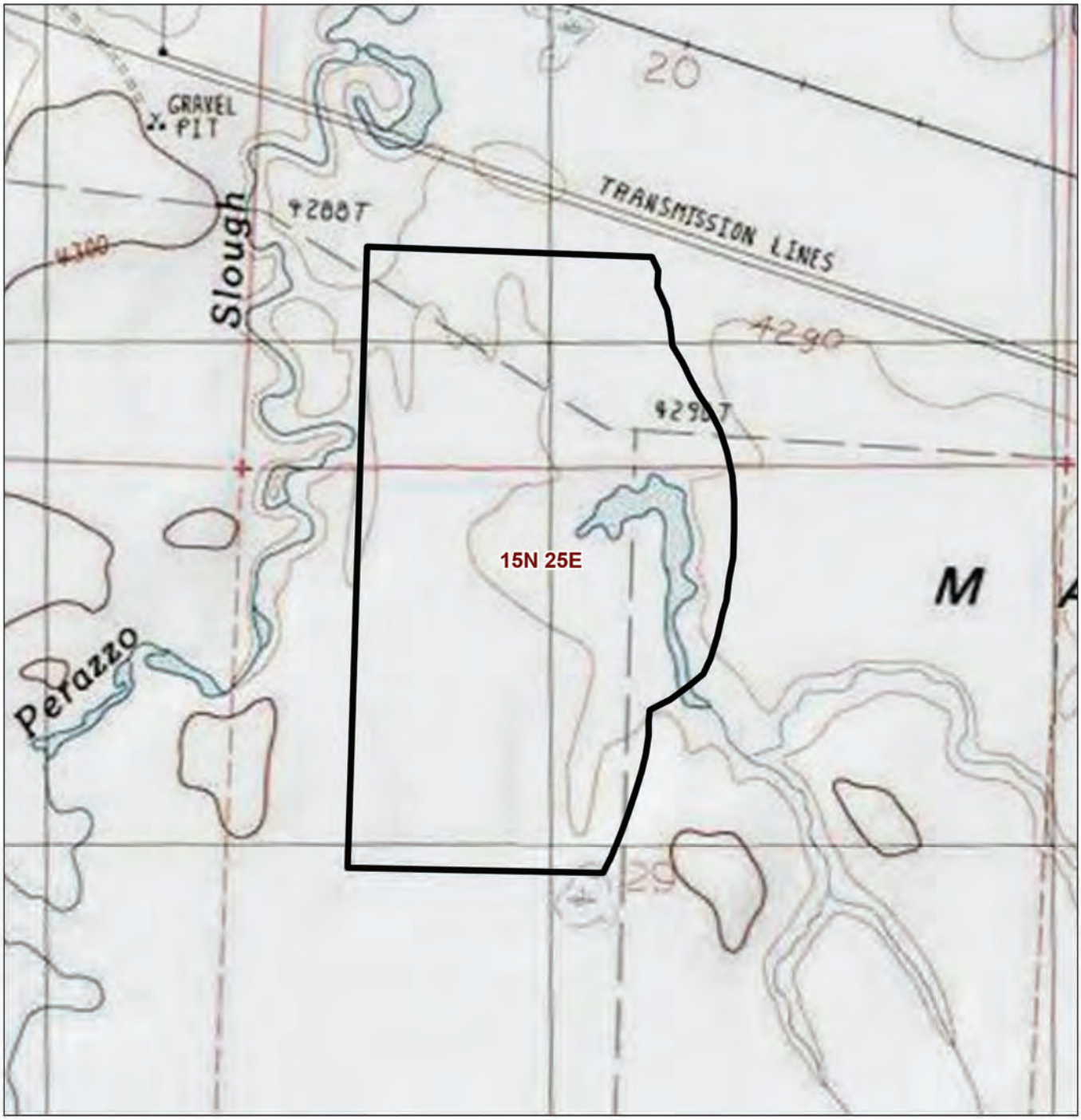

Legend

Project Area

0 500 1,000 Feet

(At original document size of 8.5x11)
1 inch = 1,000 Feet

N

Stantec

Project Location
Lyon County, NV

Prepared by JB on 11/14/2025
TR by LM on 11/14/2025
IR by xx on 11/14/2025

Client/Project
203723857

Orsted North America, Inc.
Lux CIA Additional Services

Figure No.
2

Title
Topography

Notes
1.Coordinate System: NAD 1983 UTM Zone 11N
2. Data Sources: USGS, Stantec, Orsted
3. Background:Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Copyright:© 2013 National Geographic Society, i-cubed, Esri, USGS

U:\2037\203723857\03_data\gis_cad\gis\ArcPro\Lux_181213\Lux_181213.aprx Revised: 2025-11-14 By: jbarber

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1.2 Watershed

The Project site is located within the Walker River Watershed (Image 1) in the Mason Valley hydrographic basin (HA 108), identified by hydrologic unit code (HUC) 160503030104, which flows to the Walker River. The headwaters of the Walker River originate in the Sierra Nevada as the East Walker River and the West Walker River, which converge south of the Project site near Yerington, flowing north though the Mason Valley near the Project site. East of the Project site, the Walker River then turns to flow south to terminate into Walker Lake to the southeast of the Project site (USGS, 2025). The most prominent surface water feature in the Project vicinity is the unnamed intermittent lake historically associated with the Wabuska Hot Springs and precipitation runoff (Stantec, 2025a) located northeast of the Project area.

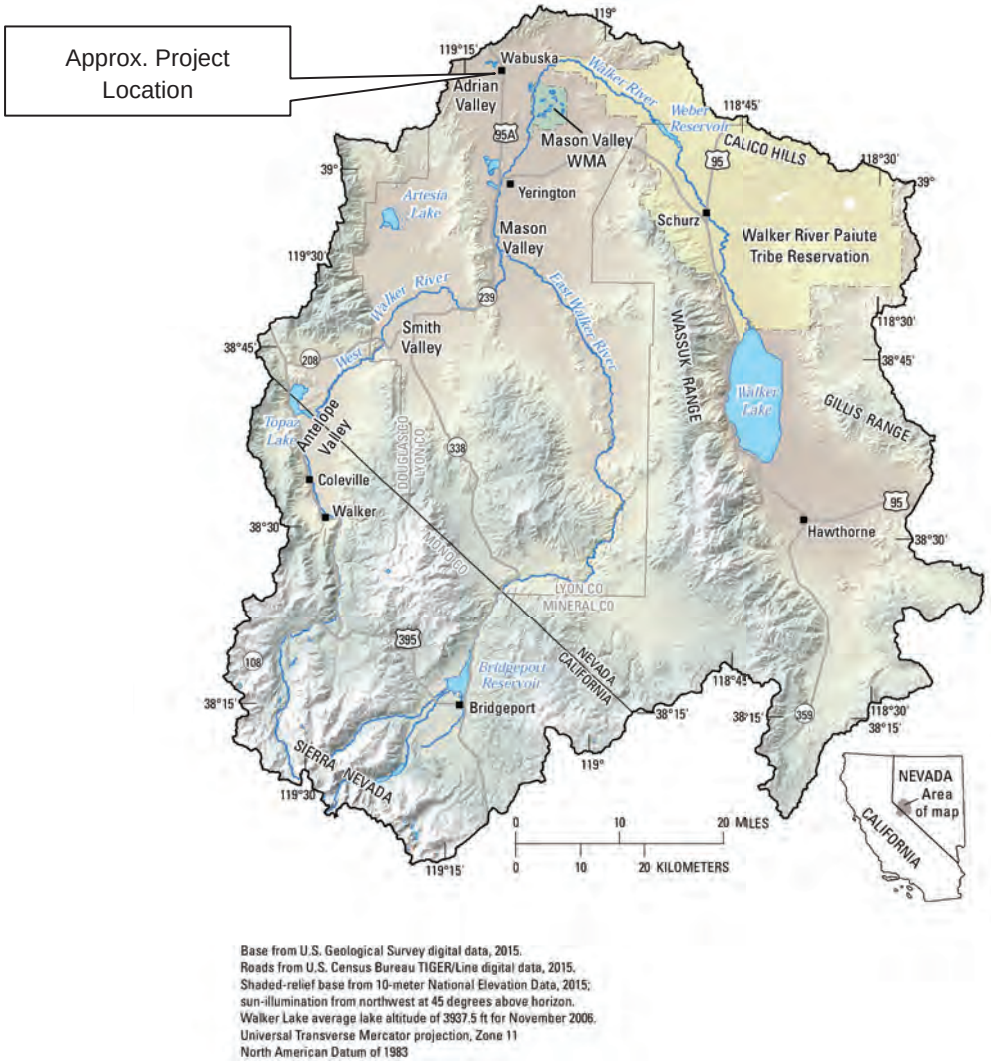

Image 1. Walker River Watershed. Source: USGS (Public domain.)

1.3 Climate

The closest weather station in a similar geographic setting to the survey area with historic and current climatic data is Yerington, Nevada, south of the Project site. The climate is categorized as arid with an annual rainfall of 4.58 inches. Temperatures range from highs over 90 degrees Fahrenheit in the summer to mild lows below 30 degrees during the winter (NOAA, 2021).

1.4 Existing Drainage Features

Based on site reconnaissance of the entire Lux Solar Center site conducted in late July and early August 2025 as a part of the Phase I ESA, stormwater on site flows south-southwest and is collected by existing drainage ditches excavated as a part of the agricultural use of the property located throughout the larger property (Stantec, 2025b); however, these drainage ditches occur outside the Project area (Figure 3).

An aquatic resources study was conducted for the entire Lux Solar Center site in September 2025. One seasonal, isolated pond was identified within the Project area (Figure 3) (Stantec, 2025a).

1.5 Floodplain

The Federal Emergency Management Agency (FEMA) produces Flood Insurance Studies (FIS) that evaluate flood risk to properties across the United States. As a part of the FIS, FEMA also maintains flood insurance rate map (FIRM) panels to show flood risk using Special Flood Hazard Areas (SFHA). The Project falls within the Lyon County FIRM panel number 32019C0550E (provided in Appendix A), effective as of January 16, 2009. There are no recorded letters of map revisions (LOMRs) or letters of map amendments (LOMAs) to the FIRM panel as of the date of this memo (FEMA, 2025).

Based on the published FIRM panel number 32019C0550E, there is a regulated SFHA Zone A, or 1 percent annual chance (also known as 100-year) floodplain without a base flood elevation (BFE) on a portion of the property. With a mapped Zone A, flooding on this site can be anticipated to be a minimum one-foot depth with a 1 percent Annual Chance flood. The entire proposed Project area falls within this floodplain (Figure 4).

Floodplain management is administered locally through floodplain administers, who evaluate approve changes to FIRM panels based on local floodplain management regulations. Lyon County serves as the FEMA Floodplain Administrator for this Project site. Since the proposed site improvements are within the limits of the existing mapped Zone A, the County requires flood modeling of the site to determine whether flood conditions have changed both to the site and/ or to adjacent upstream and downstream properties. Using the results of the model, a Floodplain Development Permit Application will be required. If the modeling results show changes to the existing mapped flood condition, a Conditional Letter of Map Revision (CLOMR) will be required for this Project. Flood modeling will be performed during the design phase of this Project, and impacts will be assessed after the modeling is completed.

Notes
1. Coordinate System: NAD 1983 UTM Zone 11N
2. Data Sources: USGS, Stantec, Orsted
3. Background:Vantor, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, USGS

Legend
- Project Area
- Solar Array

Drainage Features
- Pond (Seasonal)
- Ditch

0 500 1,000 Feet
(At original document size of 8.5x11)
1 inch = 1,000 Feet

N

Stantec

Project Location
Lyon County, NV

Prepared by JB on 11/14/2025
TR by LM on 11/14/2025
IR by xx on 11/14/2025

Client/Project
203723857
Orsted North America, Inc.
Lux CIA Additional Services

Figure No.
3

Title
Existing Drainage Features

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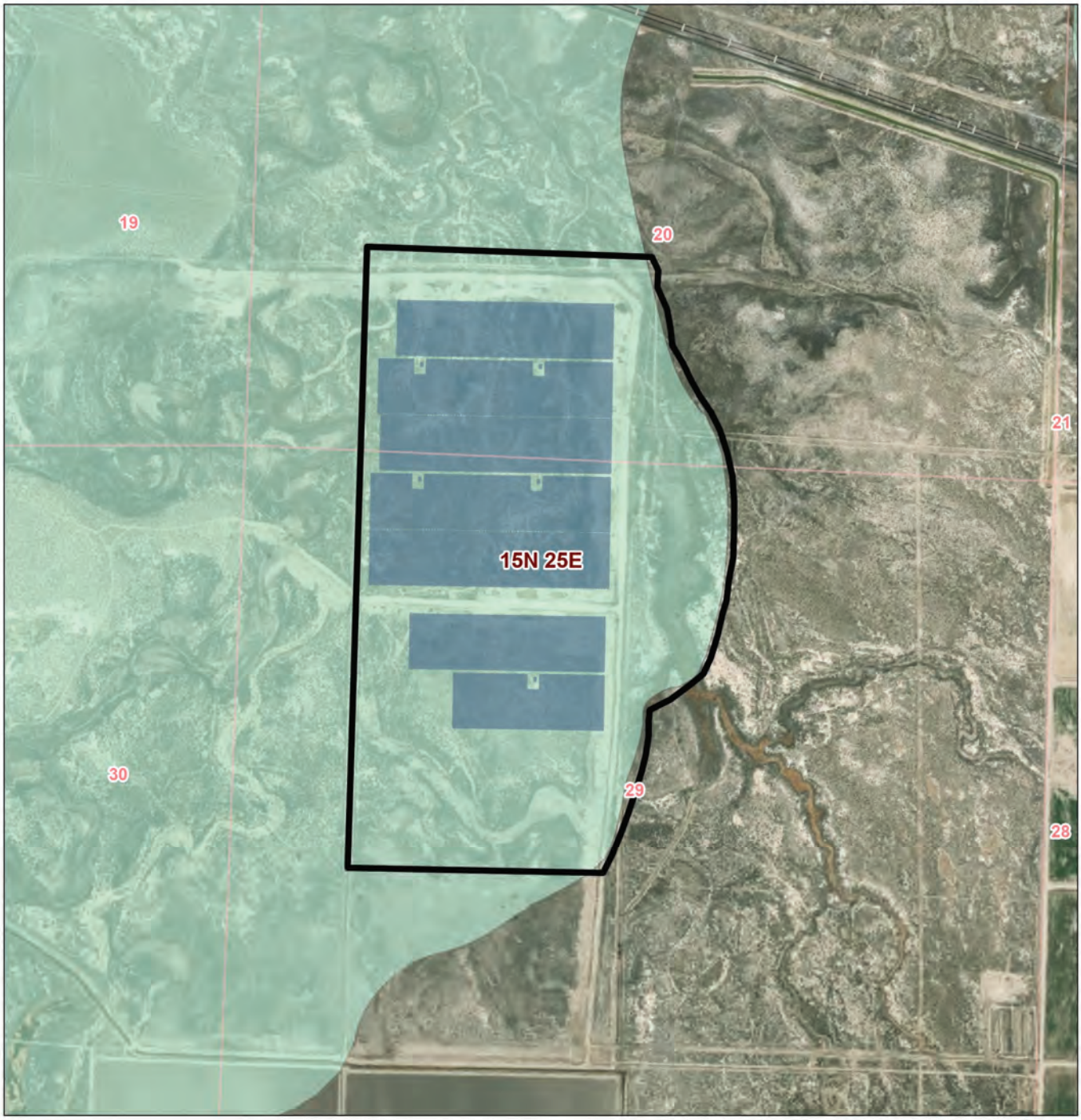

Notes
1. Coordinate System: NAD 1983 UTM Zone 11N
2. Data Sources: USGS, Stantec, Orsted
3. Background:Vantor, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, USGS

Legend
- Project Area
- Solar Array
- FEMA Special Flood Hazard Area Zone A

0 500 1,000 Feet
(At original document size of 8.5x11)
1 inch = 1,000 Feet

N

Stantec

Project Location
Lyon County, NV

Prepared by JB on 11/14/2025
TR by LM on 11/14/2025
IR by xx on 11/14/2025

Client/Project
203723857
Orsted North America, Inc.
Lux CIA Additional Services

Figure No.
4

Title
Floodplain

U:\203\203723857\03_data\gis_cad\gis\ArcPro\Lux_181213\Lux_181213.aprx Revised: 2025-11-14 By: jbarbel

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

2 Project Proposed Improvements

The Project includes the installation of PV solar arrays within a 280-acre area on the property. The proposed impervious areas will be limited to pile foundations, equipment pads, and access roads. Minimal ground disturbance is anticipated due to driven pile foundations and grading will be limited to areas required for equipment pads and access roads. The exact locations of improvement areas will be detailed in later design. Figure 4 shows the proposed site improvements with the existing FEMA SFHA Zone A.

3 Disclaimer

The conclusions in this Memo are Stantec's professional opinion, as of the time of the Memo, and concerning the scope described in the Memo. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Memo relates solely to the specific project for which Stantec was retained and the stated purpose for which the Memo was prepared.

4 References

FEMA Map Service Center. (2025, November 13). *National Flood Hazard Layer Viewer*. Retrieved from FEMA Map Service Center: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-119.22084181727944,39.13478736221345,-119.20007079066812,39.14310883532429

NOAA. (2021). *U.S. Climate Normals Quick Access*. Retrieved from NOAA National Centers for Environmental Information: https://www.ncei.noaa.gov/access/us-climate-normals/#dataset=normals-annualseasonal&timeframe=30&location=NV&station=USC00269229

Stantec. (2025a). *Lux Aquatic Resources Delineation Report .* Reno, NV.

Stantec. (2025b). *Phase I Environmental Site Assessment Report .* Reno, NV.

USGS. (2025, April 2). *Science in the Walker River Basin*. Retrieved from USGS: https://www.usgs.gov/centers/nevada-water-science-center/science/science-walker-river-basin

Reference: Lux Solar Center Expansion Area Drainage Memo

Best regards,

Stantec Consulting Services Inc.

Meghan Cronin

Contact Info:
meghan.cronin@stantec.com
Date: 2025.11.14
15:17:29-08'00'

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Project Manager
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lynda.manden@stantec.com

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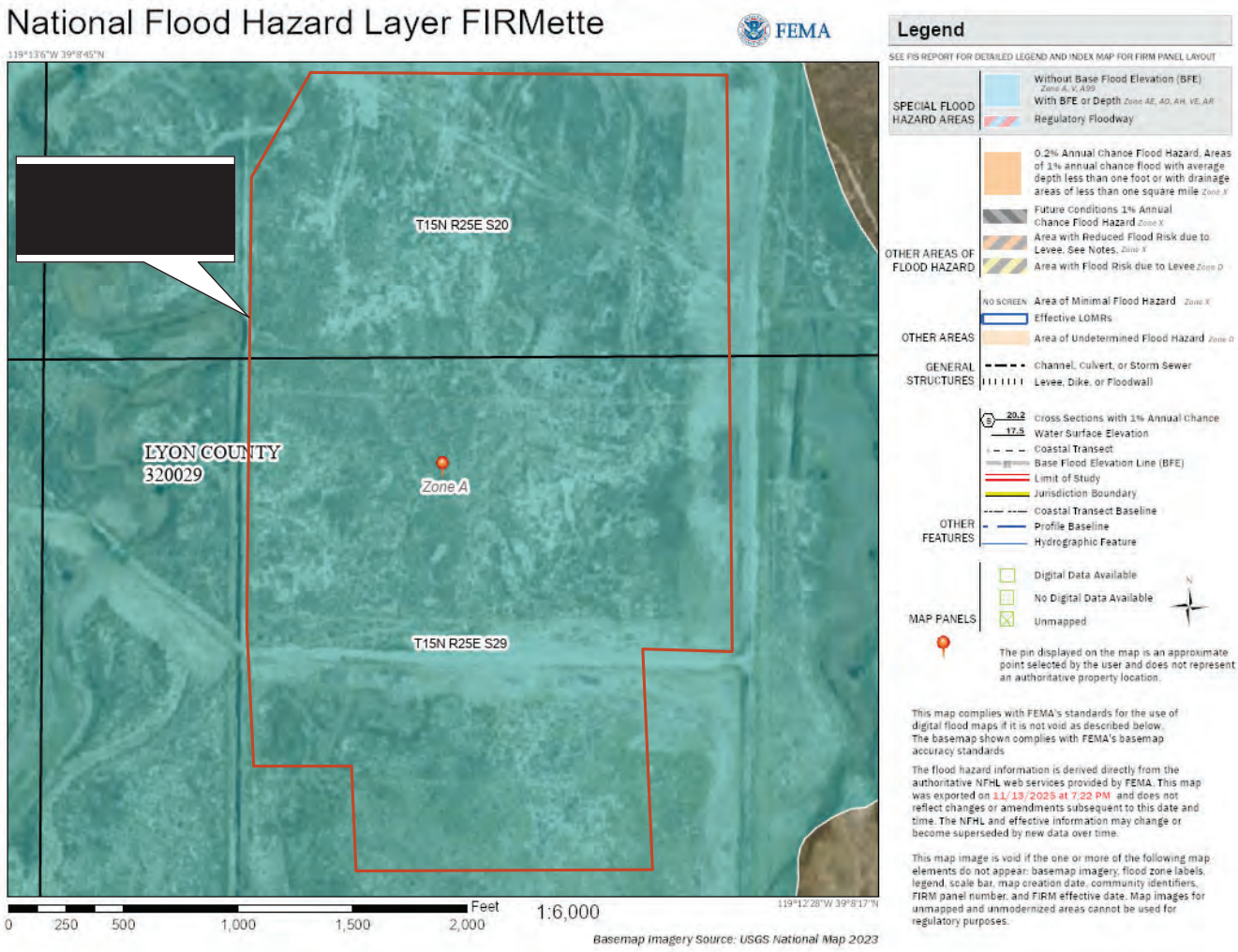
Attachment: Appendix A – National Flood Hazard Layer FIRMette

Appendix A


National Flood Hazard Layer FIRMette
FEMA
119°13'6"W 39°8'45"N
T15N R25E S20
LYON COUNTY
320029
Zone A
T15N R25E S29
0
250
500
1,000
1,500
2,000
Feet
1:6,000
119°12'28"W 39°8'17"N
Basemap Imagery Source: USGS National Map 2023
Legend
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT
SPECIAL FLOOD HAZARD AREAS
Without Base Flood Elevation (BFE)
Zone A, V, A99
With BFE or Depth Zone AE, AO, AH, VE, AR
Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD
0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
Future Conditions 1% Annual Chance Flood Hazard Zone X
Area with Reduced Flood Risk due to Levee. See Notes. Zone X
Area with Flood Risk due to Levee Zone D
OTHER AREAS
NO SCREEN Area of Minimal Flood Hazard Zone X
Effective LOMRs
Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES
Channel, Culvert, or Storm Sewer
Levee, Dike, or Floodwall
OTHER FEATURES
20.2
17.5
Cross Sections with 1% Annual Chance
Water Surface Elevation
Coastal Transect
Base Flood Elevation Line (BFE)
Limit of Study
Jurisdiction Boundary
Coastal Transect Baseline
Profile Baseline
Hydrographic Feature
MAP PANELS
Digital Data Available
No Digital Data Available
Unmapped
N
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/13/2025 at 7:22 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Stantec

Memo

To:	Amy Shanahan Director, Development Ørsted Onshore North America	From:	Barb Santner, NV PLA #355 Lynda Manden Reno, NV
Project/File:	203723857	Date:	November 14, 2025

Reference: Lux Solar Center, LLC Visual Impact Assessment Memo

Stantec is pleased to provide this memo evaluating the visual impacts of the expansion area of the Lux Solar Center (Project) located in Lyon County, Nevada. This memo serves as a desktop review of existing information about the Project site a and features.

The proposed Lux Solar Center is a 125 MW solar farm array and 125 MW BESS energy center located in Lyon County, NV. Facilities are expected to include photovoltaic (PV) panels comprising the solar array, battery energy storage containers, collector substation adjacent to the planned point of connection, associated cabling and infrastructure, and access roads, as needed. The expansion area (Project), the subject of this memo, is located on the western end of the Solar Center and covers 280 acres of the total site.

1 Existing Project Site

The proposed Project site is located on private land and is currently undeveloped. The Project site can be accessed via State Road 95 Alternate and Sierra Way. It is located within the United States Geological Survey (USGS) Wabuska, NV 7.5-minute topographic quadrangle, in the Mt. Diablo Meridian, and crosses Public Land Survey System township 15N, range 25E, and sections 22 and 29 (Figure 1).

1.1 Area Topography

The Project site is located north of Yerington, Nevada, in the Mason Valley, to the west of the Walker River. The elevation of the study area is approximately 4,320 feet. The existing topography of the site is relatively flat.

2 Methodology

Visual impacts of the project were analyzed following the Bureau of Land Management (BLM) contrast ratings. Although the project is not governed by BLM their guidelines for contrast rating are useful in visual assessments for solar projects. Lyon County requested the visual assessment methodology to assess visual impacts from existing residences and the highway 95A nearby to assess changes to the landscape as seen both by people traveling on the highway and by neighbors. Changes to the visual environment are measured by determining how a proposed project would alter the visual quality for selected representative views, called key viewpoints KOP).

The KOP locations are described below and are located on the Plan View/Key Observation Point (KOP) Locations figure.

- KOP 1 is located at Sierra Way and Butte Way near an one existing residential property
- KOP 2 is located at State Route 95A and an unnamed road crossing
- KOP 3 is located at State Route 95A at a road and an unnamed road crossing and at two (2) existing residences.
- KOP 4 is located at State Route 95A south of railroad tracks

3 Key Findings

The four (4) KOP were evaluated for visual contrast from the existing highway and residences. All were found to have no or low visual contract comparing the existing condition to the proposed activity of the solar array project. The solar facilities are located between 325 and 1,550 feet away from the KOP points. No mitigation was recommended.

Impacts of the solar project due to glare from aviation activities are not anticipated. The nearest airport to the project site is ten (10) miles away. Solar arrays are designed to absorb light and produce electricity, not reflect it. The panels that we will use for Lux Solar Center have an anti-reflective coating, which helps to increase the amount of light absorbed into the cell, thereby increasing efficiency and reducing glare and allowing the panels to blend in more easily with the surrounding area.

This reflective coating suppresses any reflection to approximately 2% of incoming sunlight, making solar panels less reflective than windows or bodies of water. In addition, solar panels track the sun’s path throughout the day, reducing the chance of glare due to angled rays, and preconstruction modeling can ensure that the placement of solar panels prevents glare.

Reference: Lux Solar Center, LLC

Refer to attachments for the following information:

- Plan View/Key Observation Point (KOP) Locations
- KOP 1-4 Existing Conditions
- KOP 1-4 Simulations of Proposed Facilities
- KOP 1-4 Visual Contrast Ratings

4 Disclaimer

The conclusions in this Memo are Stantec's professional opinion, as of the time of the Memo, and concerning the scope described in the Memo. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Memo relates solely to the specific project for which Stantec was retained and the stated purpose for which the Memo was prepared.

Best regards,

Stantec Consulting Services Inc.

Barb Santner, NV PLA #355
Senior Landscape Architect
Phone: (775) 398-1205
Barb.santner@stantec.com

Lynda Manden
Project Manager
Phone: (775) 413-4025
lynda.manden@stantec.com

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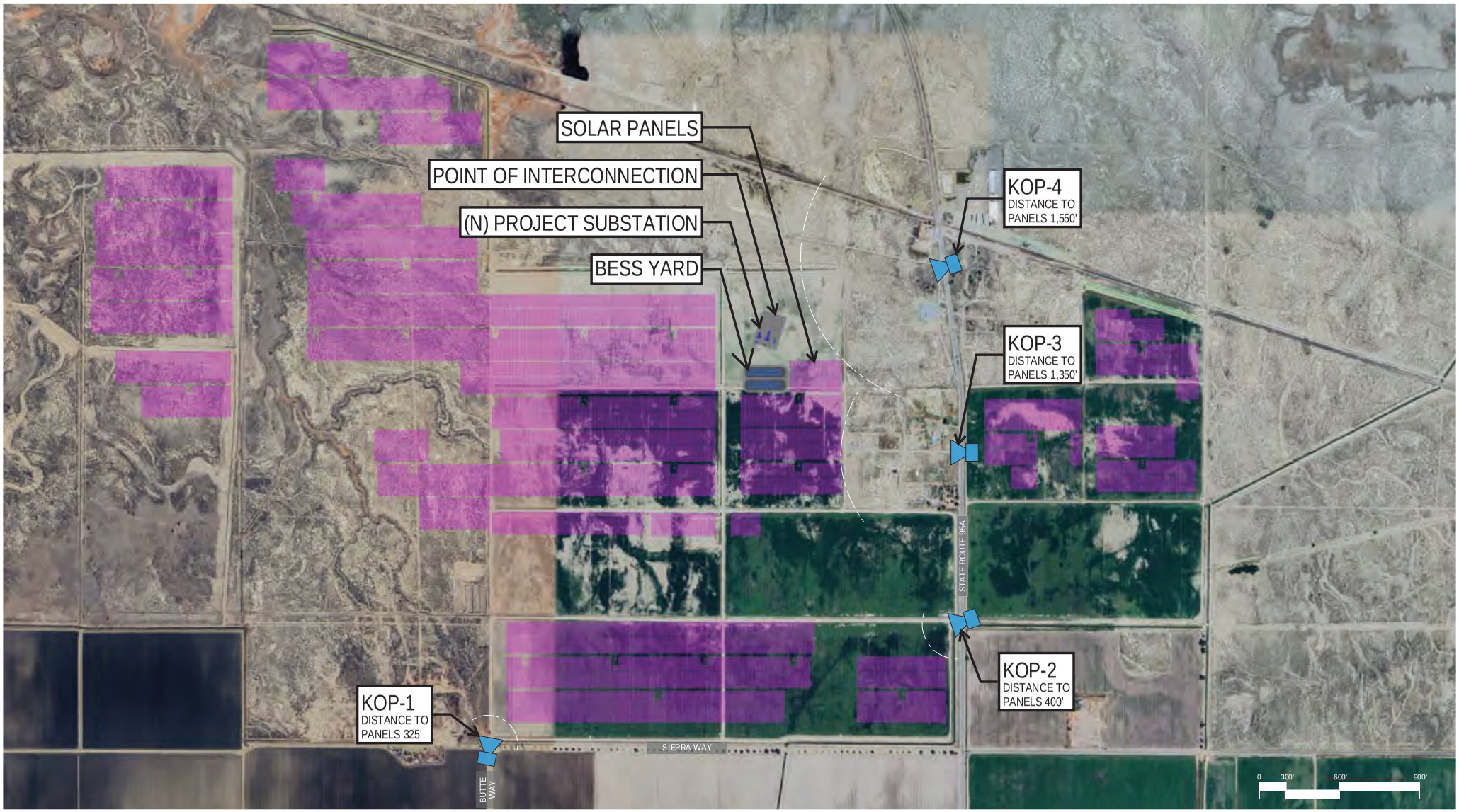
Attachment: none



NORTH

PLAN VIEW / KEY OBSERVATION POINT (KOP) LOCATIONS

LUX SOLAR SIMULATIONS

NOVEMBER 14, 2025

612

KOP 1 - ORIGINAL IMAGE

LUX SOLAR SIMULATIONS

NOVEMBER 14, 2025

KOP 1 - SIMULATION

LUX SOLAR SIMULATIONS

NOVEMBER 14, 2025

KOP 2 - ORIGINAL IMAGE

LUX SOLAR SIMULATIONS

NOVEMBER 14, 2025

615

KOP 2 - SIMULATION

LUX SOLAR SIMULATIONS

NOVEMBER 14, 2025

KOP 3 - ORIGINAL IMAGE

LUX SOLAR SIMULATIONS

NOVEMBER 14, 2025

KOP 3 - SIMULATION

LUX SOLAR SIMULATIONS

NOVEMBER 14, 2025

618

KOP 4 - ORIGINAL IMAGE

LUX SOLAR SIMULATIONS

NOVEMBER 14, 2025

619

KOP 4 - SIMULATION

LUX SOLAR SIMULATIONS

NOVEMBER 14, 2025

Form 8400 - 4
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Date – November 13, 2025

VISUAL CONTRAST RATING WORKSHEET

**KOP 1 Sierra Way and Butte Way- Near Residential

SECTION A. PROJECT INFORMATION

1. Project Name
Lux Solar
Solar Array

2. Key Observation Point
KOP 1

3. VRM Class
NA

4. Location –
39° 7'42.15"N
119°11'57.92"W

5. Location Sketch

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat wide valley	None in foreground, Indistinct, low beyond.	Fenceline in foreground, wooden power pole, vertical on left
LINE	Horizontal, simple, angular mountains in background	Indistinct	Straight, repeating horizontal
COLOR	Beige	Light green, beige	Brown
TEX-TURE	Fine	Fine, stippled to even	Fine

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat wide valley	None in foreground, Indistinct, low beyond	Solar arrays flat rectangle
LINE	Horizontal, simple, angular mountains in background	Indistinct	Solar arrays horizontal, long
COLOR	Beige	Light green, beige	Gray
TEX-TURE	Fine	Fine, stippled to even	Smooth, fine

SECTION D. CONTRAST RATING SHORT TERM - X LONG TERM

1. DEGREE OF CONSTRAST		FEATURES												2. Does project design meet visual resource? management objectives? Yes No (Explain on reverse side)
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)				
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	3. Additional mitigating measures recommended? ☐ Yes No (Explain on reverse side) Contrast rating takes into account mitigation measures
ELEMENTS	Form				x				x				x	Evaluator's Names / Date
	Line				x				x				x	Barb Santner/Stantec November 13, 2025
	Color				x				x			x		
	Texture				x				x				x	

This KOP is from the corner of Sierra Way and Butte Way near an existing residence looking north to the solar arrays. The photo simulation is of the solar arrays in the distance with groundplane of low, native grasses.

Due to the distance of the solar arrays from this location and low to no degree of visual contrast no further mitigation measures of proposed facilities are recommended.

RELEVANT ENVIROMENTAL FACTORS
Viewing Distance: The solar arrays run across the view perpendicular to the KOP and are about 325 feet away.

Form 8400 - 4
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Date – November 13, 2025

VISUAL CONTRAST RATING WORKSHEET

**KOP 2 State Route 95A and Road Crossing

SECTION A. PROJECT INFORMATION

1. Project Name	4. Location –	5. Location Sketch
Lux Solar Solar Array	39° 7'55.84"N 119°10'51.80"W	
2. Key Observation Point KOP 2		
3. VRM Class NA		

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat wide valley	None in foreground, Indistinct, low beyond.	Fenceline end in foreground,
LINE	Horizontal, simple, angular mountains in background	Indistinct to horizontal	Small vertical and horizontal fence lines
COLOR	Beige natural surface road	Light green to beige shrubs, green fields	Brown
TEX-TURE	Fine	Stippled to fine and even	Fine

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat wide valley	None in foreground, Indistinct, low beyond	Solar arrays flat rectangle
LINE	Horizontal, simple, angular mountains in background	Indistinct to horizontal	Solar arrays horizontal, short and long
COLOR	Beige natural surface road	Light green to beige shrubs, green fields	Gray
TEX-TURE	Fine	Stippled to fine and even	Fine and smooth

SECTION D. CONTRAST RATING SHORT TERM - X LONG TERM

1. DEGREE OF CONSTRAST

		FEATURES												2. Does project design meet visual resource management objectives? (Yes) No (Explain on reverse side)
		LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)				
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	3. Additional mitigating measures recommended? ☐ Yes No (Explain on reverse side) Contrast rating takes into account mitigation measures.
ELEMENTS	Form				x				x				x	
	Line				x				x				x	
	Color				x				x			x		
	Texture				x				x				x	

Evaluator's Names — Date

Barb Santner/Stantec — November 13, 2025

This KOP is from the corner of State Route 95A and a road crossing near existing agricultural areas looking west to the solar arrays. The photo simulation is of the solar arrays in the distance with groundplane of low, native grasses.

Due to the distance of the solar arrays from this location and low to no degree of visual contrast no further mitigation measures of proposed facilities are recommended.

RELEVANT ENVIROMENTAL FACTORS
Viewing Distance: The solar arrays run across the view perpendicular to the KOP and are about 400 feet away.

Form 8400 - 4
(September 1985)

Date – November 13, 2025

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VISUAL CONTRAST RATING WORKSHEET

**KOP 3 State Route 95A at Road Crossing and Residences

SECTION A. PROJECT INFORMATION

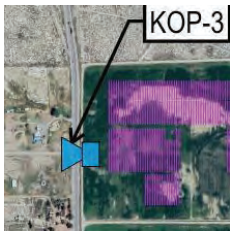
1. Project Name
Lux Solar
Solar Array

2. Key Observation Point
KOP 3

3. VRM Class
NA

4. Location –
39° 8'13.86"N
119°10'51.88" W

5. Location Sketch



SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat wide valley	Low and flat Indistinct grasses, scattered spherical shrubs	Fence posts, wooden, cylindrical power poles, agricultural barn and storage rectangular prism structures
LINE	Horizontal, simple, in foreground, angular mountains in background	Indistinct to horizontal in foreground, scattered irregular line of shrubs	Small vertical posts, vertical poles, irregular intermittent structures
COLOR	Beige natural surface road	Beige grasses, scattered and intermittent light green to beige shrubs	Beige fence posts and brown poles, beige, gray agricultural buildings
TEX-TURE	Fine roadway and ground	Stippled to fine with irregular shrubs	Fine to stippled agriculture structures

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat wide valley	Ground below arrays would be short, native grasses as a thin line	Solar arrays flat rectangle
LINE	Horizontal, simple, in foreground, angular mountains in background	Indistinct to horizontal	Solar arrays horizontal, very short and long
COLOR	Beige natural surface road	Light green to beige short grasses	Gray
TEX-TURE	Fine roadway and ground ine	Stippled to fine	Fine and smooth

SECTION D. CONTRAST RATING SHORT TERM - X LONG TERM

1. DEGREE OF CONSTRAST		FEATURES: LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
ELEMENTS	Form				x				x				x
	Line				x				x				x
	Color				x				x				x
	Texture				x				x				x

2. Does project design meet visual resource? management objectives? (Yes) No
(Explain on reverse side)

3. Additional mitigating measures recommended?
☐ Yes No (Explain on reverse side)
Contrast rating takes into account mitigation measures.

Evaluator's Names — Date

Barb Santner/Stantec — November 13, 2025

This KOP is from the corner of State Route 95A and a road crossing between existing residential lots, one north and one south, looking west to the solar arrays. The photo simulation is of the solar arrays in the distance with groundplane of low, native grasses.

Due to the distance of the solar arrays from this location and low to no degree of visual contrast no further mitigation measures of proposed facilities are recommended.

RELEVANT ENVIROMENTAL FACTORS

Viewing Distance: The solar arrays run across the view perpendicular to the KOP and are about 1,350 feet away.

Form 8400 - 4
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Date – November 13, 2025

VISUAL CONTRAST RATING WORKSHEET

**KOP 4 State Route 95A South of Railroad Tracks

SECTION A. PROJECT INFORMATION

1. Project Name
Lux Solar
Solar Array

2. Key Observation Point
KOP 4

3. VRM Class
NA

4. Location –
39° 8'33.85"N
119°10'54.26"W

5. Location Sketch

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat wide valley	Low, scattered spherical shrubs	Fence posts, wooden, cylindrical power poles, agricultural storage rectangular prism structures
LINE	Horizontal, simple, in foreground, angular mountains in background	Indistinct to horizontal in foreground, scattered irregular line of sparce trees	Small vertical posts, vertical poles, irregular intermittent structures
COLOR	Beige natural surface road	Light green to beige shrubs	Beige fence posts and brown poles, dark red and beige agricultural buildings
TEX-TURE	Fine roadway and ground	Stippled with irregular shrubs	Fine to stippled agriculture structures

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat wide valley	Ground below arrays would be short, native grasses as a thin line	Solar arrays flat rectangle
LINE	Horizontal, simple, in foreground, angular mountains in background	Indistinct to horizontal	Solar arrays horizontal, very short and long
COLOR	Beige natural surface road	Light green to beige short grasses	Gray
TEX-TURE	Fine roadway and ground ine	Stippled to fine	Fine and smooth

SECTION D. CONTRAST RATING SHORT TERM - X LONG TERM

1. DEGREE OF CONSTRAST

	FEATURES											
	LAND/WATER BODY (1)				VEGETATION (2)				STRUCTURES (3)			
	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
ELEMENTS Form				x				x				x
Line				x				x				x
Color				x				x				x
Texture				x				x				x

2. Does project design meet visual resource? management objectives? Yes No
(Explain on reverse side)

3. Additional mitigating measures recommended?
☐ Yes No (Explain on reverse side)
Contrast rating takes into account mitigation measures.

Evaluator's Names — Date

Barb Santner/Stantec — November 13, 2025

This KOP is from the corner of State Route 95A and a road crossing south of the existing railroad tracks looking southwest to the solar arrays. The photo simulation is of the solar arrays in the distance with groundplane of low, native grasses.

Due to the distance of the solar arrays from this location and low to no degree of visual contrast no further mitigation measures of proposed facilities are recommended.

RELEVANT ENVIROMENTAL FACTORS
Viewing Distance: The solar arrays run across the view perpendicular to the KOP and are about 1,550 feet away.

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
14.g

Subject:
For Possible Action: To approve the request from Traditions North LLC for a Zoning Map Amendment to amend the Zoning Map split-zoned designations from the Title 10 districts of First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), Single-Family Nonrural Residential District (NR-1), and General Commercial District (C-2), to the Title 15 district of Planned Unit Development (PUD), generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 230.76-acre parcel (APN 016-406-07), PLZ-2025-093. (Senior Planner Lisa Nash)

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Staff Report
- Backup
- Public Comment

LYON COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING * DEVELOPMENT ENGINEERING * PLANNING
CODE ENFORCEMENT * ECONOMIC DEVELOPMENT
27 SOUTH MAIN STREET, YERINGTON, NV 89447
PHONE: 775-463-6592 FAX: 775-463-5305
WEBSITE: www.lyon-county.org

BOARD OF COUNTY COMMISSIONERS

PLZ-2025-093

Proposed Action	Zoning Map Amendment from First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), and Single-Family Nonrural Residential District (NR-1), to the Title 15 district of Planned Unit Development (PUD)
Meeting Date	March 5, 2026
Property Owners	Sutro Residential Group LLC
Applicant	Traditions North LLC
Representative	Manhard Consulting LLC
Community	Dayton
Location	North of the intersection of Nevada Station and Rock Creek Parkways
Parcel Number	016-406-07
Parcel Size	220.75 acres of a 230.76-acre parcel
Master Plan	Low Density Residential, Suburban Residential, Commercial, Parks, and Open Space
Current Zoning	RR-1, E-1, NR-1, and C-2
Proposed Zoning	Planned Unit Development (PUD)
Flood Zone(s)	Zone X Shaded and Unshaded per FIRMs 32019C0290E and 32019C0289F
Case Planner	Lisa Nash

REQUEST

The Applicant requests a Zoning Map Amendment (ZMA) to change the designation from the Title 10 districts of First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), and Single-Family Nonrural Residential District (NR-1), to the Title 15 district of Planned Unit Development (PUD) on a 220.75-acre portion of parcel totaling approximately 230.76 acres in the proposed Traditions North Residential Subdivision in Dayton.

PLANNING COMMISSION

The Planning Commission heard the item on February 10, 2026. The Commission forwarded a recommendation of approval, voting 7-0 (7 Ayes; 0 Nays; 0 Abstentions). The recommendation was based on the findings listed in the staff report. A Zoning Map Amendment request cannot be conditioned.

RECOMMENDED MOTION

If the Board of County Commissioners determines that they will approve the requested Zoning Map Amendment application, then the Board should make a motion similar to the following.

The Board of County Commissioners finds that:

A. The proposed amendment is consistent with the policies embodied in the adopted master plan and the underlying land use designation contained in the land use plan;

B. The proposed amendment will not be inconsistent with the adequate public facilities policies contained in this title; and

C. The proposed amendment is compatible with the actual or master planned adjacent uses.

Based on the aforementioned Findings, I move that the Board of County Commissioners approve the request from Traditions North LLC for a Zoning Map Amendment to amend the Zoning Map designation from the Title 10 districts of First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), and Single-Family Nonrural Residential District (NR-1), to the Title 15 district of Planned Unit Development (PUD), generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 220.75-acre portion of a 230.76-acre parcel (APN 016-406-07), PLZ-2025-093.

ALTERNATIVES TO RECOMMENDATION OF APPROVAL

Alternative Motion for Continuance

If the Board of County Commissioners determine that there is insufficient information with which to make a decision on the Zoning Map Amendment application before them and that additional information, discussion and public comment are necessary to have a more complete and thorough review of the proposed project, then the Board should make the appropriate findings and move to continue the Public Hearing for the Zoning Map Amendment application to a future date with concurrence from the applicant.

If so, then the Board may wish to consider a motion similar to the following:

The Board of County Commissioners finds that:

A. Additional information, discussion, and public review are necessary for a more thorough review of the proposed Zoning Map Amendment application.

Based on the aforementioned finding, and with the applicant's concurrence, I move that the Board of County Commissioners continues the Zoning Map Amendment request from Traditions North LLC for a Zoning Map Amendment to amend the Zoning Map designation from the Title 10 districts of First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), and Single-Family Nonrural Residential District (NR-1), to the Title 15 district of Planned Unit Development (PUD), generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 220.75-acre portion of a 230.76-acre parcel (APN 016-406-07), PLZ-2025-093 for ___ days.

Alternative Motion for Denial

If after review and public comment the Board of County Commissioners determines that they should deny the Zoning Map Amendment application, then the Board may wish to consider a motion similar to the following:

The Board of County Commissioners has considered:

15.220.05: FINDINGS:

When approving a zoning text or map amendment the commission and the Board must make the following findings, supported by a statement of evidence, facts and conclusions.

A. That the proposed amendment is consistent with the policies embodied in the adopted master plan and the underlying land use designation contained in the land use plan;

B. That the proposed amendment will not be inconsistent with the adequate public facilities policies contained in this title;

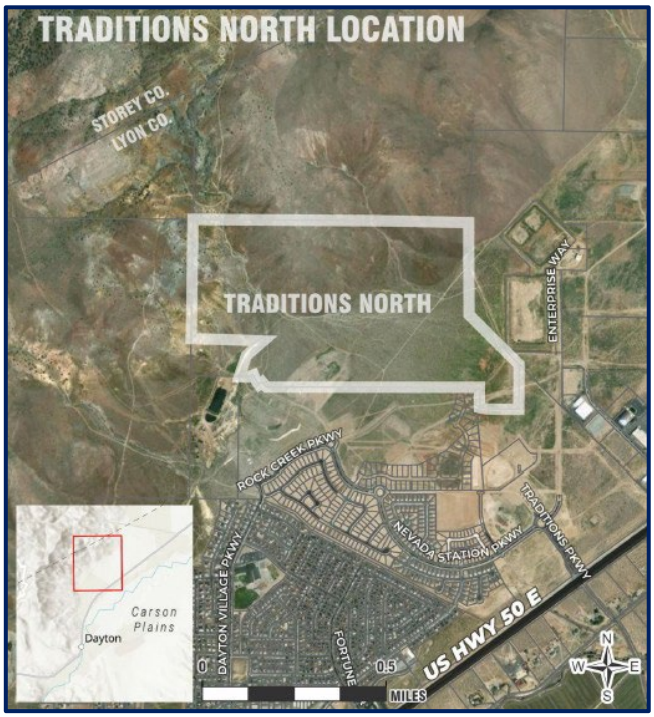
C. That the proposed amendment is compatible with the actual or master planned adjacent uses.

After consideration of the above-listed Findings, I move that the Board of County Commissioners has determined that the Amendment would <u>not</u> be in conformance with the above-listed considerations and <u>denies</u> the request from Traditions North LLC for a Zoning Map Amendment to amend the Zoning Map designation from the Title 10 districts of First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), and Single-Family Nonrural Residential District (NR-1), to the Title 15 district of Planned Unit Development (PUD), generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 220.75-acre portion of a 230.76-acre parcel (APN 016-406-07), PLZ-2025-093.

BACKGROUND INFORMATION

<u>Location, Access, and Existing Development</u>

The subject property is located in the Dayton Suburban Character District north of the existing Traditions Residential Development, generally located north of the intersection of Nevada Station and Rock Creek Parkways (APN 016-406-07). The property has a total acreage of 230.76-acres. The map below shows the location of the parcel.



Assessor's Map (provided by applicant, showing the 220.75-acre portion under consideration)

The surrounding zoning from the County's expired Development Code, Title 10 is comprised of First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), Single-Family Nonrural Residential District (NR-1), General Commercial District (C-2), and Fifth Rural Residential District (20 Acres) (RR-5) zoned properties. The parcel is bordered to the south by undeveloped land within the Traditions Residential and Commercial Subdivisions. Land to the north and west is owned by the U.S. Bureau of Land Management near the Storey–Lyon County border, and the Sutro Tunnel historic site lies to the southwest. Properties within the Traditions Commercial Subdivision are zoned General Commercial (C-2).

The parcel itself is currently undeveloped and will be primarily accessed via Fortune Drive and Traditions Parkway from U.S. Highway 50.

Public Facilities

The project is located within the Lyon County Utilities Department (LCUD) service area and there are existing water and sewer services located within adjacent properties. Any future development must obtain LCUD permit approvals before construction. Although LCUD has issued an intent-to-serve letter, this does not guarantee service. Before receiving any building permits, LCUD reserves the right to deny or limit connections to the sewer system to ensure the system resources remain permit compliant and do not exceed the available resource capabilities.

Project History

From the applicant's submittal: "*The site was originally part of the Traditions Community Master Plan. On May 6, 2004, a PUD was approved through a special use permit to establish the current Title 10 zoning designations: RR-1, E-1, C-2, and NR-1. A Tentative Subdivision Map was recorded in 2007 and extended in 2008 following the Nevada Legislature's adoption of AB74, with an additional extension granted in 2010. Although the PUD has since been dissolved, the property was hard zoned to match the approved subdivision configuration.*"

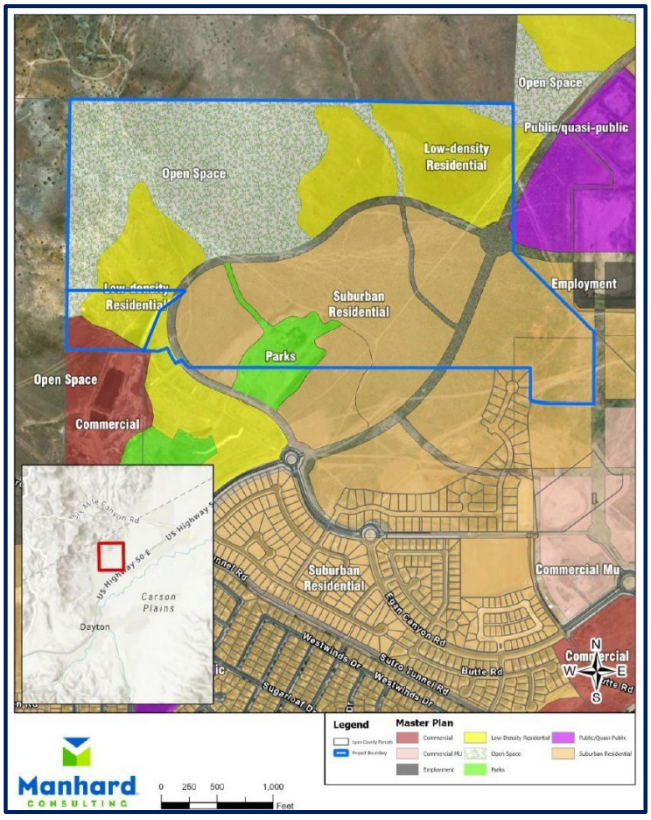
Based on the prior approvals and entitlements for the site, the applicant is correct about the current zoning designations and that there are no current entitlements for the property.

MASTER PLAN AND ZONING

Master Plan

The current Master Plan designation for the entire site is Low Density Residential, Suburban Residential, Commercial, Parks, and Open Space within the Dayton Suburban Character District. Suburban Character areas are typically within or adjacent to public water and sewer facilities and have existing paved accesses. The site is served by the Lyon County Utility District for water service and sewer service.

Note: The Master Plan and Zoning images that follow are from the applicant's updated submittal items.



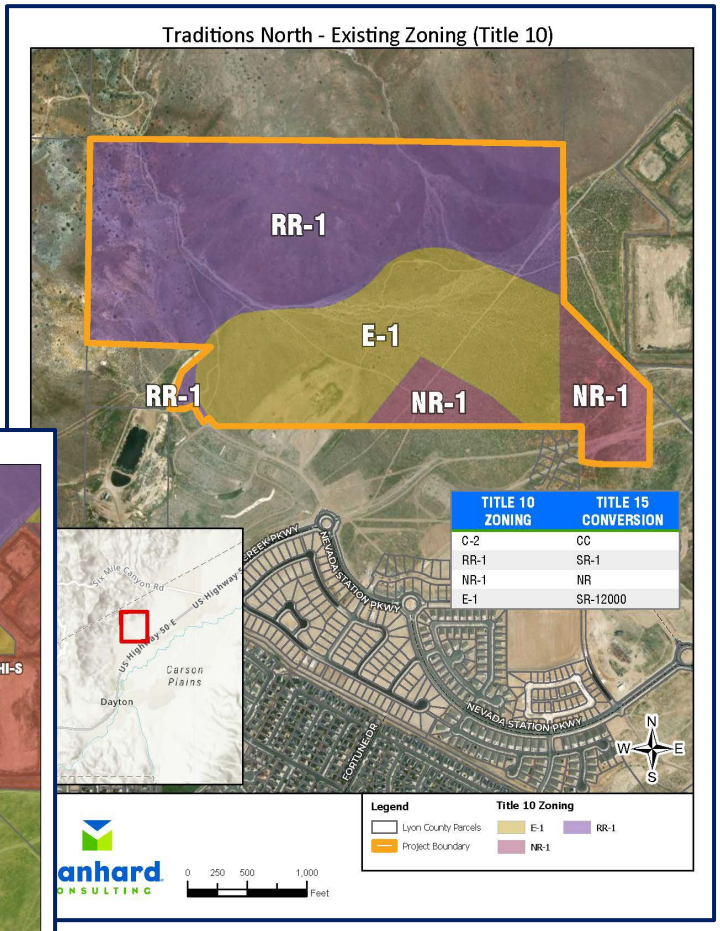
Master Plan Designation (provided by Applicant and updated by staff)

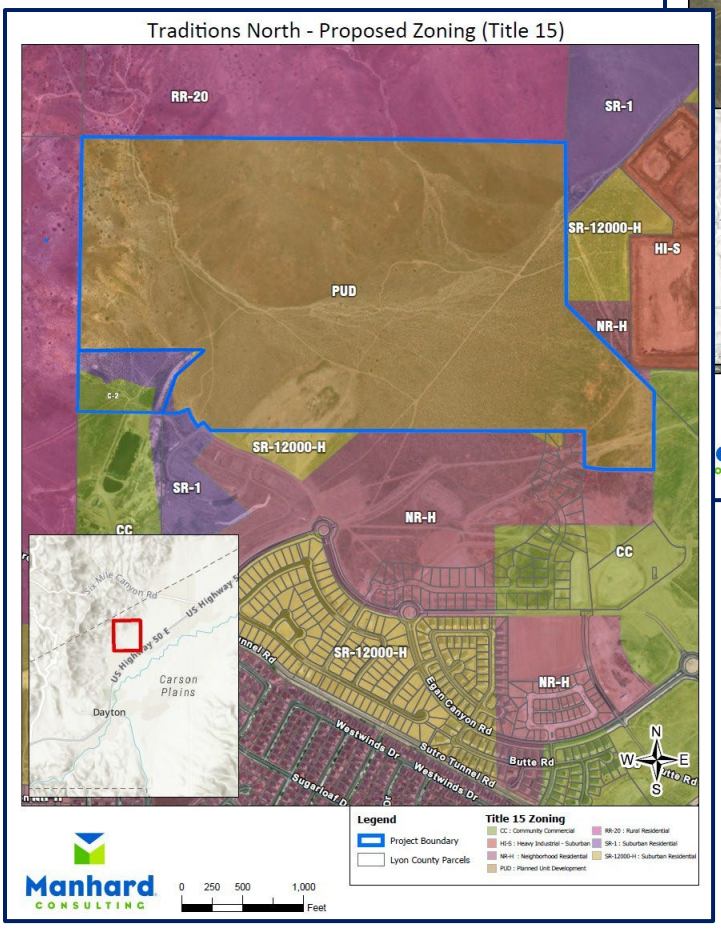
Zoning

The existing and proposed zoning of the subject parcel and the surrounding parcels are displayed in the Current Zoning and the Proposed Zoning images shown below. The subject parcel's current zoning is from the County's expired Development Code, Title 10. The zoning on the entire parcel is comprised of First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), Single-Family Nonrural Residential District (NR-1), and General Commercial District (C-2).

The proposed zoning request is to rezone 220.75 acres of the property to the Title 15 district of Planned Unit Development (PUD). The zoning amendment to PUD would be consistent with the Master Plan designations of Suburban Residential, and Low Density Residential. The Parks and Open Space designations will be accommodated within the PUD with open space and parks to be included throughout the development. The remaining 10.01 acres is planned to be donated to The Friends of Sutro Tunnel Charity and will retain the underlying zoning of First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), and General Commercial District (C-2).

Current Zoning Designation





Proposed Zoning Designation

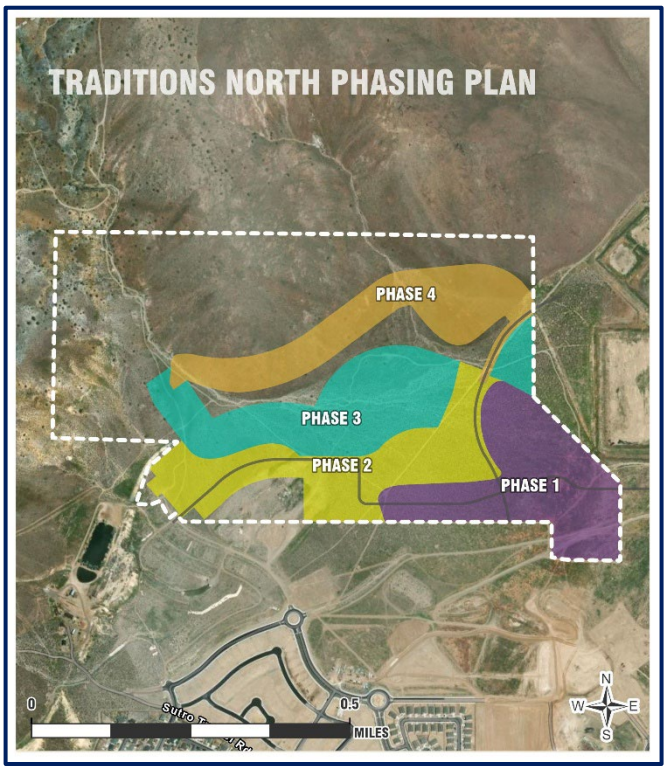
Per Title 15, *"Planned Unit Development (PUD) is a land use designation designed to provide an overall planning and design approach for a single use development or a development incorporating a mix of uses. PUD allows for deviation from a strict application of dimensional and use limitations of the zoning district or districts in order to provide flexibility for landowners to creatively plan for the overall development of their land to achieve a more desirable environment than would be possible through strict application of the standard requirements of the zoning district. Chapter 15.349 of the Land Use and Development Code includes detailed PUD information."*

PUDs are an allowed zoning district within the Low Density Residential, Suburban Residential, Parks, and Open Space Master Plan Designations within the Dayton Suburban Character District. The PUD handbook will be presented in a concurrent application (PLZ-2025-094) and allows the following main uses in addition to all uses allowed under SR-9000 and SR-12000 zoning districts, assuming the ZMA and following PUD is approved.

Single Family Detached	Community gardens
Single Family Attached	Equestrian facilities
Duplexes (Multi-family, 2 units)	Passive and action recreation
Cottage Housing	Trails

In regard to the Open Space (OS) uses above, the applicant states in the PUD Handbook *"The OS planning area is to remain largely undisturbed but acceptable uses and development include trails, passive and active recreation, equestrian facilities, community gardens, hydraulic features, roadways, and other improvements in support of such uses."*

The applicant is also coming forth with a Planned Unit Development (PUD) application (PLZ-2025-094) and Tentative Subdivision Map (TSM) application (PLZ-2025-095). The proposed land use plan and phasing are shown below.



STAFF REVIEW AND COMMENTS

Proposed Zoning Map Amendments are first reviewed by staff and the Planning Commission, who then make recommendations to the Board of County Commissioners. The Board makes the final vote on whether or not to approve the request.

FINDINGS

Chapter 15.220.05 of Lyon County Code states that when considering approval of a Zoning Map Amendment, three Findings must be considered and supported by a statement of evidence, facts and conclusions. Staff has included those three Findings in **bold** type below. Each Finding is listed with the applicant's response in *italics* and then staff's comments.

Finding A: The proposed amendment is consistent with the policies embodied in the adopted master plan and the underlying land use designation contained in the land use plan.

Applicant's Response

The underlying Master Plan land use designations are a mix of residential, open space, and commercial designations. The residential share of the master plan is about 61% of the property while open space is about 33%. The commercial area occupies about 1% with the remainder of the property having no designation.

The proposed land plan within the PUD designation serves to promote and protect open space and recreation opportunities by prioritizing the Open Space land designation in the upper half of the project. Although the Low-Density Residential Master Plan land use designation contemplates larger one-acre lots, providing smaller lot sizes grants the opportunity to increase the share of protected open space land to 40-50% of the total project area.

This project further supports policies that promote complementary neighborhoods in Suburban Character Districts by incorporating a variety of lot sizes (Policy C 1.5). The plan also provides multiple focal points for the neighborhood that will serve the broader community including the proposed large park and trailhead.

Staff Comment

The proposed Zoning Map Amendment would facilitate the development of the subject property in a manner consistent with the Master Plan and proposed future development in the area as per Policy FS 1.1, "*New development will occur in an area that is served by, or are adjacent to, areas with existing utility systems to avoid distant and costly extensions."* The proposed project is within the Lyon County Utilities District service area and existing utility systems exist south and east of the project area.

The requested amendment also meets Policy LU 1.1: "*Follow Development Patterns as Established in the Land Use Plan – Future development of Lyon County will be consistent with the Land Use Plan. The Land Use Plan will guide future growth and development by defining appropriate land use types, densities, and character in different locations including cities and towns, suburbanizing areas, rural areas, farm and ranch land, hillsides, and public lands. The county's future urban and suburban growth will develop largely around existing communities.*" The property is located directly adjacent to an existing and developing residential subdivision and follows the land use plans indicated within the Dayton Suburban Character District.

Chapter 3 of the Master Plan, Land Use, Economy and Growth, Table 2: Land Use Table describes some of the intended uses under the Suburban Residential, Low Density Residential, Parks, and Open Space designations and the zoning districts that are compatible with that Master Plan designation. This proposed Zoning Map Amendment to PUD is an allowed zoning district within the Master Plan Land Use Tables as shown on the following page. With these items, Staff feels this Finding is met.

	Title 10 Zoning *(Consistent Title 15 Designation)*	Title 15 Zoning	Density Range/Size	Description/Characteristics	Examples of Uses
Low Density Residential	**RR-2** *(RR-2, SR-2)* **RR-1** *(RR-1, SR-1)*	**RR-2** **SR-2** **RR-1** **SR-1** **PUD ***	1 DU per 1 to <5 acres (>0.2-1.0 DU/acre)	Typically found in rural districts and on the suburbanizing fringe. Lot size and layout varies. Typically not served by urban or municipal utilities, depending on location in suburbanizing district.	Single-family residences.

	Title 10 Zoning *(Consistent Title 15 Designation)*	Title 15 Zoning	Density Range/Size	Description/Characteristics	Examples of Uses
Suburban Residential	**E-2** *(SR-1/2)* **E-1** *(SR-12000)*	**SR-1/2** **SR-12000** **SR-12000-H** **PUD ***	1 DU per 12,000 sf to <1 acre (>1-<4 DU/acre)	Medium-density residential neighborhoods should contain a mix of housing types in a neighborhood setting. Each neighborhood should have a recognizable center. Centers will vary in size and composition, but may include a combination of higher-density residential uses, parks and/or recreation facilities, or civic uses. Neighborhoods should contain connective open spaces that unify the development and provide transitions between other areas and uses.	Single-family residences and duplexes and attached housing.
	NR-3 *(SR-9000)* **NR-1** *(NR)* **NR-2** *(MFR)* **MHP** *(No Consistent District)*	**SR-9000** **SR-9000-H** **NR** **NR-H** **MFR** **PUD ***	5 to 18 Dwelling Units per acre	High density residential is typically found in suburbanizing districts. High Density Residential should be located near major transportation facilities, near commercial uses, or civic centers and near parks.	Apartments, duplexes, fourplexes, condominiums and townhomes. Single Family Residential detached units at 5 to 10 dwelling units per acre.

	Title 10 Zoning *(Consistent Title 15 Designation)*	Title 15 Zoning	Density Range/Size	Description/Characteristics	Examples of Uses
Parks	N/A	**PF ***	Varies, ranging from as small as 1-3 acres to 40+ acres for regional facilities.	Intended to provide for the active and passive recreational needs of the community. Generally provided by the County.	Parks, pathways, and recreational facilities.
Open Space	**RR-5** *(RR-20)*	**OS**		Open space provides recreational linkages between different areas of the County; floodplain, drainage or view protection; and/or wildlife habitat. Public access may be provided with designated trails or bicycle facilities. However, in other areas lands may be left intact as visual buffers along an important scenic area or community boundary. Open space may be granted to or purchased outright by the County for public use, donated to private land trusts, or protected using another method, such as conservation easements, signage restrictions, and design controls.	*Primary Uses:* Publicly owned/managed and accessible lands preserved by the County, other government agencies, or quasi-public (land trusts, non-profit organizations, etc.) for conservation, resource protection, or recreational use. Not lands that are part of a private development (e.g. planned unit development) May also be preserved without public access to protect sensitive natural areas. *Secondary Uses:* Utilities (e.g. municipal wells or other utility structures).

* Planned Unit Development (PUD) is a land use designation designed to provide an overall planning and design approach for a single use development or a development incorporating a mix of uses. PUD allows for deviation from a strict application of dimensional and use limitations of the zoning district or districts in order to provide flexibility for landowners to creatively plan for the overall development of their land to achieve a more desirable environment than would be possible through strict application of the standard requirements of the zoning district. Chapter 15.349 of the Land Use and Development Code includes detailed PUD information.

Finding B: The proposed amendment will not be inconsistent with the adequate public facilities policies contained in this title.

Applicant's Response

The proposed amendment would support the establishment of a residential neighborhood that is a logical extension of the existing Traditions development. This supports Master Plan Policy LU 1.2 which seeks orderly growth patterns with neighborhood units as the primary building blocks of the County's residential areas. The subject property has utilities immediately adjacent to the site and should not require significant extensions to serve the proposed project (Policy LU 2.1 & FS 1.1). School facilities that serve the area are adequate to support the project for the based on discussions with the Lyon County School District.

Staff Comment

As described in the Public Facilities section on page 4, the project is located within the Lyon County Utilities Department service area. It would not be inconsistent with the adequate public facilities policies nor would it introduce a new need for public services that are not already provided to surrounding parcels in the area. This Finding is met.

Finding C: That the proposed amendment is compatible with the actual or master planned adjacent uses.

Applicant's Response

To the north and west are Federal public lands that are anticipated to remain as open space. The proposed land use plan establishes an Open Space designation and provides trail access points to promote this resource. The trails and open space proposed within PUD should also support the operations of the Historic Sutro Tunnel and Site located immediately to the southwest. The proposed residential development is a logical extension of the existing and master planned residential development to the south and east. The site is not directly adjacent to Employment master planned properties that exist to the east and Lyon County Code is adequate to address possible general environmental conflicts such as noise, glare, and odor as those properties are developed.

Staff Comment

The proposed Zoning Map Amendment to rezone the parcels PUD would be consistent with the Master Plan designations of Suburban Residential, Low Density Residential, Parks, and Open Space. The subject parcels would not introduce an unplanned or incompatible use to the area and include extensive parks, trails and open space areas. These parcels are directly adjacent to the Traditions Residential Subdivision and, as stated by the applicant above, are a logical extension of the residential development in the area. This Finding can be met.

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TRADITIONS NORTH ZONING MAP AMENDMENT

PLZ-2025-093

Backup information is included in the Planning Commission Agenda, under Item 14.i. Traditions North Tentative Subdivision Map.

The attachments are as follows:

Attachment 1: Project Narrative

Attachment 2: Plan Set

Attachment 3: Traffic, Drainage, and Hydrology & Hydraulics Studies

Attachment 4: Geotechnical Report

Attachment 5: Preliminary Sewer Report

Attachment 6: Typical Lot Landscape Plans and Street Cross-Sections

Attachment 7: Neighborhood and Pocket Parks and North Drainage Trail Section

Attachment 8: Draft PUD Handbook - Updated

Attachment 9: Street Name Request Form

February 3, 2026

Mr. Gavin Henderson, Director
Lyon County Community Development Department
27 S. Main St.
Yerington, NV 89447

RE: Letter of Support for Traditions North Development and Sutro Tunnel Land Donation

Dear Mr. Henderson:

On behalf of the Board of Directors of the Friends of Sutro Tunnel Charity, we are writing to express our strong support for the Traditions North development and the associated land donation benefiting the historic Sutro Tunnel in Dayton, Nevada.

The Traditions North project reflects a thoughtful and balanced approach to growth—one that addresses housing needs while making an extraordinary commitment to open space preservation, historic stewardship, and long-term community benefit. Of the approximately 230 acres comprising the project site, more than 80 acres are proposed to be permanently preserved as open space, including a 10-acre land donation to our organization.

This generous donation builds upon the Friends of Sutro Tunnel's existing 27.94 acres, expanding the Sutro Tunnel Portal Park to 38 acres. This expansion significantly strengthens our ability to preserve one of Nevada's most important engineering and cultural landmarks while enhancing opportunities for public access, education, and regional tourism.

Importantly, this land donation comes on the heels of substantial recent investment in the Sutro Tunnel site, including a $493,000 Travel Nevada grant and more than $700,000 in additional private and community donations. Together, these contributions are helping move the Sutro Tunnel closer to being safely opened to the public, transforming it into a meaningful tourism destination and a historic park for residents and visitors of Dayton, Lyon County, and the surrounding region to enjoy. These efforts are expected to generate positive economic impacts through increased visitation, heritage tourism, and local business activity.

The donated acreage includes some of the most visually prominent areas associated with the Sutro Tunnel and its historic portal. Preserving these lands in perpetuity will help maintain the tunnel's strong visual and cultural presence throughout Dayton and ensure that future generations can appreciate the site's historic significance. The expanded footprint also allows

for long-term planning that supports historic interpretation, restoration efforts, and responsible public use.

In addition to the Sutro Tunnel land donation, we commend Traditions North for designating an additional 74 acres as permanent open space and for thoughtfully clustering development to protect scenic views, historic resources, and community character. This approach aligns well with Lyon County's long-term planning goals and demonstrates how responsible development and historic preservation can move forward together.

The Friends of Sutro Tunnel Charity sincerely appreciates the partnership and generosity demonstrated through this project. We believe Traditions North represents a positive and lasting investment in Dayton's future and respectfully encourage Lyon County to view this project favorably as it proceeds through the review process.

Thank you for your time, consideration, and continued commitment to thoughtful planning and preservation within Lyon County.

Sincerely,

Board of Directors | Friends of Sutro Tunnel Charity
Phil Cowee
Bill Miles
Mark Turner
Sam Landis
Rob McFadden

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
14.h

Subject:
For Possible Action: To approve the request from Traditions North LLC for a Planned Unit Development (PUD) for the Traditions North Residential Development. The project consists of 415 single-family residential units, open space, a neighborhood park, and pocket parks and is generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 230.76-acre parcel (APN 016-406-07), PLZ-2025-094. (Senior Planner Lisa Nash)

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Staff Report
- Backup
- Public Comment

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BOARD OF COUNTY COMMISSIONERS

PLZ-2025-094

Proposed Action	Tentative Planned Unit Development (PUD) for the Traditions North Residential Development
Meeting Date	March 5, 2026
Property Owners	Sutro Residential Group LLC
Applicant	Traditions North LLC
Representative	Manhard Consulting LLC
Community	Dayton
Location	North of the intersection of Nevada Station and Rock Creek Parkways
Parcel Number	016-406-07
Parcel Size	220.75 acres of a 230.76-acre parcel
Master Plan	Low Density Residential, Suburban Residential, Parks, and Open Space
Current Zoning	RR-1, E-1, and NR-1
Proposed Zoning	Planned Unit Development (PUD)
Flood Zone(s)	Zone X Shaded and Unshaded per FIRMs 32019C0290E (effective 1/16/2009) and 32019C0289F (effective 10/20/2016)
Case Planner	Lisa Nash

REQUEST

The Applicant is seeking approval of a Tentative Planned Unit Development (PUD). The PUD consists of 415 single-family residential units and associated common areas, parks, trails and open areas on an approximate 220.76-acre portion of a 230.76-acre parcel in Dayton.

PLANNING COMMISSION

The Planning Commission heard the item on February 10, 2026. The Commission forwarded a recommendation of approval, voting 7-0 (7 Ayes; 0 Nays; 0 Abstentions). The recommendation was based on the findings listed in the staff report.

RECOMMENDED MOTION

If the Board of County Commissioners determines that they will approve the PUD application, then the Board should make a motion similar to the following.

The Board of County Commissioners has considered:

15.349.10: FINDINGS:

When making an approval, modification or denial of a Tentative PUD, the Board shall, at a minimum, consider each of the following and base approval on the combined weight of the findings. Each finding shall be supported by a statement of evidence, facts and conclusions.

A. In what respects the plan is or is not consistent with the statement of objectives of this chapter;

B. The extent to which the plan departs from zoning and planned unit development regulations otherwise applicable to the property, including but not limited to density, size and use, and the reasons such departures are or are not deemed to be in the public interest;

C. The purpose, location and amount of the open space in the planned unit development, the reliability of the proposals for maintenance and conservation of the open space and the adequacy or inadequacy of the amount and purpose of the open space as related to the proposed density and type of residential development;

D. A physical design of the plan and in the manner in which such design does or does not make adequate provision for public services, provide adequate control over vehicular traffic, parking requirements, and further the amenities of light and air, recreation and visual enjoyment;

E. The relationship, beneficial or adverse, of the proposed planned unit development to the neighborhood in which it is proposed;

F. In the case of a plan which proposes a development over a period of years, the sufficiency of the terms and conditions intended to protect the interest of the public and the residents of the planned unit development in the integrity of the plan.

Based on the aforementioned Findings, I move that the Board of County Commissioners <u>approve</u> the request from Traditions North LLC for a Tentative Planned Unit Development generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately on an approximately 220.75-acre portion of a 230.76-acre parcel (APN 016-406-07), PLZ-2025-094.

ALTERNATIVES TO RECOMMENDATION OF APPROVAL

<u>Alternative Motion for Continuance</u>

If the Board of County Commissioners determine that there is insufficient information with which to make a decision on the Tentative PUD application before them and that additional information, discussion and public comment are necessary to have a more complete and thorough review of the proposed project, then the Board should make the appropriate findings and move to continue the Public Hearing for the Tentative PUD application to a future date with concurrence from the applicant.

If so, then the Board may wish to consider a motion similar to the following:

The Board of County Commissioners finds that:

A. Additional information, discussion, and public review are necessary for a more thorough review of the proposed Tentative PUD application.

Based on the aforementioned finding, and with the applicant's concurrence, the Board of County Commissioners continues the request from Traditions North LLC for a Tentative Planned Unit Development generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately on an approximately 220.75-acre portion of a 230.76-acre parcel (APN 016-406-07), PLZ-2025-094 for ___ days.

Alternative Motion for Denial

If after review and public comment the Board of County Commissioners determines that they should deny the Tentative PUD application, then the Board may wish to consider a motion similar to the following:

The Board of County Commissioners has considered:

A. In what respects the plan is or is not consistent with the statement of objectives of this chapter;

B. The extent to which the plan departs from zoning and planned unit development regulations otherwise applicable to the property, including but not limited to density, size and use, and the reasons such departures are or are not deemed to be in the public interest;

C. The purpose, location and amount of the open space in the planned unit development, the reliability of the proposals for maintenance and conservation of the open space and the adequacy or inadequacy of the amount and purpose of the open space as related to the proposed density and type of residential development;

D. A physical design of the plan and in the manner in which such design does or does not make adequate provision for public services, provide adequate control over vehicular traffic, parking requirements, and further the amenities of light and air, recreation and visual enjoyment;

E. The relationship, beneficial or adverse, of the proposed planned unit development to the neighborhood in which it is proposed;

F. In the case of a plan which proposes a development over a period of years, the sufficiency of the terms and conditions intended to protect the interest of the public and the residents of the planned unit development in the integrity of the plan.

Based on the aforementioned considerations, I move that the Board of County Commissioners deny the request from Traditions North LLC for a Tentative Planned Unit Development generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately on an approximately 220.75-acre portion of a 230.76-acre parcel (APN 016-406-07), PLZ-2025-094.

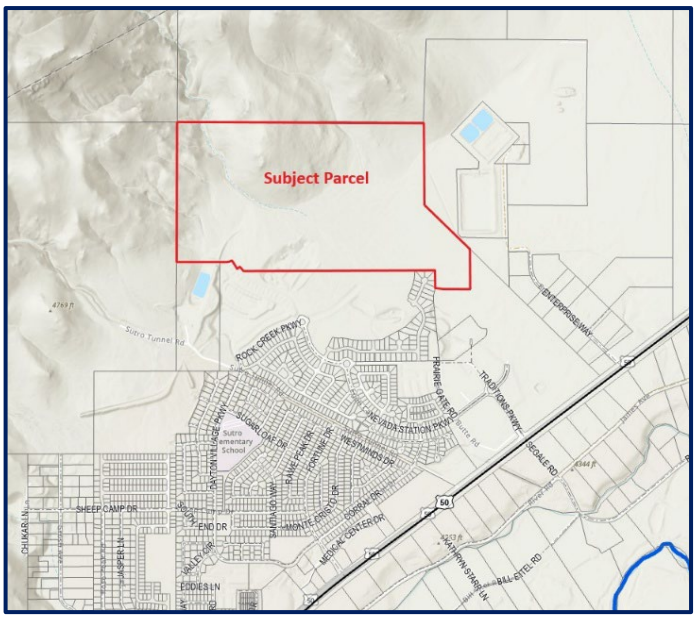
BACKGROUND INFORMATION

Location, Access, and Existing Development

The subject property is located in the Dayton Suburban Character District north of the existing Traditions Residential Development, generally located north of the intersection of Nevada Station and Rock Creek Parkways (APN 016-406-07). The property has a total acreage of 230.76-acres. The maps below show the location of the parcel.

Since the time of submittal, the applicant has an agreement to donate 10.01 acres of land in the southwest corner of the site to the Friends of Sutro Tunnel Charity organization. This will reduce the PUD property area from 230.76 to 220.75 acres. A land division entitlement will need to be submitted to record this transfer of land. The underlying zoning of First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), and General Commercial District (C-2) will remain on the 10.01-acre parcel as shown on the Sutro Tunnel Donation Existing Title 10 Zoning Map on Page 6.

Vicinity Map



Assessor's Map (provided by applicant)

The surrounding zoning from the County's expired Development Code, Title 10 is comprised of First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), Single-Family Nonrural Residential District (NR-1), General Commercial District (C-2), and Fifth Rural Residential District (20 Acres) (RR-5) zoned properties. The parcel is bordered to the south by undeveloped land within the Traditions Residential and Commercial Subdivisions. Land to the north and west is owned by the U.S. Bureau of Land Management near the Storey–Lyon County border, and the Sutro Tunnel historic site lies to the southwest. Properties within the Traditions Commercial Subdivision are zoned General Commercial (C-2).

The parcel itself is currently undeveloped and will be primarily accessed via Fortune Drive and Traditions Parkway from U.S. Highway 50.

<u>Public Facilities</u>

The project is located within the Lyon County Utilities Department (LCUD) service area and there are existing water and sewer services located within adjacent properties. Any future development must obtain LCUD permit approvals before construction. Although LCUD has issued an intent-to-serve letter, this does not guarantee service. Before receiving any building permits, LCUD reserves the right to deny or limit connections to the sewer system to ensure the system resources remain permit compliant and do not exceed the available resource capabilities.

Project History

From the applicant's submittal: "*The site was originally part of the Traditions Community Master Plan. On May 6, 2004, a PUD was approved through a special use permit to establish the current Title 10 zoning designations: RR-1, E-1, C-2, and NR-1. A Tentative Subdivision Map was recorded in 2007 and extended in 2008 following the Nevada Legislature's adoption of AB74, with an additional extension granted in 2010. Although the PUD has since been dissolved, the property was hard zoned to match the approved subdivision configuration."*

Based on the prior approvals and entitlements for the site, the applicant is correct about the current zoning designations and that there are no current entitlements for the property.

PROJECT DESCRIPTION

As provided by the Applicant:

> *"This application submittal includes a request for a zoning map amendment to establish a Planned Unit Development (PUD). Included for consideration is the tentative planned unit development plan and development handbook. The completed project includes a maximum of 415 dwelling units and it is proposed to be constructed in four phases. The PUD provides necessary flexibility to implement the project, while maintaining consistent standards across a mix of residential intensities.*
>
> *The land use plan includes planning areas that are generally consistent with existing Lyon County residential zones, with the addition of a 6,000 sq. ft. minimum lot size type.*
>
> *The Traditions North PUD Development Standards Handbook provides a framework to ensure the quality of the development that occurs with the PUD and that each project meets the intent of the approved project. The proposed project meets the development standards set forth in the Handbook, including land use, density, setbacks, open space, and other development standards."*

LAND USE CHANGES

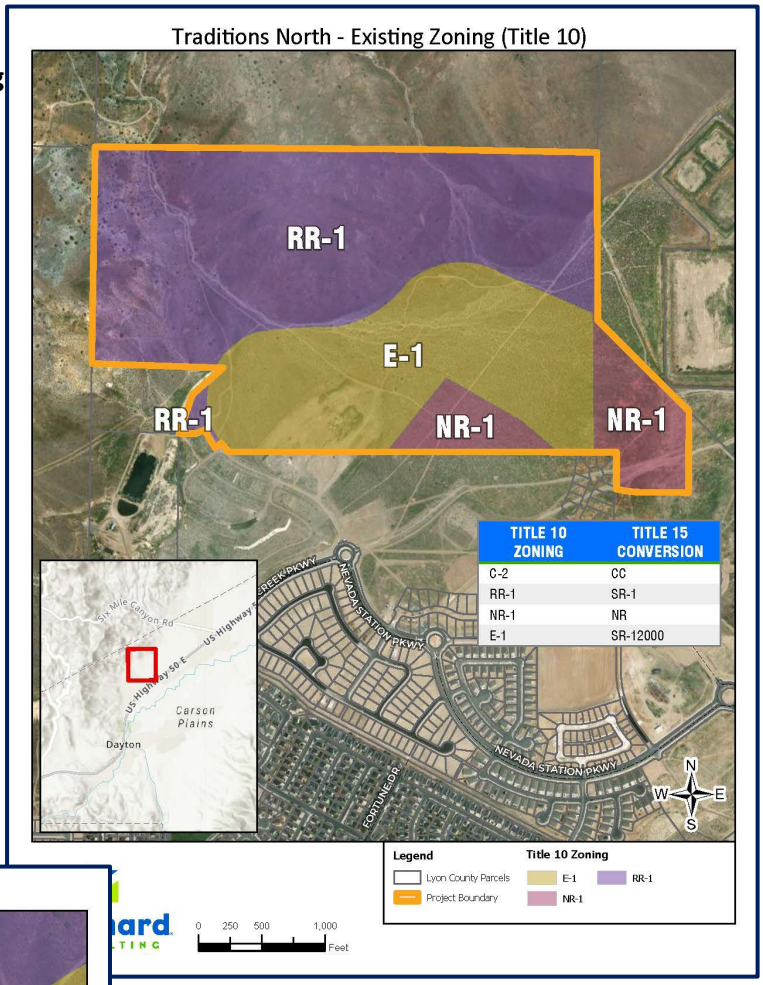
PUD Handbook Land Uses and Zoning

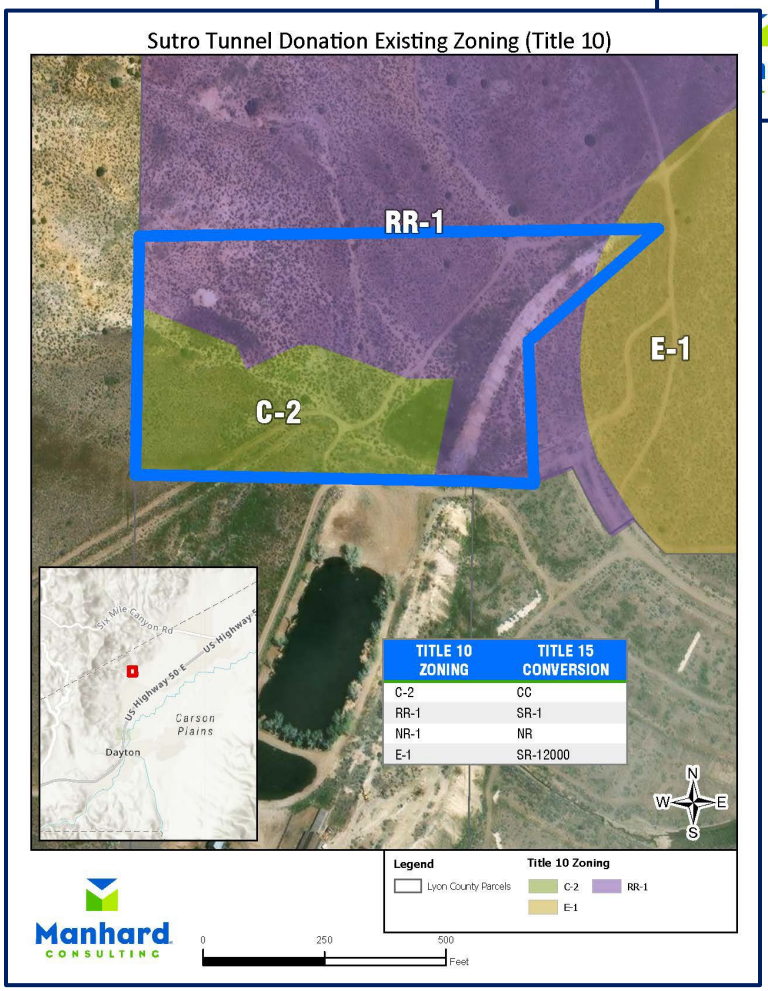
Through the Tentative PUD, the applicant proposes a mix of single-family residential lots, common areas, trails, parks, and open space. The subject parcels are governed by the County's expired Development Code (Title 10) and carry underlying zoning designations of First Rural Residential (RR-1, 1-acre), First Estates Residential (E-1), and Single-Family Nonrural Residential (NR-1).

Per the Zoning Consistency Matrix, adopted in 2018 with Title 15, the corresponding districts in Title 15 are Suburban Residential, 1 Acre Minimum (SR-1), Suburban Residential, 12000 sq.ft. Minimum (SR-12000), and Neighborhood Residential, 4500 sq.ft. Minimum (NR). The parcels are subject to SR-1, SR-12000, and NR zoning development standards and allowed uses or as defined in the current PUD.

The plan on the following page (provided by the applicant) shows the current zoning for the property.

Existing Title 10 Zoning





Sutro Tunnel Donation Existing Title 10 Zoning

Proposed Handbook Zoning

The Tentative PUD handbook proposes four residential lot sizes ranging from 4,500 to 12,000 square feet, at least 90 acres of trails and open space, active and passive recreation areas, and access to the Sutro Trail.

The proposed zoning request, which is a part of a separate application before this board (PLZ-2025-093), seeks to rezone the parcels from the Title 10 zoning districts of First Rural Residential District (1 Acre) (RR-1), First Estates Residential District (E-1), and Single-Family Nonrural Residential District (NR-1) to the Title 15 district of PUD (Planned Unit Development).

The proposed zoning districts from the PUD handbook are shown in the Proposed Land Use Plan on the following page.

Proposed Land Use Plan

Proposed Handbook Land Uses

The proposed zoning changes shown on the plan above will allow for additional land uses beyond those permitted under the underlying zoning. Each phase will have defined permitted uses and their own development standards and requirements. The PUD handbook includes the land use, density, setbacks, open space, and other development standards.

The PUD Handbook sets the maximum number of residential units at 415 single-family residential units. The underlying Title 10 zoning would allow for a maximum density of 601 residential units as shown in Table 3 below.

Table 3: Density Analysis

Density Analysis	Land Use Acreage	Units
Existing RR-1 (1 unit per acre)	± 131.28	131
Existing EE-1 (3.63 units per acre)	± 66.84	242
Existing NR-1 (9.68 units per acre)	± 23.57	228
Existing Maximum Units		**601**
Proposed Maximum Units		**415**

The applicant has also elected to include 90 acres of common area/open space (40.8%) which is in excess of the 20% open space requirement and greater than the existing Master Plan land use area designated as Open Space (38%). The following Table 1: Land Use shows the planning areas from the PUD handbook and allowed residential units per area.

Table 1: Land Use Table

PLANNING AREA	LAND AREA	ALLOWED UNITS
Single-Family Residential 4,500 SF	±6.9 acres	52
Single-Family Residential 6,000 SF	±26.1 acres	147
Single-Family Residential 9,000 SF	±34.5 acres	147
Single-Family Residential 12,000 SF	±20.5 acres	69
Trails and Open Space	90 acres minimum	-
Backbone Roads/ROW	Varies with final design	-
TOTAL	±220.75	415

The following table shows the main PUD approved uses. The PUD Handbook allows all uses permitted under SR-9000 and SR-12000 zoning districts per Lyon County Development Code.

Single Family Detached	Community gardens
Single Family Attached	Equestrian facilities
Duplexes (Multi-family, 2 units)	Passive and action recreation
Cottage Housing	Trails

In regard to the Open Space (OS) uses above, the applicant states in the PUD Handbook *"The OS planning area is to remain largely undisturbed but acceptable uses and development include trails, passive and active recreation, equestrian facilities, community gardens, hydraulic features, roadways, and other improvements in support of such uses."*

The applicant has also come to an agreement to donate 10.01 acres to the Friends of Sutro Tunnel Charity. Therefore, there will not be any commercial zoning within the Traditions North Residential Subdivision.

The uses listed above will be allowed subject to development standards described in the PUD Handbook and Lyon County Development Code.

Future Development Requirements

The applicant has submitted a Tentative Subdivision Map (TSM) (PLZ-2025-095) and Zone Map Amendment (ZMA) (PLZ-2025-093), both of which are being reviewed concurrently with this application. The TSM includes conceptual drainage studies and plans, traffic impact analysis, soils reports, grading plans, hydrology and hydraulic studies, etc. These applications (ZMA, PUD and TSM) will be heard before the Planning Commission and subsequently by the Board of County Commissioners.

If the ZMA, PUD and TSM are approved by the Board of County Commissioners, the Final PUD and Final Subdivision Maps will need to be submitted for administrative approvals before they can proceed to grading, site improvement and building permits.

STAFF REVIEW AND COMMENTS

Proposed Tentative PUDs are first reviewed by staff and the Planning Commission, who then make recommendations to the Board of County Commissioners. The Board makes the final vote on whether or not to approve the request.

FINDINGS

Chapter 15.349.10 of LCC, *"APPROVAL OR DENIAL OF APPLICATION",* states that the *"…approval or denial of a tentative planned unit development plan shall be by minute action and shall set forth the reasons for the approval or for the denial.".* It further states that the: *"…minutes shall also set forth with particularity in what respects the plan would or would not be in the public interest, including but not limited to, the following findings:".*

There are 6 Findings for PUDs, which are listed below in **bold** type with the applicant's response in *italics* and a staff comment.

Finding A: In what respects the plan is or is not consistent with the statement of objectives of this chapter;

Applicant's Response

The objectives of this PUD include:

- *Improving and enhancing the County's trail and park system by providing trails and open space that provide continuity and access to Federal public lands adjacent to the project.*
- *Encouraging innovations in residential development by introducing a greater variety of lot sizes to encourage variation in building typology.*

Staff Comment

Per Lyon County Development Code (LCC) 15.349.01: "*Planned unit development (PUD) is a land use designation designed to provide an overall planning and design approach for a single use development or a development incorporating a mix of uses. PUD allows for deviation from a strict application of dimensional and use limitations of the zoning district or districts in order to provide flexibility for landowners to creatively plan for the overall development of their land to achieve a more desirable environment than would be possible through strict application of the standard requirements of the zoning district."*

The proposed PUD Handbook is consistent with the purpose and objective of this chapter, as it does allow for the developer to plan an integrated community that is a logical extension of the community to the south and improves the environment through the addition of trails, access interconnectivity, and maintaining open space beyond the strict requirements of the LCC. This Item is met.

Finding B: The extent to which the plan departs from zoning and planned unit development regulations otherwise applicable to the property, including but not limited to density, size and use, and the reasons such departures are or are not deemed to be in the public interest;

Applicant's Response

The proposed development plan remains closely aligned with the density, lot size, and uses allowed under the existing zoning, but provides greater flexibility in the implementation of the plan to accommodate market-based considerations through the development process. Greater flexibility does not come at the cost of the preservation of open space, access to Federal public lands, and the opportunity for a mix of lot sizes and densities.

The plan proposes a deviation from standard LCC setbacks to promote a mix of intensities with a consistent street image program. The setbacks consistently promote a house forward design while maintaining minimum driveway lengths.

Staff Comment

The proposed PUD Handbook does depart from the traditional zoning district lot sizes, and also reduces the overall allowed residential density from 601 units to a maximum of 415 units. This allows for additional trails, open space and connectivity to public lands for the development, providing a positive benefit to the public.

Finding C: The purpose, location and amount of the open space in the planned unit development, the reliability of the proposals for maintenance and conservation of the open space and the adequacy or inadequacy of the amount and purpose of the open space as related to the proposed density and type of residential development;

Applicant's Response

The purpose, location, and amount of open space is indicated within the handbook and is provided at a greater degree than what is contemplated in the Master Plan. The handbook promotes access through an integrated trail system.

Staff Comment

The proposed Open Space allotment for the PUD is in excess of the required 20% from LCC as described on Page 8 of this document. The inclusion of trails and connectivity to existing off-site trails further supports the intent of maintaining and conserving open space.

Finding D: A physical design of the plan and in the manner in which such design does or does not make adequate provision for public services, provide adequate control over vehicular traffic, parking requirements, and further the amenities of light and air, recreation and visual enjoyment;

Applicant's Response

The development is a logical extension of utility infrastructure and is developed in accordance with the provided traffic impact assessment. Additional street connections are proposed to improve broader circulation through the site. Parking requirements are consistent with Lyon County Code and parking demand has been contemplated with respect to larger recreation and park amenities. The development provides a variety of recreation opportunities that are well integrated into the design of the project including a trailhead for the Sutro Trail, interface with the Historic Sutro Trail and Site, access to public lands, a large park, and multiple pocket parks.

Staff Comment

The proposed PUD Handbook design addresses the finding concerns as described by the applicant's response. Traffic, parking, improvements to infrastructure, recreation and visual enjoyment have been addressed with the design and layout provided by the applicant.

Finding E: The relationship, beneficial or adverse, of the proposed planned unit development to the neighborhood in which it is proposed;

Applicant's Response

The proposed project extends the existing Traditions neighborhood and provides new park and recreation amenities that reinforce the relationship between the existing neighborhood and the public lands and open space to the north and west.

Staff Comment

As the applicant states above, the proposed PUD Handbook does not appear to negatively impact the existing neighborhood. The addition of trail connections and retaining access to public lands will be of beneficial use to the surrounding neighborhoods.

Finding F: In the case of a plan which proposes a development over a period of years, the sufficiency of the terms and conditions intended to protect the interest of the public and the residents of the planned unit development in the integrity of the plan.

Applicant's Response

The project is proposed to be developed in four phases with the backbone roadway and stormwater infrastructure frontloaded to ensure adequate access is provided for responsible growth. Neighborhood and pocket parks intended to serve the development and nearby neighborhoods are in different phases and are required to be constructed before occupancy of a certain number of units indicated in the PUD Handbook. All construction will be coordinated with the Nevada Department of Transportation with the future improvements to US Highway 50. The tentative map application submitted with this application considers three of the four phases contemplated within the PUD. A subsequent tentative map application will be submitted in the future for the final phase.

Staff Comment

The proposed timeline for the PUD requires the infrastructure, road backbones, etc. to be constructed in the initial phase of development, thus providing sufficient protection to the existing neighborhoods and the future residents of the PUD. The applicant will be required to submit Final Subdivision Maps within statutory deadlines for development. With those requirements, this finding can be met.

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TRADITIONS NORTH PLANNED UNIT DEVELOPMENT

PLZ-2025-094

Backup information is included in the Board of County Commissioners Agenda, under Item 14.i Traditions North Tentative Subdivision Map.

The attachments are as follows:

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Attachment 2: Plan Set

Attachment 3: Traffic, Drainage, and Hydrology & Hydraulics Studies

Attachment 4: Geotechnical Report

Attachment 5: Preliminary Sewer Report

Attachment 6: Typical Lot Landscape Plans and Street Cross-Sections

Attachment 7: Neighborhood and Pocket Parks and North Drainage Trail Section

Attachment 8: Draft PUD Handbook - Updated

Attachment 9: Street Name Request Form

February 3, 2026

Mr. Gavin Henderson, Director
Lyon County Community Development Department
27 S. Main St.
Yerington, NV 89447

RE: Letter of Support for Traditions North Development and Sutro Tunnel Land Donation

Dear Mr. Henderson:

On behalf of the Board of Directors of the Friends of Sutro Tunnel Charity, we are writing to express our strong support for the Traditions North development and the associated land donation benefiting the historic Sutro Tunnel in Dayton, Nevada.

The Traditions North project reflects a thoughtful and balanced approach to growth—one that addresses housing needs while making an extraordinary commitment to open space preservation, historic stewardship, and long-term community benefit. Of the approximately 230 acres comprising the project site, more than 80 acres are proposed to be permanently preserved as open space, including a 10-acre land donation to our organization.

This generous donation builds upon the Friends of Sutro Tunnel's existing 27.94 acres, expanding the Sutro Tunnel Portal Park to 38 acres. This expansion significantly strengthens our ability to preserve one of Nevada's most important engineering and cultural landmarks while enhancing opportunities for public access, education, and regional tourism.

Importantly, this land donation comes on the heels of substantial recent investment in the Sutro Tunnel site, including a $493,000 Travel Nevada grant and more than $700,000 in additional private and community donations. Together, these contributions are helping move the Sutro Tunnel closer to being safely opened to the public, transforming it into a meaningful tourism destination and a historic park for residents and visitors of Dayton, Lyon County, and the surrounding region to enjoy. These efforts are expected to generate positive economic impacts through increased visitation, heritage tourism, and local business activity.

The donated acreage includes some of the most visually prominent areas associated with the Sutro Tunnel and its historic portal. Preserving these lands in perpetuity will help maintain the tunnel's strong visual and cultural presence throughout Dayton and ensure that future generations can appreciate the site's historic significance. The expanded footprint also allows

for long-term planning that supports historic interpretation, restoration efforts, and responsible public use.

In addition to the Sutro Tunnel land donation, we commend Traditions North for designating an additional 74 acres as permanent open space and for thoughtfully clustering development to protect scenic views, historic resources, and community character. This approach aligns well with Lyon County's long-term planning goals and demonstrates how responsible development and historic preservation can move forward together.

The Friends of Sutro Tunnel Charity sincerely appreciates the partnership and generosity demonstrated through this project. We believe Traditions North represents a positive and lasting investment in Dayton's future and respectfully encourage Lyon County to view this project favorably as it proceeds through the review process.

Thank you for your time, consideration, and continued commitment to thoughtful planning and preservation within Lyon County.

Sincerely,

Board of Directors | Friends of Sutro Tunnel Charity
Phil Cowee
Bill Miles
Mark Turner
Sam Landis
Rob McFadden

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
14.i

Subject:
For Possible Action: To approve the request from Traditions North LLC for a Tentative Subdivision Map. The request is for 358 detached single-family residential units, including 116-acres of common area open space, parks, and trails, and is generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 230.76-acre parcel (APN 016-406-07), PLZ-2025-095. (Senior Planner Lisa Nash)

Summary:

Financial Department Comments:

Approved As To Legal Form:

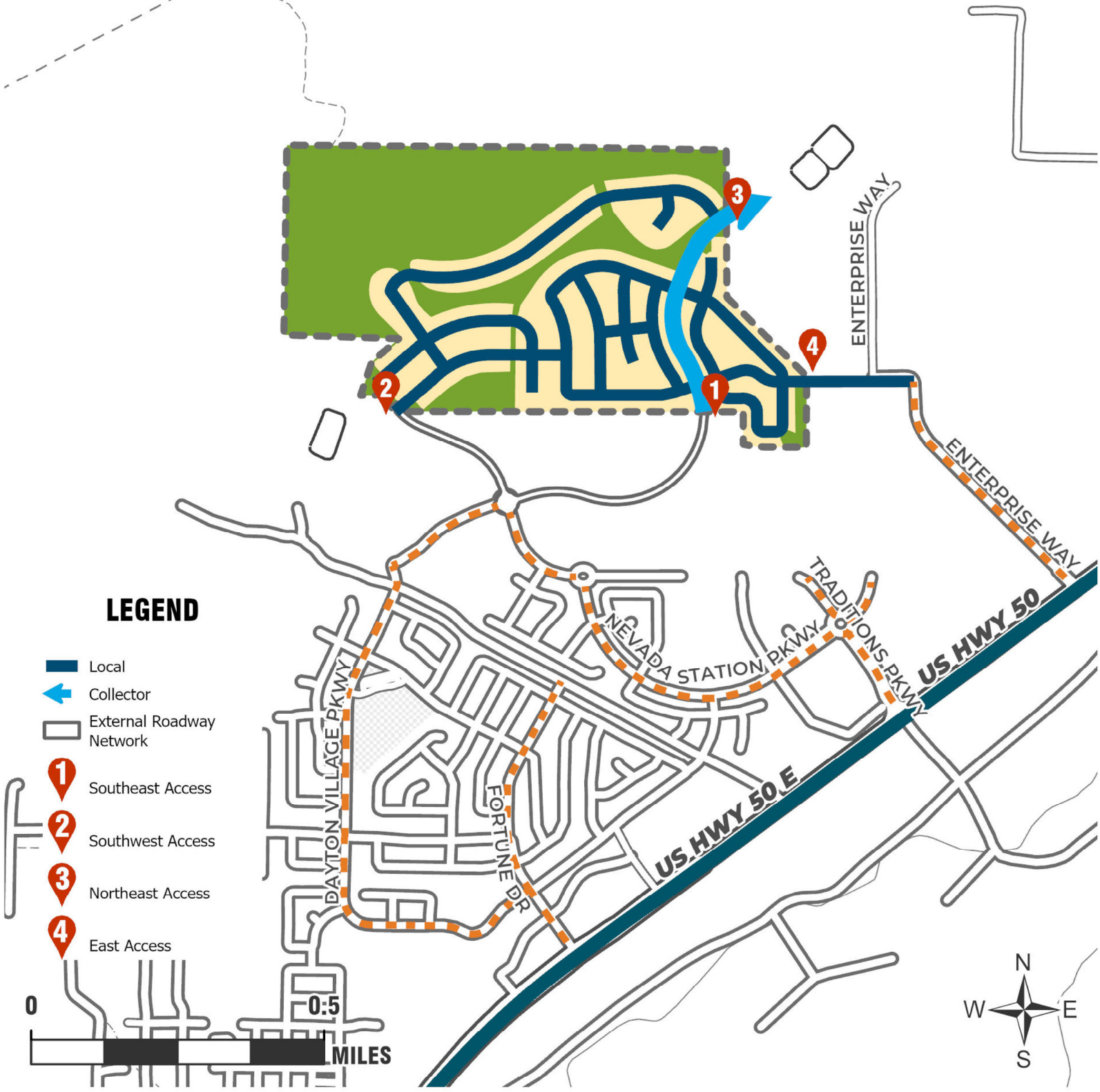
County Manager Comments:

Recommendation:

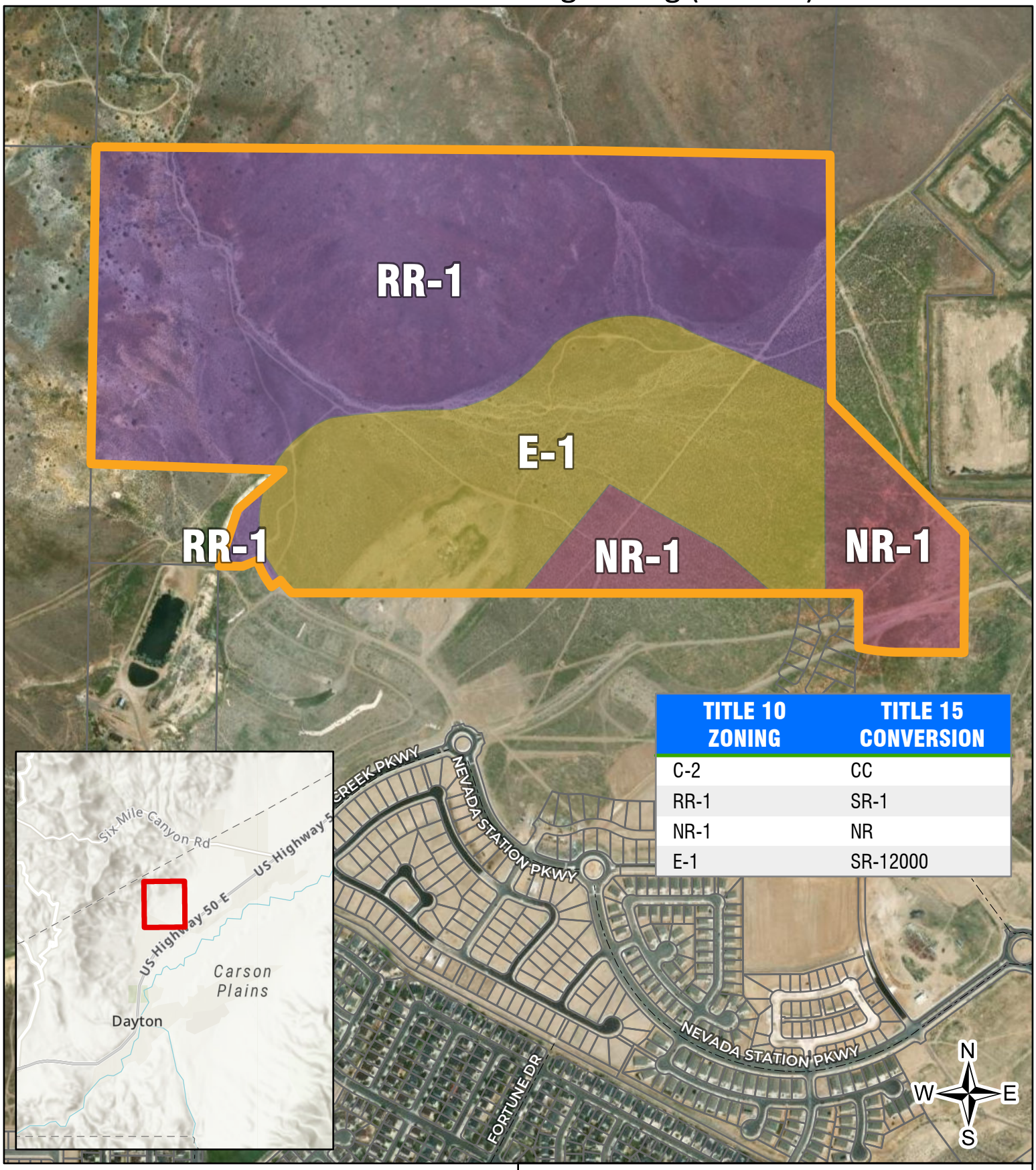
ATTACHMENTS
- Project Narrative
- Plan Set
- Traffic, Drainage, H&H Studies
- Geotechnical Report
- Preliminary Sewer Report
- Landscape, Streets
- Trails, Parks
- Draft PUD Handbook
- Street Name Request Form
- Public Comment
- Letter of Continuance

UPDATED PLANS TO REFLECT SUTRO TUNNEL 10.01 ACRE DONATION

TRADITIONS NORTH CIRCULATION PLAN



Traditions North - Existing Zoning (Title 10)



TITLE 10 ZONING	TITLE 15 CONVERSION
C-2	CC
RR-1	SR-1
NR-1	NR
E-1	SR-12000

Legend

- Lyon County Parcels
- Project Boundary

Title 10 Zoning

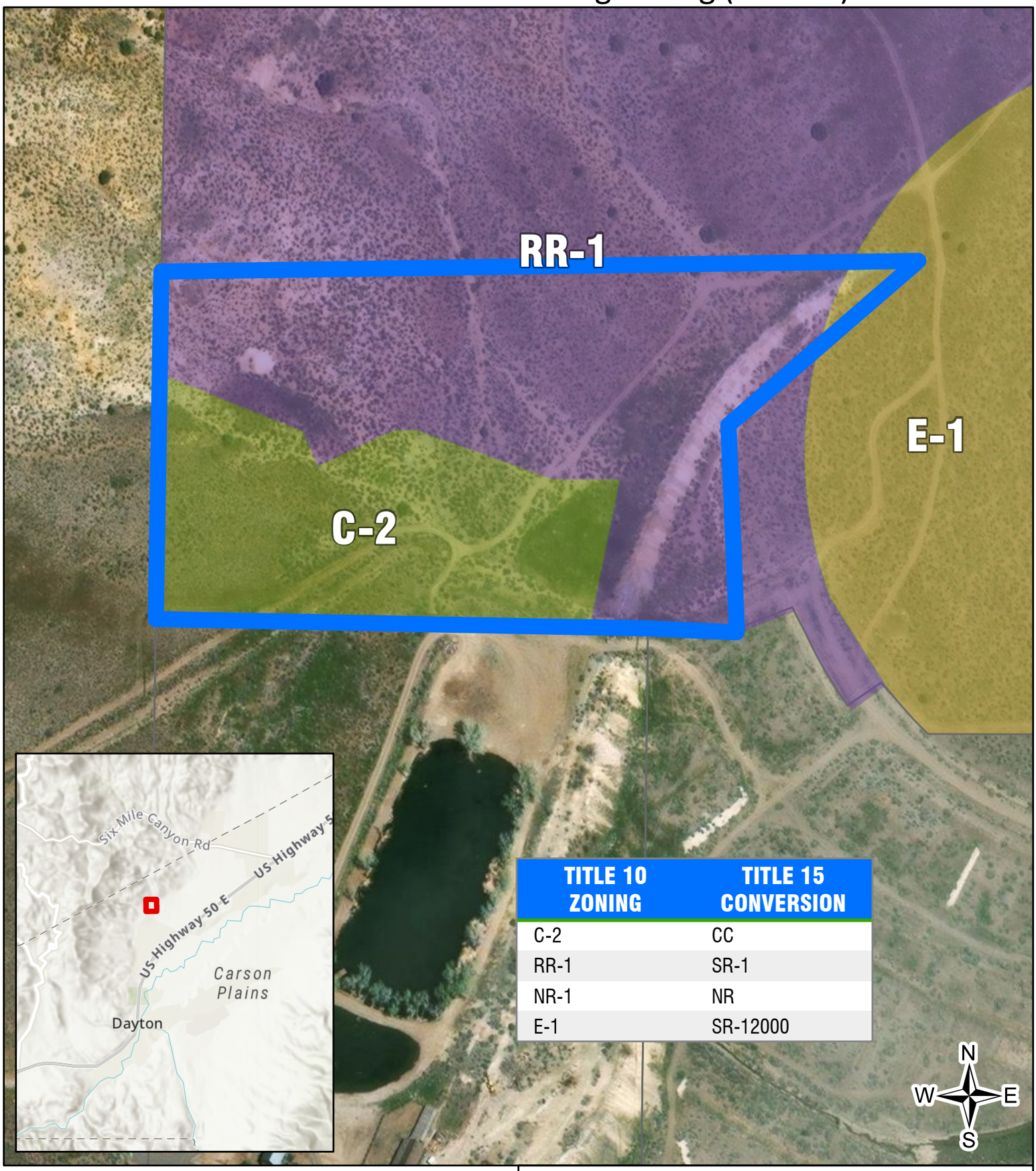
- E-1
- RR-1
- NR-1

Manhard CONSULTING

0 250 500 1,000 Feet

660

Sutro Tunnel Donation Existing Zoning (Title 10)



TITLE 10 ZONING	TITLE 15 CONVERSION
C-2	CC
RR-1	SR-1
NR-1	NR
E-1	SR-12000

Legend

Lyon County Parcels

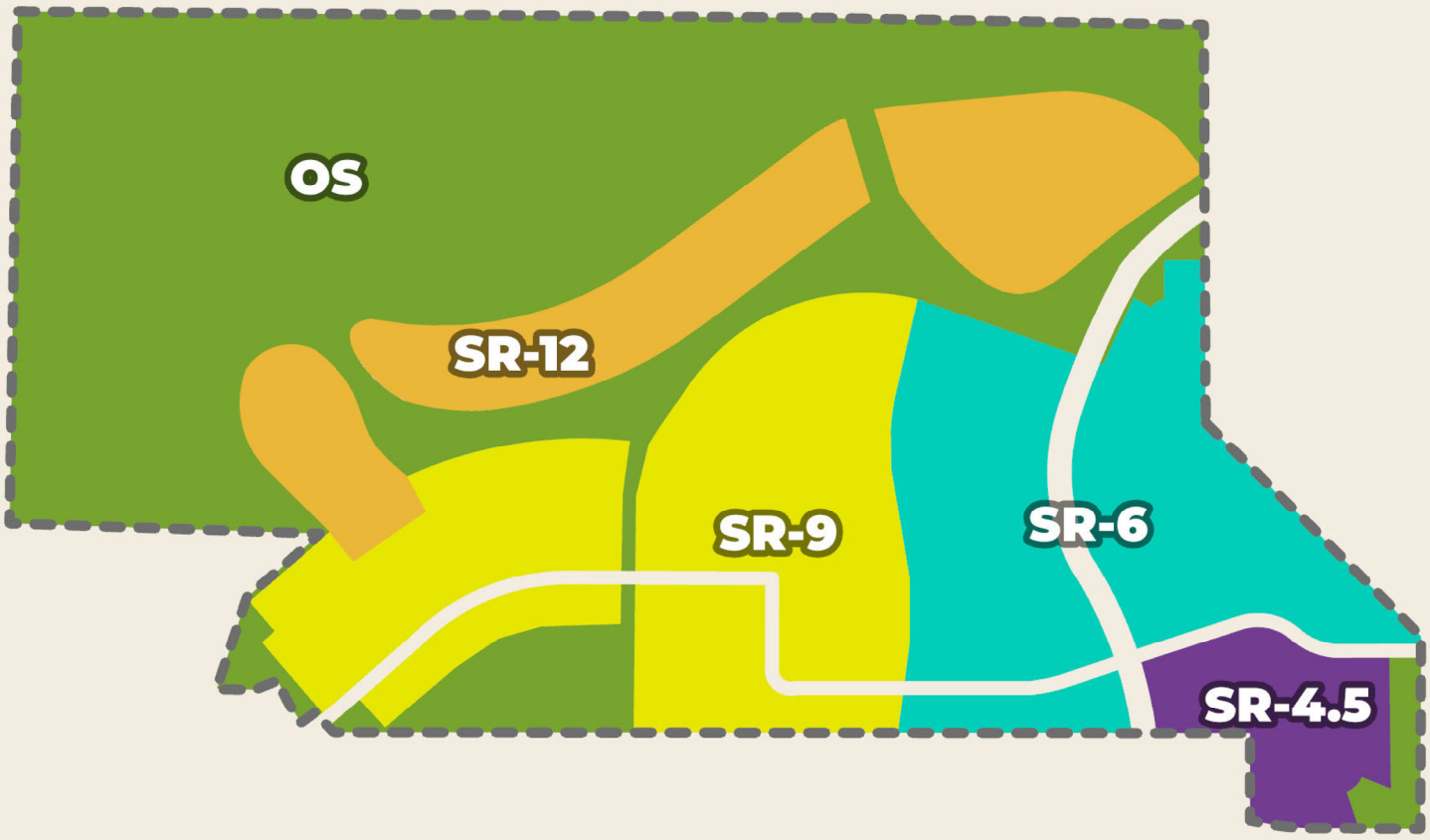
Title 10 Zoning

C-2 RR-1 E-1

Manhard CONSULTING

0 250 500 Feet

TRADITIONS NORTH LAND USE PLAN



LEGEND

- Open Space (OS)
- Single-Family - 12,000 sf (SR-12)
- Single-Family - 4,500 sf (SR-4.5)
- Single-Family - 6,000 sf (SR-6)
- Single-Family - 9,000 sf (SR-9)

0 0.5 MILES

N W E S

TRADITIONS NORTH
MASTER PARKS AND TRAILS PLAN
LEGEND
Improved Trails
Developed Greenspace
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0.5
MILES
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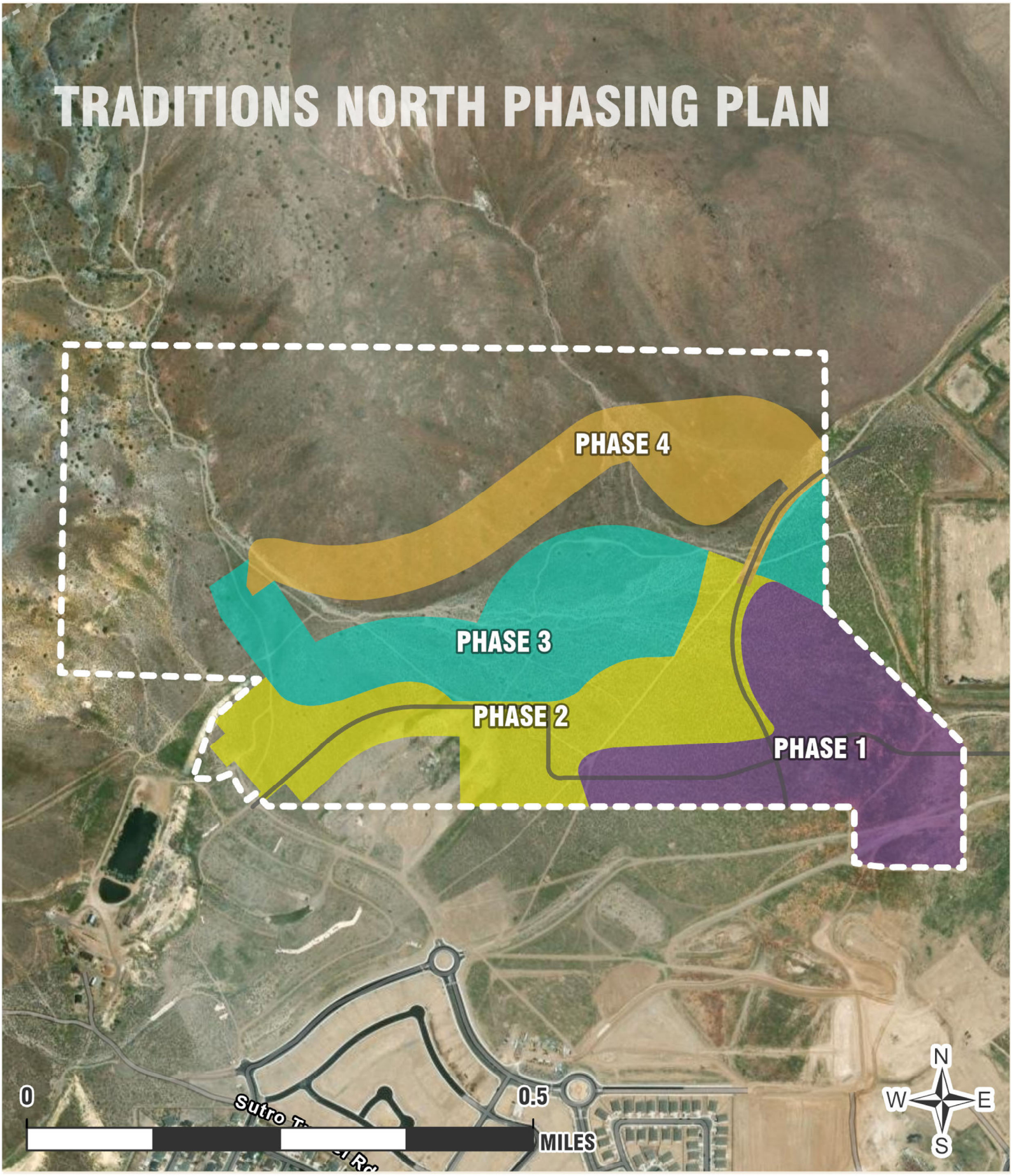
TRADITIONS NORTH PHASING PLAN
PHASE 4
PHASE 3
PHASE 2
PHASE 1
0
0.5
MILES
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TRADITIONS NORTH LOCATION
STOREY CO.
LYON CO.
TRADITIONS NORTH
ENTERPRISE WAY
ROCK CREEK PKWY
NEVADA STATION PKWY
TRADITIONS PKWY
DAYTON VILLAGE PKWY
FORTUNE
US HWY 50 E
Carson Plains
Dayton
0
0.5
MILES
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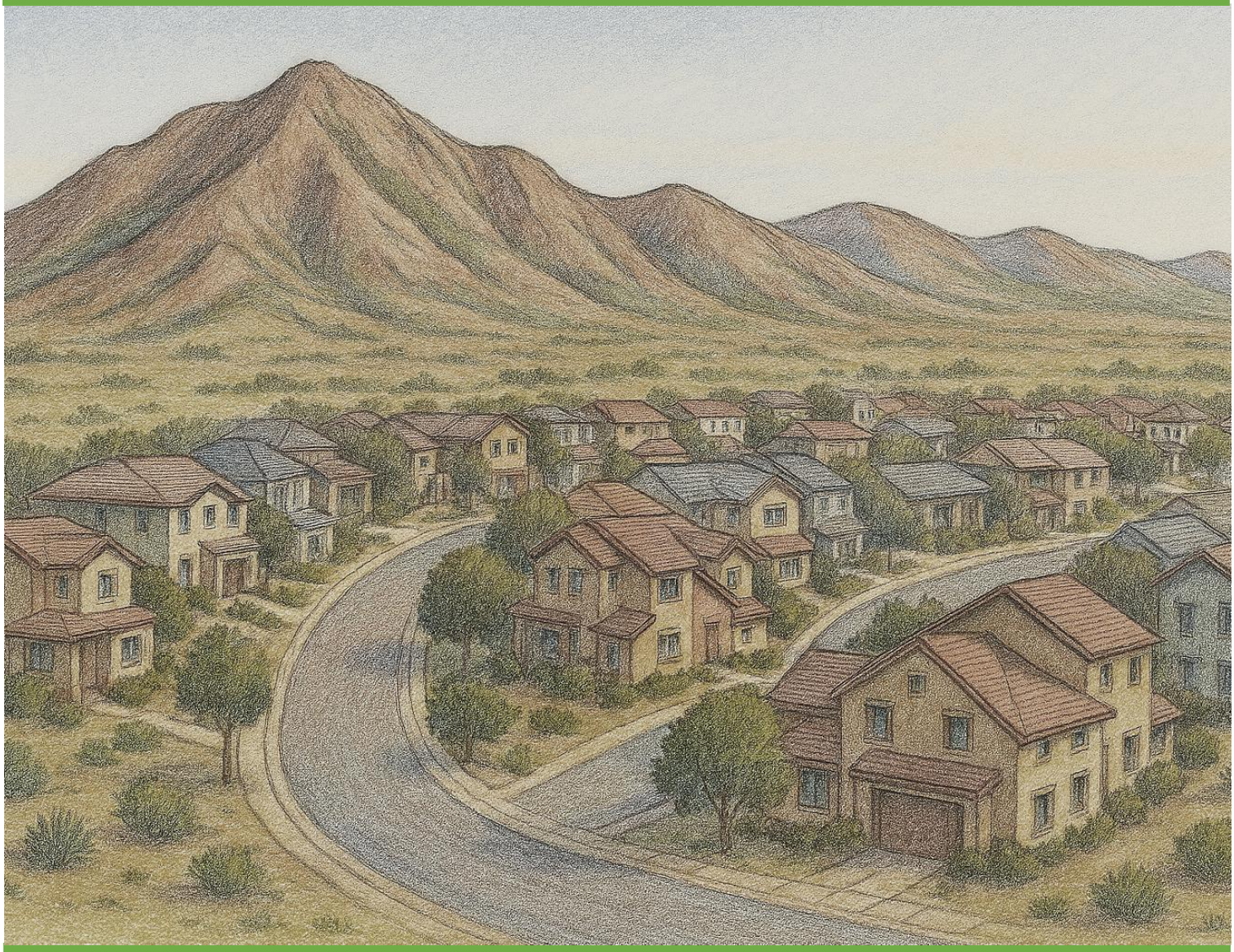
TRADITIONS NORTH

ZONING MAP AMENDMENT
PLANNED UNIT DEVELOPMENT
TENTATIVE MAP

NOVEMBER 2025



Prepared For:

Traditions North LLC

5275 West 7th Street Reno, NV 89523

Prepared By:

Manhard CONSULTING

241 Ridge Street, Suite 400, Reno, NV 89501

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- Not-Applicable Letter
- Development and Land Division Application & Checklist
- Owner & Applicant Affidavits
- PUD Handbook
- Site Plan (full sized)
- Map (full sized)
- Reduced-sized Map/Plan Set
- Vicinity Map
- Title Report
- Zoning Map Amendment Legal Description
- Plan Set (includes Preliminary Grading, Preliminary Drainage, Preliminary Utility Plans) & Checklists
- Drainage Report
- Hydrology & Hydraulics (H&H) Study
- Traffic Study
- Area Study
- Preliminary Soils Report
- Preliminary Sewer Report
- Intent to Serve Letters/Utility Statements

EXECUTIVE SUMMARY

The application proposes a planned unit development (PUD) consisting of 415 single-family residential units, which is well below the maximum density of 607 units permitted under the existing zoning. The PUD includes a mix of lot sizes to create a variety of housing options in conformance with the Lyon County Master Plan. A comprehensive PUD Handbook is included with this application drafted in accordance with Title 15 and is substantially consistent with the goals and policies of the Lyon County Master Plan.

Open space is planned to be integrated throughout the site and is designed to be sensitive to adjacent public land, topography, and recreation opportunities. The provided open space exceeds the 20% minimum open space requirement and will provide active and passive recreational amenities that will promote physical activity and interaction among residents. Additionally, a trailhead is located to the west of the site which integrates the project's trail system with existing historic resources and regional trails, enhancing connectivity and access to outdoor recreation opportunities.

A Tentative Subdivision Map for 358 units is submitted concurrently with the PUD to define lot configuration, infrastructure improvements, and preliminary site design for the first phases of development.

Table 1: Project Summary

Total Area	±230.76 acres
Maximum Number of Units	415
Tentative Map Units	358
Maximum Density	1.80 dwelling units per acre
Parking Required	728 (2 per dwelling unit)
Parking Provided	738 (10 for Sutro Trailhead)
Minimum Common Area/Open Space	100 acres (43.3%)

PROJECT LOCATION

The subject property is a ±230.76-acre site located north of the intersection of Nevada Station and Rock Creek Parkways. To the north and west of the site is land owned by the United States Bureau of Land Management and is located near the Storey County and Lyon County border. The site is primarily accessed via Fortune Drive and Traditions Parkway from U.S. Highway 50.

Figure 1: Project Location

EXISTING CONDITIONS

The project site is currently undeveloped and is a continuation of the Traditions residential development directly to the south. Otherwise, the property is generally surrounded by undeveloped land. To the southwest of the site is the Sutro Tunnel historical site which is actively undergoing historic conservation work.

Table 2: Surrounding Property Designations

	Current Zoning (Title10)	Master Plan	Current Land Use
North	• RR-5: Fifth Rural Residential District (20 Acres)	• Open Space	• Undeveloped (BLM)
East	• E-1: First Estates Residential District • M-1: General Industrial District • NR-1: Single-family Nonrural Residential District • C-2: General Commercial District	• Open Space • Low-Density Residential • Public/Quasi-Public	• Reclamation Ponds • Solid Waste Transfer Station
South	• C-2: General Commercial District • E-1: First Estates Residential District • NR-1: Single-family Nonrural Residential District • RR-1: Fifth Rural Residential District (20 Acres)	• Suburban Residential • Low-Density Residential • Commercial • Parks	• Future Traditions Village 4
West	• RR-5: Fifth Rural Residential District (20 Acres)	• Open Space	• Undeveloped (BLM)

Figure 2: Site Photo Facing Southeast

View of the southeast corner of the project site. Pictured in the image is the residential development to the south undergoing mass grading. Enterprise Way is off in the distance.

Figure 3: Site Photo Facing Northwest

View of the canyon to the Northwest of the site. The drainage channel pictured here will remain largely undisturbed except for a future roadway crossing for Phase 4.

Figure 4: Site Photo Facing Southwest

View of the southwest corner of the site. Pictured is the Historic Sutro Tunnel site and mass grading for the residential development to the south.

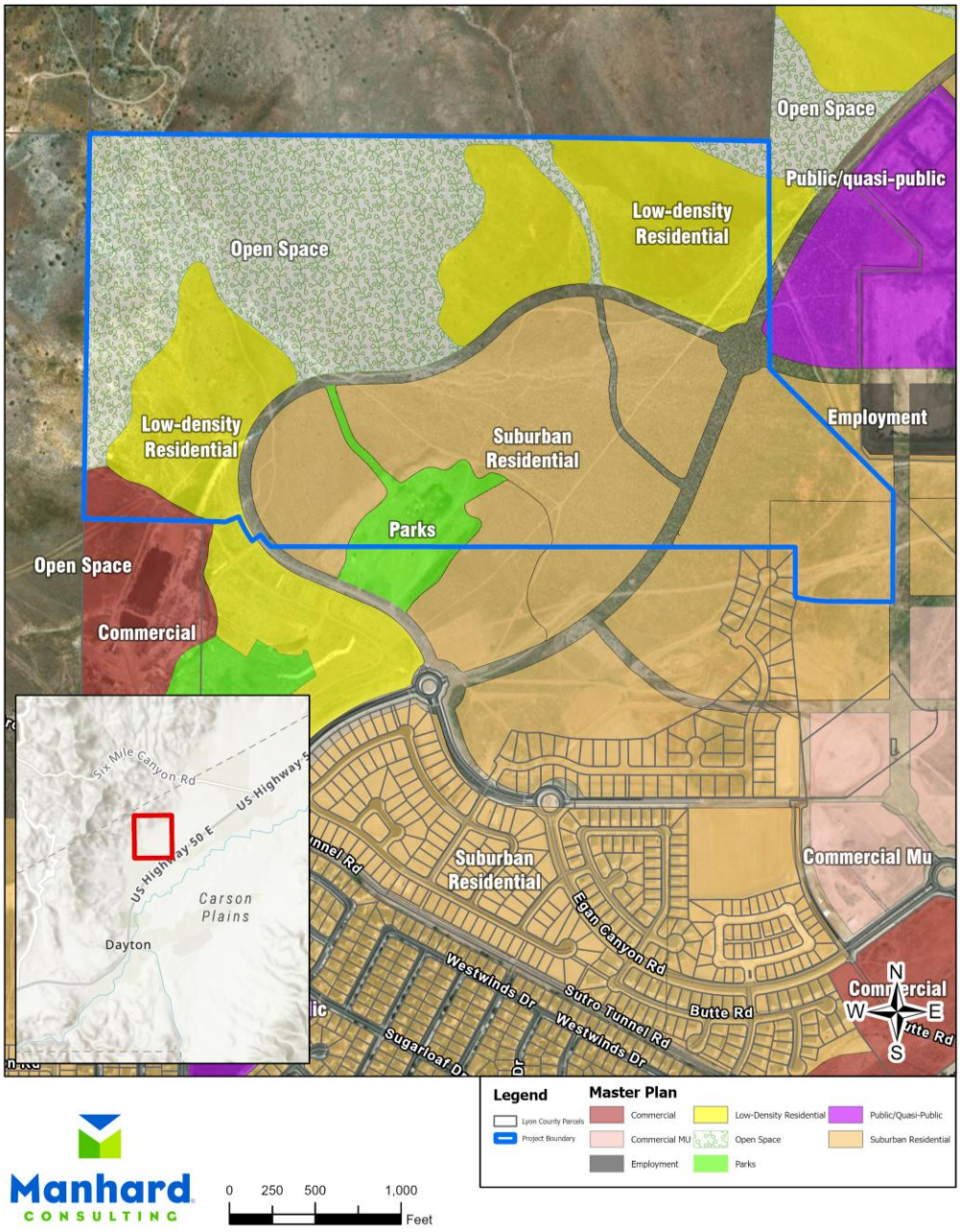
Figure 5: Site Photo Facing Northeast

View of the northeast corner of the site. The Waste Management Transfer Station is in the distance.

MASTER PLAN AND ZONING DESIGNATIONS

The property is located within the Suburban Character District and has the Master Plan designations of Suburban Residential, Low-Density Residential, Commercial, Open Space, and Parks (Figure 6). The existing Master Plan land use mix has 38% of the site as Open Space. The proposed development plan exceeds that by maintaining the site as 43% open space.

Figure 6: Lyon County Master Plan Designation



The property is subject to the existing Title 10 zoning including Rural Residential—First Rural Residential, 1 acre (RR-1), First Estates Residential (E-1), General Commercial (C-2), and Single-family Nonrural Residential (NR-1) (Figure 7). This request proposes replacing the existing zoning with the Planned Unit Development (PUD) zoning designation (Figure 8).

Figure 7: Existing Lyon County Zoning Designation

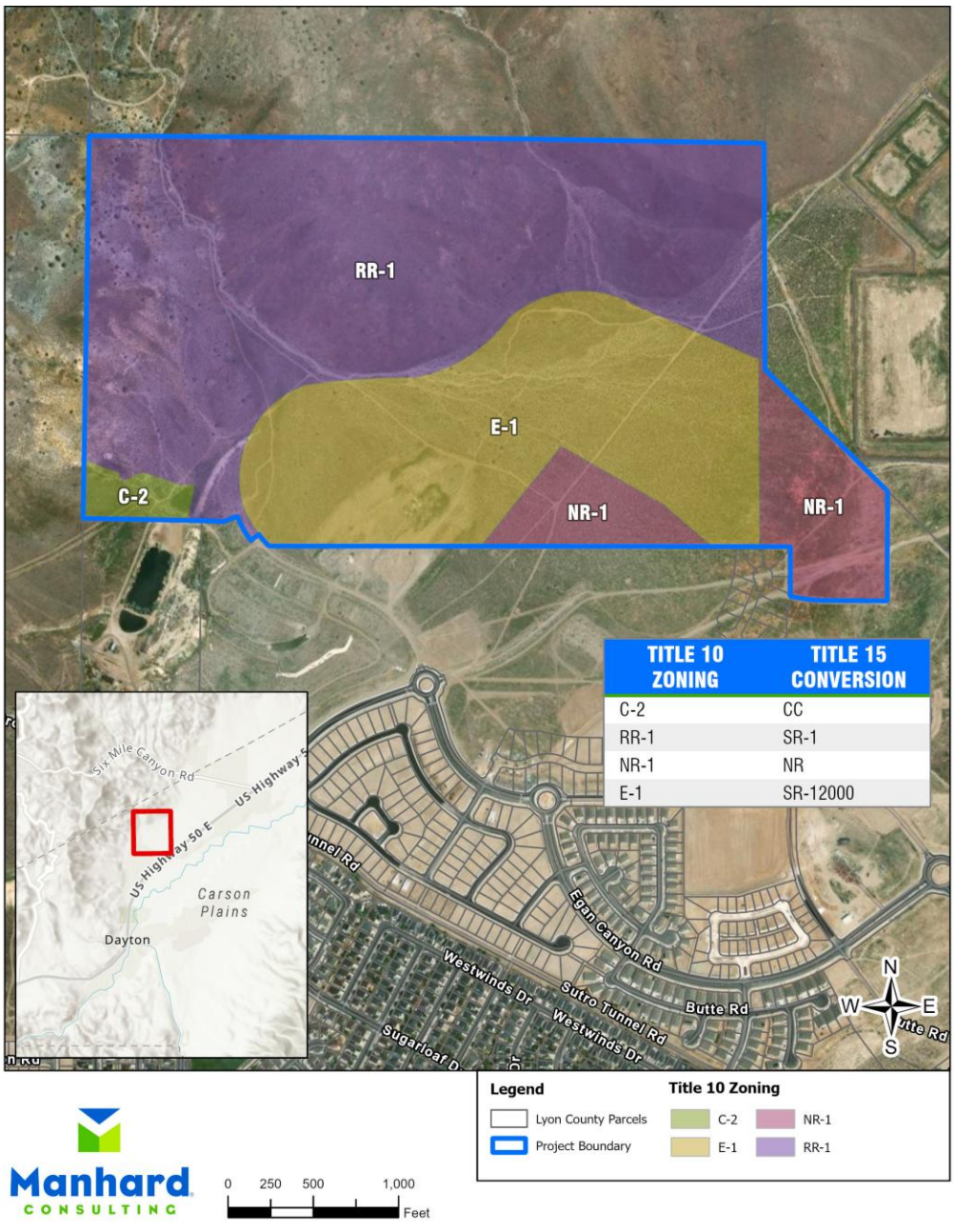
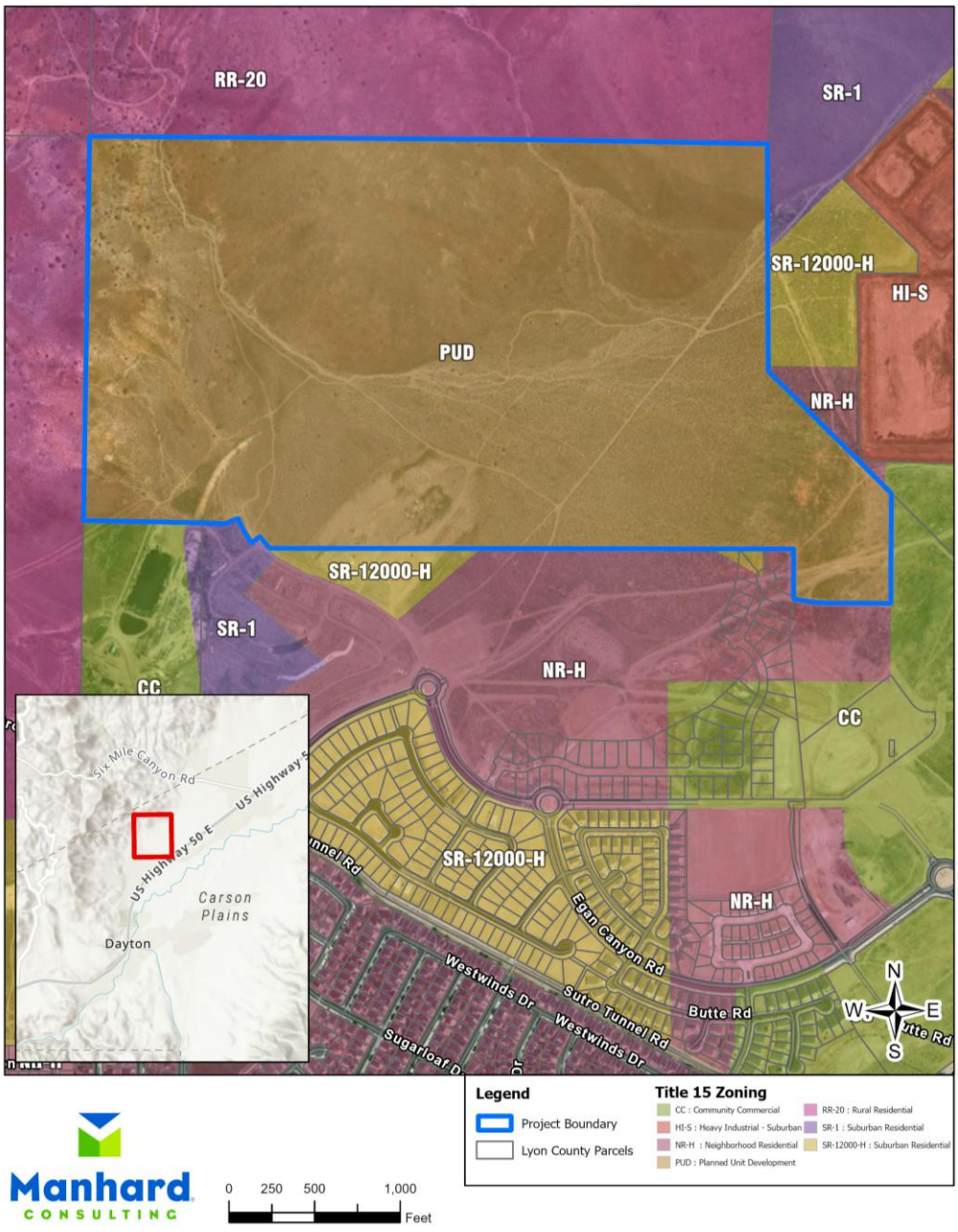


Figure 8: Proposed Lyon County Zoning Designation



PRIOR PROJECT APPROVALS

The site was originally part of the Traditions Community Master Plan. On May 6, 2004, a PUD was approved through a special use permit to establish the current Title 10 zoning designations: RR-1, E-1, C-2, and NR-1. A Tentative Subdivision Map was recorded in 2007 and extended in 2008 following the Nevada Legislature's adoption of AB74, with an additional extension granted in 2010. Although the PUD has since been dissolved, the property was hard zoned to match the approved subdivision configuration.

APPLICATION REQUEST

The enclosed application is a request for:

1) A **Zoning Map Amendment** for one parcel from ±137 acres of RR-1, ±67 acres of E-1, ±24 acres of NR-1, and ±3 acres of C-2, a total of ±230.76 acres to Planned Unit Development (PUD).
2) A **Tentative Planned Unit Development**, including the review and approval of the development standards handbook.
3) A **Tentative Map** to create a subdivision consisting of 358 detached single-family residential units on a ±230.76-acre project site, including 116 acres of common area open space, parks, and trails.

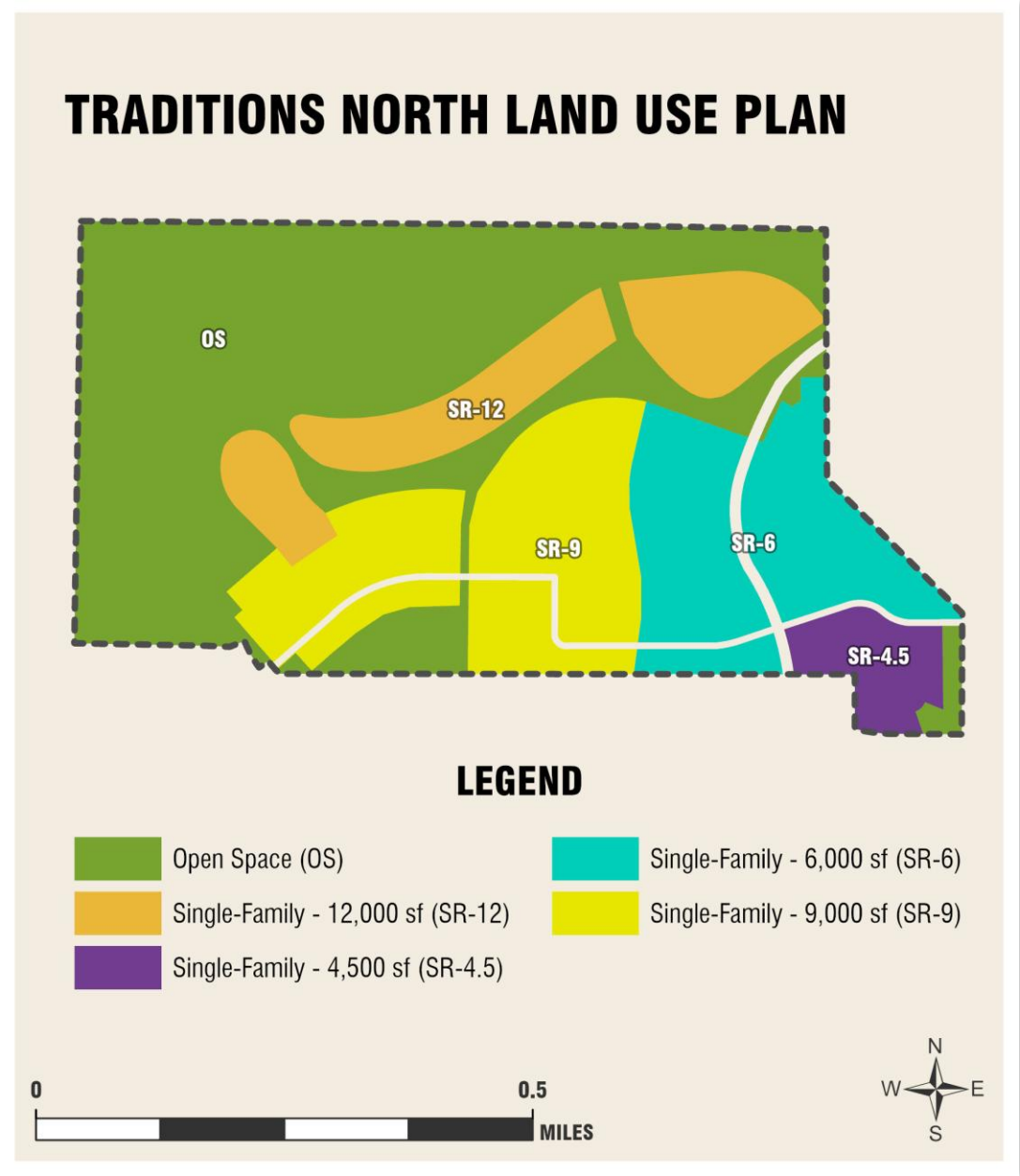
ZONING MAP AMENDMENT AND PUD DESCRIPTION

This application submittal includes a request for a zoning map amendment to establish a Planned Unit Development (PUD). Included for consideration is the tentative planned unit development plan and development handbook. The completed project includes a maximum of 415 dwelling units and it is proposed to be constructed in four phases. The PUD provides necessary flexibility to implement the project, while maintaining consistent standards across a mix of residential intensities.

The land use plan includes planning areas that are generally consistent with existing Lyon County residential zones, with the addition of a 6,000 sq. ft. minimum lot size type.

The Traditions North PUD Development Standards Handbook provides a framework to ensure the quality of the development that occurs with the PUD and that each project meets the intent of the approved project. The proposed project meets the development standards set forth in the Handbook, including land use, density, setbacks, open space, and other development standards.

Figure 9: Traditions North Land Use Plan



Title 15 Zoning	Traditions North Planning Area
Neighborhood Residential, 4,500 sf min. (NR)	SR-4.5
Neighborhood Residential, 4,500 sf min. (NR)	SR-6
Suburban Residential, 9,000 sf min. (SR-9,000)	SR-9
Suburban Residential, 12,000 sf min. (SR-12,000)	SR-12

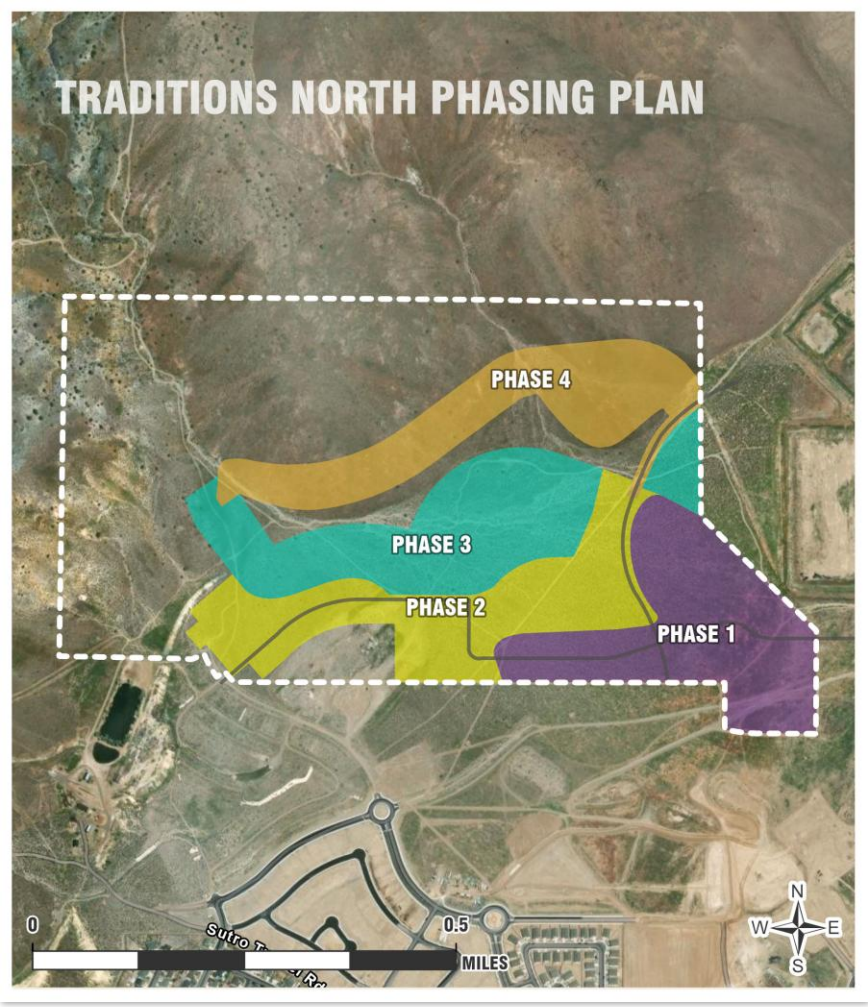
TENTATIVE MAP DESCRIPTION

This application also includes the first tentative map to implement the PUD which includes Phases 1, 2 & 3. The tentative map proposal includes 358 single-family residential units along with necessary backbone infrastructure, stormwater infrastructure, utilities, improved open space, pedestrian improvements, and trail connections.

PROJECT PHASING

The project phasing for the PUD is indicated in Figure 10 below. The tentative map application included with this submittal considers the development of Phases 1, 2, and 3. The tentative map for Phase 4 will be submitted for consideration in the future.

Figure 10: Phasing Plan



DENSITY

The density for the parcel based on the existing Title 10 zoning would allow for a maximum of 607 units. The proposed standards for the PUD establish a maximum residential unit count of 415 units for a gross density of 1.80 units per acre.

Table 3: Density Analysis

Density Analysis	Land Use Acreage	Units
Existing RR-1 (1 unit per acre)	± 137.34	137
Existing EE-1 (3.63 units per acre)	± 66.91	242
Existing NR-1 (9.68 units per acre)	± 23.57	228
Existing Maximum Units		**607**
Proposed Maximum Units		**415**

DEVELOPMENT STANDARDS

The proposed development is consistent with the development standards of LCC with minimal amendments to property setbacks to promote consistency among different land use classifications proposed within the PUD. The following setbacks are proposed.

Table 4: Traditions North Setbacks

SR-4.5	Setback
- Front & Side-street	10 ft.
- Side	5 ft.
- Rear	10 ft.
SR-6	**Setback**
- Front & Side-street	10 ft.
- Side	5 ft.
- Rear	10 ft.
SR-9	**Setback**
- Front & Side-street	10 ft.
- Side	5 ft.
- Rear	20 ft.

SR-12	Setback
- Front & Side-street	15 ft.
- Side	10 ft.
- Rear	20 ft.

PARKING

Off-street parking is provided in accordance with the LCC standard requirement of two per unit. Additional public parking will be provided to support the Sutro trailhead at the southwest corner of the project.

Table 5: Parking Calculations

	No. of Units	Spaces Required per Unit	Total Required Spaces	Total Spaces Provided
Single-Family	364	2	728	728
Sutro Trailhead	-	-	-	10
TOTAL			728	738

ARCHITECTURAL STANDARDS

Architectural requirements for the PUD are proposed to comply with the standard design and street image standards required for residential development and single-family detached residential development in Suburban Character districts pursuant to LCC Chapter 340 and LCC Chapter 341, as amended. Drawings will be provided demonstrating compliance at the time of building permits for individual homes.

FENCING

Walls and fencing will be provided in accordance with LCC. Fencing is anticipated to be six feet tall of a solid material, where appropriate. The land use plan has been designed with open space buffers where commercial zoned property is near residential land uses within the project boundary. As the adjacent property is undeveloped, it would be incumbent upon the future land development to determine appropriate mitigation of noise, light, and visual impacts of service areas.

Split rail fence treatment will be incorporated into parks and the trailhead to promote a sense of Nevada's frontier heritage. Incorporating natural materials and native plantings strengthens the relationship between the Traditions North subdivision and its interface with public land recreational opportunities.

PROJECT SIGNAGE

Although signage is not currently proposed with the first tentative map, the PUD establishes standards to ensure that signage and entry monuments for Traditions North are compatible with the residential character of the project.

Figure 11: Conceptual Entry Monument

LANDSCAPING

The PUD requires that front yards of each home site be entirely landscaped with a minimum of one tree per 50 feet of linear frontage. In addition to front yard landscaping, the primary collector includes tree-lined parkways to enhance the entry corridor.

Figure 12: Preliminary Landscape Plan

Figure 13: Typical Corner Lot Landscaping

PARKS, TRAILS AND OPEN SPACE

The proposed development plan reserves at least 100 acres of open space. Open space will be preserved using acceptable legal instruments pursuant to LCC as amended, including conservation easements or dedication to a 501(c)(3) organization. Open space areas will be maintained by a homeowner's association, landscape maintenance association, or similar entity. Additional open space above and beyond the requirement is anticipated and will be considered at each tentative map.

The project includes trails and pedestrian connections that provide residents with access to at least five pocket parks including a large five-acre neighborhood park (Figure 15: Master Park and Trails Plan). These trails also provide access to the existing trail network on public lands located to the north and west of the site.

Figure 14: Typical Trail Cross Section

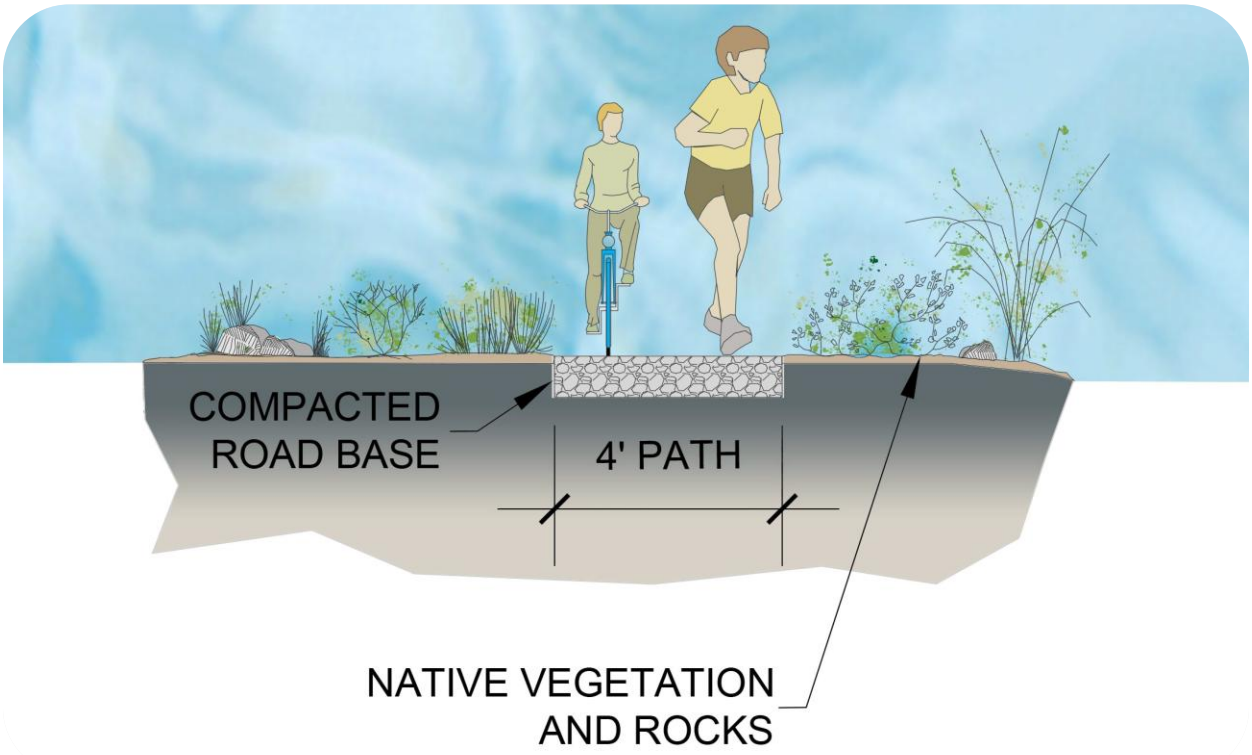


Figure 15: Master Park and Trails Plan

ACCESS AND CIRCULATION

VEHICULAR ACCESS

Vehicular access to the site is provided through the existing Traditions subdivisions to the south which take access from US Highway 50. There are two access points to the south and two access points proposed for connections to property to the east. One of the eastern access points may connect to the existing Enterprise Way contingent upon securing easements from adjacent property owners.

Figure 16: Circulation Plan

Roadways proposed within the project boundary are to be dedicated to Lyon County. Streets will be constructed pursuant to the Traditions North PUD Handbook and Lyon County standard details (Figure 17 & Figure 18).

Figure 17: Collector Street Cross Section

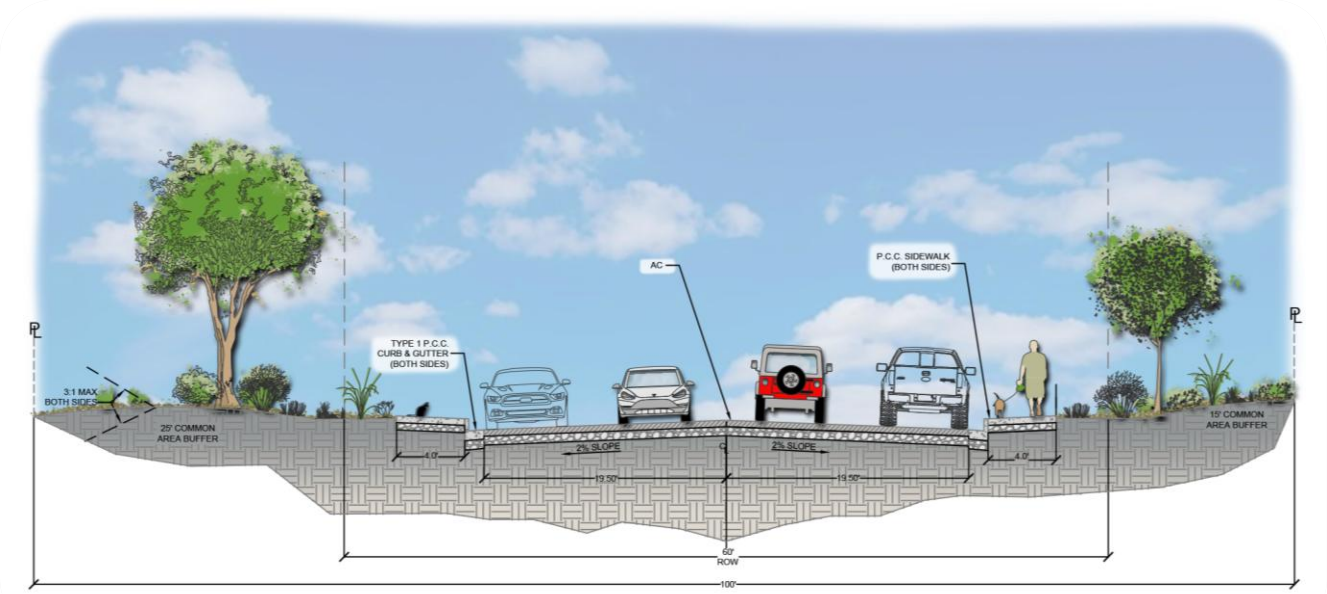
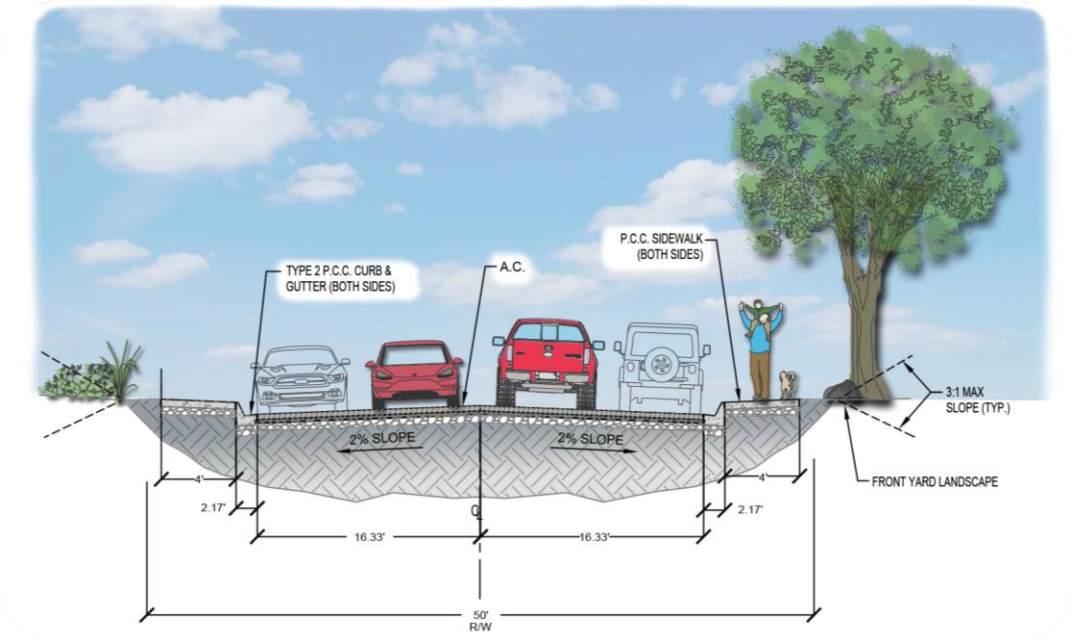


Figure 18: Typical Local Street Cross Section



PEDESTRIAN ACCESS

Pedestrian access will be provided throughout the project site through sidewalks and trails. Sidewalks are proposed to be a minimum width of four feet and are located on both sides of the street throughout the development. The collector road includes enhanced pedestrian facilities with landscape areas on each side of the street.

TRAFFIC

A traffic study has been submitted with this application that analyzes the impacts of primary access through Fortune Drive and Traditions Parkway for Phases 1-3. The project will access US 50 via Fortune Drive and Traditions Parkway. The project originally contemplated a connection to Enterprise Way; however, due to circumstances separate from the traffic study, a vehicle connection to Enterprise Way is no longer being considered and is not included in this traffic analysis and report. If individual project developers wish to pursue a vehicle connection to Enterprise Way in the future, a separate traffic analysis will need to be conducted at that time.

Updated trip generation has been provided with this application and is summarized in the table below (Table 6: Trip Generation for Proposed):

Table 6: Trip Generation for Proposed Residential

	Units	ADT	AM Peak Hour	PM Peak Hour
Single-Family Detached Housing	364 (358 proposed)	3,433 trips	255 trips	342 trips

The project is not expected to result in levels of service below policy thresholds and therefore no project related mitigations are recommended.

UTILITIES AND PUBLIC SERVICES

WATER

The project is served by the Lyon County Utilities Department (LCUD) for water by an existing 8-inch water main stubbed at the property line to the south. Future water infrastructure necessary to support this development will be constructed in accordance with Lyon County Utilities Department standard details and design requirements.

SEWER

A preliminary sewer report is included with the application materials. Sewer conveyance will be provided by the Lyon County Utilities Department (LCUD) by an existing 8-inch sewer main stubbed at

the property line the south. Future sanitary sewer infrastructure to support the development will be constructed in accordance with Lyon County Utilities Department standard details and design requirements.

POLICE AND FIRE

The property is currently served by Central Lyon Fire and the Lyon County Sheriff's Department. The closest sheriff substation is located 2.5 miles northeast along US Highway 50. The nearest fire station is located three-quarters of a mile away with an estimated five-minute response time to the boundary of the project.

SCHOOLS

Compulsory education services are provided by Lyon County School District. The project is currently zoned for Sutro Elementary School, Dayton Intermediate School, and Dayton High School. There are existing bus routes serving the neighborhood to the south that would be reasonably extended to serve this development.

HYDROLOGY

The existing terrain of this property is characterized by alluvial fan slopes that include shallow, unconfined, and moderately confined drainage flows. These flow ultimately tributary to the Carson River watershed. The proposed drainage system is designed to manage existing and proposed stormwater generation and is analyzed based on a 100-year flood event.

The tentative map and conceptual drainage report includes a mix of solutions to manage stormwater flows through drainage swales, underground pipes, open space drainage corridors, four regional detention basins, and three project outfalls. The proposed drainage design complies with Lyon County Drainage Guidelines and post-development stormwater discharge from the property remain below the pre-development peak. No adverse impacts from a hydrological perspective are anticipated.

ZONING MAP AMENDMENT FINDINGS

A. That the proposed amendment is consistent with the policies embodied in the adopted Master Plan and the underlying land use designation contained in the land use plan;

The underlying Master Plan land use designations are a mix of residential, open space, and commercial designations. The residential share of the master plan is about 61% of the property while open space is about 33%. The commercial area occupies about 1% with the remainder of the property having no designation.

The proposed land plan within the PUD designation serves to promote and protect open space and recreation opportunities by prioritizing the Open Space land designation in the upper half of

the project. Although the Low-Density Residential Master Plan land use designation contemplates larger one-acre lots, providing smaller lot sizes grants the opportunity to increase the share of protected open space land to 40-50% of the total project area.

This project further supports policies that promote complementary neighborhoods in Suburban Character Districts by incorporating a variety of lot sizes (Policy C 1.5). The plan also provides multiple focal points for the neighborhood that will serve the broader community including the proposed large park and trailhead.

That the proposed amendment will not be inconsistent with the adequate public facilities policies contained in this title;

The proposed amendment would support the establishment of a residential neighborhood that is a logical extension of the existing Traditions development. This supports Master Plan Policy LU 1.2 which seeks orderly growth patterns with neighborhood units as the primary building blocks of the County's residential areas. The subject property has utilities immediately adjacent to the site and should not require significant extensions to serve the proposed project (Policy LU 2.1 & FS 1.1). School facilities that serve the area are adequate to support the project for the based on discussions with the Lyon County School District.

B. That the proposed amendment is compatible with the actual or master planned adjacent uses.

To the north and west are Federal public lands that are anticipated to remain as open space. The proposed land use plan establishes an Open Space designation and provides trail access points to promote this resource. The trails and open space proposed within PUD should also support the operations of the Historic Sutro Tunnel and Site located immediately to the southwest. The proposed residential development is a logical extension of the existing and master planned residential development to the south and east. The site is not directly adjacent to Employment master planned properties that exist to the east and Lyon County Code is adequate to address possible general environmental conflicts such as noise, glare, and odor as those properties are developed.

PLANNED UNIT DEVELOPMENT FINDINGS

A. In what respects the plan is or is not consistent with the statement of objectives of this chapter;

The objectives of this PUD include:

- Improving and enhancing the County's trail and park system by providing trails and open space that provide continuity and access to Federal public lands adjacent to the project.
- Encouraging innovations in residential development by introducing a greater variety of lot sizes to encourage variation in building typology.

B. **The extent to which the plan departs from zoning and planned unit development regulations otherwise applicable to the property, including but not limited to density, size and use, and the reasons such departures are or are not deemed to be in the public interest;**

The proposed development plan remains closely aligned with the density, lot size, and uses allowed under the existing zoning, but provides greater flexibility in the implementation of the plan to accommodate market-based considerations through the development process. Greater flexibility does not come at the cost of the preservation of open space, access to Federal public lands, and the opportunity for a mix of lot sizes and densities.

The plan proposes a deviation from standard LCC setbacks to promote a mix of intensities with a consistent street image program. The setbacks consistently promote a house forward design while maintaining minimum driveway lengths.

C. The purpose, location and amount of the open space in the planned unit development, the reliability of the proposals for maintenance and conservation of the open space and the adequacy or inadequacy of the amount and purpose of the open space as related to the proposed density and type of residential development;

The purpose, location, and amount of open space is indicated within the handbook and is provided at a greater degree than what is contemplated in the Master Plan. The handbook promotes access through an integrated trail system.

D. A physical design of the plan and in the manner in which such design does or does not make adequate provision for public services, provide adequate control over vehicular traffic, parking requirements, and further the amenities of light and air, recreation and visual enjoyment;

The development is a logical extension of utility infrastructure and is developed in accordance with the provided traffic impact assessment. Additional street connections are proposed to improve broader circulation through the site. Parking requirements are consistent with Lyon County Code and parking demand has been contemplated with respect to larger recreation and park amenities. The development provides a variety of recreation opportunities that are well integrated into the design of the project including a trailhead for the Sutro Trail, interface with the Historic Sutro Trail and Site, access to public lands, a large park, and multiple pocket parks.

E. The relationship, beneficial or adverse, of the proposed planned unit development to the neighborhood in which it is proposed;

The proposed project extends the existing Traditions neighborhood and provides new park and recreation amenities that reinforce the relationship between the existing neighborhood and the public lands and open space to the north and west.

F. In the case of a plan which proposes a development over a period of years, the sufficiency of the terms and conditions intended to protect the interest of the public and the residents of

the planned unit development in the integrity of the plan.

The project is proposed to be developed in four phases with the backbone roadway and stormwater infrastructure frontloaded to ensure adequate access is provided for responsible growth. Neighborhood and pocket parks intended to serve the development and nearby neighborhoods are in different phases and are required to be constructed before occupancy of a certain number of units indicated in the PUD Handbook. All construction will be coordinated with the Nevada Department of Transportation with the future improvements to US Highway 50. The tentative map application submitted with this application considers three of the four phases contemplated within the PUD. A subsequent tentative map application will be submitted in the future for the final phase.

TENTATIVE MAP FINDINGS**

A. The property to be subdivided is zoned for the intended uses and the density and design of the subdivision conforms to the requirements of the zoning regulations contained in this title;

The tentative map is consistent with the land use plan proposed by the PUD that provides for a mix of densities.

B. If located within a planned unit development, the tentative subdivision map conforms to the density requirements, lot dimension standards and other design standards regulations approved for the planned unit development;

The tentative map conforms with the lot dimension standards and other design standards to be established with the adoption of the PUD.

C. The tentative subdivision map conforms to public facilities and improvement standards contained in this title;

Facilities to be offered for public dedication will comply with all requirements pursuant to LCC, Lyon County Utilities, Lyon County Public Works, and other applicable entities.

D. The tentative subdivision map conforms to the improvement and design standards contained in this title and adopted design criteria and improvement standards;

Roadway improvements have been designed in accordance with LCC, Lyon County standard road section details, and the submitted PUD handbook for Traditions North.

E. If applicable, that a phasing plan has been submitted and is deemed acceptable;

The tentative map application is proposed to be implemented in three phases. The first phase is located to the south and east of the property and includes access from Enterprise way and the

connections to the subdivisions to the south. The next phase is located to the southwest and will include stormwater management infrastructure that will support the remainder of the development. The final phase for this map fills in between the initial phases.

F. There are no delinquent taxes or assessments on the land to be subdivided, as certified by the County Treasurer;

Proof of tax payments has been provided with the application materials.

G. The project complies with all environmental and health laws and regulations concerning water and air pollution, the disposal of solid waste, facilities to supply water, community or public sewage disposal and, where applicable, individual systems for sewage disposal;

The project will be served by Waste Management through their standard residential garbage collection services.

H. The availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision;

Water service is provided by the Lyon County Utilities Department. Conveyance systems will be designed in accordance with Lyon County Utilities requirements.

I. There is adequate access and availability to public services such as schools, police protection, transportation, recreation and parks;

Based on discussions with Lyon County School District, schools that serve this property are adequate. Police services are provided by the Lyon County Sheriff's Department. The Dayton Substation is located within 2.5 miles of the project. The project proposes a large park and trailhead that will supplement the project and the broader community. Transportation facilities are adequate according to the provided traffic impact statement.

J. The project is in general conformity with the Lyon County Comprehensive Master Plan, the local community plan, if adopted, and the master plan of streets and highways;

The project supports the following Master Plan policies:

- Policy LU 1.1: Follow Development Patterns as Established in the Land Use Plan
- Policy LU 1.2 Residential Development Patterns in Neighborhoods
- Policy LU 2.1 Residential Development in Areas with Services
- Policy LU 3.1: Diverse Economic Base
- Policy FS 1.1: Location of New Development

- Policy C 1.2: Pedestrian Friendly Communities
- Policy C 1.3: Design Tailored to Communities
- Policy C 1.5: Design Complementary Neighborhoods in Suburban Districts

K. The project will have no adverse impacts, or provides adequate mitigation of adverse impacts, to existing public streets;

Negligible impacts are anticipated to the existing public street system and coordination will occur between the development of this project and the proposed improvements to US Highway 50.

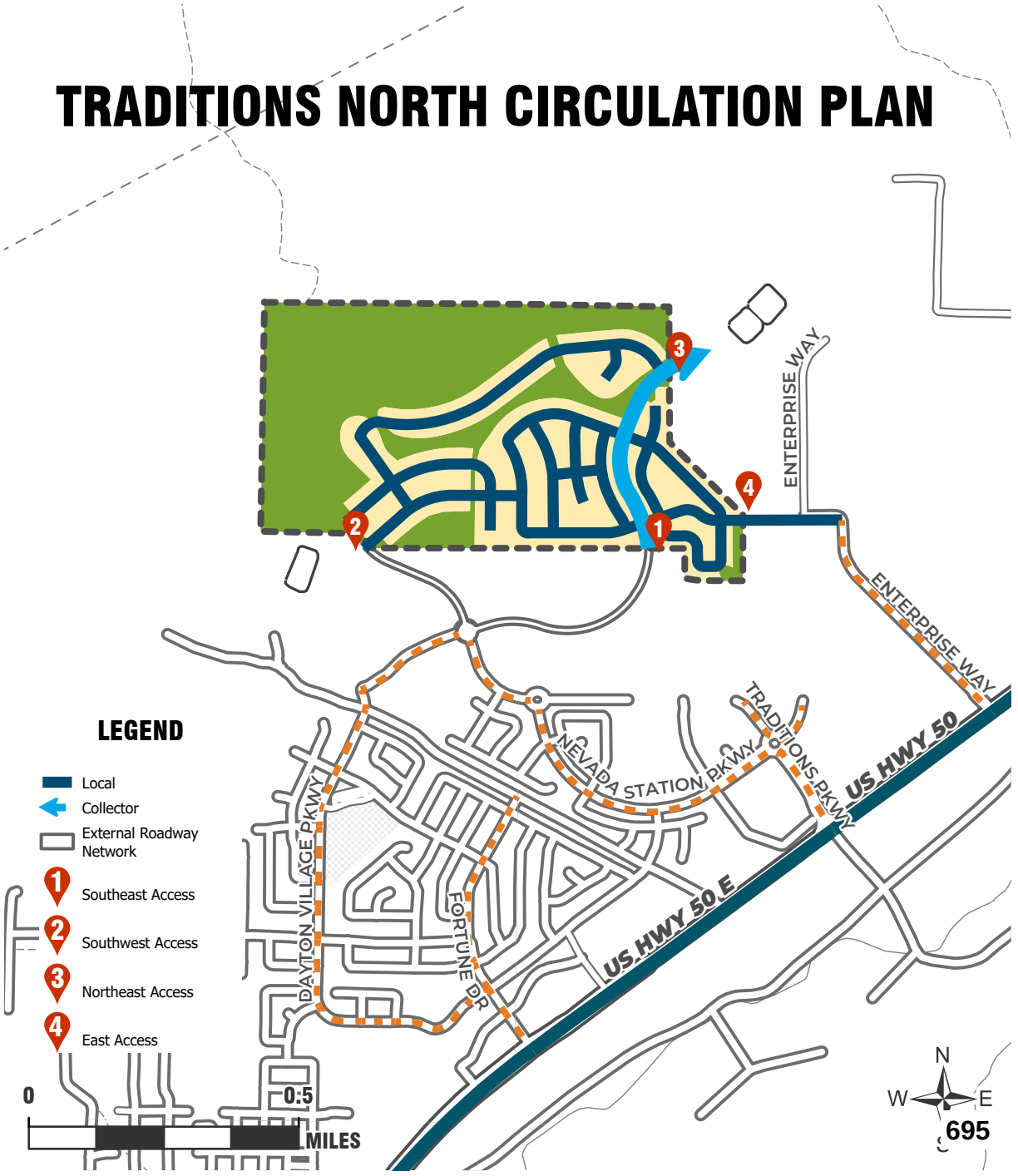
L. The physical characteristics of the land such as floodplain, slope and soil have been considered and provisions to adequately mitigate adverse impacts of development on the environment have been incorporated;

Physical characteristics such as slope, drainageways, [others] have been considered in the design of the project and adequate mitigation is proposed to protect the public health, safety, and welfare.

M. **The project demonstrates availability and accessibility of fire protection services, including, but not limited to, the availability and accessibility of water and services for the prevention and containment of fires, including fires in wild lands.**

The project is to be served by Central Lyon Fire. The nearest fire station is located three-quarters of a mile from the site, or an estimated response time of five minutes. This property is located within the Wildland Urban Interface zone for Central Lyon County. All residential building permits are required to have fire and life safety code plan reviews and be reviewed in accordance with the IWUIC code adopted at the time of permit submittal.

TRADITIONS NORTH CIRCULATION PLAN



LYON COUNTY UTILITIES DEPARTMENT
34 Lakes Blvd. Suite 103
P.O. Box 1699
Dayton NV 89403
Phone (775) 246-6220 Fax: (775) 246-6223
www.lyon-county.org

Sent via email to: cdwilliams@manhard.com

December 15, 2025

Manhard Consulting
c/o Carter Williams
241 Ridge Street, Ste 400
Reno, NV 89501

RE: Intent to Serve letter – Water and Sewer
Project: Traditions North – 364 Single Family Residential Lots APN #016-106-07

Dear Mr. Williams:

The project is located within LCUD's service area. This letter shall not be construed as a guarantee that the service will be provided. A will-serve commitment must be obtained as a result of an application for service prior to approval of a Final Map.

LCUD reserves the right to deny or limit the water or sewer connections provided to ensure that growth within the service area does not exceed the available resource capabilities. This letter is not complete unless signed by the Utilities Director and the Owner, with the Owner Acknowledgement statement signed and dated.

Requirements for approval of an application for service shall include, but are not limited to, the following:

1. Dedication of water rights that have met the requirements of the State Engineer and LCUD.
2. Construction and dedication of infrastructure and site improvements necessary to serve the Project. This includes costs for any system improvements, off-site improvements, and engineering reviews necessary to serve the Project. The Developer may apply for developer or reimbursement agreements if the required improvements may serve other projects. Any developer agreements or reimbursement agreements shall be approved by the Planning Commission and BOCC, as applicable.
3. Recorded Final Map.
4. Satisfaction of all conditions of development set forth in the Lyon County Code, and identified in the Planning Commission and BOCC approval conditions for the Project.

The terms and conditions associated with this letter are valid for one year from the date of issuance, and it is incumbent upon the developer to request a renewal before expiration. If a

will-serve letter is not issued or a renewal is not approved within a period of one year, this Intent to Serve notification is to be considered null and void.

If you have additional questions, please don't hesitate to contact me at (775) 246-6220.

Sincerely,

Sean Sinclair
Interim Utilities Director

cc: Melissa Strobel and – Lyon County

OWNER ACKNOWLEDGEMENT

Owner acknowledges receipt of this letter. **Owner acknowledges that it has read and completely understands that County may be unable to provide sewer service to any new construction or fixtures in the Dayton Utilities Service Area due to limitations on effluent disposal capacity. Owner, therefore, assumes all risk of undertaking any improvements, with full knowledge and understanding that the County may be unable to issue any certificate of occupancy until such time as sewer service can be safely provided.** Owner further understands that Lyon County may not be able to provide sewer service to this property at this time, and the Owner and County do not know when or if the County will be able to provide sewer service. Owner accepts and assumes all risks of moving forward with the project.

Dated: 12/18/2025

By: Jarred Corbell

Developer: Jarred Corbell Digitally signed by Jarred Corbell DN: C=US, E=jarred.corbell@gmail.com, O="JC Development Consulting, LLC", CN=Jarred Corbell Date: 2025.12.18 12:37:45-07'00'

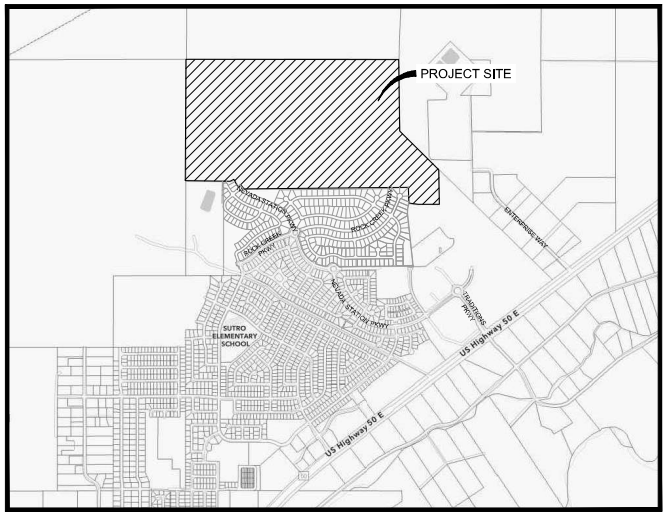
TENTATIVE MAP

TRADITIONS NORTH

APN: 016-406-07
DAYTON, NEVADA

ABBREVIATIONS

AB	AGGREGATE BASE	INV	INVERT
ARV	AIR RELEASE VALVE	IP	IRON PIPE
BC	BEGINNING OF CURVE	EXFG	EXTERIOR FINISHED GRADE
BFC	BACK FACE OF CURB	LP	LOW POINT
BM	BENCHMARK	MAX	MAXIMUM
BOP	BOTTOM OF PIPE	MB	MAILBOX
BVC	BEGINNING OF VERTICAL CURVE	MIN	MINIMUM
BW	FG @ BOTTOM OF WALL	NWL	NORMAL WATER LEVEL
CB	CATCH BASIN	P	PAVEMENT
CL	CENTERLINE	PC	POINT OF CURVE
CMP	CORRUGATED METAL PIPE	PCC	POINT OF COMPOUND CURVE
CNTRL	CONTROL	PI	POINT OF INTERSECTION
AGG.	CONCRETE	PL	PROPERTY LINE
CONST.	CONSTRUCT	PP	POWER POLE
CY	CUBIC YARD	PROP	PROPOSED
DIA	DIAMETER	PT	POINT OF TANGENCY
DIP	DUCTILE IRON PIPE	PVC	POLYVINYL CHLORIDE PIPE
DI	DUCTILE IRON	P.V.C.	POINT OF VERTICAL CURVE
(e)	EXISTING	PVI	POINT OF VERTICAL INTERSECTION
EX	EXISTING	PVT	POINT OF VERTICAL TANGENCY
E	ELECTRIC	R	RADIUS
EC	END OF CURVE	RCP	REINFORCED CONCRETE PIPE
EG	EXISTING GRADE	ROW	RIGHT-OF-WAY
ELEV.	ELEVATION	RR	RAILROAD
EP	EDGE OF PAVEMENT	SD	STORM DRAIN
EVC	END OF VERTICAL CURVE	SDMH	STORM DRAIN MANHOLE
FES	FLARED END SECTION	SF	SQUARE FOOT
FF	FINISHED FLOOR	SL	STREET LIGHT
FL	FLOW LINE	SS	SANITARY SEWER
FM	FORCE MAIN	SSMH	SANITARY SEWER MANHOLE
FG	FINISHED GRADE	STA.	STATION
FVA	FLUSH VALVE ASSEMBLY	SY	SQUARE YARDS
GAS	GAS	T	TELEPHONE
GW	GUY WIRE	TBR	TO BE REMOVED
GV	GATE VALVE	TC	TOP OF CURB
HW	HEADWALL	TEMP	TEMPORARY
HH	HANDHOLE	TOS	TO OF SLAB
HP	HIGH POINT	T/P	TOP OF PIPE
HWL	HIGH WATER LEVEL	TRANS	TRANSFORMER
HYD	HYDRANT	TW	FG @ TOP OF WALL
I.E.	INVERT ELEVATION	VB	VALVE BOX
INL	INLET	VV	VALVE VAULT
		WL	WATER LEVEL
		WM	WATER MAIN



VICINITY MAP
NTS

SHEET INDEX

SHEET NUMBER	SHEET TITLE
1	TITLE SHEET
2	OVERALL SITE PLAN
3	SITE PLAN
4	SITE PLAN
5	SITE PLAN
6	SITE PLAN
7	UTILITY PLAN
8	UTILITY PLAN
9	UTILITY PLAN
10	UTILITY PLAN
11	UTILITY PLAN
12	GRADING PLAN
13	GRADING PLAN
14	GRADING PLAN
15	GRADING PLAN
16	GRADING PLAN
L1	OVERALL LANDSCAPE PLAN

OWNER
SUTRO RESIDENTIAL GROUP LLC
860 GS RICHARDS BLVD
CARSON CITY, NV 89703

DEVELOPER
TRADITIONS NORTH, LLC
3527 S. FEDERAL WAY, SUITE 103 #1020
BOISE, ID 83705

CIVIL
PIÑON DESIGN GROUP
2850 TOBIANO DRIVE
RENO, NV 89521
(775) 843-0466

GEOTECHNICAL ENGINEER
WOOD RODGERS
1361 CORPORATE BLVD
RENO, NV 89502
(775) 823-4068

PLANNER
MANHARD CONSULTING, LTD
241 RIDGE STREET, SUITE 400
RENO, NV 89501
(775) 746-3500

LANDSCAPE ARCHITECT
LA STUDIO NEVADA
1552 C STREET
SPARK, NV 89431
(775) 323-2223

BASIS OF BEARING
MODIFIED NEVADA STATE PLANE COORDINATE SYSTEM, WEST ZONE, NORTH AMERICAN DATUM OF 1983/1994 (NAD 83/94) USING THE PUBLISHED VALUES FOR NGS CONTROL POINTS "D 200 RESET 1978" AND "DAYTON", BEARING TAKEN AS N38°58'21"E, COMBINED GRID TO GROUND FACTOR = 1.000222. ALL COORDINATES SHOWN HEREON ARE MODIFIED COORDINATES. ALL DISTANCES SHWON HEREIN ARE GROUND VALUES.

BASIS OF ELEVATION
NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29) . AS TAKEN FROM NEVADA DEPARTMENT OF TRANSPORTATION CONTROL MONUMENT "D 200 RESET", HAVING A PUBLISHED ELEVATION OF 4349.73 FEET, "D 200 RESET" IS DESCRIBED AS: A FOUND STANDARD DISK IN A CONCRETE POST; STAMED "D200 1978". POINT IS 3.9 MILES NORTHEAST ALONG U.S. HIGHWAY 50 FROM DAYTON AND 23.87 FEET NORTHEAST OF "D200 1954"

SPECIFICATIONS
ALL CONSTRUCTION SHALL CONFORM TO THE LATEST REVISION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (2012 EDITION AND ANY APPURTENANT SUPPLEMENTS) .

ENGINEER'S STATEMENT
THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH LYON COUNTY SITE PLAN REVIEW REQUIREMENTS WITH ACCEPTED ENGINEERING PROCEDURES AND GUIDELINES, AND ARE IN SUBSTANTIAL COMPLIANCE WITH APPLICABLE STATUTES, ORDINANCES, AND CODES. IN THE EVENT OF A CONFLICT BETWEEN ANY PORTION OF THESE PLANS AND THE CODES, THE CODES SHALL PREVAIL.

DANIEL C. BIRCHFIELD, Exp 12-31-25 CIVIL, No. 20844, STATE OF NEVADA, PROFESSIONAL ENGINEER

11/14/25

DANIEL C. BIRCHFIELD, P.E. P.E.#20844

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RENO, NV 89521

TRADITIONS NORTH
DAYTON, NEVADA
TITLE SHEET

PROJ. MGR. DCB
DRAWN BY: AST
DATE: NOV 2025
SCALE: AS SHOWN
SHEET 1
1 OF 17

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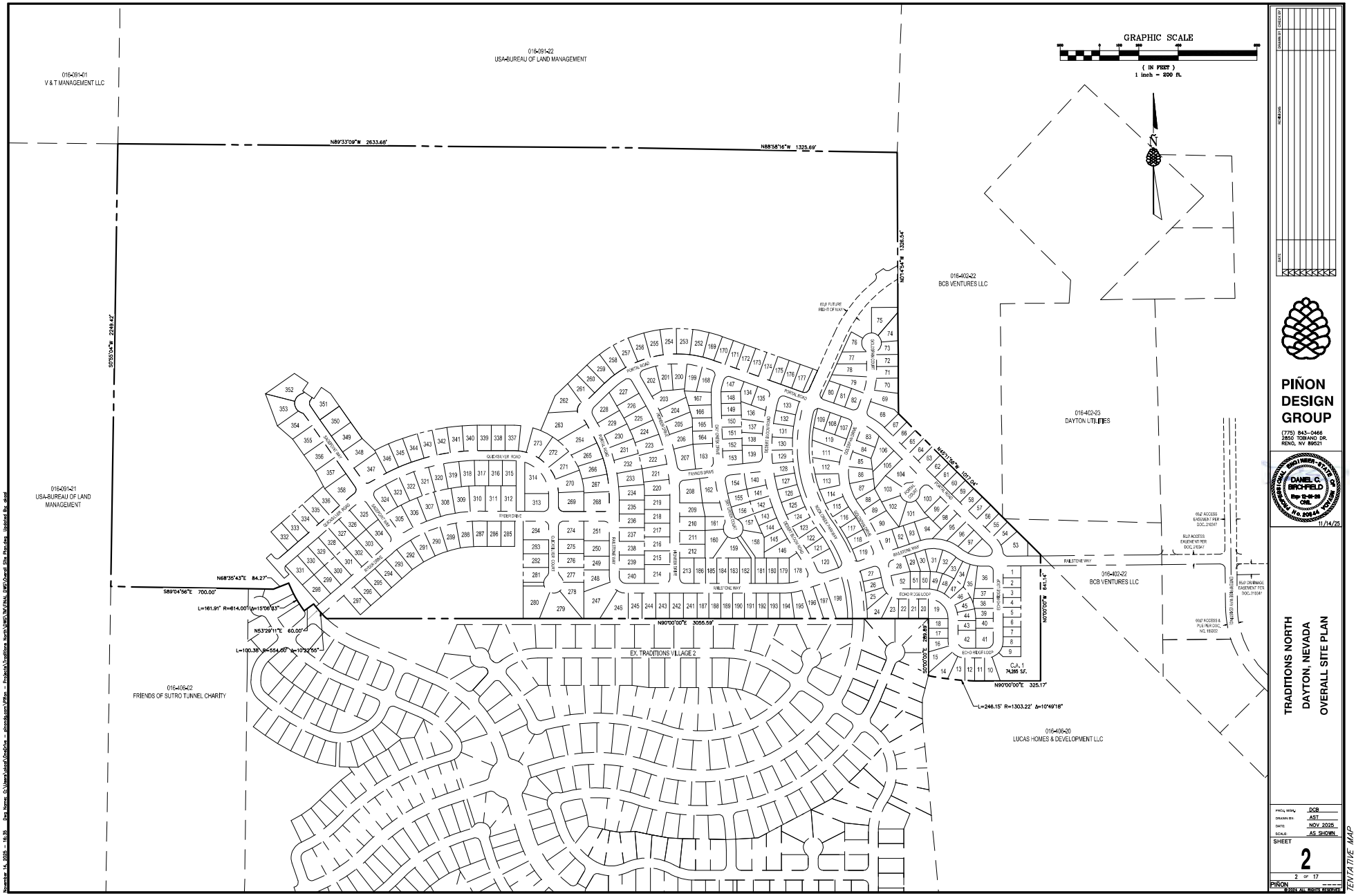
TENTATIVE MAP

Call 811 Call before you Dig
Avoid cutting underground utility lines. It's easy.

November 13, 2025 - 11:59 Dwg. Name: C:\Users\Ashe\OneDrive - pinondg.com\Pinon - Projects\Traditions North\Civil\Plat_Plat\Title Sheet.dwg Updated By: Ashe

869



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DANIEL C. BIRCHFIELD
Exp. 12-31-26
CIVIL
No. 20144
STATE OF NEVADA
11/14/25

TRADITIONS NORTH
DAYTON, NEVADA
OVERALL SITE PLAN

PROJ. MGR.: DCB
DRAWN BY: AST
DATE: NOV 2025
SCALE: AS SHOWN
SHEET 2
2 OF 17

TENTATIVE MAP

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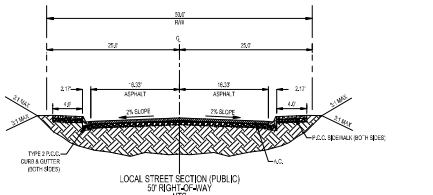
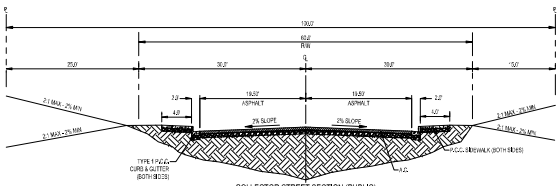


LOCAL STREET SECTION (PUBLIC)
50' RIGHT-OF-WAY
NTS



COLLECTOR STREET SECTION (PUBLIC)
60' RIGHT-OF-WAY
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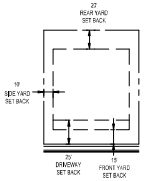
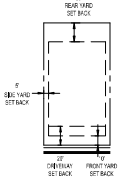
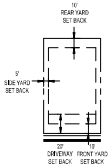


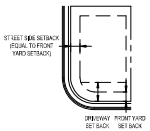
TYPICAL 1200 SF LOT SETBACKS



TYPICAL 9000 SF LOT SETBACKS



TYPICAL 4,500 & 6,000 SF LOT SETBACKS

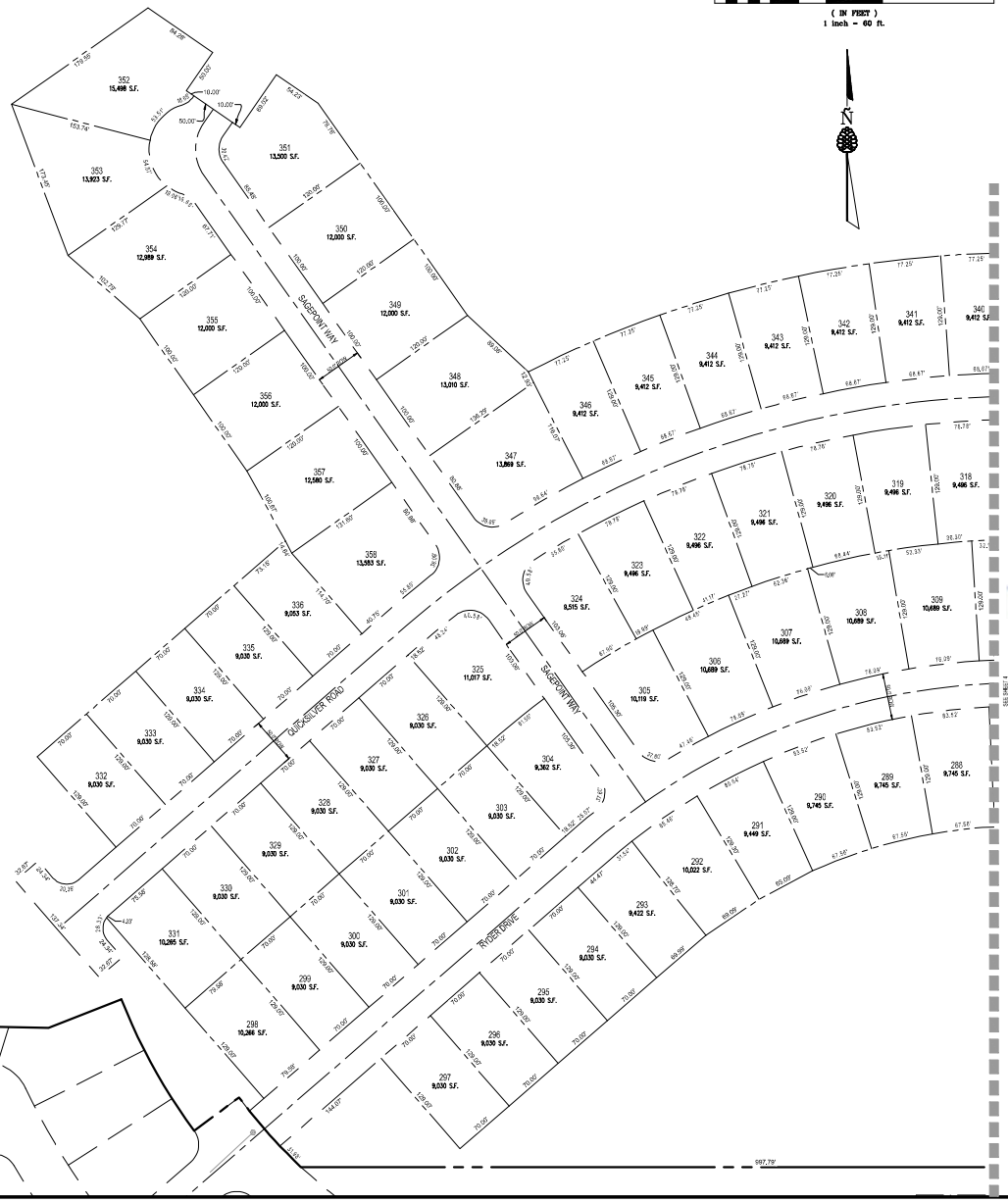


TYPICAL CORNER LOT SETBACKS

NOTE: CORNER LOT SETBACKS TO MATCH ITS CORRESPONDING SF LOT SETBACK REQUIREMENT, EXCEPT THE STREET SIDE SETBACK IS EQUAL TO THE FRONT YARD SETBACK.

GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft.



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PROFESSIONAL ENGINEER - STATE OF NEVADA
DANIEL C. BIRCHFIELD
Exp. 12-31-26
CIVIL
No. 20044
11/14/25

TRADITIONS NORTH
DAYTON, NEVADA
SITE PLAN

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3
3 OF 17
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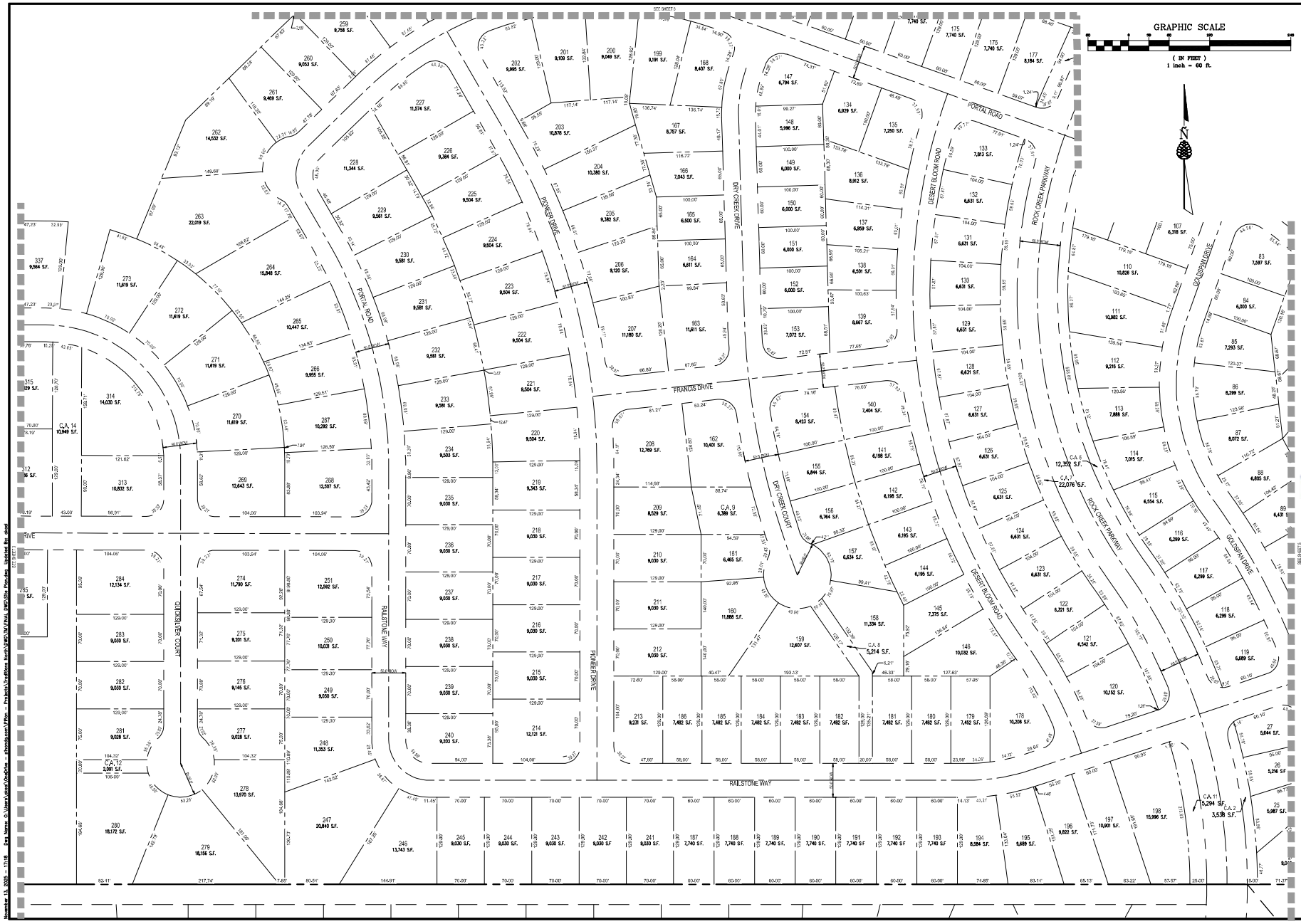

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DANIEL C. BIRCHFIELD
Exp. 12-31-25
CIVIL
No. 20844

11/14/25

TRADITIONS NORTH
DAYTON, NEVADA
SITE PLAN

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SHEET 4

4 OF 17

PIÑON

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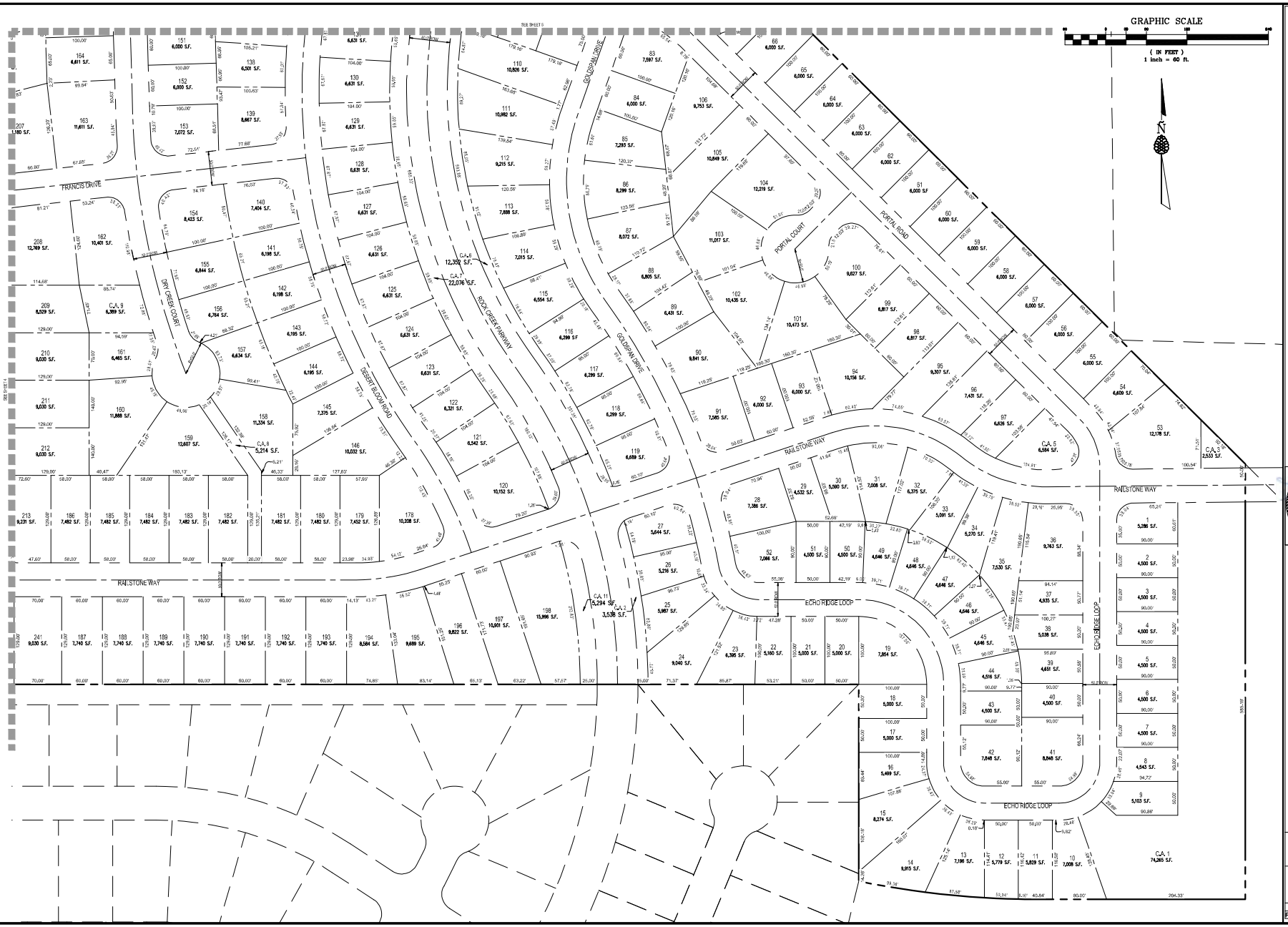

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No. 20844
11/14/25

TRADITIONS NORTH
DAYTON, NEVADA
SITE PLAN

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SHEET 5

5 OF 17

PIÑON

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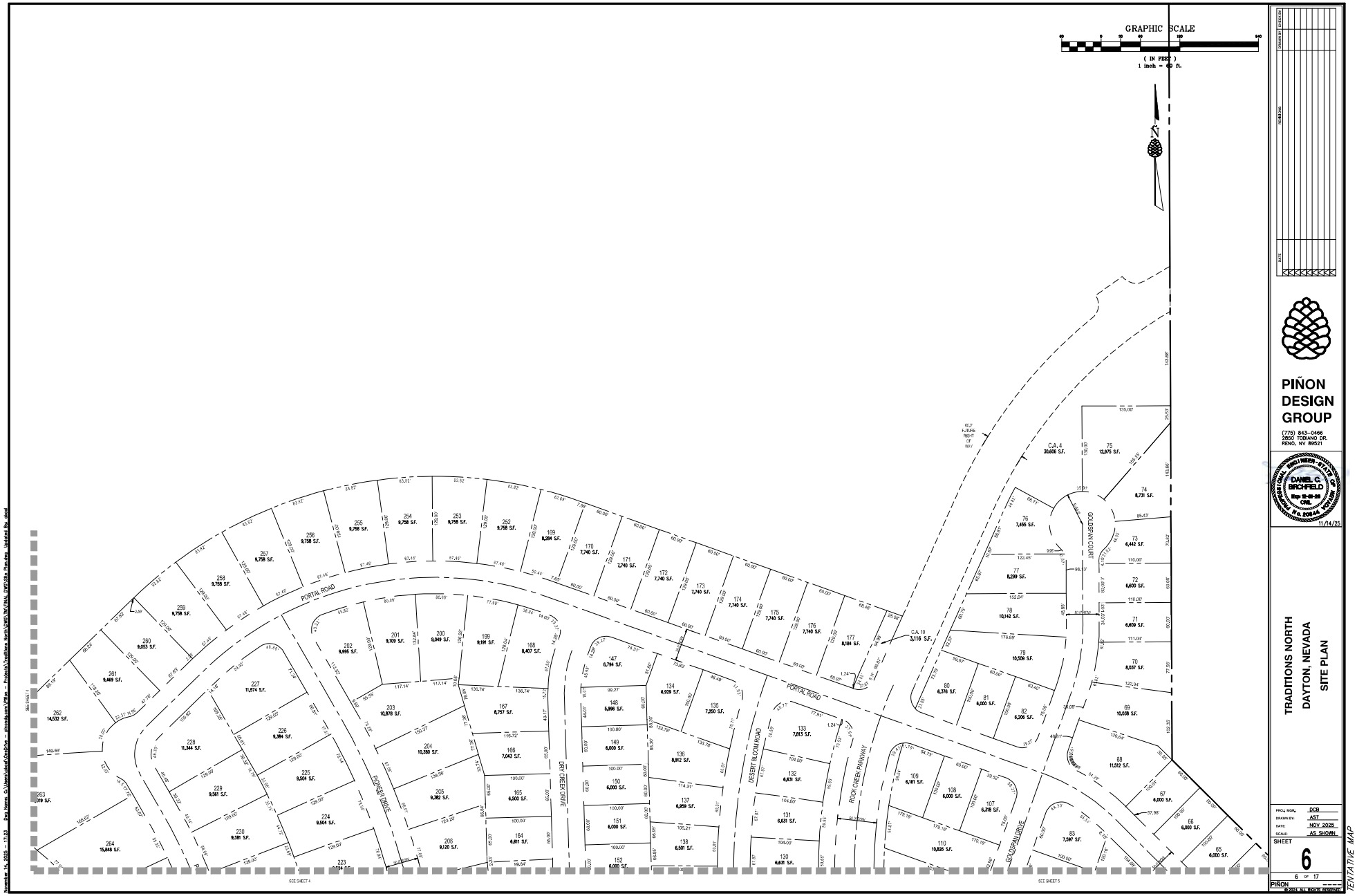

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Exp. 12-31-25
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TRADITIONS NORTH
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SITE PLAN

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SHEET 6

6 OF 17

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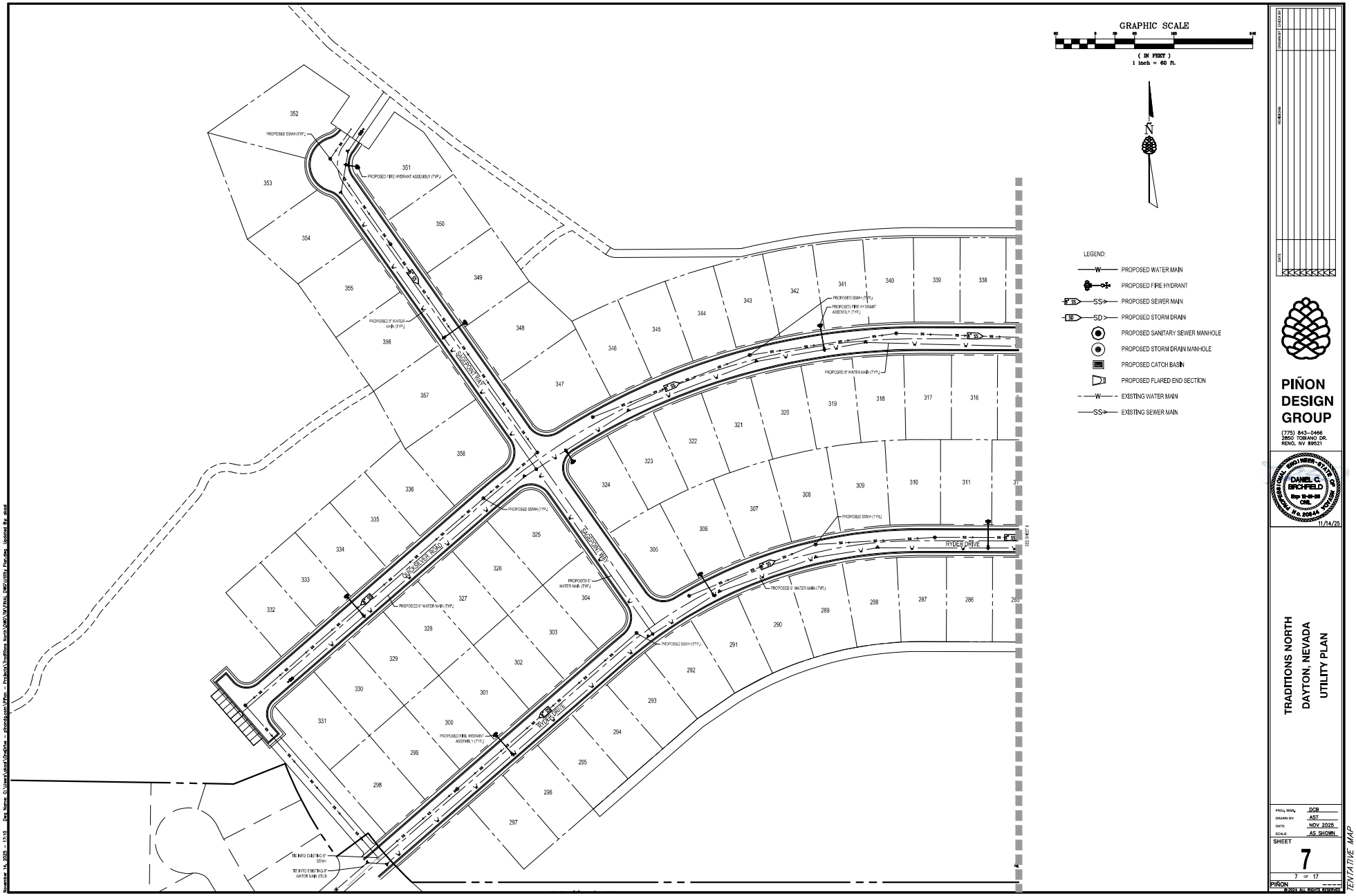

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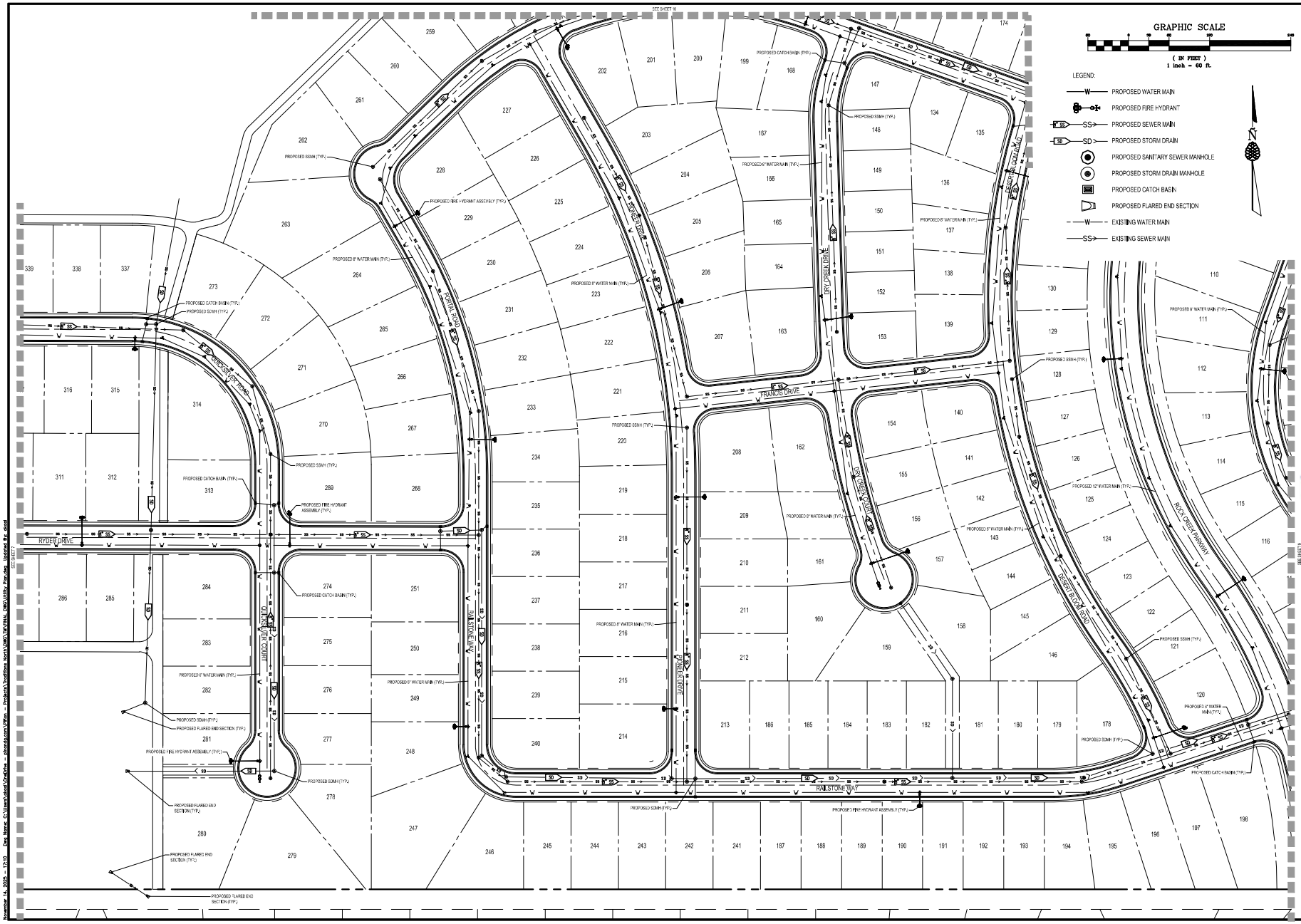

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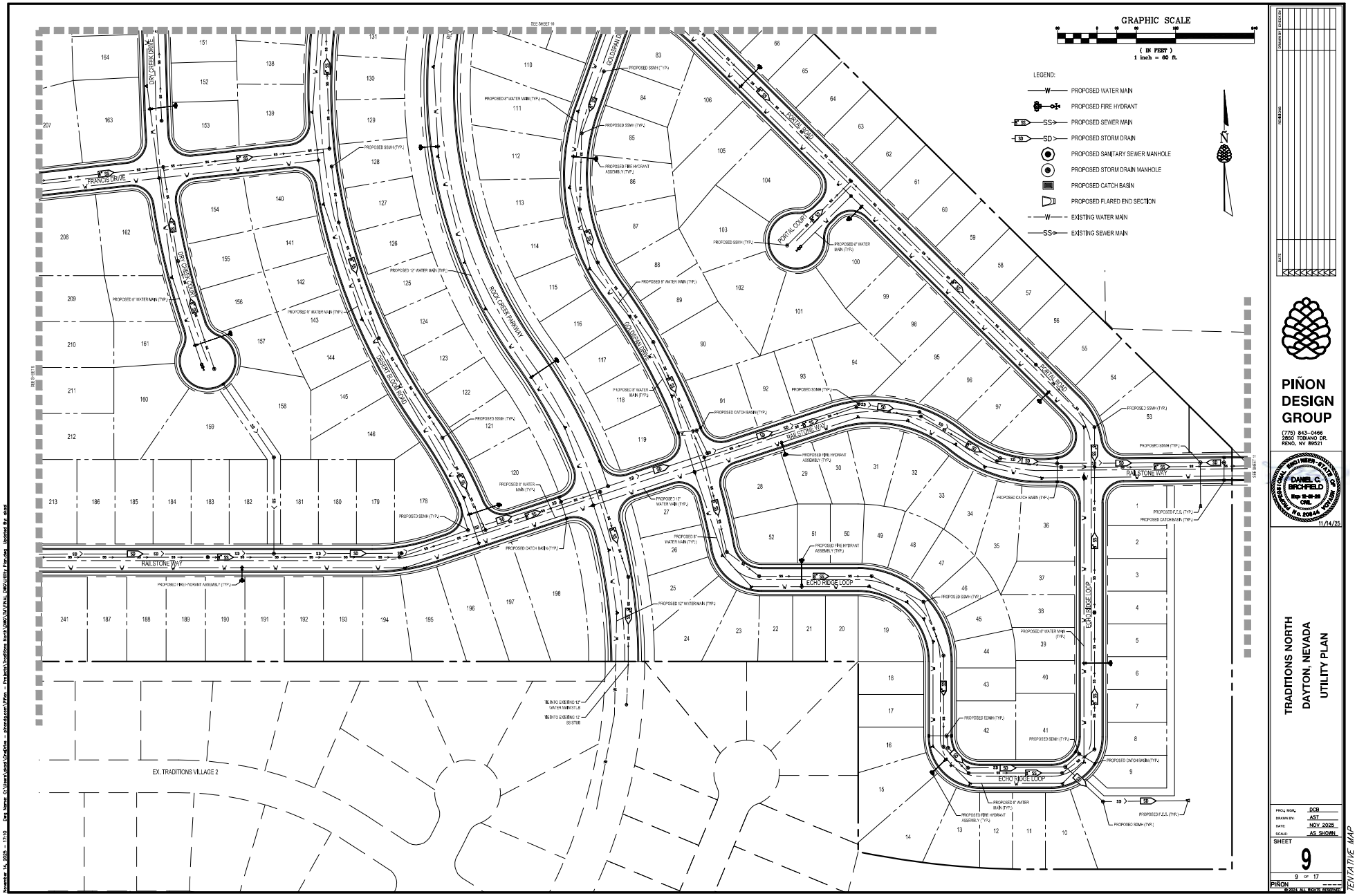

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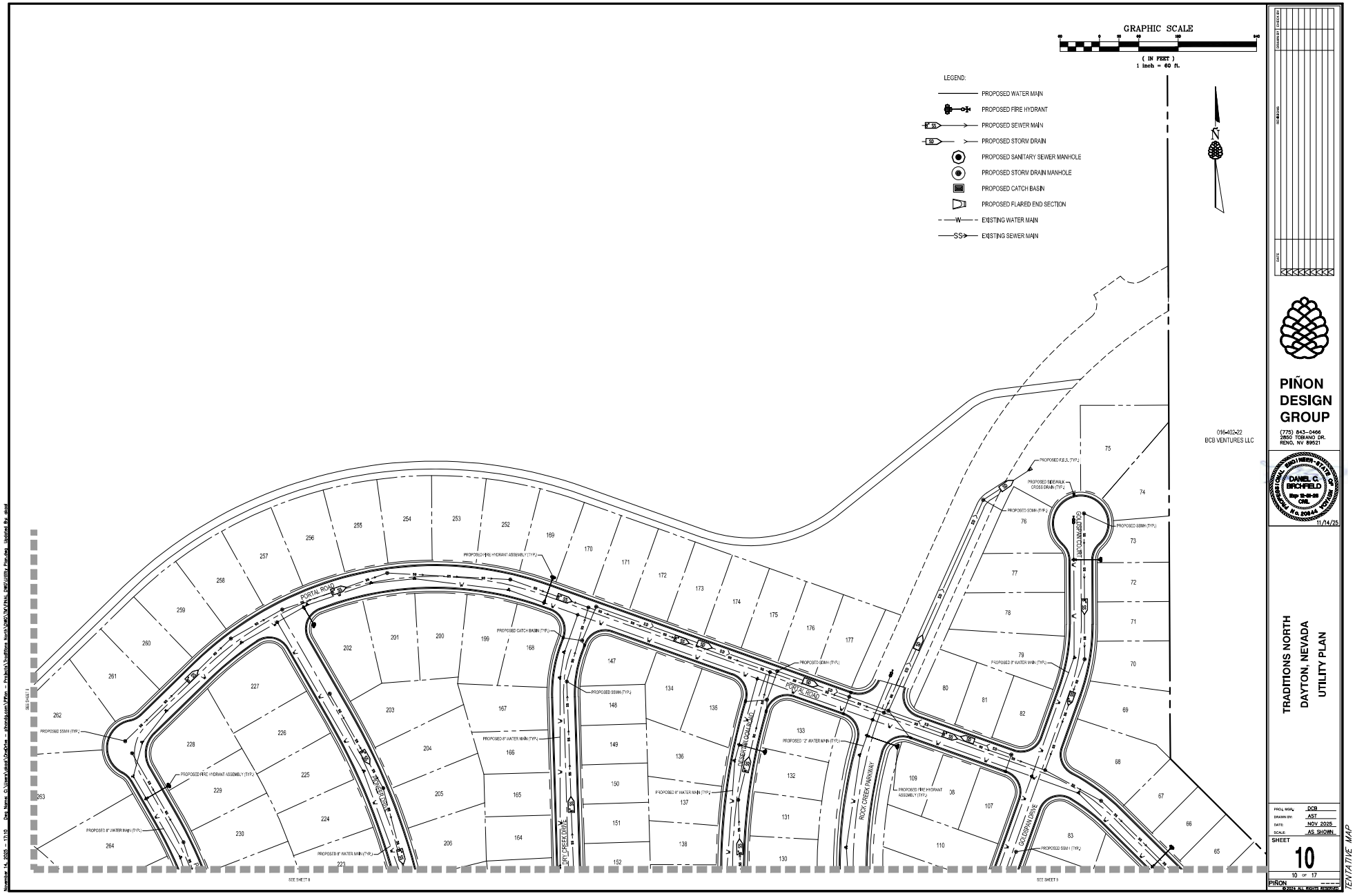

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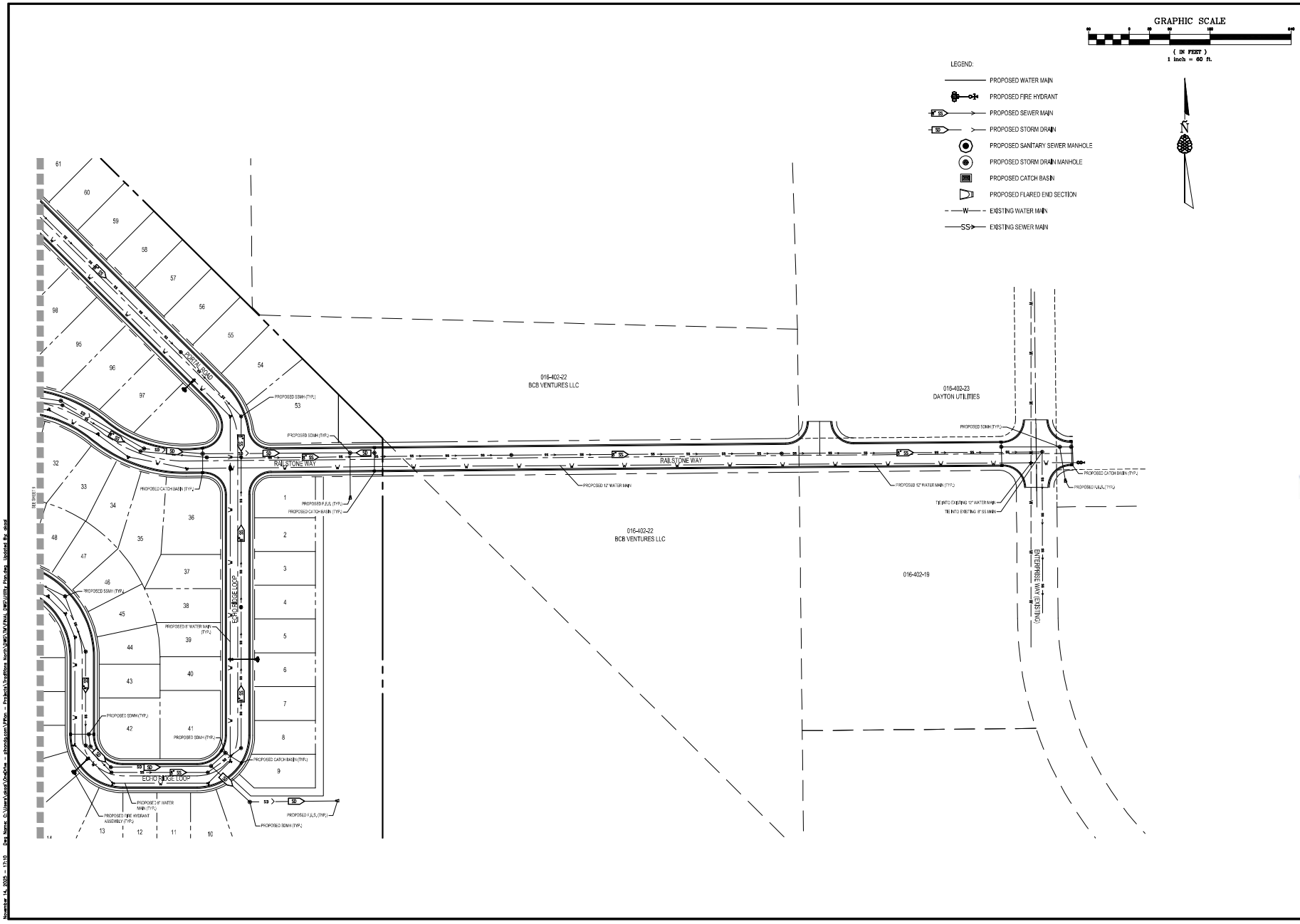

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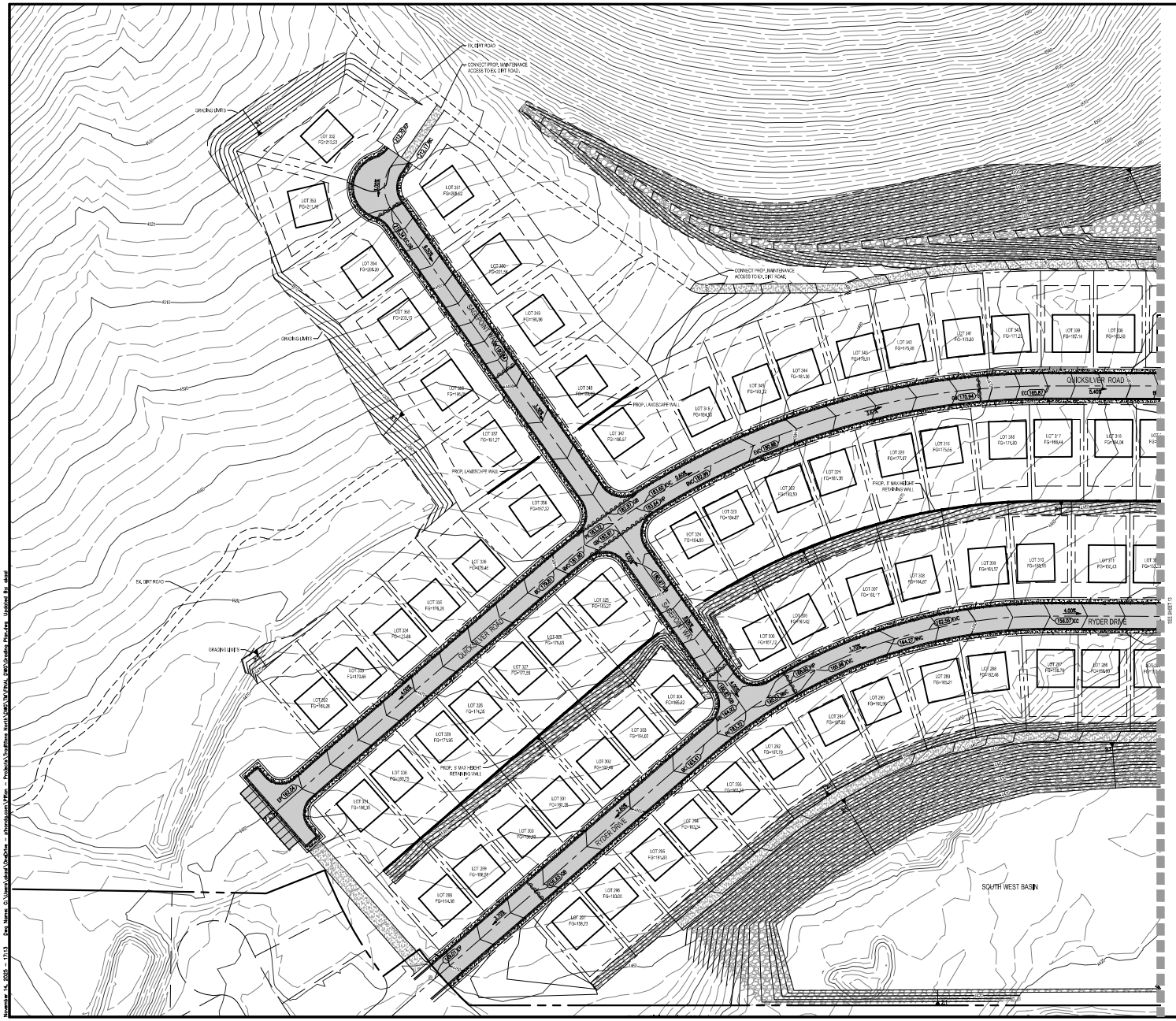

GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft.

LEGEND:

- PROPOSED A/C DRIVEWAY
- PROPOSED RIP RAP
- PROPOSED CONCRETE
- PROPOSED MAINTENANCE ACCESS
- GRADE BREAK
- EXISTING MAJOR CONTOUR INTERVAL
- EXISTING MINOR CONTOUR INTERVAL
- PROPOSED MAJOR CONTOUR INTERVAL
- PROPOSED MINOR CONTOUR INTERVAL
- SPOT ELEVATION CALL OUT
- SLOPE CALL OUT
- ENGINEERED SLOPE
- PROPOSED RETAINING WALL

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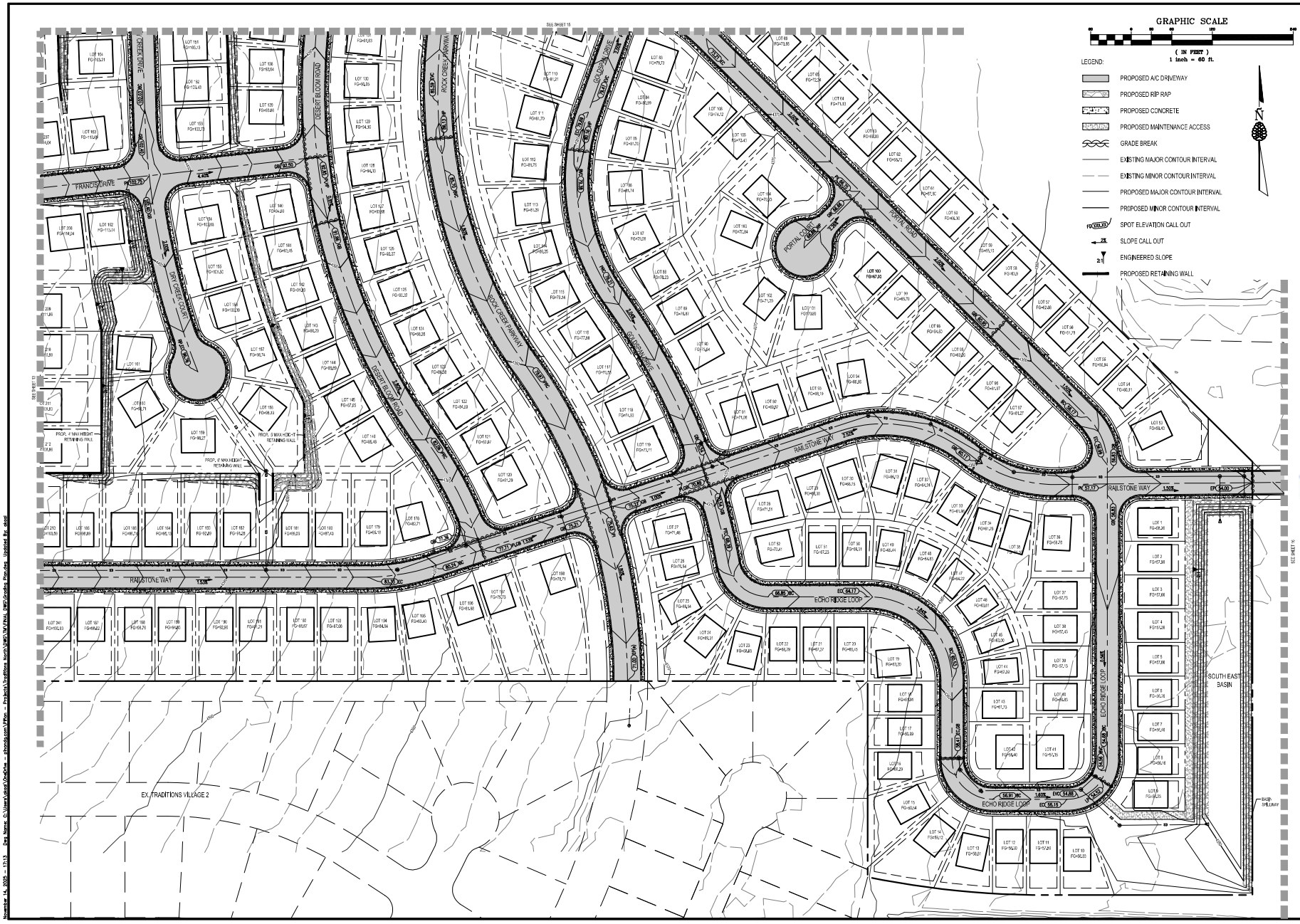

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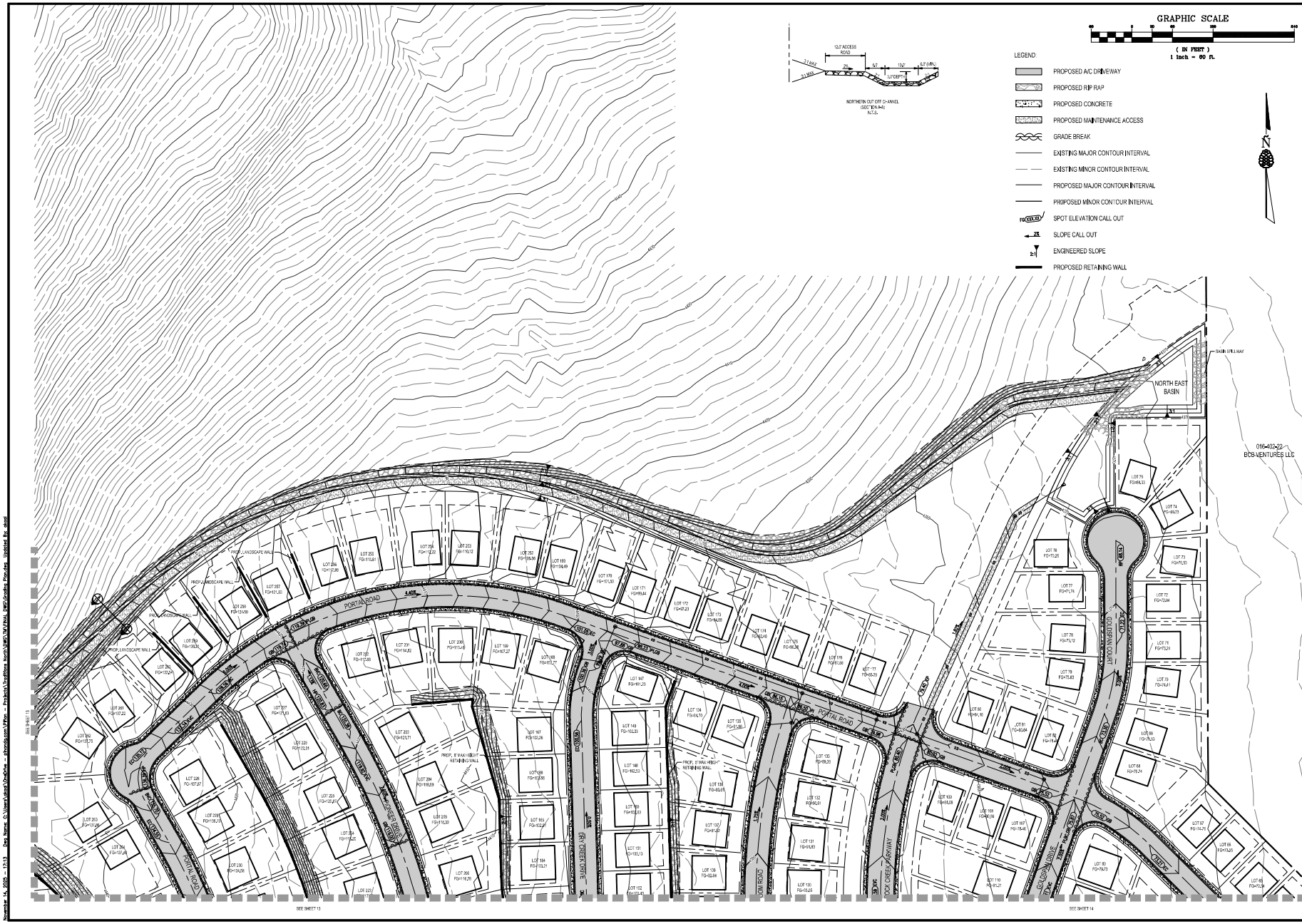

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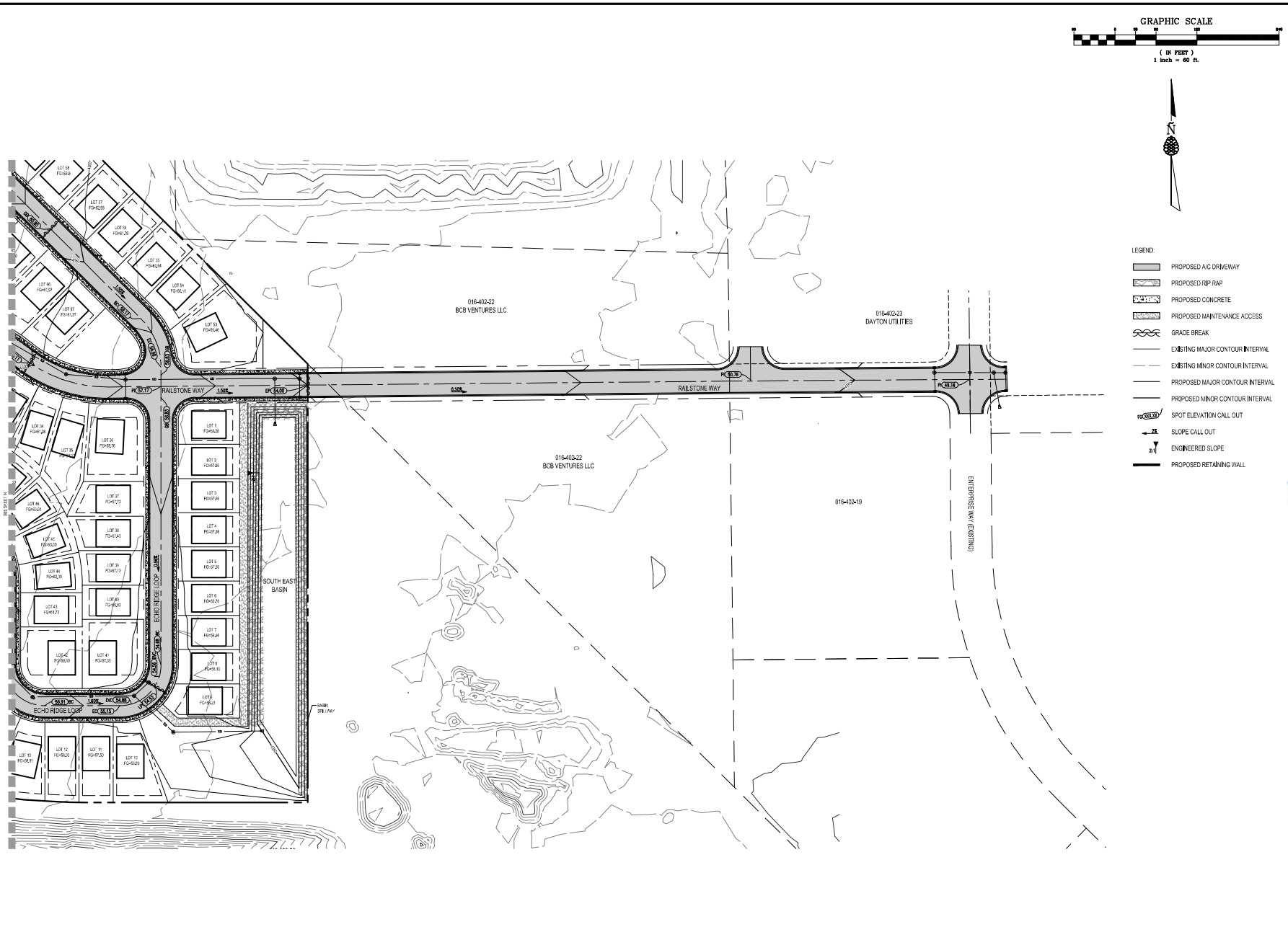

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GENERAL NOTES

1. ALL PLANTING AND IRRIGATION SHALL BE INSTALLED PER LOCAL GOVERNING CODES.
2. TREES
   - DECIDUOUS TREES SHALL HAVE A MINIMUM CALIPER OF 2 INCHES.
   - EVERGREEN TREES SHALL HAVE A MINIMUM HEIGHT OF 6 FEET.
   - ADDITIONAL TREES, BEYONC THOSE REQUIRED BY CODE, MAY BE REDUCED IN SIZE AT INSTALLATION AND PROVIDED AT THE DISCRETION OF THE OWNER.
3. FINAL PLANT SELECTION AND LAYOUT WILL BE BASED ON SOUND HORTICULTURAL PRACTICES RELATING TO MICRO-CLIMATE, SOIL, AND WATER REGIMES. ALL TREES WILL BE STAKED SO AS TO REMAIN UPRIGHT AND PLUMB FOLLOWING INSTALLATION. PLANT SIZE AND QUALITY AT TIME OF PLANTING WILL BE PER THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-1990).
4. ALL SHRUB BEDS WILL RECEIVE 3" DEPTH MULCH WITH WEED CONTROL.
5. ALL LANDSCAPING WILL BE AUTOMATICALLY IRRIGATED. CONTAINER PLANTINGS WILL BE DRIP IRRIGATED BASED ON THE SPECIFIC HORTICULTURAL REQUIREMENTS OF EACH SPECIES. A REDUCED-PRESSURE-TYPE BACKFLOW PREVENTER WILL BE PROVIDED ON THE IRRIGATION SYSTEM AS REQUIRED PER CODE.
6. PLANTING PLAN IS CONCEPTUAL. PLANT QUANTITIES INDICATED ARE PER LOCAL AGENCY CODE REQUIREMENTS. PLANT LOCATIONS, FINAL SPECIES SELECTION, AND SIZE AT PLANTING SHALL BE DETERMINED DURING DEVELOPMENT OF FINAL CONSTRUCTION DOCUMENTS.
7. ANY AMENITIES AND/OR AMENITY AREAS ARE CONCEPTUAL. FINAL SELECTION SHALL BE DETERMINED DURING DEVELOPMENT OF FINAL CONSTRUCTION DOCUMENTS.

LANDSCAPE DATA

TOTAL SITE AREA: 10,051,801 SQ FT (230.76 ACRES)
DEVELOPED AREA:

JURISDICTION: LYON COUNTY
APN: 015-406-07

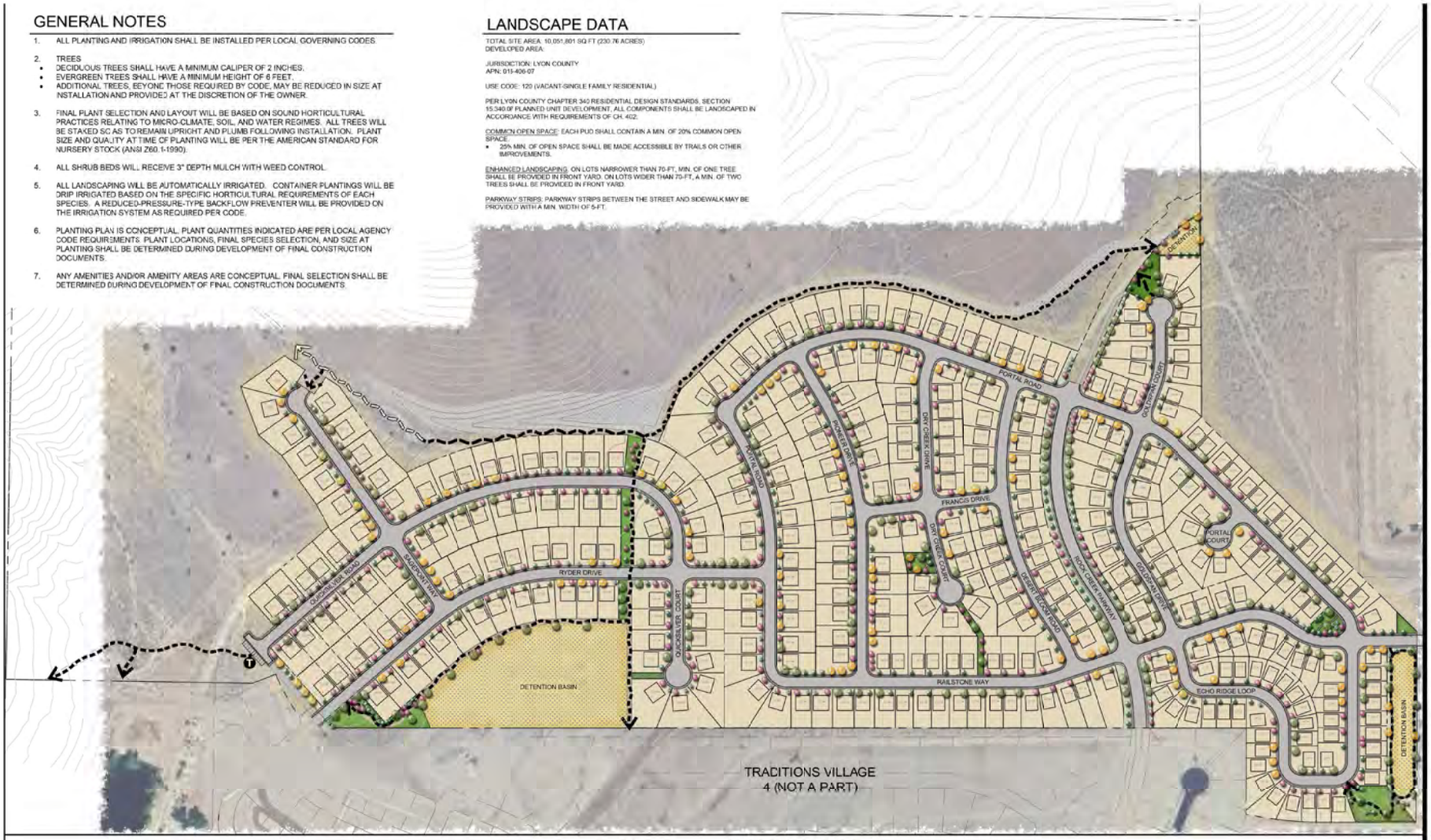
USE CODE: 120 (VACANT-SINGLE FAMILY RESIDENTIAL)

PER LYON COUNTY CHAPTER 340 RESIDENTIAL DESIGN STANDARDS, SECTION 15.340.9F PLANNED UNIT DEVELOPMENT, ALL COMPONENTS SHALL BE LANDSCAPED IN ACCORDANCE WITH REQUIREMENTS OF CH. 402.

COMMON OPEN SPACE: EACH PUD SHALL CONTAIN A MIN. OF 20% COMMON OPEN SPACE.
- 25% MIN. OF OPEN SPACE SHALL BE MADE ACCESSIBLE BY TRAILS OR OTHER IMPROVEMENTS.

ENHANCED LANDSCAPING: ON LOTS NARROWER THAN 70-FT, MIN. OF ONE TREE SHALL BE PROVIDED IN FRONT YARD. ON LOTS WIDER THAN 70-FT, A MIN. OF TWO TREES SHALL BE PROVIDED IN FRONT YARD.

PARKWAY STRIPS: PARKWAY STRIPS BETWEEN THE STREET AND SIDEWALK MAY BE PROVIDED WITH A MIN. WIDTH OF 5-FT.



PLANT LEGEND

- ORNAMENTAL TREES
- DECIDUOUS SHADE TREES
- EVERGREEN TREES
- LANDSCAPE AREA

AMENITY LEGEND

- DETENTION BASIN
- POCKET PARKS
- TRAILS
- TRAILHEAD
- EXISTING DIRT ROAD

811 Know what's below. Call before you dig.

0' 150' 300' 450'
Scale in Feet

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Tentative Map
TRADITIONS NORTH
Traditions North, LLC
Lyon Co. Nevada

No.	Revision Date

LA No: 1048-501-06-25
Designed: AR
Drawn: KHK
Checked: RPH
Date: 1/13/2025

PROGRESS SET
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Sheet L1 of 1

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STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
310 Galletti Way
Sparks, Nevada 89431

Joe Lombardo
Governor

Tracy Larkin-Thomason, P.E., *Director*

January 30, 2026

GCW Engineering
5482 Longley Lane, Suite B
Reno, NV, 89511
Attention: Marissa Harned, PE

SENT VIA ELECTRONIC MAIL

RE: Traditions North – Traffic Impact Study (11/12/2025)

Ms. Harned,

The Nevada Department of Transportation (NDOT) has reviewed the updated traffic analysis prepared by GCW Engineering, dated November 12th, 2025, for the above-referenced project. Based on the above information, this traffic study is accepted for this project, and it can move forward with the NDOT occupancy permit process. Please be aware of the following comments as the project progresses through the permit process.

1. NDOT acceptance of a traffic study is typically valid for one year following the date on the acceptance letter, provided the nature of the development does not significantly change. Permit applications made after one (1) year may require an amendment or a new traffic study. Permit applications made after five (5) years will require a new traffic impact study.

2. The following improvements are recommended as mitigations based on the traffic impact study:
    a) Prior to reaching LOS E, construct an additional right-turn lane for the southbound Fortune Drive to US 50 movement to mitigate the cumulative developmental impacts of Traditions North and other projects north of US 50.

3. Given the multiple developments responsible for the mitigation of the cumulative impact, Lyon County may require the construction of transportation improvements it deems necessary to mitigate project-specific or cumulative impacts within NDOT right-of-way. Where such improvements are required and are not constructed by the County, Lyon County may participate in the review, approval, and administration of a reimbursement agreement among affected developers to allocate the cost of the required improvements on a pro rata basis. All required improvements shall be reviewed and permitted through NDOT and constructed in accordance with applicable NDOT standards and requirements.

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4. Permit for Lyon County-maintained infrastructure, such as traffic signals, street lighting, County road approaches, etc., shall be on an encroachment permit application with the County as the main applicant.

5. All design features will be required to comply with NDOT Standards. Any deviation will require approval by the District Engineer. The Permit Office will provide details required for the deviation requests if needed during the permit application review.

6. This acceptance letter and the accepted traffic impact study will need to be included as part of the NDOT encroachment permit submittal. To obtain additional details about the NDOT encroachment permitting process, the NDOT District II Permits Office can be contacted at (775) 834-8330 or D2Permits@dot.nv.gov.

We look forward to working with your design team and helping you to achieve the successful completion of your project.

NDOT may require additional changes and/or comments as the permit process progresses. If you have any questions, please feel free to contact Jeff Graham at (775) 834-8382.

Sincerely,

Signed by:
Kelly Gaworski
0B63A74DA2BE4A8...

Kelly Gaworski, PE
Engineering Services Manager
NDOT District II

KG:jg

Enclosures: Traditions North – Traffic Impact Study (11/12/2025)

Cc: Gavin Henderson - Lyon County Community Development Director
Louis Cariola – Lyon County Senior Planner
Loren Chilson – Headway Transportation
Bhupinder Sandhu – District Engineer
Andrew Lawerence – Assistant District Engineer
Chris Bell – NDOT Traffic Operations
NDOT District II Traffic Engineering
NDOT District II Permits Office
File

TRAFFIC IMPACT STUDY

FOR

TRADITIONS NORTH

November 12, 2025

PREPARED FOR:

GF Development, LLC

PREPARED BY:

GCW
ENGINEERS \ SURVEYORS

GCW, Inc.
5482 Longley Lane, Suite B, Reno, Nevada 89511
775.322.4300
www. gcwengineering.com

YOUR QUESTIONS ANSWERED QUICKLY

Why did you perform this study?

This Traffic Impact Study evaluates the potential traffic impacts associated with the proposed Traditions North project in Dayton, Nevada. This study of potential transportation impacts was undertaken for planning purposes and to assist in determining what traffic controls or mitigations may be needed to reduce potential impacts, if any are found.

What does the project consist of?

The project consists of approximately 364 single family residential housing units located north of US Highway 50 (US 50), Nevada Station Parkway, and the Traditions Village 1 and Village 2 developments.

The project will access US 50 via Fortune Drive and Traditions Parkway. The project originally contemplated a connection to Enterprise Way as well, however due to circumstances separate from the traffic study, a vehicle connection to Enterprise Way is no longer being considered and was not included in this traffic analysis and report. If the project wishes to pursue a vehicle connection to Enterprise Way in the future, a separate traffic analysis will need to be conducted at that time.

How much traffic will the project generate?

The project is anticipated to generate approximately 3,433 Daily, 255 AM peak hour, and 342 PM peak hour trips to the external roadway network.

How will project traffic affect the roadway network?

Under Opening Year Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds.

Under Future Year conditions, the US 50/Fortune Drive intersection is anticipated to operate at level of service E during the AM peak hour. The poor level of service is primarily due to the high southbound right-turn volume on Fortune Drive. The southbound Fortune Drive approach currently contains a hatched-out lane which can be converted to a second right-turn lane. With dual southbound right-turn lanes and protected plus overlap phasing, the overall US 50/Fortune Drive intersection is anticipated to operate within policy level of service thresholds. Capacity improvements for the Future Year condition should be undertaken by NDOT as regional improvements since the poor future operating conditions will occur unrelated to this project

Under Future Year Plus Project conditions, the analysis includes the needed regional capacity improvements (dual southbound right-turn lanes) at the US 50/Fortune Drive intersection. The study intersections are expected to operate at overall LOS D or better (within policy level of service thresholds).

What are the recommended improvements?

The project is not expected to result in levels of service below policy thresholds and therefore no project related mitigations are recommended. The following regional improvements by NDOT are included in the *US 50 Corridor Study* or as part of the corridor safety improvements that are currently at the 90% design stage, and were included in the Future Year analysis as a background condition:

- Lower the speed limit on US 50 from 60 mph to 55 mph from east of Fortune Drive to James Avenue to provide a more gradual transition in speed limits through the expanding urbanized area
- Widen US 50 to six lanes for the Future Year per the *US 50 Corridor Study*. With the widening project:
    - Construct/restripe a second southbound right-turn lane on Fortune Drive at US 50
    - Construct a westbound right-turn lane on US 50 at Fortune Drive (not shown in the *US 50 Corridor Study*) as exists today
    - Construct a westbound right-turn lane on US 50 at Traditions Parkway (not shown in the *US 50 Corridor Study*) as exists today
    - Improve the south leg of the US 50/Traditions Parkway/Segale Road intersection

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INTRODUCTION

This report presents the findings of a Traffic Impact Study completed to assess the potential traffic impacts on local intersections associated with the Traditions North project in Dayton, Nevada. This traffic impact study has been prepared to document existing traffic conditions, quantify traffic volumes generated by the proposed project, identify potential impacts, document findings, and make recommendations to mitigate impacts, if any are found. The location of the project is shown on **Figure 1** and **Figure 2**, and the project site plan is shown on **Figure 3**.

Study Area and Evaluated Scenarios

The project consists of approximately 364 single family residential housing units. The project is located north of US Highway 50 (US 50), Nevada Station Parkway, and the Traditions Village 1 and Village 2 developments. The study intersections were identified as those most likely to be impacted by project traffic and are shown on **Figure 2**. The following intersections are included in this study:

1. Fortune Drive/Sugarloaf Drive
2. US 50/Fortune Drive
3. US 50/Traditions Parkway

This study includes analysis of both the weekday AM and PM peak hours as these are the periods of time in which peak traffic is anticipated to occur. The evaluated development scenarios are:

- Existing Conditions
- Opening Year Conditions – this scenario analyzes a 4-year horizon (Year 2029)
- Opening Year Plus Project Conditions
- Future Year Conditions (20-year horizon) – this scenario analyzes the 20-year horizon beyond the Opening Year (Year 2049)
- Future Year Plus Project Conditions

GCW ENGINEERS \ SURVEYORS

NO SCALE

- Project Site

Figure 1

Traditio 723 th

Traffic Impact Study

Regional Project Location

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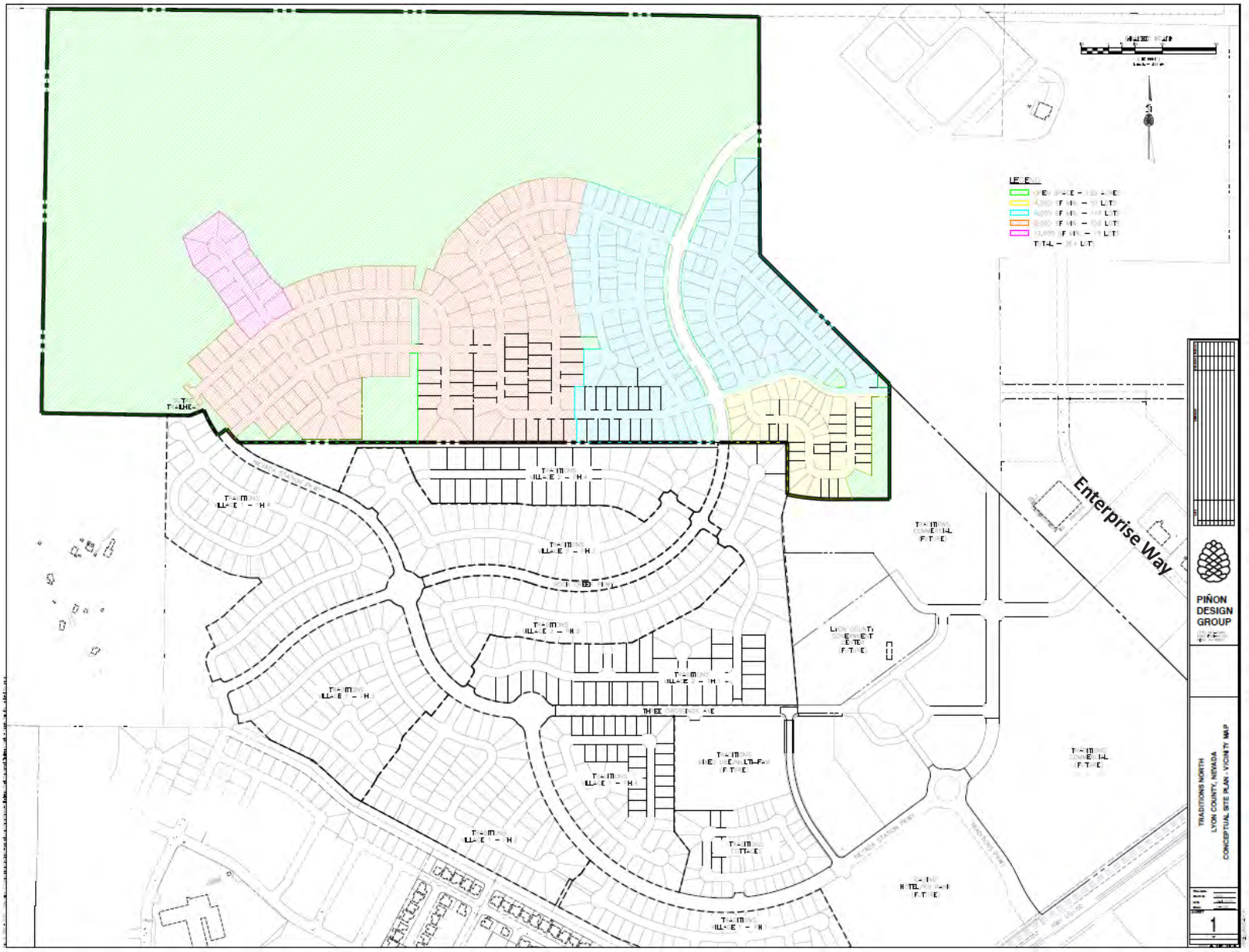
NO SCALE

- Project Site
(#) - Study Intersection

Figure 2
Traditio 724 th
Traffic Impact Study
Study Intersections



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NO SCALE

Figure **3**

Traditio **725** th

Traffic Impact Study

Preliminary Site Plan

ANALYSIS METHODOLOGY

Level of service (LOS) is a term commonly used by transportation practitioners to measure and describe the operational characteristics of intersections, roadway segments, and other facilities. This term equates seconds of delay per vehicle at intersections to letter grades "A" through "F" with "A" representing optimum conditions and "F" representing breakdown or over capacity flows.

Intersections

The complete methodology for intersection level of service analysis is established in *the Highway Capacity Manual (HCM), 7th Edition* published by the Transportation Research Board (TRB). **Table 1** presents the delay thresholds for each level of service grade at signalized and unsignalized intersections.

Table 1: Level of Service Definition for Intersections

Level of Service	Brief Description	Average Delay (seconds per vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Free flow conditions.	< 10	< 10
B	Stable conditions with some affect from other vehicles.	10 to 20	10 to 15
C	Stable conditions with significant affect from other vehicles.	20 to 35	15 to 25
D	High density traffic conditions still with stable flow.	35 to 55	25 to 35
E	At or near capacity flows.	55 to 80	35 to 50
F	Over capacity conditions.	> 80	> 50

Source: *Highway Capacity Manual, 7th Edition*

Level of service calculations were performed for the study intersections using the Synchro 12 software package with analysis and results reported in accordance with *HCM* methodology.

Level of Service Policy

Lyon County

Chapter 4 – Transportation of the *2020 Lyon County Master Plan* (adopted December 16, 2021) includes the following level of service policies:

> *Signalized Intersections*
> *Level of Service at signalized intersections should be calculated using the Highway Capacity Manual, 2016 methodology. Delay at signalized intersections will be calculated on a peak hour basis and reported for the intersection overall. The overall intersections should operate at LOS D or better for the peak hour condition.*

Unsignalized Intersections

Level of Service at unsignalized intersections should be calculated using the Highway Capacity Manual, 2016 methodology. Delay at unsignalized intersections will be calculated on a peak hour basis and reported for both the approach with the highest delay and the intersection overall. The intersection approaches should operate at LOS D or better for the peak hour condition.

Nevada Department of Transportation

The Nevada Department of Transportation (NDOT) *Traffic Impact Study Requirements* publication states:

Level of service "C" will be the design objective for capacity and under no circumstances will less than level of service "D" be accepted for site and non-site traffic

Hence, LOS "D" was used as the threshold criteria for this analysis.

EXISTING CONDITIONS

Roadway Facilities

A brief description of the key roadways in the study area is provided below.

US Highway 50 is a highway with four-lane (two lanes in each direction and left-turn pockets at intersections) and five-lane (two lanes in each direction and two-way left-turn lane) sections within the study area. The roadway runs in a northeast-southwest direction and is considered an east-west roadway in this analysis. US 50 is classified as a Principal Arterial per NDOT roadway classification. The posted speed limit on US 50 at Fortune Drive is 45 mph and transitions to 60 mph just east of Fortune Drive.

Fortune Drive is a four-lane roadway with two lanes in each direction and turn pockets at intersections between US 50 and Dayton Village Parkway/Corral Drive. North of Dayton Village Parkway/Corral Drive, Fortune Drive is a two-lane residential roadway. The posted speed limit on Fortune Drive is 25 mph.

Traditions Parkway is a four-lane roadway north of US 50 that intersects Nevada Station Parkway at a roundabout intersection. The south leg of the US 50/Traditions Parkway intersection is a two-lane roadway called Segale Road that serves rural residential properties. The posted speed limit on Traditions Parkway north of US 50 is 35 mph.

Sugarloaf Drive is a two-lane residential roadway. The posted speed limit on Sugarloaf Drive is 25 mph.

Alternative Modes of Travel

Bicycle and pedestrian facilities do not exist on US 50 in the project area. Sidewalk exists on both sides of Fortune Drive and Sugarloaf Drive for the entire length of each roadway. Sidewalk also exists on both sides of Traditions Parkway from approximately 450 feet north of US 50 to Nevada Station Parkway. The US

50/Fortune Drive intersection has a marked crosswalk on the north leg of the intersection. Bicycle lanes do not exist on the study roadways.

Lyon County does not provide fixed route bus service.

Crash History

Vehicle crash data was obtained from NDOT and includes information from the 2019 to 2023 five-year period (the most current data available). The data shows the following:

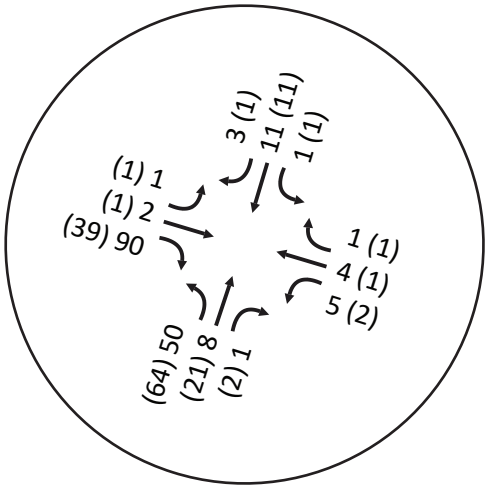
- Fortune Drive/Sugarloaf Drive – Zero crashes were reported at the intersection during the five year period
- US 50/Fortune Drive – Fourteen (14) crashes were reported at or within approximately 300 feet of the intersection during the five year period, including:
    - One (1) fatal crash – single vehicle run-off-the-road type crash involving alcohol
    - Six (6) injury crashes – 5 rear-end type crashes and 1 head-on type crash
    - Seven (7) property damage only (PDO) crashes – 5 single vehicle run-off-the-road type crashes and 2 rear-end type crashes
- US 50/Traditions Parkway – Four (4) crashes were reported at or within approximately 300 feet of the intersection during the five year period, including:
    - Two (2) injury crashes – 2 angle type crashes
    - Two (2) PDO crashes – 1 single vehicle run-off-the-road type crash and 1 rear-end type crash

There do not appear to be any trends or recurring crash types that require mitigations. The crash data sheets are provided in **Appendix A**.

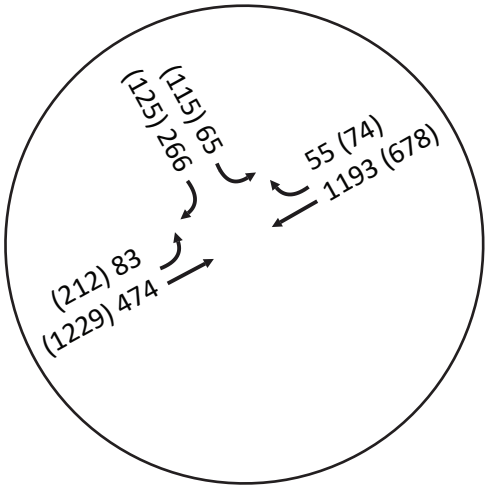
Traffic Volumes

AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak hour traffic volumes were collected at the study intersections on Tuesday, June 3, 2025. A review of NDOT's Annual Traffic Reports including the *2024 Seasonal Growth Factors* report (the most recent available) shows that traffic volumes in June are typically higher than the annual average, therefore, a seasonal factor was not applied to the existing traffic count data. The traffic count data sheets are provided in **Appendix B**. **Figure 4** shows the existing traffic volumes at the study intersections.

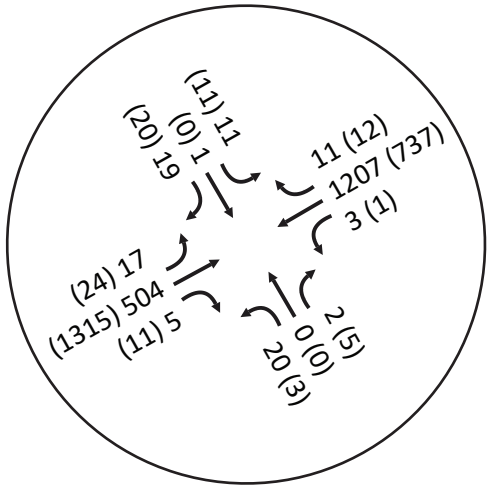
1 *Fortune Dr / Sugarloaf Dr*



2 *US 50 / Fortune Dr*



3 *US 50 / Traditions Pkwy*



GCW ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

(#) - Study Intersection STOP - Stop - Signal YIELD - Yield

Figure 4

Traditio 729 th

Traffic Impact Study

Existing Traffic Volumes, Lane Configurations, and Controls

Intersection Level of Service Analysis

Existing weekday AM and PM peak hour intersection level of service analysis was performed for the study intersections using Synchro 12 and HCS 2025 analysis software programs. The existing intersection lane configurations and controls are shown on **Figure 4. Table 2** shows the existing conditions level of service results and the technical calculations are provided in **Appendix C**.

Table 2: Existing Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS
1	Fortune Dr/Sugarloaf Dr	Side Street Stop				
	Overall		7	A	6	A
	EB Approach (Sugarloaf Dr)		9	A	9	A
	WB Approach (Sugarloaf Dr)		11	B	10	A
	NB Left (Fortune Dr)		7	A	7	A
	SB Left (Fortune Dr)		7	A	7	A
2	US 50/Fortune Dr	Signalized High-T				
	Overall		23	C	18	B
	EB Left (US 50)		45	D	24	C
	WB Approach (US 50)		18	B	15	B
	SB Approach (Fortune Dr)		36	D	23	C
	EB Merge (Fortune Dr to US 50)[3]		6	A	13	B
3	US 50/Traditions Pkwy	Side Street Stop				
	Overall		1	A	1	A
	NB Approach (Segale Rd)		39	E	47	E
	SB Approach (Traditions Pkwy)		36	E	30	D
	EB Left (US 50)		12	B	10	A
	WB Left (US 50)		9	A	13	B

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections and for the worst approach/movement for side street stop controlled intersections.
2. Average Density is reported for the EB Merge from the Fortune Dr SB left-turn to US 50 EB through movement.
3. Merge analysis was performed using HCS 2025 software.
Source: GCW, 2025

As shown in the table, the northbound and southbound approaches of the US 50/Traditions Parkway intersection are expected to operate at LOS E with minor street stop control. While the overall intersection is expected to operate at LOS A during the AM and PM peak hours, Lyon County standards state that unsignalized intersection "approaches should operate at LOS D or better for the peak hour condition." A traffic signal at the US 50/Traditions Parkway intersection is currently under construction. The other study intersections are expected to operate within policy level of service thresholds.

OPENING YEAR CONDITIONS

The Opening Year of the project is anticipated to be 2029.

Traffic Volumes

Opening Year traffic volumes were developed by applying a regional growth rate to the existing traffic volumes at the study intersections for 4 years. An annual growth rate of 0.5 percent per year was used, since trip generation estimates from other significant planned/approved projects in the area were also added. The 0.5 percent annual growth rate is consistent with the methodology used on other projects approved by NDOT and accounts for regional background growth that is not included in the trip generation of other projects. Trips generated by the following planned/approved, but not yet built, projects in the area were added to the study intersections:

- Traditions Town Center Phases 1-3
- Dayton Six

The resulting annual growth for the Opening Year volumes is generally higher than the traffic volume growth outlined in the *US 50 Corridor Study* (approximately 8-9 percent vs. 4-5 percent) due to the planned/approved project trips. The Opening Year (2029) AM and PM peak hour intersection turning movement volumes are shown on **Figure 5**. The growth rate and traffic volume development calculations are provided in **Appendix D**.

Intersection Level of Service Analysis

Opening Year weekday AM and PM peak hour intersection level of service analysis was performed for the study intersections based on the Opening Year traffic volumes, the existing peak hour factors from the counts, and the lane configurations and controls shown on **Figure 5**. A traffic signal at the US 50/Traditions Parkway intersection is currently under construction and will be completed prior to the Opening Year (2029) of the project. The Opening Year analysis was conducted with a traffic signal at the intersection. **Table 3** shows the Opening Year level of service results and the technical calculations are provided in **Appendix E**.

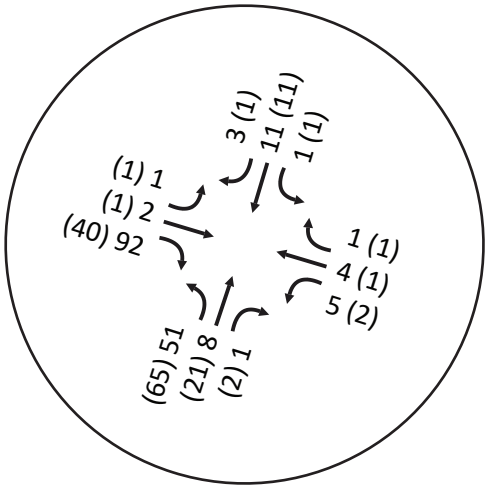
Table 3: Opening Year Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS
1	Fortune Dr/Sugarloaf Dr	Side Street Stop				
	Overall		7	A	6	A
	EB Approach (Sugarloaf Dr)		9	A	9	A
	WB Approach (Sugarloaf Dr)		11	B	10	A
	NB Left (Fortune Dr)		7	A	7	A
	SB Left (Fortune Dr)		7	A	7	A
2	US 50/Fortune Dr	Signalized High-T				
	Overall		25	C	20	B
	EB Left (US 50)		49	D	34	C
	WB Approach (US 50)		21	C	16	B
	SB Approach (Fortune Dr)		39	D	36	D
	EB Merge (Fortune Dr to US 50)[3]		12	B	17	B
3	US 50/Traditions Pkwy	Signal				
	Overall		20	B	20	C
	EB Approach (US 50)		14	B	17	B
	WB Approach (US 50)		21	C	21	C
	NB Approach (Segale Rd)		42	D	49	D
	SB Approach (Traditions Pkwy)		36	D	33	C

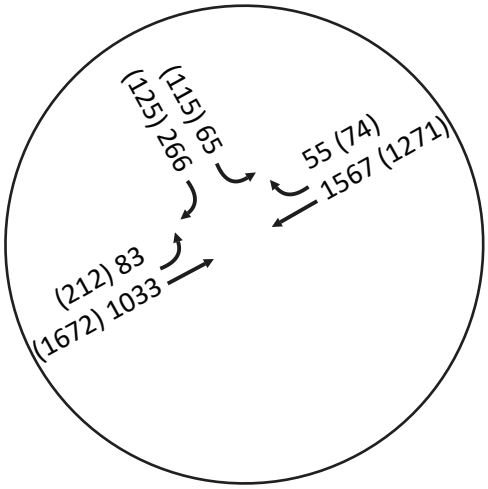
Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections and for the worst approach/movement for side street stop controlled intersections.
2. Average Density is reported for the EB Merge from the Fortune Dr SB left-turn to US 50 EB through movement.
3. Merge analysis was performed using HCS 2025 software.
Source: GCW, 2025

As shown in the table, the study intersections are expected to operate within policy level of service thresholds during the AM and PM peak hours under Opening Year conditions.

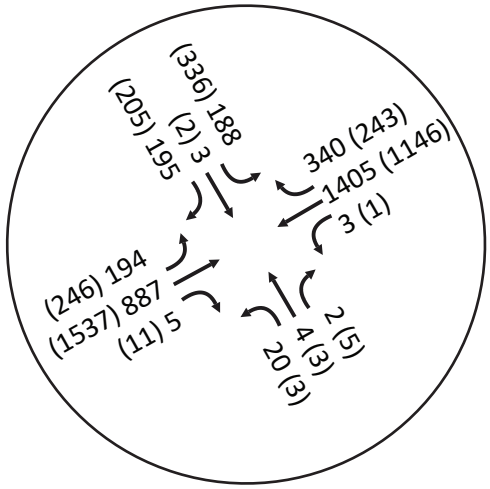
1 *Fortune Dr / Sugarloaf Dr*



2 *US 50 / Fortune Dr*



3 *US 50 / Traditions Pkwy*



GCW ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

(#) - Study Intersection STOP - Stop - Signal YIELD - Yield

Figure 5

Traditio 733 th
Traffic Impact Study

Opening Year Traffic Volumes, Lane Configurations, and Controls

FUTURE YEAR CONDITIONS

The Future Year analysis estimates operating conditions for the 20-year horizon after Opening Year (Year 2049).

Planned Roadway Improvements

The *US 50 Corridor Study - Pine Cone Road to Neigh Road Traffic Report* (CA Group, Inc.) documents planned roadway improvements in the study area. The corridor study includes three build alternatives with improvements for the overall corridor – the Arterial Alternative, Parkway Alternative, and Controlled Access Alternative. Based on input from NDOT staff, the Arterial Alternative is understood to be the NDOT preferred alternative and was used as the basis for this study. Improvements at the US 50 intersections with Fortune Drive and Traditions Parkway are included in the Arterial Alternative. The Arterial Alternative improvements for the study intersections include:

- Six through lanes (three lanes in each direction) on US 50
- US 50/Fortune Drive – signalized High-T intersection with dual eastbound left-turn lanes
- US 50/Traditions Parkway – signalized intersection with full access (all movement allowed) for all approaches of the intersection

It is important to note that the improvements identified in the corridor study do not include westbound right-turn deceleration lanes at the US 50/Fortune Drive and US 50/Traditions Parkway intersections, however these lanes exist today. NDOT's access management standards include warrants for right-turn lanes, which are clearly met based on Future Year (no project) traffic volumes. It is anticipated, and the analysis assumes, that these existing right-turn lanes will continue to be provided for the Future Year condition (without the project) by NDOT as part of the US 50 widening project.

The Future Year lane configurations and controls used in the analysis are shown on **Figure 6**.

Planned/Anticipated Developments & Traffic Volume Forecasts

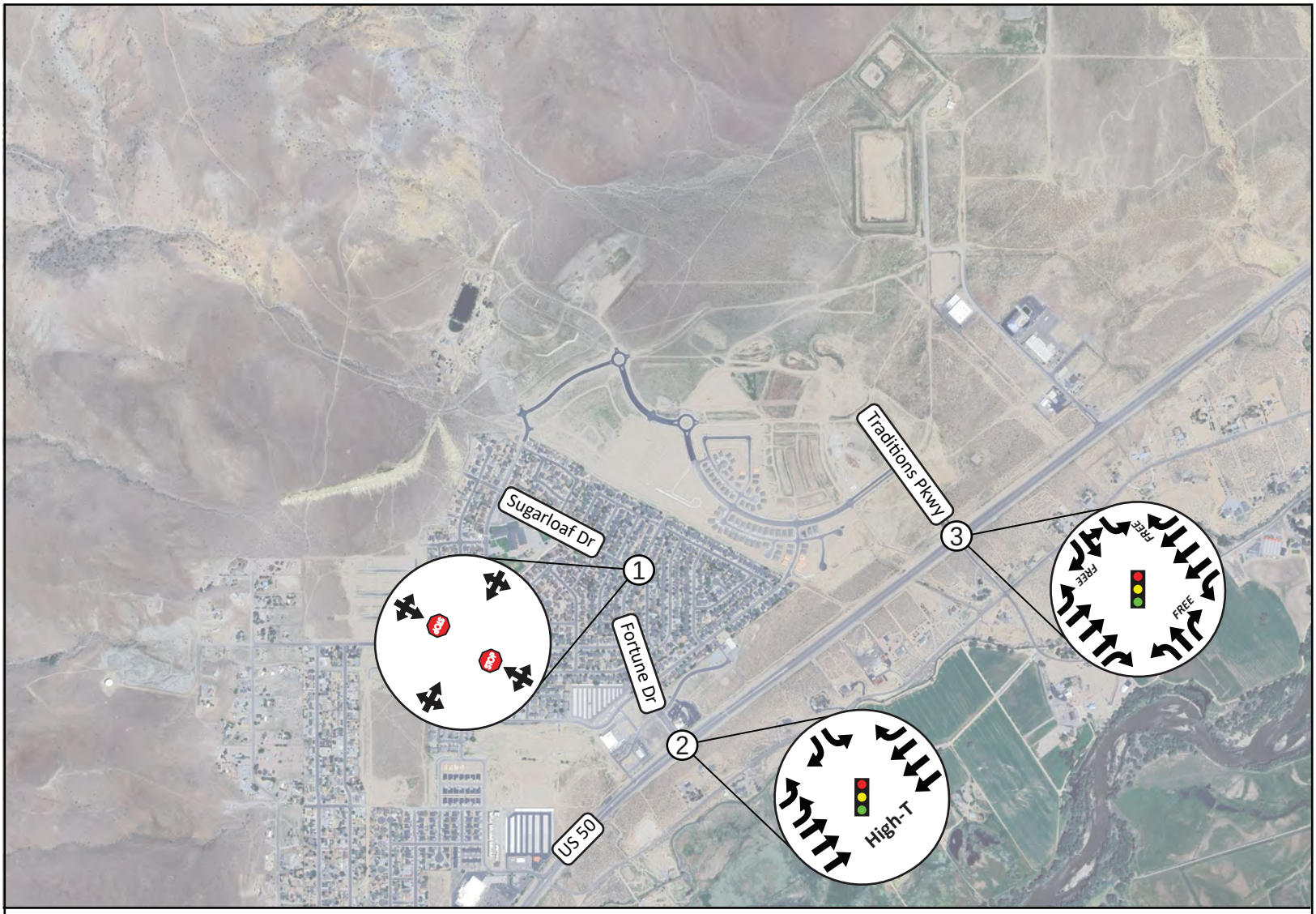
The *US 50 Corridor Study Traffic Report* includes analysis of multiple intersections on US 50 including the US 50/Fortune Drive and the US 50/Traditions Parkway intersections. The corridor study analyzes Future Year (2040) traffic volume forecasts that were developed using a regional growth rate and trip generation estimates from planned projects in the area. "Appendix 3 – 2040 Traffic Forecasting and Assumptions" of the *US 50 Corridor Study Traffic Report* (provided in **Appendix D**) includes a detailed description of how the forecasts were developed. The Future Year (2040) traffic volumes from the *US 50 Corridor Study Traffic Report* and from the *Traffic Impact Study for Traditions Town Center Phases 1-3* (Headway Transportation, September 27, 2023) were used as a starting point to develop Future Year (2049) forecasts for this analysis. The following steps were taken to develop Future Year (2049) traffic volumes at the study intersections:

1. Since the traffic volume forecasts in the *US 50 Corridor Study* represent the year 2040, background regional growth for an additional 9 years was calculated and added to the 2040 forecasts. An annual growth rate of 0.5 percent per year was used, since trip generation estimates from other planned/approved projects that were not included in the *US 50 Corridor Study* were also added and the 2040 volumes already account for known developments. The 0.5 percent annual growth rate is consistent with the methodology used on other projects approved by NDOT and accounts for regional background growth that is not included in the trip generation of other projects.

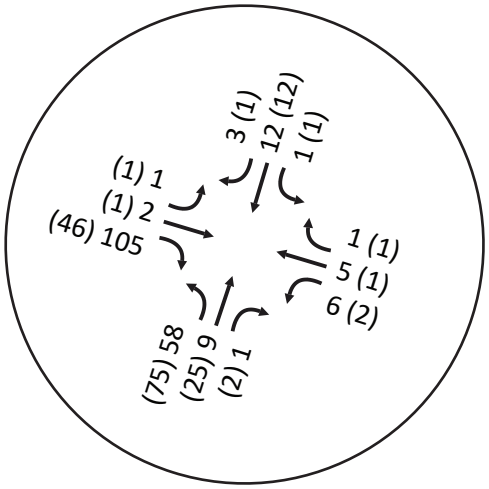
2. The *US 50 Corridor Study* traffic volume forecasts (2040) appear to already include a portion of the trips generated by the proposed Traditions project located north of US 50 between Fortune Drive and Traditions Parkway, but not the entire project. Trip generation estimates from the proposed Traditions Village 2 and Estates at Sutro (included in the Future Year forecasts for Traditions Town Center shown in Appendix D), Traditions Town Center Phases 1-3, and Dayton Six projects were added to the Future Year forecasts.

The Future Year (2049) traffic volumes are shown on **Figure 6** and represent the known long-term development in the study area.

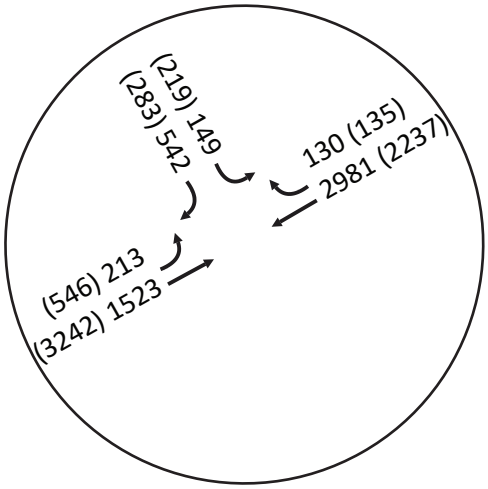
The overall Future Year forecasts presented in the *US 50 Corridor Study* result in an average annual growth rate of approximately 4-5 percent when compared to the existing volumes presented in that study. Consistent with the *US 50 Corridor Study*, the Future Year (2049) volumes used in this analysis also result in an average annual growth rate of approximately 4-5 percent when compared to the existing (2025) traffic volumes shown on **Figure 4**. The growth rate and traffic volume development calculations are provided in **Appendix D**.



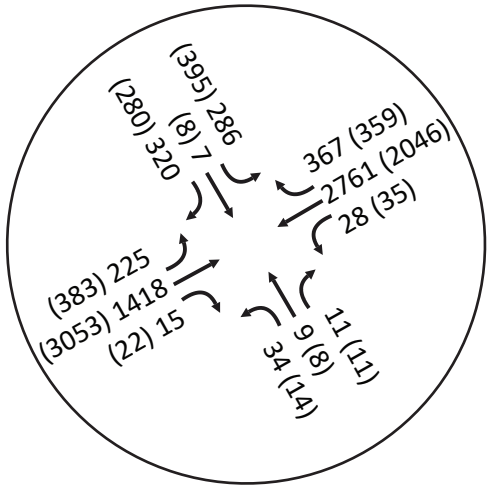
1 *Fortune Dr / Sugarloaf Dr*



2 *US 50 / Fortune Dr*



3 *US 50 / Traditions Pkwy*



GCW ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

(#) - Study Intersection STOP - Stop - Signal YIELD - Yield

Figure 6

Traditio 736 th

Traffic Impact Study

Future Year Traffic Volumes, Lane Configurations, and Controls

Intersection Level of Service

AM and PM peak hour intersection level of service analysis was performed for the study intersections based on the Future Year traffic volumes, lane configurations, and controls shown on **Figure 6**. **Table 4** shows the Future Year conditions level of service results and the technical calculations are provided in **Appendix F**.

Table 4: Future Year Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS
1	Fortune Dr/Sugarloaf Dr	Side Street Stop				
	Overall		8	A	6	A
	EB Approach (Sugarloaf Dr)		9	A	9	A
	WB Approach (Sugarloaf Dr)		11	B	11	B
	NB Left (Fortune Dr)		7	A	7	A
	SB Left (Fortune Dr)		7	A	7	A
2	US 50/Fortune Dr	Signalized High-T				
	Overall		**74**	**E**	41	D
	EB Left (US 50)		**83**	**F**	67	E
	WB Approach (US 50)		53	D	33	C
	SB Approach (Fortune Dr)		**>120**	**F**	57	E
	EB Merge (Fortune Dr to US 50)[3]		18	B	35	D
3	US 50/Traditions Pkwy	Signal				
	Overall		36	D	38	D
	EB Approach (US 50)		21	C	31	C
	WB Approach (US 50)		38	D	43	D
	NB Approach (Segale Rd)		101	F	75	E
	SB Approach (Traditions Pkwy)		93	F	79	E

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections and for the worst approach/movement for side street stop controlled intersections.
2. Average Density is reported for the EB Merge from the Fortune Dr SB left-turn to US 50 EB through movement.
3. Merge analysis was performed using HCS 2025 software.
Source: GCW, 2025

As shown in **Table 4**, the overall US 50/Fortune Drive intersection and some movements are anticipated to operate at level of service E/F during the AM peak hour. The poor level of service is primarily due to the high southbound right-turn volume on Fortune Drive. The southbound Fortune Drive approach currently contains a hatched-out lane which can be converted to a second right-turn lane. With dual southbound right-turn lanes and protected plus overlap phasing, the overall US 50/Fortune Drive intersection is anticipated to operate within policy level of service thresholds. Capacity improvements for the Future Year condition should be undertaken by NDOT as regional improvements since the poor future operating conditions will occur unrelated to this project.

PROJECT CONDITIONS

The project consists of up to 364 single family residential units.

Trip Generation

Trip generation rates from *Trip Generation Manual, 11th Edition* published by the Institute of Transportation Engineers (ITE) were used to develop trip generation estimates for the proposed project based on the Single Family Detached Housing rates. **Table 5** shows the Daily, AM peak hour, and PM peak hour trip generation estimates.

Table 5: Trip Generation Estimates

Land Use (ITE Code)	Size[1]	Trips[2]				
		Daily	AM	AM In/Out	PM	PM In/Out
Single Family Detached Housing (210)	364 du	3,433	255	64 / 191	342	216 / 127

Notes: 1. du = dwelling units
2. Trips were calculated based on the following rates per du: Daily – 9.43; AM – 0.70 (25% in / 75% out); PM – 0.94 (63% in / 37% out)
Source: GCW, 2025

As shown in the table, the project is expected to generate 3,433 Daily, 255 AM peak hour, and 342 PM peak hour trips.

Trip Distribution

Project trips were distributed to the adjacent roadway network based on existing traffic volumes, the locations of complimentary land uses, and anticipated travel patterns. Under Future Year Plus Project conditions, it was assumed that some traffic would travel between the proposed project and the planned Traditions Town Center and Dayton Six projects without accessing US 50. Project trips were distributed based on the following:

<u>Opening Year</u>

- 70% to/from the west via US 50
- 30% to/from the east via US 50

<u>Future Year</u>

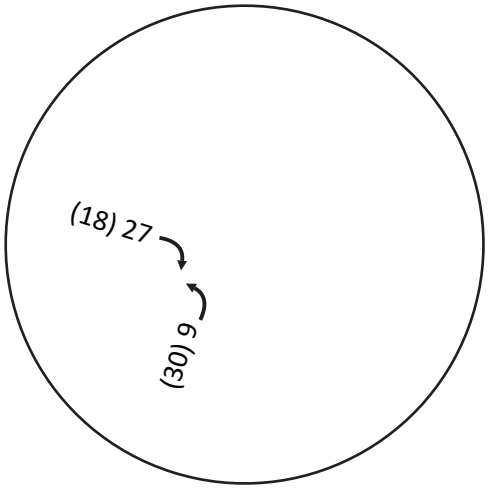
- 10% to/from Dayton Six
- 8% to from Traditions Town Center
- 82% to/from US 50
    - 70% to/from the west via US 50
    - 30% to/from the east via US 50

Figure 7 shows the project trip distribution and assignment for the Opening Year scenario. **Figure 8** shows the project trip distribution and assignment for the Future Year scenario.

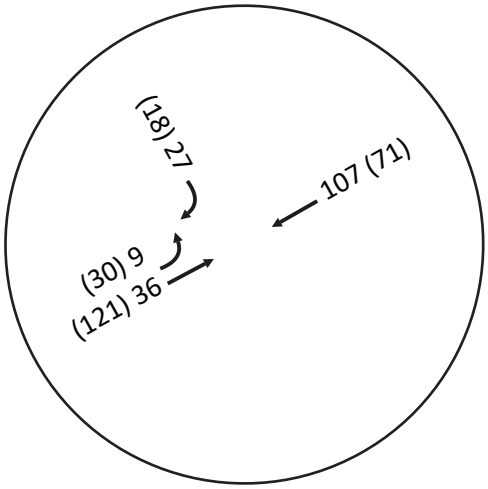
Project Access

The project is located north of the Traditions Village 1 and Village 2 projects and will connect to US 50 via Fortune Drive and Traditions Parkway.

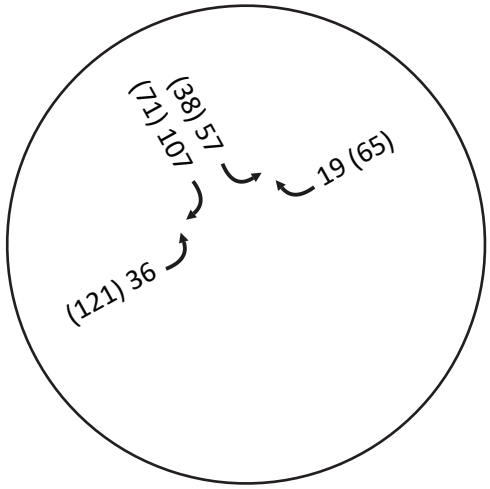
1 *Fortune Dr / Sugarloaf Dr*



2 *US 50 / Fortune Dr*



3 *US 50 / Traditions Pkwy*

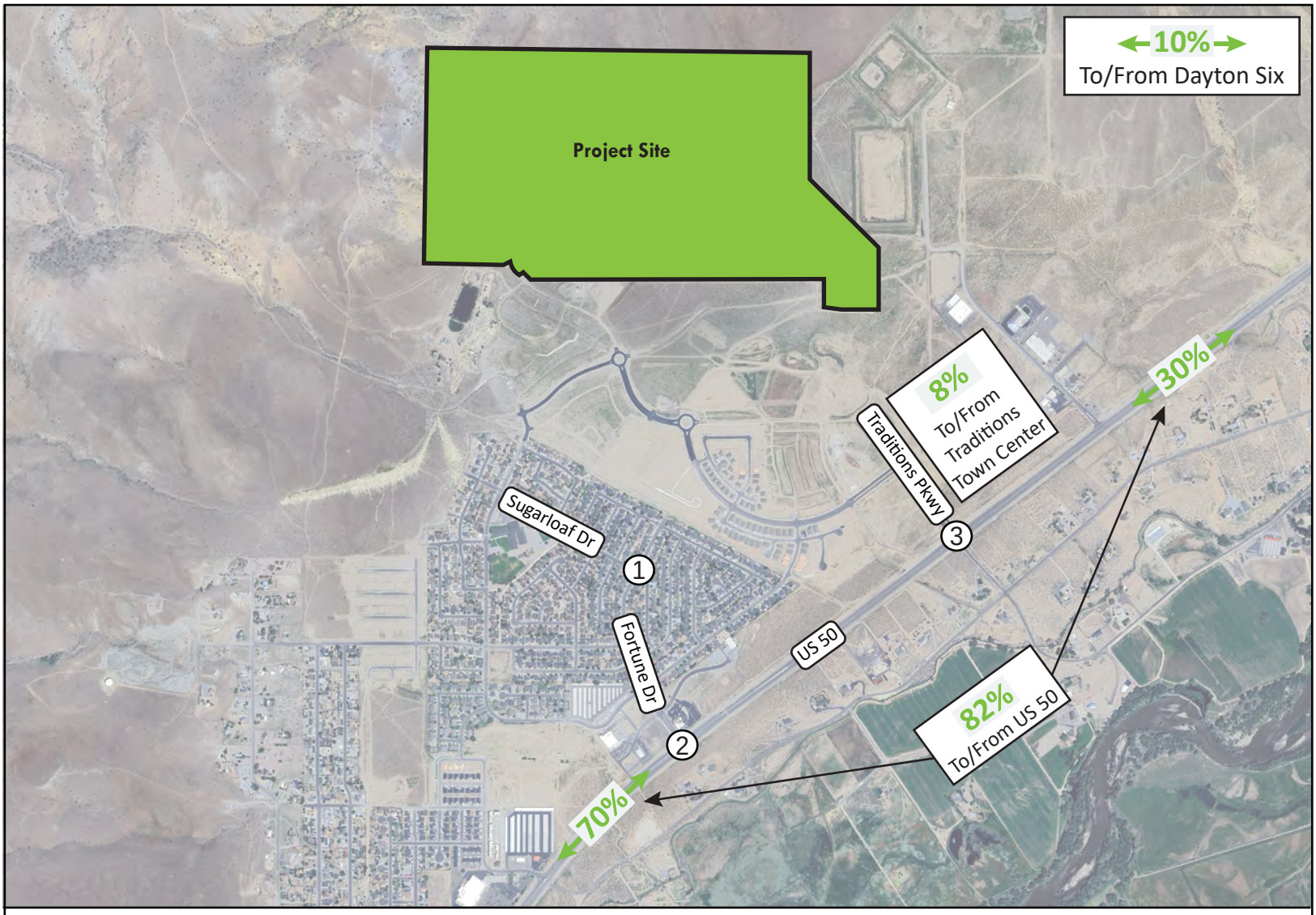


GCW ENGINEERS \ SURVEYORS

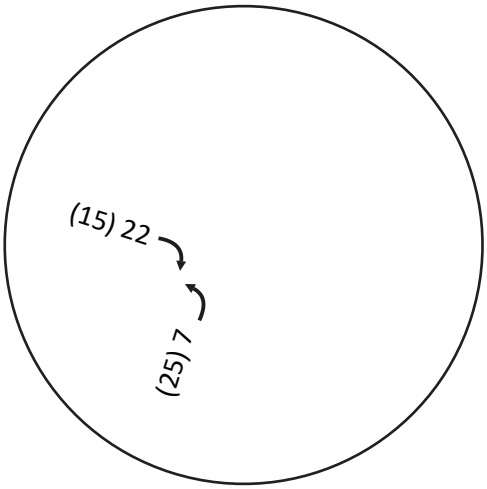
NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)
- Project Site
(#) - Study Intersection
←XX%→ - Trip Distribution

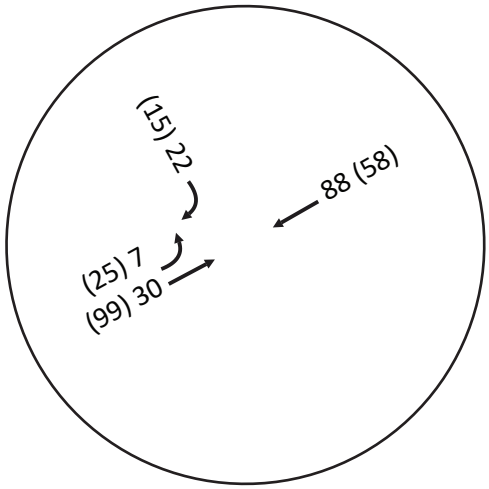
Figure 7
Traditio 740 th
Traffic Impact Study
Project Trips - Opening Year



1 *Fortune Dr / Sugarloaf Dr*



2 *US 50 / Fortune Dr*



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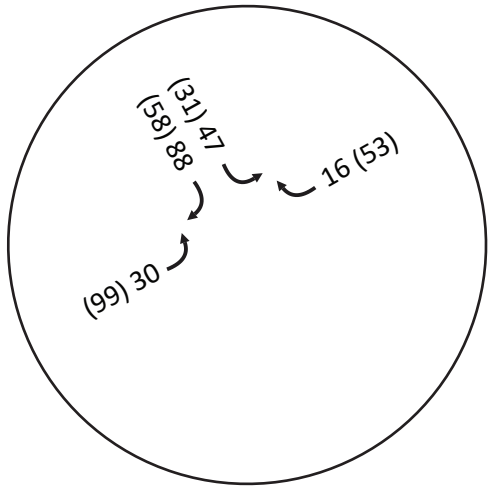


GCW ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
(#) - Study Intersection
←XX%→ - Trip Distribution

Figure 8

Traditio 741 th

Traffic Impact Study

Project Trips - Future Year

OPENING YEAR PLUS PROJECT CONDITIONS

Traffic Volumes

Project trips (**Figure 7**) were added to the Opening Year traffic volumes (**Figure 5**) to develop the Opening Year Plus Project conditions traffic volumes, shown on **Figure 9**.

Intersection Level of Service

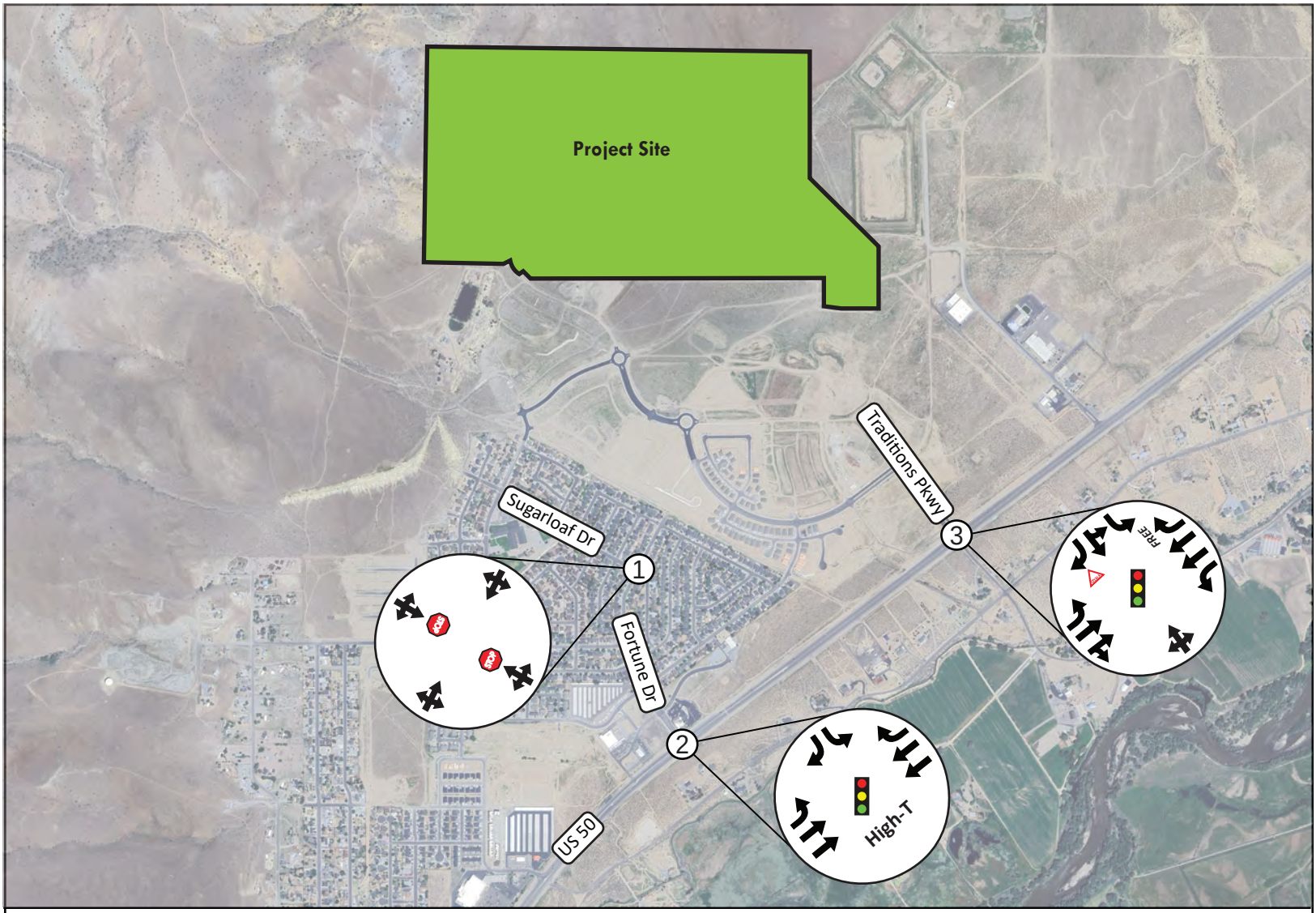
AM and PM peak hour intersection level of service analysis was performed for the study intersections based on the Opening Year Plus Project traffic volumes, the existing peak hour factors from the counts, and the lane configurations and controls shown on **Figure 9**. **Table 6** shows the level of service results and the technical calculations are provided in **Appendix G**.

Table 6: Opening Year Plus Project Intersection Level of Service

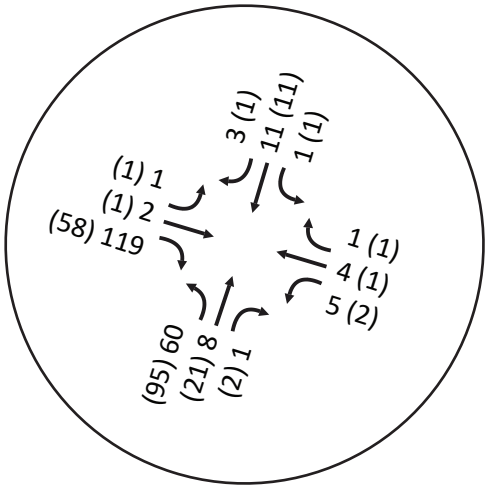
Int. ID	Intersection	Control	Opening Year				Opening Year Plus Project			
			AM		PM		AM		PM	
			Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS
1	Fortune Dr/Sugarloaf Dr	Side Street Stop								
	Overall		7	A	6	A	8	A	7	A
	EB Approach (Sugarloaf Dr)		9	A	9	A	9	A	9	A
	WB Approach (Sugarloaf Dr)		11	B	10	A	11	B	11	B
	NB Left (Fortune Dr)		7	A	7	A	7	A	7	A
	SB Left (Fortune Dr)		7	A	7	A	7	A	7	A
2	US 50/Fortune Dr	Signalized High-T								
	Overall		25	C	20	B	32	C	25	C
	EB Left (US 50)		49	D	34	C	52	D	40	D
	WB Approach (US 50)		21	C	16	B	29	C	20	B
	SB Approach (Fortune Dr)		39	D	36	D	44	D	39	D
	EB Merge (Fortune Dr to US 50)[3]		12	B	17	B	12	B	18	B
3	US 50/Traditions Pkwy	Signal								
	Overall		20	B	20	C	26	C	28	C
	EB Approach (US 50)		14	B	17	B	18	B	23	C
	WB Approach (US 50)		21	C	21	C	25	C	34	C
	NB Approach (Segale Rd)		42	D	49	D	44	D	54	D
	SB App. (Traditions Pkwy)		36	D	33	C	48	D	35	C

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections and for the worst approach/movement for side street stop controlled intersections.
2. Average Density is reported for the EB Merge from the Fortune Dr SB left-turn to US 50 EB through movement.
3. Merge analysis was performed using HCS 2025 software.
Source: GCW, 2025

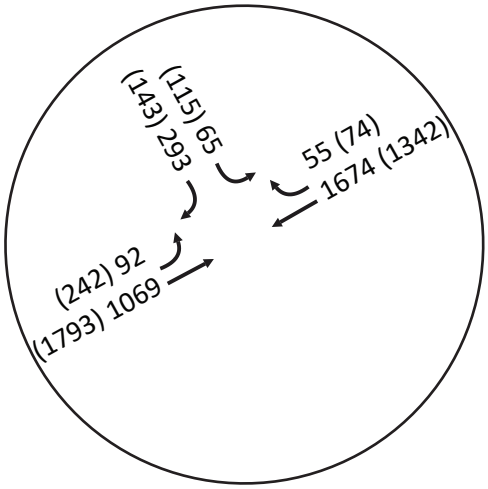
As shown in the table, the study intersections are expected to operate at LOS C or better with project traffic.



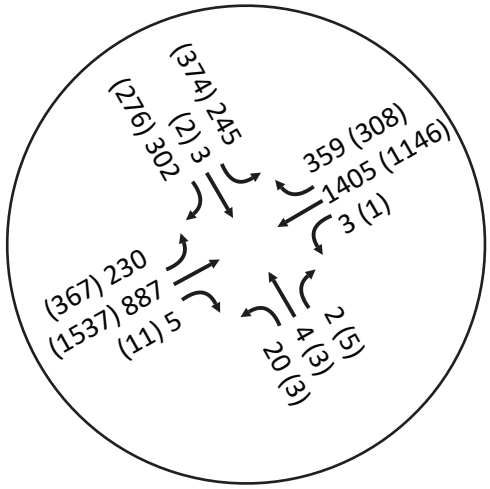
1 *Fortune Dr / Sugarloaf Dr*



2 *US 50 / Fortune Dr*



3 *US 50 / Traditions Pkwy*



GCW ENGINEERS \ SURVEYORS

NO SCALE

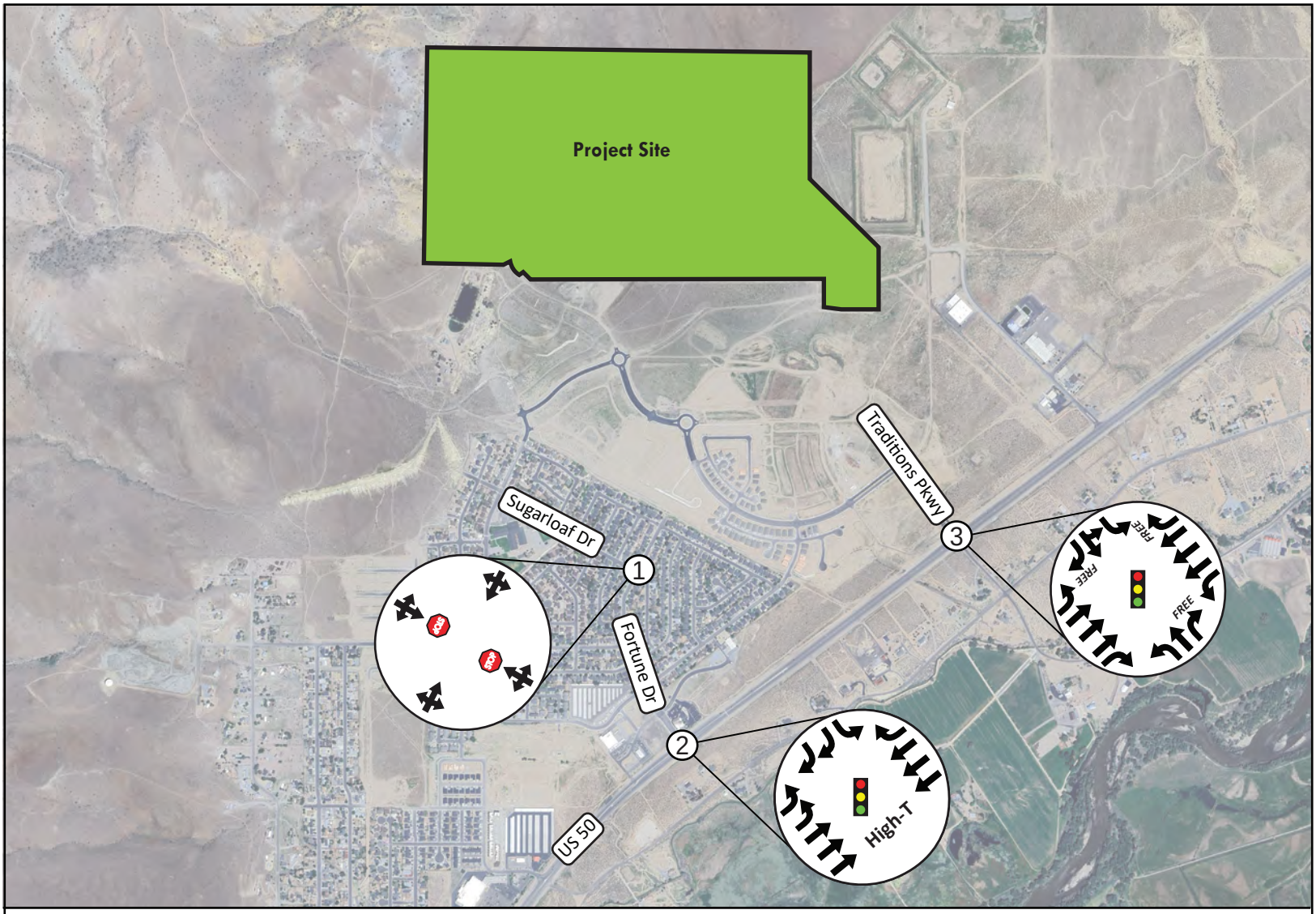
AM Peak Hour Volume (PM Peak Hour Volume)

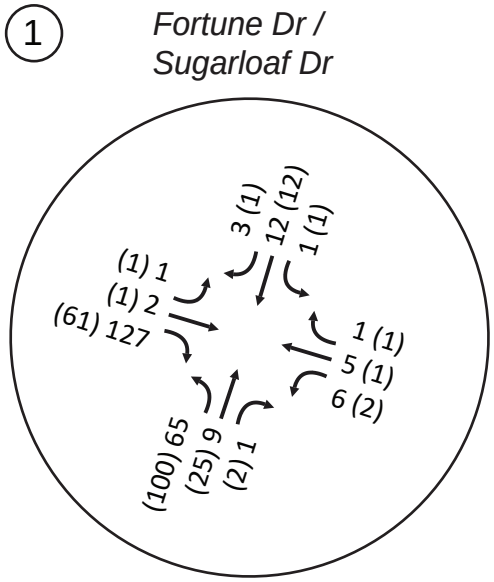
- Project Site
- Stop
- Signal
- Yield
- (#) - Study Intersection

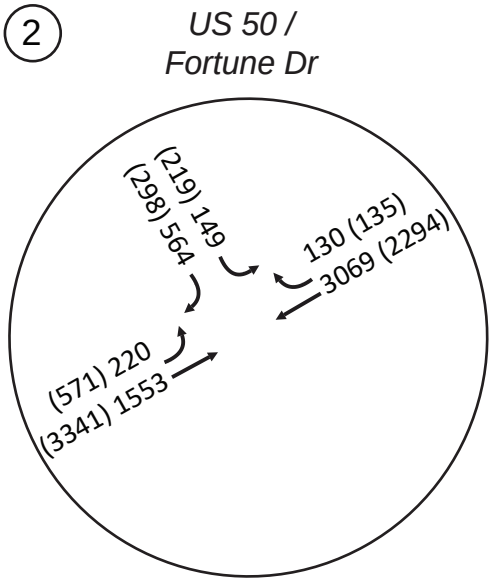
Figure 9

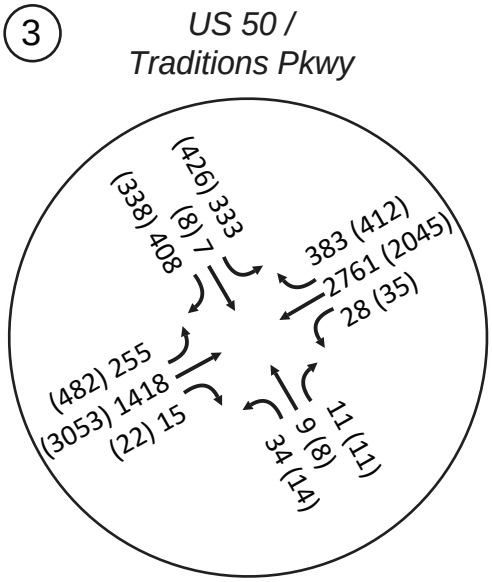
Traditio 743 th
Traffic Impact Study

Opening Year Plus Project Traffic Volumes, Lane Configurations, and Controls









GCW ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
- Stop
- Signal
- Yield
- (#) - Study Intersection

Figure 10

Traditio 744 th

Traffic Impact Study

Future Year Plus Project Traffic Volumes, Lane Configurations, and Controls

FUTURE YEAR PLUS PROJECT CONDITIONS

Traffic Volumes

Project trips (**Figure 8**) were added to the Future Year traffic volumes (**Figure 6**) to develop the Future Year Plus Project conditions traffic volumes, shown on **Figure 10**.

Intersection Level of Service

AM and PM peak hour intersection level of service analysis was performed for the study intersections based on the Future Year Plus Project traffic volumes and the lane configurations and controls shown on **Figure 10**. The analysis includes the planned roadway improvements from the *US 50 Corridor Study*, including six lanes on US 50 (see the "Future Year Conditions" section of this report for more detail). Additionally, as discussed in the "Future Year Conditions" section of this report, a second southbound right-turn lane is needed at the US 50/Fortune Drive intersection to provide operations within policy thresholds and should be undertaken by NDOT as a regional improvement since the poor future operating conditions will occur unrelated to this project. The Future Year Plus Project conditions analysis assumes this capacity improvement is in place. **Table 7** shows the level of service results and the technical calculations are provided in **Appendix H**.

Table 7: Future Year Plus Project Intersection Level of Service

Int. ID	Intersection	Control	Future Year				Future Year Plus Project			
			AM		PM		AM		PM	
			Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS
1	Fortune Dr/Sugarloaf Dr	Side Street Stop								
	Overall		8	A	6	A	8	A	7	A
	EB Approach (Sugarloaf Dr)		9	A	9	A	9	A	9	A
	WB Approach (Sugarloaf Dr)		11	B	11	B	11	B	11	B
	NB Left (Fortune Dr)		7	A	7	A	7	A	7	A
	SB Left (Fortune Dr)		7	A	7	A	7	A	7	A
2	US 50/Fortune Dr	Signalized High-T with dual SB right-turn lanes[4]								
	Overall		49	D	37	D	55	D	40	D
	EB Left (US 50)		94	F	58	E	91	F	61	E
	WB Approach (US 50)		35	C	30	C	43	D	34	C
	SB Approach (Fortune Dr)		93	F	45	D	94	F	45	D
	EB Merge (Fortune Dr to US 50)[3]		18	B	35	D	18	B	36	D
3	US 50/Traditions Pkwy	Signal								
	Overall		36	D	38	D	44	D	50	D
	EB Approach (US 50)		21	C	31	C	25	C	35	C
	WB Approach (US 50)		38	D	43	D	49	D	67	E
	NB Approach (Segale Rd)		101	F	75	E	112	F	87	F
	SB App. (Traditions Pkwy)		93	F	79	E	95	F	94	F

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections and for the worst approach/movement for side street stop controlled intersections.
2. Average Density is reported for the EB Merge from the Fortune Dr SB left-turn to US 50 EB through movement.
3. Merge analysis was performed using HCS 2025 software.
4. The analysis assumes capacity improvements including dual southbound right-turn lanes are in place at this intersection.
Source: GCW, 2025

As shown in the table, the study intersections are expected to operate at overall LOS D or better (within policy thresholds) under Future Year Plus Project conditions.

CONCLUSIONS & RECOMMENDATIONS

The following is a list of our key findings and recommendations:

- The proposed project consists of approximately 364 single family housing units and is anticipated to generate approximately 3,433 Daily, 255 AM peak hour, and 342 PM peak hour trips to the external roadway network.
- The project is located north of US 50, Nevada Station Parkway, and the Traditions Village 1 and Village 2 projects.
- The project will access US 50 via Fortune Drive and Traditions Parkway. The project originally contemplated a connection to Enterprise Way as well, however due to circumstances separate from the traffic study, a vehicle connection to Enterprise Way is no longer being considered and was not included in this traffic analysis and report. If the project wishes to puruse a vehicle connection to Enterprise Way in the future, a separate traffic analysis will need to be conducted at that time.
- Under Existing conditions, the northbound and southbound approaches of the US 50/Traditions Parkway intersection are expected to operate at LOS E with minor street stop control. While the overall intersection is expected to operate at LOS A during the AM and PM peak hours, Lyon County standards state that unsignalized intersection “approaches should operate at LOS D or better for the peak hour condition.” A traffic signal at the US 50/Traditions Parkway intersection is currently under construction and will be completed prior to the Opening Year (2029) of the project. The other study intersections are expected to operate within policy level of service thresholds.
- Under Opening Year and Opening Year Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds.
- Under Future Year conditions, the US 50/Fortune Drive intersection is anticipated to operate at level of service E during the AM peak hour. The poor level of service is primarily due to the high southbound right-turn volume on Fortune Drive. The southbound Fortune Drive approach currently contains a hatched-out lane which can be converted to a second right-turn lane. With dual southbound right-turn lanes and protected plus overlap phasing, the overall US 50/Fortune Drive intersection is anticipated to operate within policy level of service thresholds. Capacity improvements for the Future Year condition should be undertaken by NDOT as regional improvements since the poor future operating conditions will occur unrelated to this project
- Under Future Year Plus Project conditions, the analysis includes the needed regional capacity improvements (dual southbound right-turn lanes) at the US 50/Fortune Drive intersection. The study intersections are expected to operate at overall LOS D or better (within policy level of service thresholds).
- The project is not expected to result in levels of service below policy thresholds and therefore no project related mitigations are recommended. The following regional improvements by NDOT are

included in the *US 50 Corridor Study* or as part of the corridor safety improvements that are currently at the 90% design stage, and were included in the Future Year analysis as a background condition:

- Lower the speed limit on US 50 from 60 mph to 55 mph from east of Fortune Drive to James Avenue to provide a more gradual transition in speed limits through the expanding urbanized area
- Widen US 50 to six lanes for the Future Year per the US 50 Corridor Study. With the widening project:
  - Construct/restripe a second southbound right-turn lane on Fortune Drive at US 50
  - Construct a westbound right-turn lane on US 50 at Fortune Drive (not shown in the *US 50 Corridor Study*) as exists today
  - Construct a westbound right-turn lane on US 50 at Traditions Parkway (not shown in the *US 50 Corridor Study*) as exists today
  - Improve the south leg of the US 50/Traditions Parkway/Segale Road intersection

To: **Lyon County Community Development**
From: **Piñon Design Group**
Date: **11/12/2025**
Subject: **Hydrology and Hydraulic Study per Lyon County Code Section 15.800.07**

This memo is prepared in accordance with Lyon County Code Section 15.800.07(E) Hydrology and Hydraulic Study Requirements. A Conceptual Drainage Study for the Traditions North project (Tentative Map) has been prepared in accordance with Lyon County requirements and demonstrates that the project is not located within a Special Flood Hazard area. According to the FEMA FIRM Community-Panel Number 32019C0290E. The site is in Zone X which is defined by FEMA as areas of minimal flood hazard. Reference Appendix A for the FEMA FIRMette flood zone maps on the proposed site and adjacent properties to the site. Neither a Conditional Letter of Map Revision (CLOMR) or Letter of Map Revision (LOMR) is required for this project.

The offsite hydrology and hydraulic output data referenced in the Conceptual Drainage Study was analyzed as part of the North Dayton Valley Area Drainage Master Plan and provided by JE Fuller to Piñon Design Group under the direction of Lyon County Community Development. Please reference the Conceptual Drainage Study for more information.

Sincerely,

Piñon Design Group

Dan Birchfield, PE
President

TRADITIONS NORTH

Conceptual Drainage Report

November 2025

Traditions North

APN: 016-406-07 • 230.76 acres
Dayton, Nevada

By: Piñon Design Group

PROFESSIONAL ENGINEER - STATE OF NEVADA
DANIEL C. BIRCHFIELD
Exp: 12-31-26
CIVIL
No. 20844

PIÑON DESIGN GROUP

750

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VII. CONCLUSIONS 11

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II. INTRODUCTION

This Conceptual Drainage Study has been prepared for the Traditions North subdivision in Dayton, Nevada. The report evaluates existing drainage conditions, proposed improvements, hydrologic calculations, detention design requirements, and compliance with Lyon County Drainage Guidelines (Revised September 2024).

A. Site Location

1) **Street Location & APN**
The proposed Traditions North subdivision is located in Dayton, Nevada, northeast of Highway 50 and north of existing Traditions development areas. The property is identified as **APN 016-406-07** and comprises **230.76 acres**.

2) **Section, Township, Range & Coordinates**
Approximate location:
- S1, T16N, R21E
- Latitude: 39.2836°, Longitude: -119.5778°

3) **Adjacent Developments**
- North: Undeveloped land (BLM)
- South: Traditions Subdivisions (existing/planned)
- East: Undeveloped land and drainage corridors (BLM)
- West: Mixed undeveloped private property and Lyon County land

Figure 1A: Project Location

B. Site Description

1) Topography, Ground Cover, Soils

The 230.76-acre site consists of gently sloping alluvial fan terrain, generally draining from northeast to southwest toward the Carson River watershed. Elevations vary by approximately 170 feet across area of proposed development. Ground cover consists primarily of native desert vegetation and disturbed soils. On-site NRCS soils consist of Hydrologic Soil Groups A and C typical of Dayton area alluvium.

2) Existing Drainage Facilities & Conditions

The project area currently conveys stormwater as **shallow overland sheet flow** across the site toward existing drainage paths trending southwest. No manmade drainage systems currently exist onsite. Off-site drainage entering the parcel comes from minor upstream watershed areas north and east of the property.

3) **FEMA Zone**
The site is located within FEMA Zone X. No areas of special flood hazard (Zone A, AE, or AO) exist within the project boundary.

C. Proposed Project Description

1) Traditions North proposes a **residential subdivision** across the 230.76-acre parcel, including new internal streets, drainage conveyance improvements, and potential open space/trail corridors. Phasing is anticipated to include multi-phase development (approximately 4 subdivisions), generally progressing from south to north.

D. Previous Studies

1) North Dayton Valley Area Drainage Master Plan (ADMP) dated August 1, 2019.

III. HISTORIC DRAINAGE SYSTEM

A. Area Drainage Master Plan (ADMP) Applicability

1) Historic drainage conditions are based on the North Dayton Valley Area Drainage Master Plan (NDVADMP) dated August 1, 2019. The ADMP identifies major flow paths and regional inflow cross sections relevant to this project.

B. Basins

1) **Relationship to Major Drainage Facilities**
The site drains toward regional off-site flow paths ultimately tributary to the Carson River watershed.

2) **Basin Characteristics**
- Terrain: alluvial fan slopes
- Runoff behavior: shallow, unconfined and moderately confined flows
- Vegetation: sparse desert vegetation with moderate infiltration
- Erosion potential: moderate due to sandy soils and slope gradients

3) **Existing Drainage Patterns**
Runoff flows in shallow concentrated flow patterns toward the east and south, exiting the site along the southern and eastern boundaries.

4) **Historic Data**

NDVADMP Cross Section	100YR-24HR (cfs)	100YR-6H (cfs)	25YR-24HR (cfs)
12	18.7	38.5	11.1
162	4.0	11.0	2.8
165.8	313.1	8.41	106.0

5) **Effects on Adjacent Properties**
Historically, runoff disperses widely across the alluvial surface. Concentrated discharge is not present under existing conditions. Development must avoid increasing flow concentration onto undeveloped neighboring properties.

IV. PROPOSED DRAINAGE SYSTEM

The project proposes a residential subdivision using engineered conveyance, storm drain infrastructure, open space corridors, and four regional detention basins (NE-BASIN, NW-BASIN, SE-BASIN, SW-BASIN).

A. Design Storm Criteria

1) **Design Storm**
The 100-year – 6-hour design storm was analyzed because this event was nearly double the peak runoff of the 100-year –24-hour event, according to the NDVADMP.

2) **Hydrologic Method**
Hydrologic modeling was completed using Autodesk Storm and Sanitary Analysis (SSA) with the HEC-1 Unit Hydrograph method and the SCS Curve Number (CN) loss method.

3) **Rainfall Information Used** (NOAA Atlas 14, Lyon County)
- 5-yr, 24-hr: ~ 1.36 inches
- 25-yr, 24-hr: ~ 1.89 inches
- 100-yr, 24-hr: ~ 2.77 inches
- **100-yr, 6-hr: ~ 1.66 inches**

B. Runoff

1) **Historic (Pre-Development) Flow Rates and Paths**

For this study, the **baseline (pre-development) peak flows** at these cross sections are taken from the ADMP and incorporated into the post-development model as upstream boundary inflows. Conceptually, this ensures that **existing watershed inflows are preserved** and only the incremental contribution from the project is modified by development.

2) **Developed (Post-Development) Flow Rates and Paths**
For post-development conditions, the project watershed has been divided into **seven local subbasins (Sub-01 through Sub-07)** representing the Traditions North site, plus imported ADMP inflows represented as **X-SEC-12, X-SEC-162, and X-SEC-170** within the SSA model.

Total modeled area of local subbasins is approximately **93.26 acres**, which reflects the portion of the 230.76-acre site included in the hydrologic model at this conceptual stage (remaining area to remain undeveloped or be incorporated in future refinement or represented via additional subbasins as design advances).

Regional inflows from the ADMP are carried into the model as **X-SEC-12, X-SEC-162, and X-SEC-170**. These are summarized above and represent the **external pre-development inflows** to which project runoff is added.

All local and regional flows are routed through the proposed conveyance and detention system to the **NE-OUTFALL** node, which represents the primary discharge point from the Traditions North site to the downstream system. The SE-OUTFALL and SW-OUTFALL were modeled to have zero discharge in the design storm event; however, the final design report may indicate flow. In any case, the basins will have constructed outlets/spillways in the event of storm in excess of the design storm.

C. Proposed Improvements

1) Flows will be conveyed using a combination of:
   - Drainage swales
   - Curb and gutter
   - Underground storm drain pipes
   - Open space drainage corridors
   - Four regional flow storage basins (Detention/Water Quality)
   - Three project outfalls

2) A detailed pipe by pipe analysis of the proposed storm drain systems is not appropriate for this conceptual drainage study but will be analyzed at final design to ensure they meet Lyon County Drainage Guidelines. The storm drain systems were analyzed as conceptual system with water catchment subbasin areas delineated for each system. The design storm was applied to each of these systems to properly route the proposed drainage distribution and ensure the overall system and storage basins are adequately sized.

Local Project Subbasins (From SSA): **Table 1:**

Subbasin	**Area (ac)**	**Peak Flow (cfs)**
Sub-01	10.14	8.57
Sub-02	7.01	5.93
Sub-03	10.01	8.41
Sub-04	14.83	12.51
Sub-05	4.21	3.56
Sub-06	39.87	33.59
Sub-07	7.18	6.04

D. Detention Basins

Four flow storage basins are planned for Traditions North:

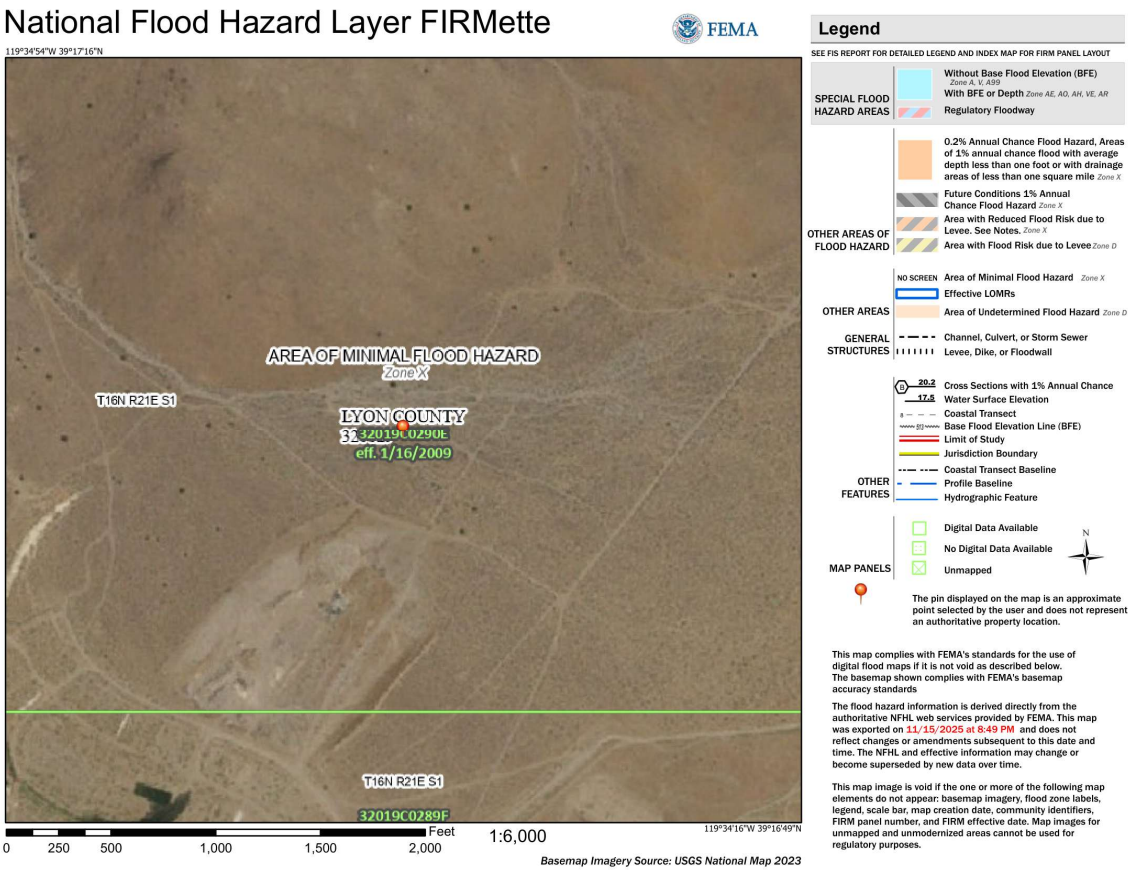
1) NW Basin – Acts primarily as a water quality basin to settle out sediment from offsite flows prior to conveying them through the site. This basin also act to divert a portion of the flow to the SW Basin while the majority of the flow will continue within the cutoff channel to the east.
2) SW Basin – Existing Retention Basin and material borrow pit that was constructed as part of the original Traditions Master Plan mass grading in the early 2000s. This basin will be graded to suit the development and installation of a neighborhood park. It will be retrofitted with an outlet pipe to discharge to the Traditions Village 2 cutoff channel. The existing basin bottom lies several feet below the downstream discharge and will also provide sediment transport mitigation.
3) SE Basin – Located at the lowest point of the site, this basin will collect flow from the on-site southeastern areas. The discharge will need to be a wide weir to distribute outflow back to sheet flow condition. This basin will also serve as a neighborhood park.
4) NE Basin – This basin collects a majority of the offsite runoff and sends it eastward along the predevelopment drainage pattern. The outlet structure will need detailed analysis and design at the final design stage.

Detention basin performance (From SSA): **Table 2:**

Basin	**Invert (ft)**	**Rim (ft)**	**Peak Inflow (cfs)**	**Max HGL (ft)**
NE-BASIN	4364.0	4372.0	253.66	4368.75
NW-BASIN	4446.1	4452.0	291.49	4452.49
SE-BASIN	4347.8	4453.5	39.15	4351.48
SW-BASIN	4415.8	4426.0	78.84	4420.19

V. FLOOD HAZARD COMPLIANCE

The site is located within FEMA Zone X. No areas of special flood hazard (Zone A, AE, or AO) exist within the project boundary.



VII. CONCLUSIONS

A. Benefits

The proposed drainage design complies with Lyon County Drainage Guidelines. Post-development discharges at the NE-OUTFALL (215.62 cfs) remain below the ADMP pre-development peak at Cross Section 170 (313.14 cfs), satisfying the County's no-adverse-impact requirement. Organized drainage system replaces the uncontrolled sheet flow. Water quality basins will improve sediment transport.

B. Adverse Effects & Mitigation

No adverse impacts are anticipated. All flows will be detained and released at or below pre-development peak rates. Overland flow paths and open space drainage corridors further reduce downstream impacts.

C. Compliance Statement

The conceptual drainage design for **Traditions North** complies with **Lyon County Drainage Guidelines (2024)** and satisfies stormwater conveyance, flood protection, and downstream impact requirements for Tentative Map review.

VIII. APPENDICES

Appendix A – Runoff Area Exhibit

Appendix B – SSA Subbasin Output

Appendix C – Detention Basin Stage–Storage

Appendix D – Background Data

PRELIMINARY
GEOTECHNICAL DESIGN REPORT
Traditions North

Dayton, Lyon County, Nevada

Submitted To:

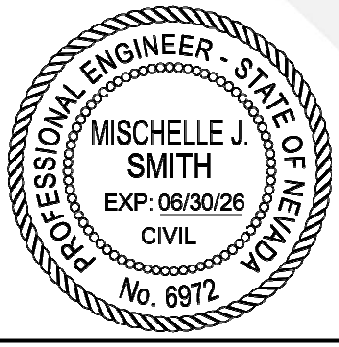
Jarred Corbell
GF DEVELOPMENT, LLC.
3527 S. Federal Way, Suite 103 #1020
Boise, ID 83705

Project Number

4627001

Date

July 2025
Revised: August 2025



Mischelle J. Smith, PE
RE Number 6972

Corporate Office: 3301 C Street, Bldg. 100-B • Sacramento, CA 95816 • 916.341.7760 • Fax: 916.341.7767
Reno Office: 1361 Corporate Boulevard, Reno, NV 89502 • 775.823.4068 • Fax: 775.823.4066
www.woodrodgers.com

August 28, 2025
Project No. 4627001

Jarred Corbell
GF DEVELOPMENT, LLC.
3527 S. Federal Way, Suite 103 #1020
Boise, ID 83705

Re: Traditions North – Amendment # 01
Alternative Pavement Section
Dayton, Lyon County, Nevada

Ref: 2024 International Residential Code and 2024 Northern Nevada Amendments

Preliminary Geotechnical Design Report
Traditions North
Dayton, Lyon County, Nevada
Wood Rodgers' Project No. 4627001
Submitted: July, 2025

Dear Jarred:

Per our discussions, this letter provides updated recommendations to the pavement sections for the referenced project. Unless specifically modified herein, the recommendations presented in the referenced report are considered valid as written.

STRUCTURAL PAVEMENT SECTIONS

Materials and workmanship shall be consistent with the requirements of the agency having jurisdiction and the Standard Specifications for Public Works Construction. These sections have been developed with the expectation that the separation requirements presented in Section 5.2.4 of the referenced report have been met. Table 5 provides updates to the structural pavement sections for the project.

Table 5 (Amendment #01) - Structural Pavement Sections[1]

Road Type	Pavement Thickness (In.)	Pavement Type	Type II Class B Base Course Thickness (In.)[2]
Local Residential	3	Type 3	6
Collector Residential	4	Type 2	8

[1] Per Drawing No. L-1, Roadway Sections, Lyon County.
[2] Base Course thickness is in addition to structural fill separation requirements presented in Section 5.2.4.

Oil for all mixes should consist of PG-64-28NV. If fine-grained soils greater than one foot in thickness are encountered at roadbed grade, over-excavation in accordance with Section 5.2.4 of the referenced report is required. If granular soils, or fine grained soils less than one foot in thickness, are encountered at roadbed grade meeting the requirements of Table 2 of the referenced report, the need for over-excavation and replacement with 12" of import structural fill should be assessed.

Please let us know if you have any questions or need further clarification regarding these updates.

Sincerely,
WOOD RODGERS, INC.

Andrew Mayse, E.I.
Geotechnical Professional

Mischelle J. Smith, P.E.
Principal Engineer
RE Number: 6972
Expires: 06/30/2026

Enclosures:
July 2025 Wood Rodgers Preliminary Geotechnical Design Report

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EXECUTIVE SUMMARY

This report presents preliminary grading and design recommendations for the project. Given the project area, anticipated cuts, and depths of proposed fills, it is our opinion the final grading plan should be reviewed and the need for additional exploration and analysis be considered and appropriately proposed.

The project consists of constructing approximately 364 one-to-two-story single family residences with associated public streets. The residences are anticipated to be wood framed and supported by standard spread foundations with slab-on-grade flooring. Foundation loads are anticipated to be light. Street improvements, underground services, and project access will be designed to Lyon County standards and in accordance with the Standard Specifications for Public Works Construction (SSPWC). Based on preliminary grading plans (Piñon Design Group, 2025), cuts and fills are anticipated to approach ± 10-feet and ± 30-feet, respectively.

The project is in Dayton, Lyon County, Nevada and encompasses an area of approximately 231-acres and is located at a central latitude and longitude of 39.2846°N and -119.5772°E, respectively. The site is bordered by the Traditions Village 2 project to the south and undeveloped land to the north, east, and west. Vegetation across the site is moderate consisting of small and large brush, weeds, and grasses. The site is predominantly undeveloped with the exceptions of excavation and stockpiling operations near the south boundary of the site, a constructed berm on the western boundary of the site and dirt trails that transect the property. Per Google Earth imagery, the area near the south boundary of the site has been subject to excavation and stockpiling operations since at least June 2003.

Based on the Geologic Map of the Flowery Peak Quadrangle, Storey and Lyon counties, Nevada, the site is mapped in an area of Holocene Piedmont alluvial deposits consisting of alluvium of varying age (Qay), Miocene biotite-hornblende andesite flows (Tvba), and extensively disturbed areas (Qx) observed as the excavation and stockpiling operations on the southern boundary of the project site.

The soils encountered in our explorations typically consisted of complex interbedded sands, silts, and clays, as well as poorly graded sandy gravels with varying degrees of fines. Additionally, cobbles and boulders are present in the subsurface profile, typically at depths below 3 feet. Undocumented fill soils were observed from excavation and stockpiling operations near the southern boundary of the site were observed during our investigation. Stockpiles must be processed and qualified before receiving structural improvements.

Groundwater was not encountered in our exploration locations and is anticipated to be at a depth that will not affect the proposed improvements. Depth to groundwater may vary based on seasonal changes in precipitation and near-surface seepage.

Standard spread foundations with slab-on-grade flooring have been recommended for the support of structures.

Sands present at the site may allow excavations and utility trenches to slough or cave and must be adequately considered and planned for by the contractor. Oversize material to 18-inches in diameter may be encountered at depths greater than 3-feet below the ground surface during trenching and excavations. Therefore, excavatability will probably be more difficult in utility trenches where removal of larger sized particles can be difficult within the confines of a trench, and which will likely result in irregular trench profiles where cobbles and boulders must be removed.

Structural pavement sections have been presented for local and collector roads. These sections have been developed based on understanding that materials and workmanship shall be consistent with the provisions of the Standard Specifications of Public Works Construction (SSPWC).

1. INTRODUCTION

Presented herein are the results of Wood Rodgers' geotechnical exploration, laboratory testing, and associated geotechnical design recommendations for the proposed Traditions North development in Dayton, Lyon County, Nevada. The assessments and recommendations presented in this geotechnical report have been determined, in part, around the surface and subsurface conditions identified by our exploration program which was developed to be consistent with locally accepted industry practices regarding exploratory means and methods for geotechnical investigations of similar projects. The proposed structural elements, topography, grading design, soils, and geology are all unique; therefore, the engineering judgment employed by those in responsible charge of geotechnical design is in general conformance with the accepted standards of care for engineering analyses as defined by the Nevada State Board of Engineers and Land Surveyors.

This report has been prepared in consideration of the applicable provisions of the International Residential Code (IRC, 2024), ASCE 7, and the amendments and modifications adopted by Lyon County. These documents establish the minimum requirements to safeguard the public health, safety and general welfare of the occupants as well as the minimum level of structural integrity, life safety, and fire safety for inhabitants of new and existing structures. Geotechnical considerations for public improvements have been formulated around the requirements of Lyon County and the Standard Specifications for Public Works Construction. Performance standards around which our primary recommendations have been framed are based upon the requirements of the referenced documents. Any expectations of performance inconsistent with, outside the purview of, or exceeding the requirements of the referenced documents are subjective and, therefore, a function of materials, design, workmanship, and ownership. Unless these expectations of performance are specifically stipulated or quantified herein, they are considered in excess to the scope and design standards of this report.

The objectives of this study were to:

1. Explore, test, and assess general soil, geology, and ground water conditions pertaining to design and construction for the proposed development as required by the IRC and the Homebuilders' Guide to Earthquake Resistant Design and Construction (FEMA 232, 2024).
2. Provide recommendations associated with the design and construction of the project, as related to the identified geotechnical conditions and the stipulated design levels and performance standards established herein, and the requirements of the IRC and guidelines presented in FEMA 232.

Because of the preliminary status of site layout and project development and design, this geotechnical design report is preliminary.

2. SCOPE OF SERVICES

As indicated in our proposal, upon completion of our field and office studies, a geotechnical investigation report consistent with the requirements of the 2024 International Residential Code (IRC) will be completed for the project and will present the following:

- Description of the project site with the approximate locations of our explorations, shown on a Site Plan.
- Descriptive logs of the explorations performed for this study.
- General summary of the site soils and geology.
- Summary of noted surface drainage features and ground water conditions encountered.
- Seismic design considerations consistent with FEMA 232.
- Site preparation and grading recommendations developed for standard spread foundations.
- Types of suitable foundations including appropriate footing depths and widths, and anticipated settlement.
- Concrete and concrete slab-on-grade support options.
- Drainage considerations that may affect foundation and concrete slab-on-grade performance.
- Structural pavement sections for local and collector streets.
- Recommendations for additional exploration as appropriate.

Our study included field exploration, laboratory testing, and engineering analyses to identify the physical and mechanical properties of the various on-site materials. Results of our field exploration and testing programs are included in this report; in consideration of the stated design levels and performance standards, these results form the basis for our conclusions and recommendations.

3. PROJECT CHARACTERIZATION

3.1. Project Description

The project is located in Dayton, Lyon County, Nevada (Figure 1 – *Vicinity Map*, Appendix A) and consists of constructing approximately 364 one-to-two-story single family residences with associated public streets. The residences are anticipated to be wood framed and supported by standard spread foundations with slab-on-grade flooring. Foundation loads are anticipated to be light.

Street improvements, underground services, and project access for the residential development are to be dedicated and consistent with Lyon County's design standards and in accordance with the materials and workmanship requirements of the Standard Specifications for Public Works Construction (SSPWC). The overall project layout is presented on Figure 2 – *Improvement Plan & Approximate Exploration Locations* (Appendix A).

3.2. Site Conditions

The overall site encompasses an area of approximately 231-acres and is located at a central latitude and longitude of 39.2846°N and -119.5772°E, respectively. The site is bordered by the Traditions Village 2 project to the south and undeveloped land to the north, east, and west. Vegetation across the site is moderate consisting of small and large brush, weeds, and grasses. Cuts and fills are anticipated to approach ± 10-feet and ± 30-feet, respectively. The site is predominantly undeveloped with the exception of excavation and stockpiling operations near the south boundary of the site, a constructed berm on the western boundary of the site, and dirt trails that transect the property. Per Google Earth imagery, the area near the south boundary of the site has been subject to excavation and stockpiling operations since at least June 2003.

3.3. Exploration

3.3.1. Excavating and Sampling

The project was explored in June 2025 by advancing a series of eleven test pits with a track mounted excavator, utilizing a 48-inch bucket. Approximate exploration locations are presented on Figure 2 - *Improvement Plan & Approximate Exploration Locations* and Figure 3 - *Site Map & Approximate Exploration Locations* in Appendix A of this report. Maximum depths of exploration advance extended to 15 feet. Refusal was not encountered. Wood Rodgers' personnel examined and classified soils in the field in general accordance with ASTM D2488 (Description and Identification of Soils). Representative bulk samples were sampled from select layers in the soil profile and placed in sealed plastic bags or buckets and returned to our Reno, Nevada laboratory for testing.

3.3.2. Geophysical Methods

Seismic refraction methods (ReMi ™) were performed to measure shear wave velocity and to establish $V_{S_{100}}$. Shear wave velocity measurements have been relied upon to aid in the determination of an

appropriate Site Class (ASCE 7). Figure B-3 (Appendix B) presents the measured shear wave geophysical profile.

3.4. Sampling, Classification and Reporting

Wood Rodgers' personnel examined and classified soils in the field in general accordance with ASTM D2488 (Description and Identification of Soils). During exploration, representative bulk samples were placed in sealed plastic bags and returned to our Reno, Nevada laboratory for testing. Additional soil classifications, as well as verification of the field classifications, were performed in accordance with ASTM D2487 (Unified Soil Classification System [USCS]) upon completion of laboratory testing as described in the Laboratory Testing section. Logs of the explorations are presented as B-1a through B-1k in Appendix B. The USCS explanatory chart of soil unit symbols and related descriptions has been included as B-2 - Unified Soil Classification and Key to Soil Descriptions.

3.5. Laboratory Testing

Soil testing performed in the Wood Rodgers' laboratory was conducted in general accordance with the standards and methods described in Volume 4.08 (Soil and Rock; Dimension Stone; Geosynthetics) of the ASTM Standards. Samples of significant soil types were analyzed to determine in-situ moisture contents (ASTM D2216), grain size distributions (ASTM D6913), plasticity indices (ASTM D4318), and resistance value (R-Value) (ASTM D2844). Test results were used to classify the soils according to the USCS (ASTM D2487) and to verify the field logs which were then updated.

Test results are presented in Appendix C on C-1a through C-1c. Table 1 also presents a summary of the test data.

Table 1 - Summary of Test Data

Test Hole	Depth (Ft.)	Moisture (%)	%Gravel (+ #4)[1]	% Sand (#4-#200)	%Fines (-#200)	Liquid Limit	Plastic Index	R-Value	USCS
ASTM Standard		D2216	D6913			D4318		D2844	D2487
TP-2	2-5	7.4	49.0	41.1	9.9	30	11	---	GP-GC
TP-5	0-2	4.4	---	---	20.7	---	---	32	SM[2]
TP-6	2-3	4.3	25.9	63.5	10.6	NP	NP	---	SP-SM
TP-9	4-6	4.6	22.6	70.9	6.5	NP	NP	---	SW-SM

Table 1 - Summary of Test Data

Test Hole	Depth (Ft.)	Moisture (%)	%Gravel (+ #4)[1]	% Sand (#4-#200)	%Fines (-#200)	Liquid Limit	Plastic Index	R-Value	USCS
ASTM Standard		D2216	D6913			D4318		D2844	D2487
TP-11	1-4	15.5	1.4	36.2	62.4	30	14	---	CL

[1] Since ASTM D2487 is limited by a maximum particle size of 3", the gradation test data presented is based on a maximum particle size of 3". Larger particles (i.e., 8 to 12" in diameter) if observed in our test holes would be documented on the logs and should be anticipated as part of grading.
[2] Visually classified in accordance with ASTM D2488.

As a courtesy, resistivity, pH, chlorides, oxidation-reduction potential, sulfides and moisture were also tested to aid others in the assessment of potential corrosivity to ductile iron pipe and/or steel reinforcement; refer to Appendix C, C-2 for test methods and results.

Wood Rodgers, Inc. is not a corrosion engineering firm. Therefore, a corrosion engineer or structural engineer knowledgeable in the project steel specifications should be consulted for final assessments of corrosion potential at the site.

3.6. Geologic and General Soil and Groundwater Conditions

Based on the National Geologic Map Database (NGMDB, 2013), shown in Figure 4, the site is mapped in an area by Castor et. al. as Holocene Piedmont alluvial deposits consisting of alluvium of varying age (Qay), Miocene biotite-hornblende andesite flows (Tvba), and extensively disturbed areas (Qx) observed as the excavation and stockpiling operations on the southern boundary of the project site.

The soils encountered in our explorations typically consisted of complex interbedded sands, silts, and clays, as well as poorly graded sandy gravels with varying degrees of fines. Additionally, cobbles and boulders are present in the subsurface profile, typically at depths below 3 feet. Undocumented fill soils were observed from excavation and stockpiling operations near the southern boundary of the site were observed during our investigation. Stockpiles must be processed and qualified before receiving structural improvements.

Groundwater was not encountered in our exploration locations and is anticipated to exist at a depth not expected to affect the proposed improvements. Depth to groundwater may vary based on seasonal changes in precipitation and near-surface seepage.

4. SEISMIC HAZARDS

The International Building Code (IBC) requires that structures assigned to Seismic Design Category D, E, or F be evaluated for the following potential geologic and seismic hazards: surface rupture or displacement due to faulting, slope instability, liquefaction including the potential for seismically induced spreading or lateral flow, and slope instability. The following sections present our discussion and assessments of the stipulated hazards. Discussions regarding total and differential settlement are incorporated with the foundation design considerations.

4.1. Surface Rupture

4.1.1. Evaluation Guidelines

In 1998, the Nevada Earthquake Safety Council formulated guidelines for evaluating potential surface rupture due to faulting. The intent of the guidelines is to provide *a standardized minimum level of investigation for fault rupture in Nevada*; these guidelines have been adopted with the 2018 Northern Nevada Amendments of the IBC. Specifically, the guidelines state that investigation of sites for potential surface rupture or hazards shall be included in all geotechnical investigations. Further, if any Quaternary age surface rupture is mapped or otherwise interpreted to be present on the site, the feature is to be investigated further.

In addition to establishing the minimum level of investigation for fault rupture, the guidelines also offer recommendations for dealing with or mitigating identified hazards, including:

- Holocene active faults (evidence of movement within the past 10,000 years) shall be set-back a minimum distance of 50-feet for occupied structures.
- Late Quaternary (evidence of movement within the past 130,000 years) faults shall not be spanned by any critical facilities (hospitals, schools, fire stations, etc.). The facility under investigation does not meet the requisite requirements to be considered critical.

These guidelines allow for set-back distances to be adjusted by the competent professional. No additional constraints regarding fault-structure location are presented in the guidelines.

4.1.2. Investigation

MyHazards NV interactive fault map was accessed to determine the presence of any mapped features transecting the property. A trace of the Carson Lineament fault is mapped intersecting the northeastern corner and extending approximately 0.4 mi into the property. The fault is described to be of Quaternary age (< 1.8 million years regarding recency of movement) and is not considered to be Holocene nor Late Quaternary active. Therefore, this structure is sufficiently distant and of an age that offsets or additional considerations are not recommended nor presented by the Guidelines for the planned improvements; surface rupture due to the identified structure is considered unlikely. Should the final development plan

place a critical facility, such as a fire station, within this portion of the development, deeper examination of the structure may be required.

4.2. Soil Profile Type Amplification Factors

Seismic design values were determined based on a representative latitude and longitude of 39.2846°N and -119.5772°E, respectively. In accordance with ASCE 7-22 (Table 20.2-1) and the Northern Nevada Amendments of the 2024 IRC, Site Class CD and Seismic Design Category D_1 have been assigned to the project. Per ASCE 7-22, the site's modified Peak Ground Acceleration (PGA_M) to be used for engineering analyses is equal to 0.61g.

4.3. Liquefaction

Liquefaction is a loss of soil shear strength that can occur during a seismic event as excessive pore water pressure between the soil grains is induced by cyclic shear stresses. This phenomenon is limited to poorly consolidated (Standard Penetration Test less than 30, overburden stress corrected shear wave velocity less than 700 fps) clean to silty sand/sandy silt lying below the ground water table (typically less than 50 feet deep). In addition, we are using AASHTO's recommendation of Bray and Sancio (2006) criteria for assessing liquefaction susceptibility in clays and silts which suggests that a soil with a plasticity index less than 12 and a water content to liquid limit ratio greater than 0.85 will be susceptible to liquefaction. Neither of which are evidenced in our site data. Therefore, due to the stiffness of the underlying soil profile and anticipated depth to groundwater, a potential for liquefaction (and therefore lateral spread) does not exist at the project site.

4.4. Seismic Compression

Seismic compression is an accrual of volumetric strains during seismic events in unsaturated soil and is typically confined to poorly compacted engineered fills and Holocene soils. Significant deposits of Holocene soils are not indicated on the geologic map and deep, loose engineered fills are not anticipated, therefore, the settlement potential due to seismic compression is considered negligible.

5. DISCUSSION AND RECOMMENDATIONS

5.1. General Information

- *Conformance with the Geotechnical Report:* The recommendations provided herein, particularly under Earthwork, Structures, Concrete, and Public Improvements are intended to reduce risks of structural distress related to consolidation or expansion of native soils and/or structural fills. These recommendations, along with proper design and construction of the planned structure(s) and associated improvements, work together as a system to improve overall performance. If any aspect of this system is ignored or poorly implemented, the performance of the project will suffer.

- *Clarification of Structural Areas:* Structural areas referred to in this report include all areas of buildings, concrete slabs, asphalt pavements, as well as pads for any minor structures or retaining walls. Areas which extend behind or under rockery or other retaining structures are considered structural zones. In addition, the structural zone shall be considered to extend at a 1:1 (H:V) slope out from the edge of the structural footprint. All compaction requirements presented in this report are relative to ASTM D 1557 (ASTM D Volume 4, 2022).

- *Hazardous Materials:* Any evaluation of the site for the presence of surface or subsurface hazardous substances is beyond the scope of this study. When suspected hazardous substances are encountered during routine geotechnical investigations, they are noted in the exploration logs and reported to the client. No such substances were identified during our exploration.

- *Backfill of Exploration Locations:* Explorations were advanced at the approximate locations shown on the Site Map and Approximate Exploration Locations (Figure 3). Each exploration was backfilled upon completion of the field portion of our study, and the backfill was compacted to the extent possible with the equipment on hand. However, the backfill was not compacted to the requirements presented herein under Grading and Filling. If structures, concrete flatwork, pavement, utilities or other improvements are to be located in the vicinity of any of the test pits, the backfill should be removed and re-compacted in accordance with the requirements contained in the soils report. Failure to properly compact backfill could result in excessive settlement of improvements located over test pits.

- *SWPPP Requirements:* The site-specific Stormwater Pollution Prevention Plan (SWPPP), as required by the State of Nevada, will be the responsibility of the general contractor and/or owner. Recommendations presented herein regarding moisture conditioning are for the benefit of creating a targeted fill behavior. Moisture conditioning recommendations are not intended to direct the contractor in their means and methods for dust and SWPPP control.

- *Public Improvements:* Recommendations for paved improvements in right-of-way areas will be consistent with Standard Specifications for Public Works Construction (SSPWC) and the agency having jurisdiction (AHJ) standards. Driveway recommendations are in general conformance with

AASHTO's Low Volume Road design protocols, the Portland Cement Association (PCA) and American Concrete Institute (ACI) recommendations. Underground utilities will be provided by a variety of public and private companies; trenching and backfill recommendations presented herein are generally consistent with OSHA and the AHJ requirements, respectively.

5.2. Earthwork

5.2.1. Clarification of Geomaterials

Based on materials encountered in our investigation, the following definitions characterize terms utilized in this report:

- Rock fill possesses more than 30-percent retained on the 3/4-inch sieve and may present particles up to 12-inches.
- Fine grained soil possesses more than 40 percent passing the number 200 sieve and exhibits a plasticity index greater than 15.
- Granular soil possesses less than 40 percent passing the number 200 sieve, exhibits a plasticity index less than or equal to 15, and has a maximum particle size less than 6-inches.

It should be noted these definitions have been formulated around anticipated soil behavior and may not coincide with classifications provided by the Unified Soil Classification System.

5.2.2. Clearing and Grubbing

- All vegetation and topsoil are to be cleared and grubbed from structural areas. A minimum stripping depth of 0.3 to 0.5 feet is anticipated.
- Localized deeper areas of clearing may be required in areas of large brush and trees or where large root balls are encountered.
- Vegetation and organic debris should be disposed of offsite or placed in designated non-structural areas.
- If on-site disposal is approved, vegetation could be blended with soil (at a maximum ratio of 1:10 vegetation to soil, by mass) prior to placement in nonstructural fill or landscape areas.
- Organic material should be broken up using a large sheep's foot roller or chipper prior to blending with soil and moisture conditioning.

5.2.3. Undocumented Fill

- Excavation and stockpiling operations near the southern boundary of the site were observed during our investigation. Existing stockpiles must be processed and qualified as granular soil or rock fill before being placed as structural fills.

- Refer to Section 5.2.4 for subgrade preparation requirements for structures to be located in the footprint of the existing excavation and stockpiling operations.

5.2.4. Subgrade Preparation

- To allow for the preparation of subgrade soils, any undocumented fill encountered within the development area should be removed or stockpiled for qualification and later use.

- Any fine-grained soils encountered at structural grade (bottom of footing, roadbed grade, slab subgrade) shall be verified to be greater than 1-foot in thickness prior to removal and replacement with structural fill. If the fine-grained layer is less than 1-foot in thickness, no additional action is required.

- A maximum fill differential of 8-feet below foundation grade shall be observed. To meet this requirement, cut depths may need to be extended within a structure footprint to increase the net fill differential. Based on existing topography, this requirement is anticipated to be localized if present.

- Grade preparation for any fill to be placed adjacent to a slope steeper than 4:1 (H:V) shall include a keyway and excavation of horizontal benches as fill is placed.
    - The keyway should be at least 6-feet wide and extend at least 2-feet in depth below lowest adjacent grade.
    - Benches shall maintain a minimum bench width of 4-feet.
    - Vertical height of bench cuts shall be consistent with what is necessary for the benches to step uniformly up the slope.
    - Benches should be scarified, moisture conditioned and capped with a thin fill lift prior to compaction to facilitate the development of a uniform meld between the in-situ soils and fills.
- Where oversized material (i.e. > 6 in) is present, subgrade shall be moisture conditioned and proof-rolled with a fully loaded water truck prior to placing fill or constructing improvements.

- In-situ granular or fine-grained soils should be scarified for a minimum depth of 12-inches, moisture conditioned to within 3-percent of optimum and compacted to not less than 90-percent of the soil's maximum dry density (ASTM D1557) prior to placing fill or constructing improvements.

- Any resulting void created by removal of oversize during subgrade preparation may be filled with structural fill placed and compacted to 90 percent of the soil's maximum dry density in accordance with ASTM D1557 or lean concrete.

- In all cases, the final subgrade shall be smooth, firm, and relatively unyielding as determined by the testing agencies' qualified representative.

5.2.5. Subgrade Stabilization

- The fine-grained soils encountered within the project limits may tend to pump and or destabilize when moisture content exceeds optimum.
- Care should be taken during grading to ensure precipitation, or construction activities do not lead to an increase in or ponding of water on exposed grade.
- Pumping soils may be scarified and allowed to dry or removed and replaced with a layer of clean, angular, 12-inch minus rock fill or stabilized with a geogrid.
- Subgrade stabilization is a trial-and-error process, and it is recommended that a test section of suitable depth and length be conducted.
- The contractor should propose a stabilization protocol that is consistent with their readily available means and methods, and this proposal presented for review, by the owner, the general contractor, and grading inspector.
- Subgrade stabilization is considered adequate if the subgrade is firm and relatively unyielding (as approved by the engineer) when proof-rolled with a fully loaded water truck.
- Subgrade stabilization may not be required for walkways or private improvements subject solely to foot traffic providing the required compaction levels are achieved.

5.2.6. Mass Grading

- Verification testing of onsite soils to be qualified as structural fill shall be in accordance with ASTM D75, ASTM D6913, and ASTM D4318 and shall meet the requirements of Table 2.
- Based on our explorations, undocumented fill may be used as structural fill tested and verified to meet the granular soil definition.
- Undocumented fill has not been verified for degree of compaction and shall therefore be reworked in accordance with this section.
- Existing fill and native soils generated from cut and meeting the definition of granular soil (Section 5.2.1) may be placed as structural fill within the 1-foot separation zone.
- The site is anticipated to be designed for a cut-fill balance. However, should import be required it should meet the requirements of Table 2.
- Prior to importing material to the site, a submittal verifying import quality shall be received and approved by Wood Rodgers.

Table 2 - Guideline Specification for Import Structural Fill

Sieve Size (ASTM D6913)	Percent by Weight Passing Sieve
6 Inch[1]	100
4 Inch	90 - 100
¾ Inch[2]	50 - 100
No. 200	5 - 40
Maximum Liquid Limit (ASTM D4318)[3]	50
Maximum Plasticity Index (ASTM D4318)[3]	15
Soluble Sulfate Level (ACI 318, Table 4.3.1)	Negligible
R-Value (ASTM D2844)[4]	30 Min.

[1] Pending approval of the means and methods of the contractor, maximum particle size may be increased to 12-inches.

[2] Material presenting more than 30-percent material retained on the ¾" sieve shall be referred to as rockfill. (Section 5.2.1)

[3] Dry Method

[4] Within right-of-way only.

- With the approval of the geotechnical engineer, maximum particle size for the materials presented in Table 2 may be increased to 12-inches. Refer to Section 5.2.7 for rockfill placement requirements.
- An increased maximum particle size to 12-inches will impact the uniformity of trench profiles and trench spoils may need to be screened prior to reuse as trench backfill.
- A nominal maximum particle size of 6-inches is recommended for the final 24-inches of pad fills, to facilitate fine grading and advancing utility and footing trenches.
- Generation of oversized rock, i.e., greater than 6-inches, should be anticipated during mass grading of cut zones and trenching.
- For granular fill generated on-site, material should be excavated, dozed and processed into a uniform stockpile prior to being sampled and tested for material quality prior to acceptance.
- If the site is mass graded cut to fill, without the benefit of selective grading and processing, it is likely some of the soils placed as fill may present clay pockets or zones and regrading could be required.

- Granular or fine-grained soil placed as fill shall be moisture conditioned to within 3-percent of optimum, placed in 12-inch maximum loose lifts, and compacted to not less than 90-percent of the soil's maximum dry density.

- Minimum compaction requirements shall be increased to 95-percent in areas where total fill thickness exceeds 10-feet.

5.2.7. Rockfill Placement and Verification

Soils that are classified as rockfill should be placed and verified in conformance with the following placement procedures.

- Oversize (i.e., rock > 6-inches in least dimension) must be blended and placed in such a manner that: nesting of the rock does not occur, rock is uniformly distributed throughout the fill lift, and voids are uniformly filled with the soil matrix.

- A maximum lift thickness of 12-inches should be observed for 6-inch minus rock fill. A maximum lift thickness of 18-inches should be observed for 12-inch minus rock fill.

5.2.7.a. Rockfill Verification Protocols

- Determine a moisture-density relationship (ASTM D1557 Method C) on the portion of the sample passing the ¾-inch sieve.

- Rockfill shall be placed and compacted with the ¾-inch minus fraction moisture conditioned to at least optimum as determined in accordance with ASTM D1557, Method C.

- Where standard density testing cannot be performed due to oversize material, performance criteria for acceptance of the compacted fill shall be established; otherwise rockfill shall be compacted to not less than 90-percent of the soil's maximum dry density.

- For acceptance based on performance criteria, an initial rolling pattering consisting of at least five single passes with a minimum 20-ton roller (815 Caterpillar "Sheepsfoot" compactor, or equivalent) for mass grading, or five complete passes with hand compactors or pneumatic trench roller in footing trenches is recommended.

- Increase the number of passes as necessary until no notable increase in density can be measured (ASTM D6938, Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods) or notable deflection is reduced to negligible.

- Modifications to the rolling pattern will be required with change in percentage of + ¾-inch rock and/or changes in moisture content of the ¾-inch minus portion of the rockfill.

- The established rolling patterns, and estimated percentage of + ¾-inch material, shall be

recorded.

5.2.8. Trenching and Excavations

- OSHA - Regulations amended in Part 1926, Volume 54, Number 209 of the Federal Register (Table B-1, October 31, 1989) require that the temporary sidewall slopes be limited to maintain trench stability. Minimum sidewall slopes and acceptable trench configurations are also presented in the referenced register.
- In some areas of the parcel, oversize material (> 6-inches) will be encountered during trenching and excavations. Excavatability will probably be more difficult in utility trenches where removal of larger sized particles can be difficult within the confines of a trench, and which will likely result in irregular trench widths where boulders or fractured bedrock must be removed.
- Oversize material which may be generated during excavating and trenching may require off-hauling or placement in non-structural areas.
- Open excavations should be protected from flooding.
- Based on the results of our exploration program, it is our opinion that the bulk of the native site soils appear to be predominately Type C, although variations exist.
- All fills should conservatively be considered Type C unless directed otherwise by the contractor's competent individual trained in trench safety.
- Some of the sands present at the site may allow excavations and utility trenches to slough or cave and therefore, must be adequately considered and planned for by the contractor.
- All trenching should be performed and stabilized in accordance with local, state, and OSHA standards. Bank stability is the responsibility of the contractor or contractor's qualified representative who is present at the site, able to observe changes in ground conditions, and has control over personnel and equipment.
- Pipe bedding, initial backfill, and trench backfill shall be consistent with the approved civil and/or utility plans.

5.2.9. Earthwork Testing and Observation

- Verification of subgrade and fills should be performed by a firm that is AMRL accredited in ASTM E329.
- Special inspection of fill soils is required during mass grading of the development; the Special Inspector should be ICC certified in soils or NAQTC certified in Sampling and Density disciplines.
- The special inspector shall verify and document that placement of fill and rockfill are consistent with the Mass Grading (5.2.6) and Rockfill Placement and Verification Requirements (5.2.7).

- Density testing of fills should be in accordance with ASTM D6938 (Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods) or ASTM D1556 (Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method).
- Subgrade should be density tested approximately every 500 square yards.
- Fill should be density tested once for every 1,000 square yards per lift of material placed during mass grading and one test per 300 feet of footing trenches or over-excavation of footings.
- One density test should be performed for each 500 square yards or per each lift for smaller, localized fill zones.
- Full time construction observation is required for mass graded fills and for any rock fill placement.
- The testing frequency should be increased if the contractor is having difficulty achieving and maintaining the required moisture levels.
- Utility bedding and trench backfill should be density tested per the requirements of the governing agency. Typically, agencies prescribe density testing per foot of bedding/backfill thickness, at a frequency of one test between manholes or valves, or one test every 500 lineal feet, including laterals.
- Nonstructural fills should be density tested for every 2,000 yards or for every 2-feet of fill for smaller, localized fill zones.

5.2.10. Embankments

- The surface of any embankment should be compacted to the same percentage compaction as the body of the fill. This may be accomplished by compacting the surface of the embankment as it is constructed or by overbuilding the fill and cutting back to its compacted core.
- The exterior face of embankments should be constructed with an inclination no steeper than 2H:1V.
- Minor variations in slope gradient due to sculpting or landscaping of the slope face should not be considered inconsistent with the recommendations of this report or adverse to the ultimate performance of the global stability of the overall slope.
- Refer to Section 5.6.1 Slopes and Drainage for erosion protection considerations.

5.3. Structures

The following sections have been developed based on the understanding and expectation that the requirements specified in Section 5.2 Earthwork of this report have been met.

5.3.1. Standard Spread Foundations

The following table and supporting statements present design values and considerations for use in the development of standard spread foundation design.

Table 3 - Allowable Foundation Bearing Pressures for Standard Spread Foundations

Loading Condition	Maximum Net Allowable Bearing Pressure (PSF)[1]
Dead Load Plus Full Time Live Load	2,500
Dead Load Plus Live Loads, Plus Transient Wind or Seismic Loads	3,300

[1] Net allowable bearing pressure is that pressure at the base of the footing is in addition to the adjacent overburden pressure.

- For frost protection, footings should be founded at least 1 ½ feet below adjacent outside or unheated interior finish grades.
- Interior footings not located within frost prone areas should be founded at least 12 inches below surrounding ground or 16 inches below slab level for confinement.
- Regardless of loading, individual pad foundations and continuous spread foundations should be at least 18 and 12 inches wide, respectively, or as required by code.
- The minimum footing sizes recommended are based on the ability to develop bearing capacity. Footing dimensions should be determined by the engineer responsible for structural design.
- Lateral loads, such as wind or seismic, may be resisted by passive soil pressure and friction on the bottom of the footing. A coefficient of base friction of 0.45 is typical to the structural fills.
- Design values for active and passive equivalent fluid pressures of 35 and 350 pounds per square foot per foot of depth, respectively, can be utilized.
- When designing for passive pressure, the upper one foot of the soil profile should not be included unless confined by a concrete slab, or pavement.
- The integrity of the foundation support soils shall be maintained until concrete is placed.
- Total post-construction settlement for the structures is anticipated to be on the order of ½-inch, or less.
- Differential settlement between foundations with similar loads and sizes is anticipated to be half of the total settlement across 40-feet.

5.3.2. Retaining Structures

- Recommended lateral earth pressures for consideration in the design of retaining walls and landscaping walls are presented in Table 4.

Table 4 - Lateral Earth Pressures[1]

Condition	Active (psf/f)		Passive (psf/f)		At Rest
	Static	Pseudo-Static	Static	Pseudo-Static	
Level	35	65	350	250	55

[1] Walls retaining sloping backfill or are greater than six feet in exposed height, require specific analyses and design values should be evaluated and presented by the geotechnical engineer.

- Changes in earth pressures due to seismic influences were assessed via the AASHTO LRFD protocol that considers some component of cohesion will be maintained within the backfill.
- In addition, it has been assumed that some displacement is allowable during the design event, and our recommended values have therefore been based on 50% of the USGS' predicted PGA.
- The values presented in Table 4 do not consider hydrostatic pressures or surcharge loading.
- Excessive wall pressures can be developed due to heavy compaction equipment proximate to the wall during backfill placement. Therefore, due care during placement and compaction of backfill is required.
- Backfill behind retaining structures should be granular and compacted to not less than 90 percent of the soils' maximum dry density.
- French drains, a drainage gravel backfill layer wrapped in geotextile such as Mirafi 140 N, or a prefabricated drainage composite should be utilized if buildup of hydrostatic pressure is possible.
- Moisture proofing must be considered for retaining walls facing interior living spaces or where the development of efflorescence is undesirable.
- Site preparation and foundations for retaining structures shall be consistent with Section 5.2 Earthwork and Section 5.3.1 Standard Spread Foundations.
- Walls retaining sloping backfill or are greater than six feet in exposed height, require specific analyses and design values should be evaluated and presented by the Geotechnical Engineer.

5.3.3. Site Drainage

- Adequate surface drainage must be constructed and maintained away from the structures. The permanent finish slopes away from the structure should be constructed to allow water to drain away quickly from and prevent any ponding of water adjacent to the structure per code

requirements. Runoff should be collected within permanent drainage paths that can convey water off the property or to designated collection facilities.

- Foundation and stem wall backfill should be densified to at least 90 percent relative compaction in accordance with the requirements given in the Mass Grading section (5.2.6). Compacting the backfill material decreases permeability and reduces the amount of irrigation and storm water available to enter under floor areas.

5.4. Concrete

The American Concrete Institute (ACI) considers three different exposure classes to address the degree of severity for environmental conditions: freezing and thawing (Exposure Category F), concrete in contact with soil that contains water soluble sulfate ions (Exposure Category S), and Exposure Class W for concrete in contact with water. Exposure categories F and S, and potential mitigation, are discussed in Section 5.4.1.

5.4.1. Materials

The concrete material recommendations vary between Exposure Class F and Exposure Class S. Therefore, those specifying concrete subject to both freezing and thawing and water-soluble sulfate ions should consider the potential exposure conditions for Class F and Class S and select the most appropriate.

5.4.1.a. Exposure Class F (Exterior Slabs-on-Grade)

- The potential exists for some portions of concrete to absorb sufficient water to be saturated prior to freezing (Exposure Class F2).
- Where deicing chemicals are anticipated to be used (civil improvements), exposure Class F3 would be assigned.
- Therefore, as presented in the Standard Specifications for Public Works Construction concrete requirements for Portland cement concrete exposed to freeze-thaw cycles, should include air entrainment (4 – 7%), maximum water: binder ratio of 0.45, and a minimum 28-day compressive strength of 4,000 psi.

5.4.1.b. Exposure Class S

The summary below presents excerpts from ACI and SSPWC. Refer to the referenced standards in their entirety when specifying sulfate resistance exceeding the presented geotechnical or civil considerations.

- Sulfate test results on the native soils yielded results in the S0 negligible range (ACI 318, < 0.10 percent SO_4^{2-} by mass).
- Per the SSPWC, no special concrete provisions are required to address sulfate resistance. Type II cement is recommended for use.

5.4.1.c. Chlorides

- Chemical test results on the native soils presented non-detected chloride ion concentrations (mg/kg).

5.4.2. Construction

- Slabs-on-grade should be supported on a 6-inch, minimum, layer of Type 2, Class B aggregate base layer compacted to not less than 95-percent of the soil's maximum dry density unless subject solely to foot traffic. Concrete slabs-on-grade subject solely to foot traffic should be supported on a 4-inch, minimum, layer of Type 2, Class B aggregate based compacted to not less than 95-percent of the soil's maximum dry density.

- A moisture vapor retarder (Stego Wrap 15 mil) should be considered for slab areas covered by moisture sensitive floor coverings or equipment. Moisture vapor layers should be placed in accordance with the manufacturer's instructions and below the base layer on a properly prepared subgrade.

- All concrete placement and curing should be performed in accordance with procedures outlined by the American Concrete Institute. Special considerations should be given to concrete placed and cured during hot or cold weather conditions.

- The occurrence of concrete shrinkage cracking may be reduced and/or controlled by limiting the amount of water within the mix (water cement ratio of 0.45 or less), the incorporation of crack control joints and proper concrete placing and curing practices including ACI 318 provisions for areas subject to freeze thaw conditions.

- Proper curing, finishing, control joints and reinforcing should be provided to minimize any damage resulting from shrinkage including cracks and slab curling. Joint spacing, locally, is typically on 10-to-12-foot centers for large slabs and no more than five feet for sidewalks.

- Western Nevada is a region with absorptive aggregates and exceptionally low relative humidity. Therefore, concrete flatwork will shrink and curl in a manner which is not typical of many other US regions.

- Proper site preparation and placement of reinforcement are imperative to the performance of slab-on-grade improvements.

- Cracking that occurs within the slab-on-grade floors will often reflect through overlying improvements even if adequate substrate preparation has occurred.

- Control of the rate of moisture loss in concrete slab-on-grade improvements by using curing compounds, fogging, or other suitable means is imperative to protecting the slab from excessive curling.

- Slabs-on-grade will still exhibit some cracking and curling. The occurrence of concrete shrinkage cracks is independent of the soil supporting characteristics.

5.5. Public Improvements

Unless noted otherwise, dedicated improvements shall be designed and constructed in accordance with the approved civil plans, the Standard Specifications for Public Works Construction, and the jurisdiction's standard details.

5.5.1. Slopes and Drainage

- Surface drainage shall be per the approved project Civil design drawings.
- Stability of cut and filled surfaces involves two separate aspects. The first concerns slope stability related to mass wasting, landslides, or the surficial downward movement (or slumping) of soil or rock.
- Cut and fill slopes, with gradients of 2H:1V (horizontal to vertical) or flatter, are suitable for the project soils.
- The specified slope is based on an overall slope average. Localized sculpting of the slope face, resulting in limited minor increases to slope gradient at isolated locations, is considered consistent with the global stability considerations of this report.
- The second aspect of slope stability involves erosion potential which is dependent on numerous factors involving grain size distribution, cohesion, moisture content, slope angle and the velocity of the water or wind across the ground surface.
- Erosion protection should be as indicated on the approved Civil drawings and/or per the jurisdiction's design standards.
- Typically, 2:1 (H:V) slopes require armoring. Slopes steeper than 3:1 (H:V) are typically addressed with a combination of revegetation and localize armoring or landscape retaining walls.
- Temporary (during construction) and permanent (after construction) erosion control will be required for all disturbed areas.
- Brow ditches are recommended above any slopes greater than 10-feet in height and should be incorporated into the overall drainage considerations presented on the civil drawings.
- Provisions for drainage from behind common retaining walls should be considered and presented in the approved civil plans.
- In compliance with all applicable city, county, state and federal regulations the contractor shall prevent dust from being generated during construction, and the contractor shall submit an acceptable dust control plan prior to starting site preparation or earthwork.

5.5.2. Structural Pavement Sections

- Materials and workmanship shall be consistent with the requirements of the jurisdiction and the Standard Specifications for Public Works Construction.
- Table 5 presents the recommended minimum structural pavement sections for the development based on planned use. Minimum sections required by the jurisdictions shall govern if more than specified in Table 6.
- These sections have been developed with the expectation that the requirements of Section 5.2.4 – Subgrade Preparation have been satisfied.
- Depending on final site grading, structural pavement sections may be re-evaluated by the Geotechnical Engineer in consideration of the subgrade R-Value (ASTM D2844 – Standard Test Method for Resistance R-Value and Expansion Pressure of Compacted Soils).

Table 5 - Structural Pavement Sections[1]

Road Type	Pavement Thickness (In.)	Pavement Type[2]	Type II Class B Base Course Thickness (In.)[3]
Local	4	2" Type 3 + Lime / 2" Type 2	6
Collector	5	Type 2 + Lime	8

[1] Per the Standard Specifications for Public Works Construction
[2] Base Course thickness is in addition to structural fill separation requirements presented in Table 2.

- The Contractor should submit a pavement mix design to the Owner or Engineer, for approval, at least five working days prior to paving. When pavement is placed directly adjacent to concrete flatwork, the finish compacted grade of the pavement should be at least ½ of an inch higher than the edge of adjacent concrete surface to allow adequate compaction of the pavement without damaging the concrete.

5.5.3. Pavement Design Life

- Maintenance is mandatory to ensure long-term pavement performance and to meet or exceed the assumed 20-year design life.
- Maintenance refers to any activity performed on the pavement that is intended to preserve its original service life or load-carrying capacity. Examples of maintenance activities include patching, crack or joint sealing, and seal coats. If these maintenance activities are ignored or deferred, premature failure of the pavement will occur.

- Premature failure of asphaltic concrete frequently occurs adjacent to poorly graded ponding areas and/or landscape areas. Failures may occur due to excessive precipitation, irrigation and landscaping water infiltrating into the subgrade soils causing subgrade failure.

- In areas where saturation of the subgrade soils beneath asphaltic pavement may occur, it is strongly recommended the owner/project manager include provisions by design for a subdrain system to eliminate the potential for saturation of subgrade soils. The subdrain system should discharge into a permanent drainage area that will not impede drainage flow to cause the system to back-up and/or clog. Appropriate maintenance procedures should be implemented to ensure the subdrain system does not plug and allow for proper drainage of surface and subsurface water beneath paved areas. Subdrain location and configuration should be evaluated once final grading and landscaping plans have been prepared.

- If the ultimate traffic exceeds the anticipated levels, it may be necessary to reevaluate and overlay the pavement at some time in the future.

- The cost associated with proper maintenance is generally much less than the cost for reconstruction due to the premature failure of the pavement. Therefore, it is strongly recommended the owner/project manager implement a pavement management program.

6. SUPPLEMENTARY SERVICES

- A design level geotechnical report should be prepared once final design grades have been established and reviewed.
- Verification of existing fills may be required.
- Additional exploration (test pits with material testing and/or geophysical surveys) may be warranted where final grade extends beyond the depth of the exploratory test pits.
- An additional investigation of the mapped fault structure may be required if any critical facilities are planned along the lineament.

7. CONSTRUCTION OBSERVATION AND TESTING SERVICES

- The recommendations presented in this report assume that the contractors perform their work as required by the project documents and that owner/project manager provides for sufficient field-testing and construction review during each phase of construction.
- Prior to construction, the owner/project manager should schedule a pre-construction conference including, but not limited to representatives of the owner, architect, civil engineer, the general contractor, earthwork and materials subcontractors, building official, and geotechnical engineer.
- It is the owner's/project manager responsibility to set-up this meeting and contact all responsible parties. The conference will allow parties to review the project plans, specifications, scheduling and recommendations presented in this report, and discuss applicable material quality and mix design requirements.
- Quality control reports should be submitted to the owner/project manager for review and distributed to the appropriate parties. It is essential that any changes or revisions to project plans be provided to Wood Rodgers in a timely fashion to ensure contractor compliance and avoid construction delays or the need to remove completed work.
- During construction, Wood Rodgers Incorporated should have the opportunity to provide sufficient on-site observation of site preparation and grading, over-excavation, fill placement, foundation installation, and paving.

These observations would allow us to document the geotechnical conditions are as anticipated and that the contractor's work meets with the criteria in the approved plans and specifications. Verification of horizontal and vertical control must be provided by whoever was responsible for establishing those boundaries and constructing associated improvements.

8. EXPECTATION OF PERFORMANCE

- The planned residences will incorporate either a standard slab-on-grade foundation with perimeter footings extending to a minimum depth of 18 inches below finished exterior grade.
- In lieu of solely off-hauling and importing, the developer/owner has selected to grade the site using cut to fill practices and selective grading.
- Therefore, the potential exists that soils within various building pads may fall outside the specified limits of Structural Fill.
- This deviation should not be considered a failure to adhere to recommendations presented within this report but should be considered a limitation to mass-grading when a natural, virgin material is used for a fill source.
- These inherent variations should not be considered to comprise a non-conformity with the project specifications unless the Weighted Plasticity (% of material passing the #200 sieve x Plasticity Index) of the weighted structural fill separation layer exceeds 7.5.
- Single family residential construction results in a complex composite of steel, concrete, lumber, and earth. Each element responds differently to loading and consequently cracking and distortion occur.
- Occurrence of cracking or distortion is not in and of itself evidence of the structure failing to meet a reasonable standard or level of performance.
- Repair of unsightly, non-structural, cracks should be considered part of the homeowner maintenance program.
- Cracks that continue to reappear or widen or propagate may be indicative of extenuating issues that require redress.
- Our design protocols and recommended construction testing procedures rely upon ASTM Standards and Guidelines; therefore, any subsequent studies to evaluate completed product or construction practices shall be in accordance with ASTM E 141 AND shall employ the same testing means and methods available at the time of construction.
- Where access or testing limits do not allow continuity in testing methods, a correlation program must be performed that establishes that the testing and evaluation methods employed by the reviewing agency present results consistent with and comparable to the test methods prescribed by this report and employed during construction.
- Failure to follow these prescribed protocols would result in test data being compromised when compared to ASTM standards and requirements.

- In addition, failure to follow the referenced statistical and sampling ASTM assessment protocols would result in a forensic assessment program rife with inconsistencies and variations which would result in the forensic investigation failing to meet the level of precision necessary to accurately evaluate the site conditions.

9. STANDARD LIMITATION CLAUSE

- This report has been prepared in accordance with generally accepted local geotechnical practices.
- The analyses and recommendations submitted are based upon field exploration performed at the specific locations identified and the conditions encountered, as discussed in our report.
- No guarantee or warranty as to the continuity of soil conditions between exploration points is implied or intended.
- Therefore, this report does not reflect soil or water variations that may become evident during the construction period, at which time re-evaluation of the recommendations may be necessary.
- Final plans and specifications should be reviewed by the design engineer responsible for this geotechnical report to determine if they have been prepared in accordance with the recommendations contained in this report prior to submitting to the building department for review.
- It is the owner's/project manager responsibility to provide the plans and specifications to the engineer.
- This report is issued with the understanding that it is the responsibility of the owner or their representative to ensure that the information and recommendations contained herein are brought to the attention of the design team for the project and incorporated into the plans and specifications, and that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.
- We recommend our firm be retained to perform construction observation in all phases of the project related to geotechnical factors to document compliance with our recommendations.
- The owner/project manager is responsible for distribution of this geotechnical report to all designers and contractors whose work is related to geotechnical factors.
- It is the contractor’s responsibility for the grading and construction of the designed improvements. This responsibility includes the means, methods, techniques, sequence, and procedures of construction and safety of construction at the site.
- All construction shall conform to the requirements of the most recently adopted version of the Standard Specifications for Public Works Construction and the requirements of the agency having jurisdiction (AHJ).
- Failure to inspect the work shall not relieve the contractor from their obligation to perform sound and reliable work as described herein and as described in the Standard Specifications for Public Works Construction.

- In the event of changes in the design, location, or ownership of the project after presentation of this report, our recommendations should be reviewed and possibly modified by the Geotechnical Engineer.
- If the Geotechnical Engineer is not afforded the privilege of making this recommended review, we can assume no responsibility for misinterpretation or misapplication of our recommendations or their validity in the event changes have been made in the original design concept without our prior review. The engineer makes no other warranties, either expressed or implied, as to the professional advice provided under the terms of this agreement and included in this report.
- This report was prepared by Wood Rodgers, Inc. for the benefit of GF Development, LLC and their duly assigned agents or other responsible parties.
- The material in this report reflects Wood Rodgers' best judgment considering the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties.
- Wood Rodgers accepts no responsibility for damages, if any, suffered by any third party because of decisions made by third parties or actions based on this report without consultation with Wood Rodgers and written approval for such actions.

10. REFERENCES

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TRADITIONS NORTH

Conceptual Sanitary Sewer Report

November 2025

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By Piñon Design Group

PIÑON DESIGN GROUP

TRADITIONS NORTH – CONCEPTUAL SANITARY SEWER REPORT

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PROJECT LOCATION AND DESCRIPTION

Traditions North is located adjacent to the current Traditions Project on Traditions Parkway and Highway 50 in Dayton, Lyon County, Nevada (Figure 1A – *Project Location*). The property is located north of Highway 50, west of Enterprise Way, and east of the Sutro Tunnel. The site APN is: 016-406-07 and consists of 368 single-family lots. This site is situated in Section 01, Township 16 North, and Range 21 East of the Mount Diablo Meridian.

Figure 1A: Project Location

EXISTING WASTEWATER SYSTEM

The existing area contains public gravity sanitary sewer mains owned and maintained by Lyon County Utilities Department (LCUD). There are 8" gravity sewer connections in Rock Creek Parkway and Nevada Station Parkway that convey wastewater to the Industrial Lift Station (LCUD). There is also an existing 8" gravity main connection in Enterprise way that conveys wastewater to the Industrial Lift Station (LCUD). The lift station pumps the wastewater to the Rolling A Waste Water Treatment Plant.

A utility discovery application was submitted in July, 2025 and is still pending issuance of the final assessment document as of writing of this report. More information on the existing system will be available once the discovery report is completed.

PROPOSED WASTEWATER SYSTEM

The proposed system will consist of a gravity sewer collection system (Reference Figure 2: Sewer-shed Exhibit). The westernmost 37 dwelling units (Figure 2: orange hatch) are planned to connect to the existing 8" connection in Nevada Station Parkway along the southwest project boundary. Then, the middle portion of the site (Figure 2: green hatch), with 130 dwelling units, will connect to the existing 8" connection in Rock Creek Parkway along the southeast project boundary. Finally, the eastern portion of the site (Figure 2: cyan hatch), with 191 dwelling units, connect into the existing 8" stub in Enterprise Way. Design details, flow/pressure modeling, and telemetry will be determined at final design stage.

The proposed wastewater collection system and lift station will be designed to LCUD standards and dedicated to LCUD.

ESTIMATED PEAK SEWAGE FLOWS

For this analysis, the flow factors used in the calculations are the Lyon County standard of average daily flow of 175 gpd/DU for a single-family residential and multi-family. The average daily flow is utilized for approximating the contribution to the Wastewater Treatment Plant. A conservative peaking factor of 3.8 is then applied to

the average daily flow to compute the peak flow used in the design of the sanitary sewer mains. The following table summarizes the results of the calculations of the average and peak daily flows for the proposed residential subdivisions:

Subdivision	Dwelling Units (DU)	Flow per DU (gpd/DU)	Avg Daily Flow (gpd)	Peaking Factor	Peak Flow (gpd)
Traditions North	358	175	62,650	3.8	238,070

PROPOSED SEWER MAINS

The proposed waster collection system consists of individual laterals to each dwelling unit and public gravity sewer mains. The project will be constructed in phases and each phase will provide a detailed analysis demonstrating it will function properly at the time of construction and throughout the duration of the project.

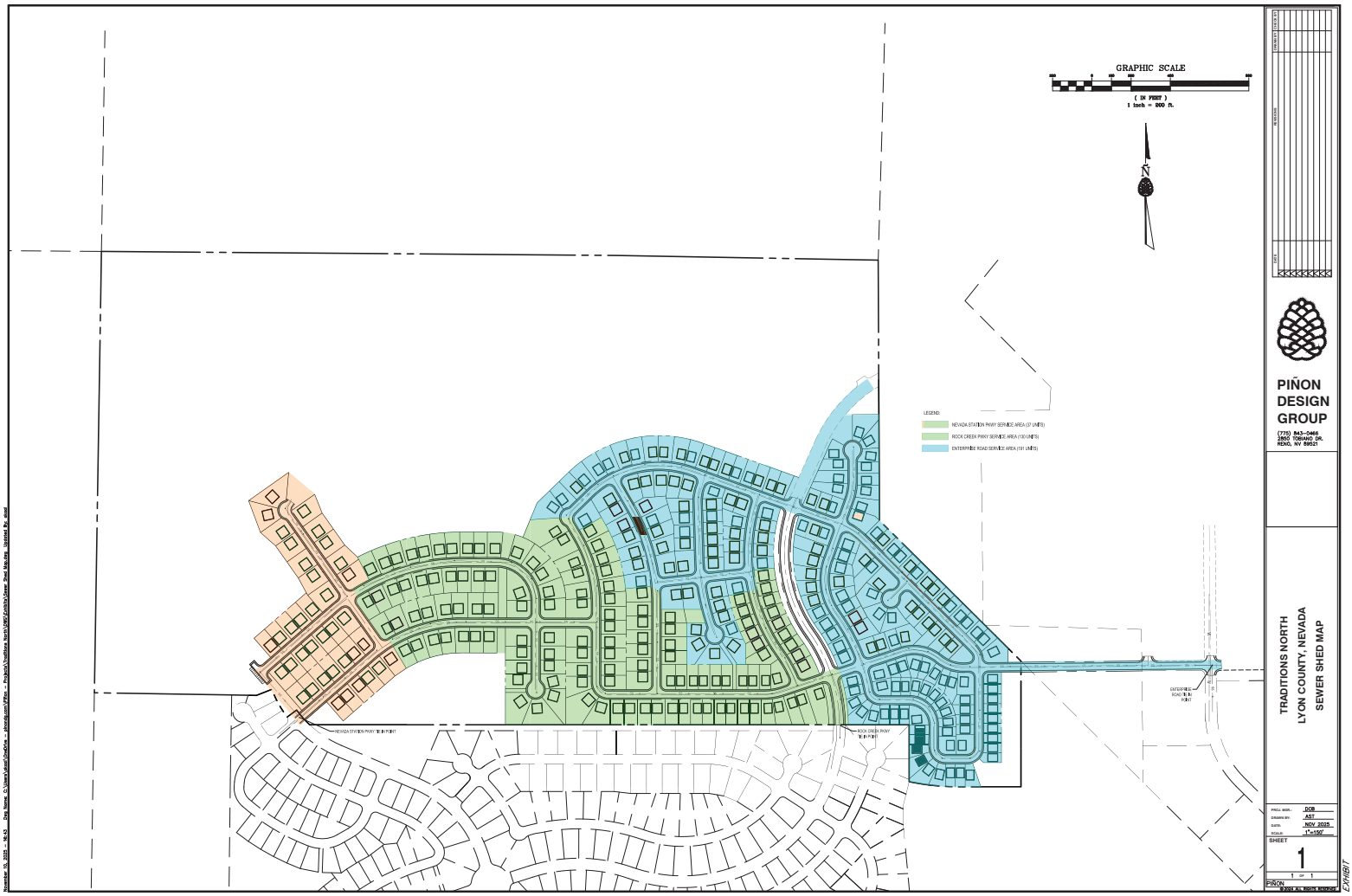
The following minimum standards will be met with the final design:

- The minimum size for sewer mains is 8 inches, and mains are sized based on flow calculations. Individual sewer laterals will be 4” minimum.
- Sewer mains are considered at capacity when peak flow reaches a ratio (d/D) of 0.75.
- Minimum slopes and spacing for sewer mains are specified (e.g., 8-inch mains require a minimum slope of 0.4 percent).
- Sewer lines are generally PVC SDR-35 unless otherwise approved.
- Manhole spacing is limited to 400 feet for lines smaller than 15 inches, with greater spacing allowed for larger mains.
- Sewer mains will provide capacity for the ultimate tributary population, and flow and peaking factors follow the previously described standards and Nevada Administrative Code (NAC).

CONCLUSION

In conclusion, the conceptual sanitary sewer report has been performed to ensure that the proposed sewer system will meet design criteria required by LCUD and NAC. The study shows that proposed sanitary sewer system will be installed in such a way that each phase will function properly at the time of construction and throughout the duration of the project.

Figure 2: Sewer-shed Exhibit
(see attached 36”x48” sheet)


GRAPHIC SCALE
(IN FEET)
1 inch = 800 ft.
N
LEGEND:
NEVADA STATION PKWY SERVICE AREA (37 UNITS)
ROCK CREEK PKWY SERVICE AREA (130 UNITS)
ENTERPRISE ROAD SERVICE AREA (191 UNITS)
NEVADA STATION PKWY TIE-IN POINT
ROCK CREEK PKWY TIE-IN POINT
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DRAWN BY: AST
DATE: NOV 2025
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SHEET
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1 OF 1
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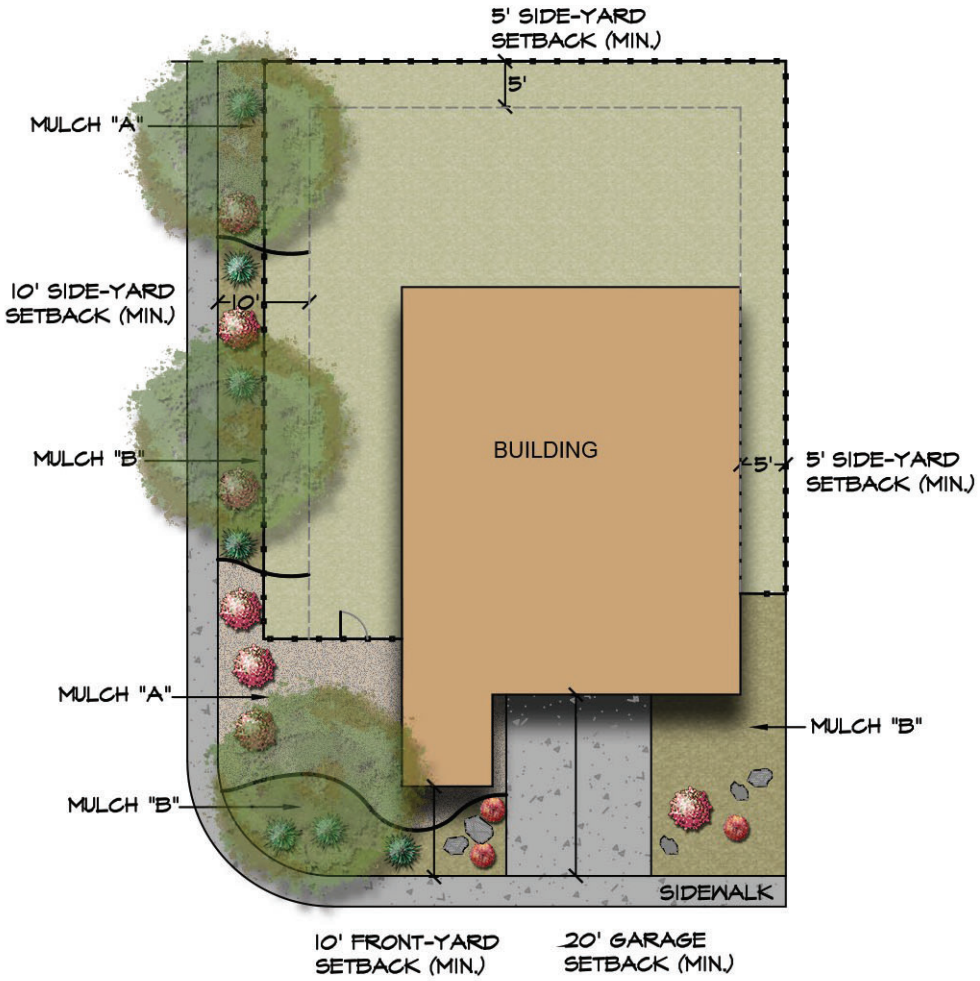
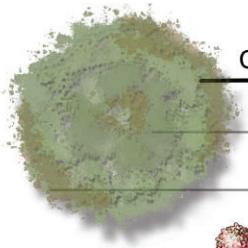
EXHIBIT





CORNER LOT 4,500 SF LEGEND

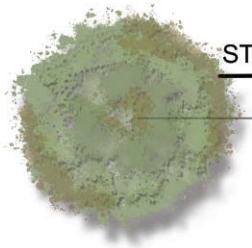
- FRONT YARD TREES
- SIDE STRIP TREES
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- GROUNDCOVER/PERENNIALS
- LANDSCAPE BOULDERS
- LANDSCAPE MULCH
- BACKYARD (TO BE LANDSCAPED BY HOMEOWNER)
- FENCE LINE
- PROPERTY LINE

CORNER LOT FRONT YARD LANDSCAPE

- (1) SIDE STRIP TREES @ 30' O.C.
- (1) FRONT YARD TREE
- (6) SHRUBS PER (1) TREE - PROVIDE A MIX OF THE FOLLOWING:
  - 5-GAL. DECIDUOUS SHRUBS
  - 5-GAL. EVERGREEN SHRUBS
  - 1-GAL. PERENNIAL OR GROUNDCOVER
- TURF - 50% MAX. COVERAGE (OPTIONAL)
- LANDSCAPE BOULDERS
- A MINIMUM OF TWO MULCH TYPES (LAVA ROCK, RIVER ROCK, D.G., BARK MULCH)

THIS EXHIBIT IS PROVIDED FOR ILLUSTRATION PURPOSES ONLY AND IS SUBJECT TO CHANGE.

STANDARD LOT 4,500 SF LEGEND



- FRONT YARD TREES
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- GROUNDCOVER/PERENNIALS
- LANDSCAPE BOULDERS
- LANDSCAPE MULCH
- BACKYARD (TO BE LANDSCAPED BY HOMEOWNER)
- FENCE LINE
- PROPERTY LINE

STANDARD LOT FRONT YARD LANDSCAPE

- (1) FRONT YARD TREE
- (6) SHRUBS PER (1) TREE - PROVIDE A MIX OF THE FOLLOWING:
  - 5-GAL. DECIDUOUS SHRUBS
  - 5-GAL. EVERGREEN SHRUBS
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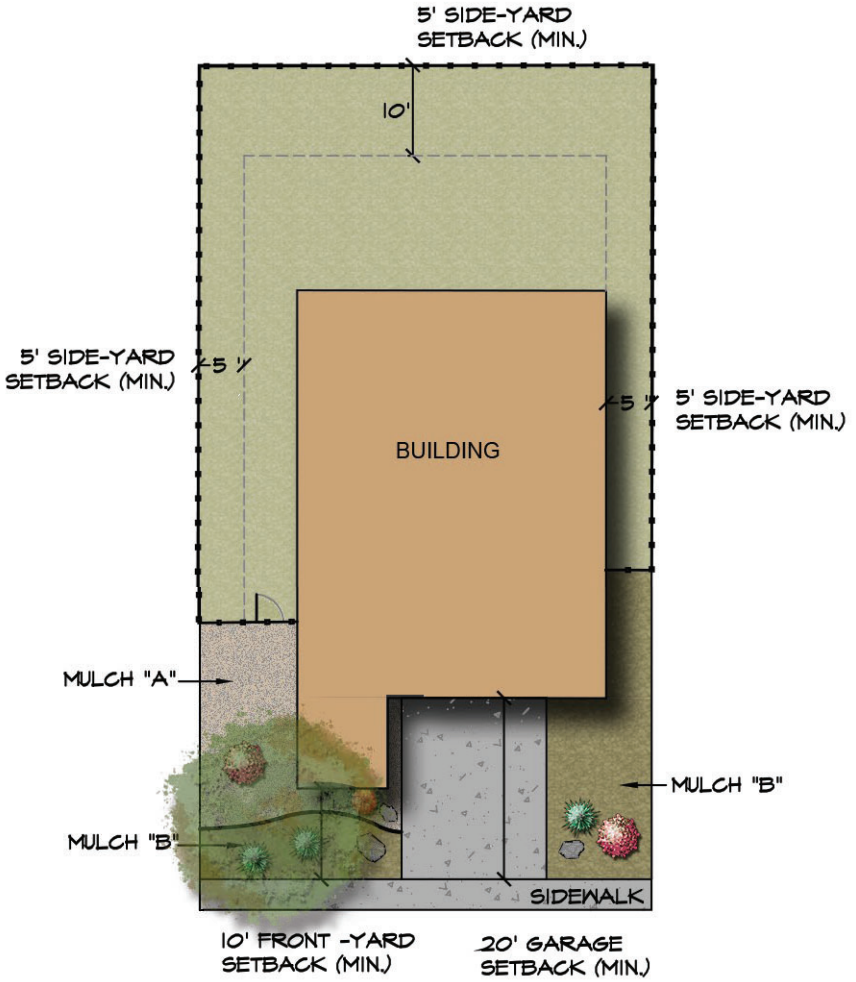

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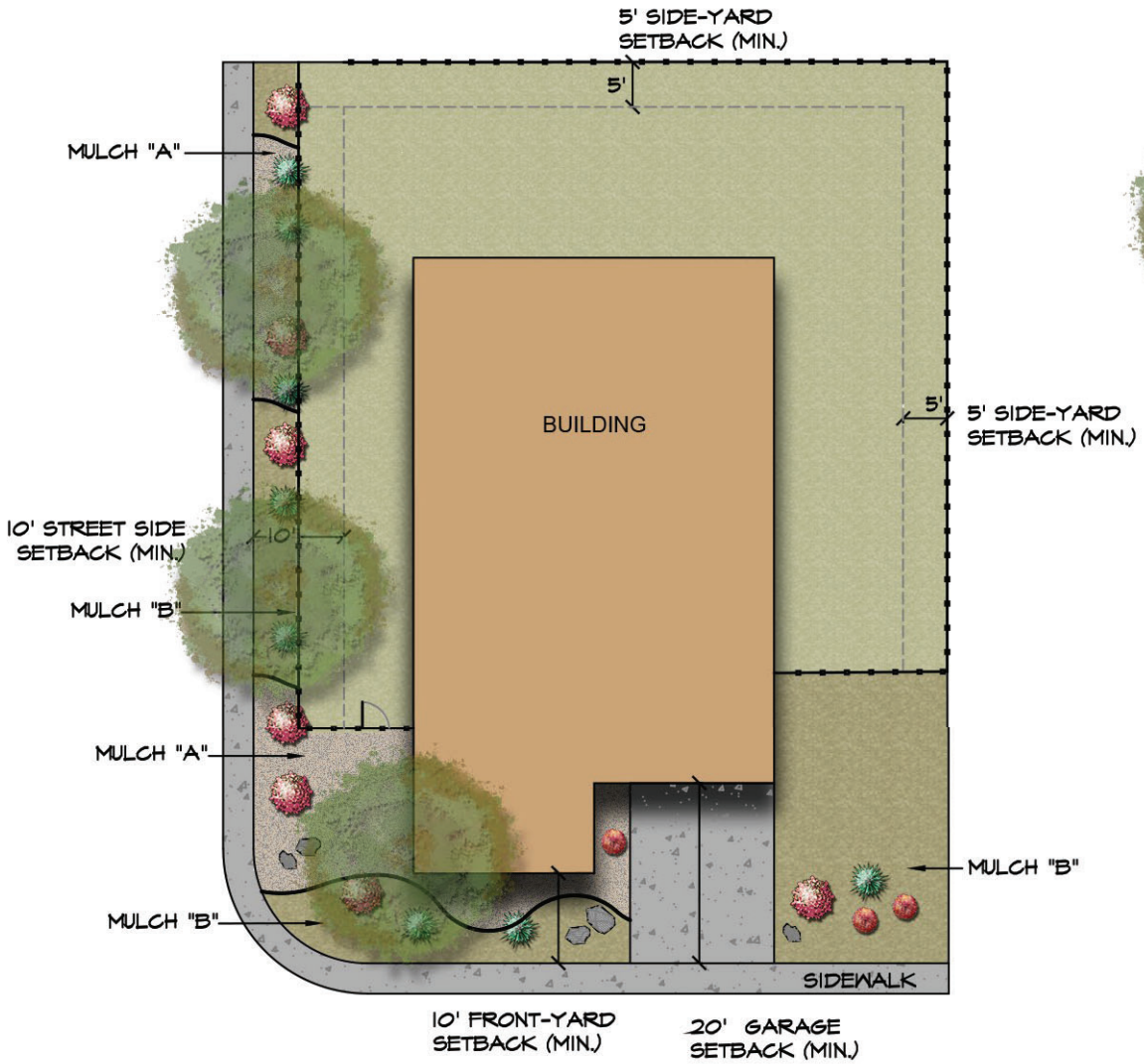

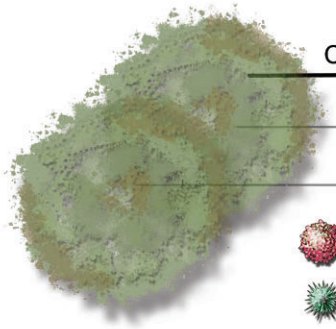

CORNER LOT 6,000 SF LEGEND

- FRONT YARD TREES
- SIDE STRIP TREES
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- GROUNDCOVER/PERENNIALS
- LANDSCAPE BOULDERS
- LANDSCAPE MULCH
- BACKYARD (TO BE LANDSCAPED BY HOMEOWNER)
- FENCE LINE
- PROPERTY LINE

CORNER LOT FRONT YARD LANDSCAPE

- (1) SIDE STRIP TREES @ 30' O.C.
- (1) FRONT YARD TREE
- (6) SHRUBS PER (1) TREE - PROVIDE A MIX OF THE FOLLOWING:
  - 5-GAL. DECIDUOUS SHRUBS
  - 5-GAL. EVERGREEN SHRUBS
  - 1-GAL. PERENNIAL OR GROUNDCOVER
- TURF - 50% MAX. COVERAGE (OPTIONAL)
- LANDSCAPE BOULDERS
- A MINIMUM OF TWO MULCH TYPES (LAVA ROCK, RIVER ROCK, D.G., BARK MULCH)

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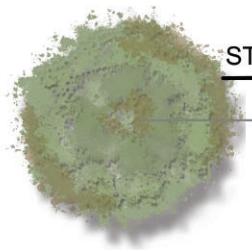
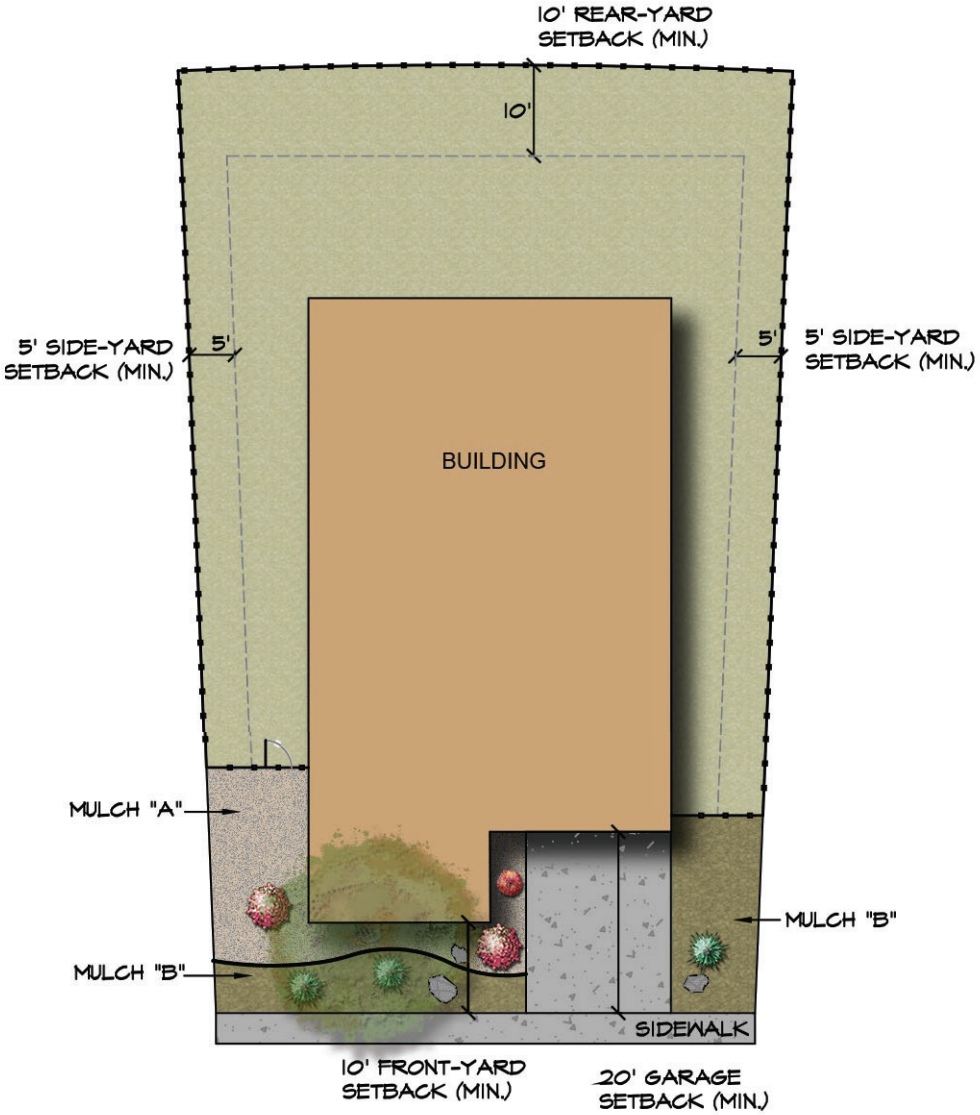


STANDARD LOT 6,000 SF LEGEND

- FRONT YARD TREES
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- GROUNDCOVER/PERENNIALS
- LANDSCAPE BOULDERS
- LANDSCAPE MULCH
- BACKYARD (TO BE LANDSCAPED BY HOMEOWNER)
- FENCE LINE
- PROPERTY LINE

STANDARD LOT FRONT YARD LANDSCAPE

- (1) FRONT YARD TREE
- (6) SHRUBS PER (1) TREE - PROVIDE A MIX OF THE FOLLOWING:
  - 5-GAL. DECIDUOUS SHRUBS
  - 5-GAL. EVERGREEN SHRUBS
  - 1-GAL. PERENNIAL OR GROUNDCOVER
- TURF - 50% MAX. COVERAGE (OPTIONAL)
- LANDSCAPE BOULDERS
- A MINIMUM OF TWO MULCH TYPES (LAVA ROCK, RIVER ROCK, D.G., BARK MULCH)



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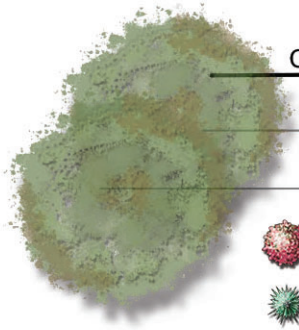

CORNER LOT 9,000 SF LEGEND

- FRONT YARD TREES
- SIDE STRIP TREES
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- GROUNDCOVER/PERENNIALS
- LANDSCAPE BOULDERS
- LANDSCAPE MULCH
- BACKYARD (TO BE LANDSCAPED BY HOMEOWNER)
- FENCE LINE
- PROPERTY LINE

CORNER LOT FRONT YARD LANDSCAPE

- (1) SIDE STRIP TREES @ 30' O.C.
- (1) FRONT YARD TREE PER 50' FRONTAGE
- (6) SHRUBS PER (1) TREE - PROVIDE A MIX OF THE FOLLOWING:
  - 5-GAL. DECIDUOUS SHRUBS
  - 5-GAL. EVERGREEN SHRUBS
  - 1-GAL. PERENNIAL OR GROUNDCOVER
- TURF - 50% MAX. COVERAGE (OPTIONAL)
- LANDSCAPE BOULDERS
- A MINIMUM OF TWO MULCH TYPES (LAVA ROCK, RIVER ROCK, D.G., BARK MULCH)

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STANDARD LOT 9,000 SF LEGEND

- FRONT YARD TREES
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- GROUNDCOVER/PERENNIALS
- LANDSCAPE BOULDERS
- LANDSCAPE MULCH
- BACKYARD (TO BE LANDSCAPED BY HOMEOWNER)
- FENCE LINE
- PROPERTY LINE

STANDARD LOT FRONT YARD LANDSCAPE

- (1) FRONT YARD TREE PER 50' FRONTAGE
- (6) SHRUBS PER (1) TREE - PROVIDE A MIX OF THE FOLLOWING:
  - 5-GAL. DECIDUOUS SHRUBS
  - 5-GAL. EVERGREEN SHRUBS
  - 1-GAL. PERENNIAL OR GROUNDCOVER
- TURF - 50% MAX. COVERAGE (OPTIONAL)
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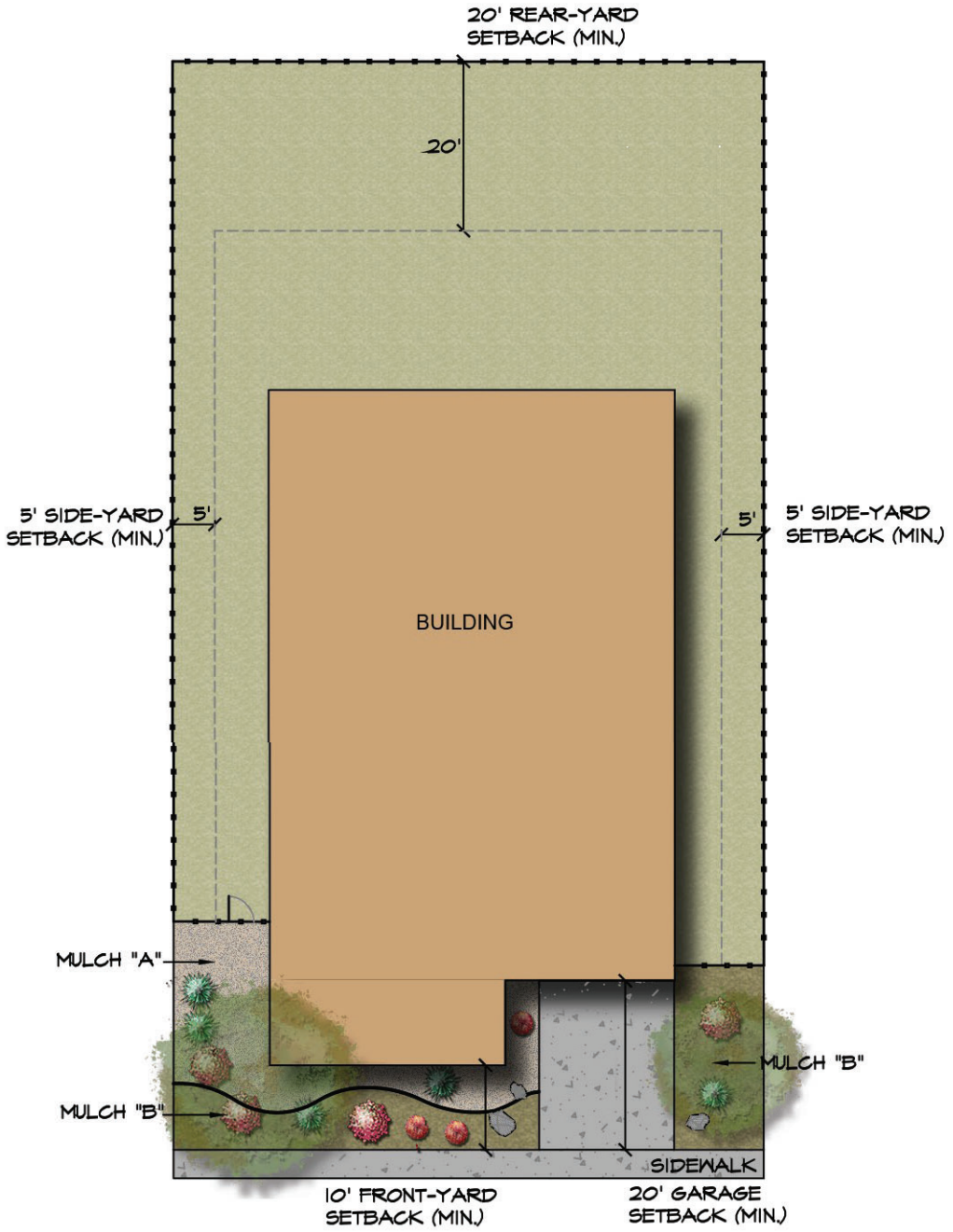

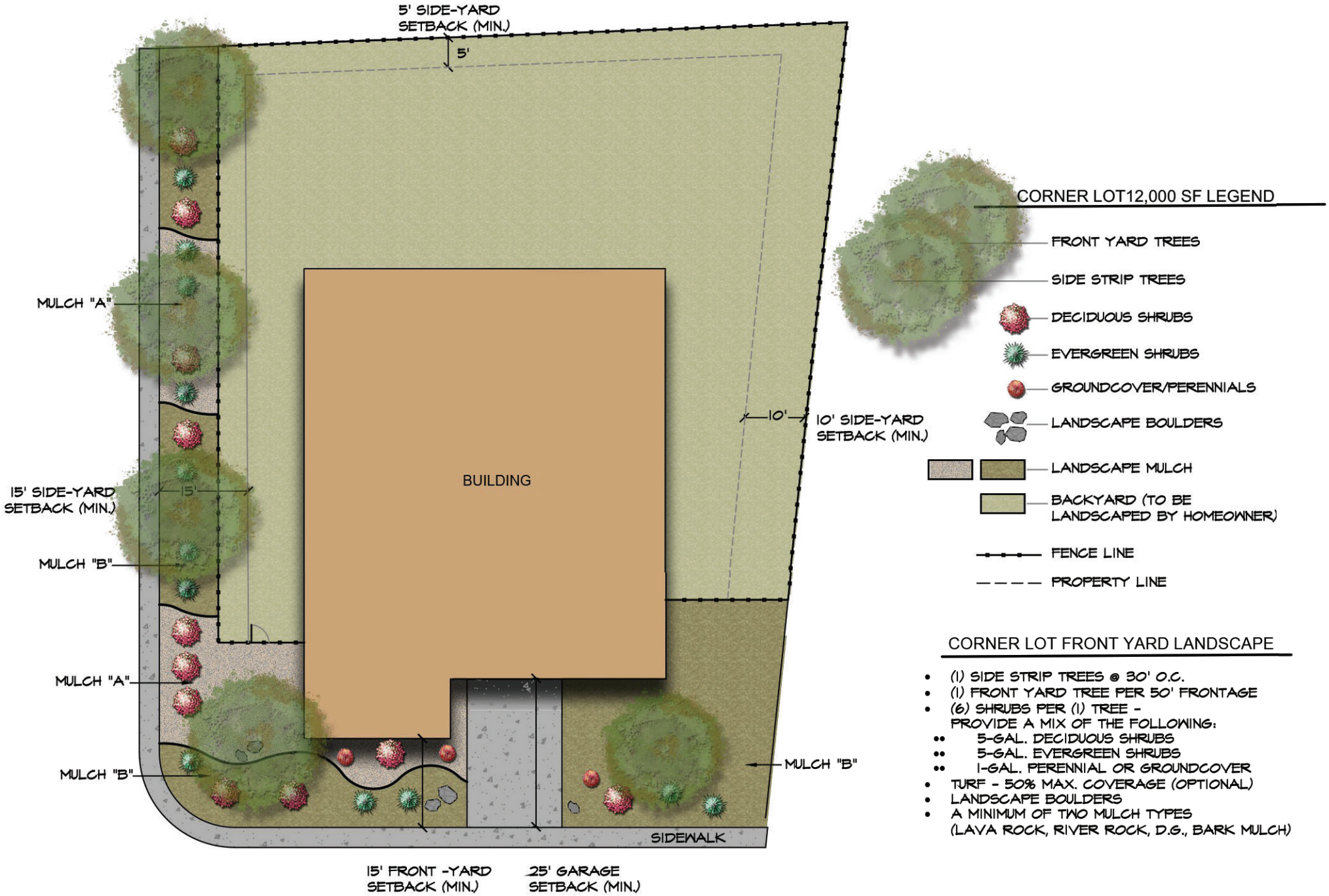

CORNER LOT FRONT YARD LANDSCAPE

- (1) SIDE STRIP TREES @ 30' O.C.
- (1) FRONT YARD TREE PER 50' FRONTAGE
- (6) SHRUBS PER (1) TREE -
  PROVIDE A MIX OF THE FOLLOWING:
  - 5-GAL. DECIDUOUS SHRUBS
  - 5-GAL. EVERGREEN SHRUBS
  - 1-GAL. PERENNIAL OR GROUNDCOVER
- TURF - 50% MAX. COVERAGE (OPTIONAL)
- LANDSCAPE BOULDERS
- A MINIMUM OF TWO MULCH TYPES
  (LAVA ROCK, RIVER ROCK, D.G., BARK MULCH)

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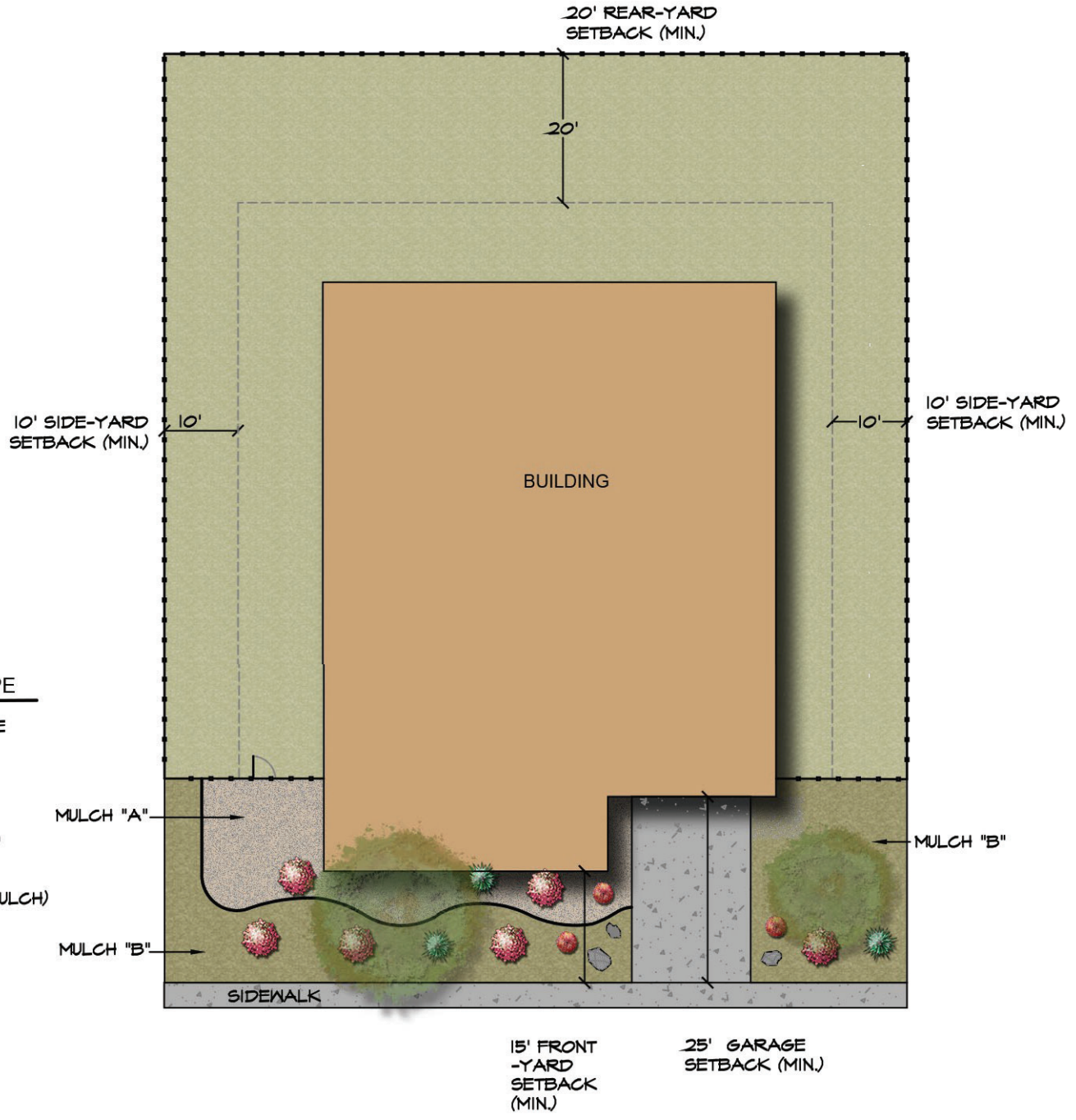
STANDARD LOT 12,000 SF LEGEND

- FRONT YARD TREES
- DECIDUOUS SHRUBS
- EVERGREEN SHRUBS
- GROUNDCOVER/PERENNIALS
- LANDSCAPE BOULDERS
- LANDSCAPE MULCH
- BACKYARD (TO BE LANDSCAPED BY HOMEOWNER)
- FENCE LINE
- PROPERTY LINE

STANDARD LOT FRONT YARD LANDSCAPE

- (1) FRONT YARD TREE PER 50' FRONTAGE
- (6) SHRUBS PER (1) TREE - PROVIDE A MIX OF THE FOLLOWING:
  - 5-GAL. DECIDUOUS SHRUBS
  - 5-GAL. EVERGREEN SHRUBS
  - 1-GAL. PERENNIAL OR GROUNDCOVER
- TURF - 50% MAX. COVERAGE (OPTIONAL)
- LANDSCAPE BOULDERS
- A MINIMUM OF TWO MULCH TYPES (LAVA ROCK, RIVER ROCK, D.G., BARK MULCH)



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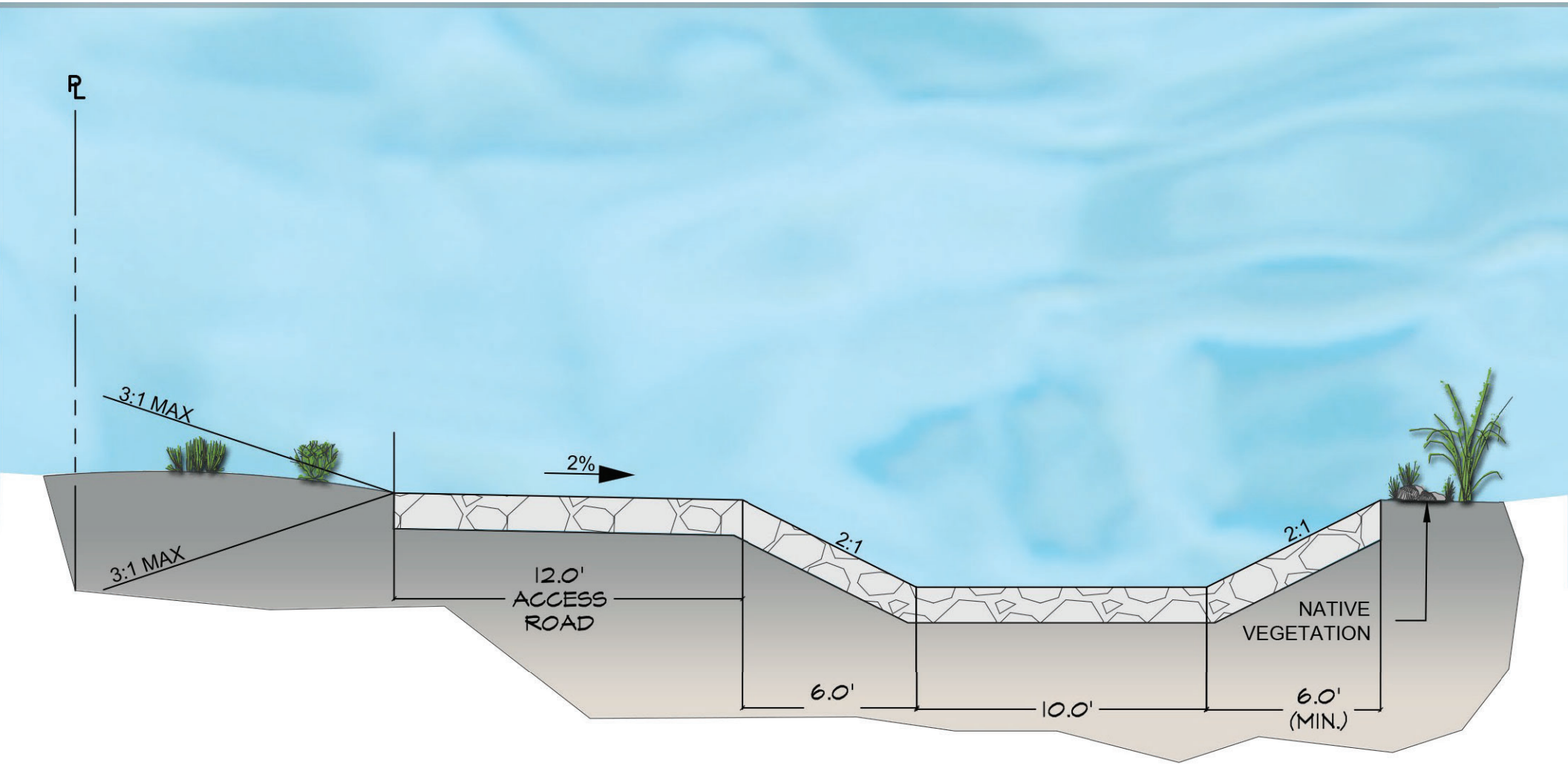

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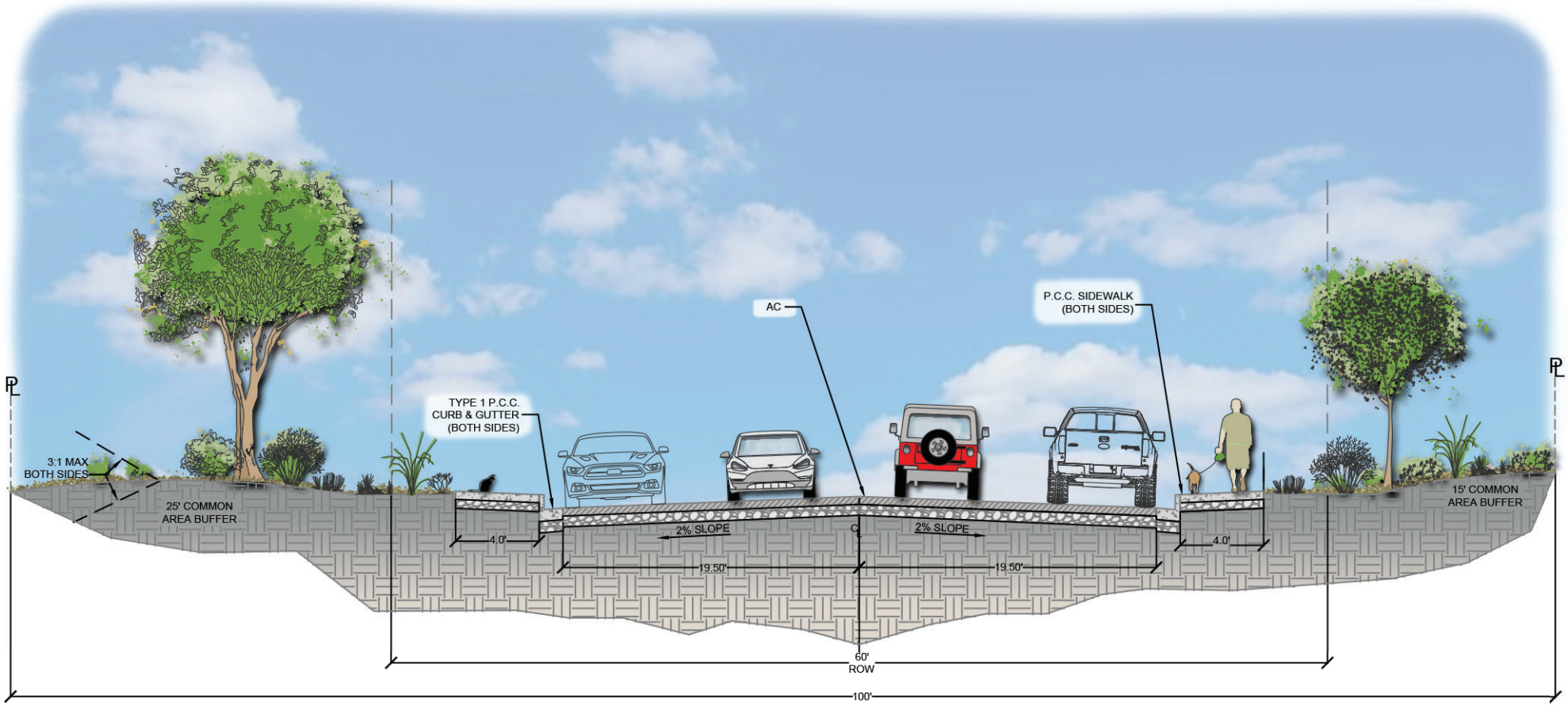
N.T.S.



COLLECTOR STREET SECTION
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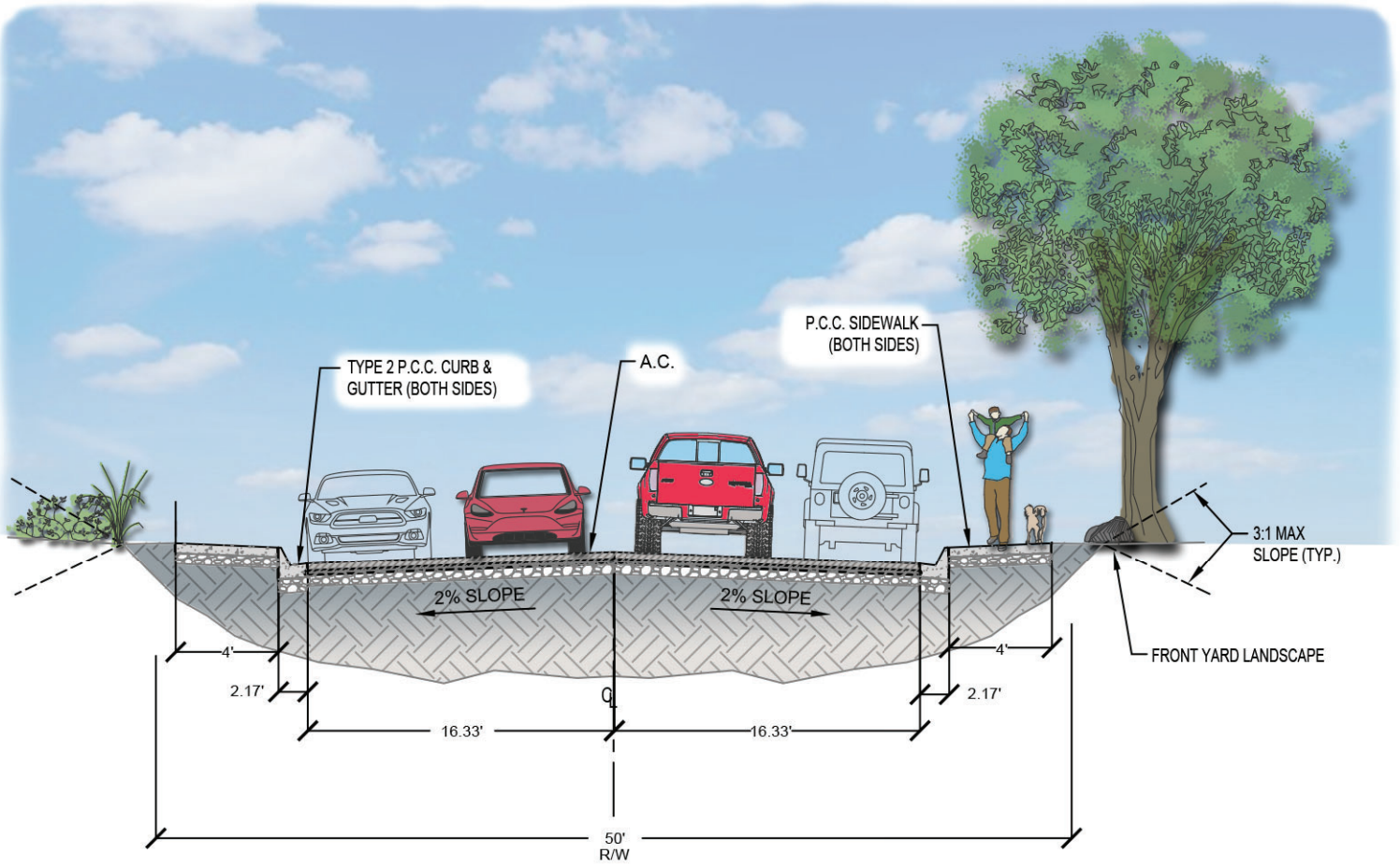
60' RIGHT-OF-WAY
NTS



LOCAL STREET SECTION
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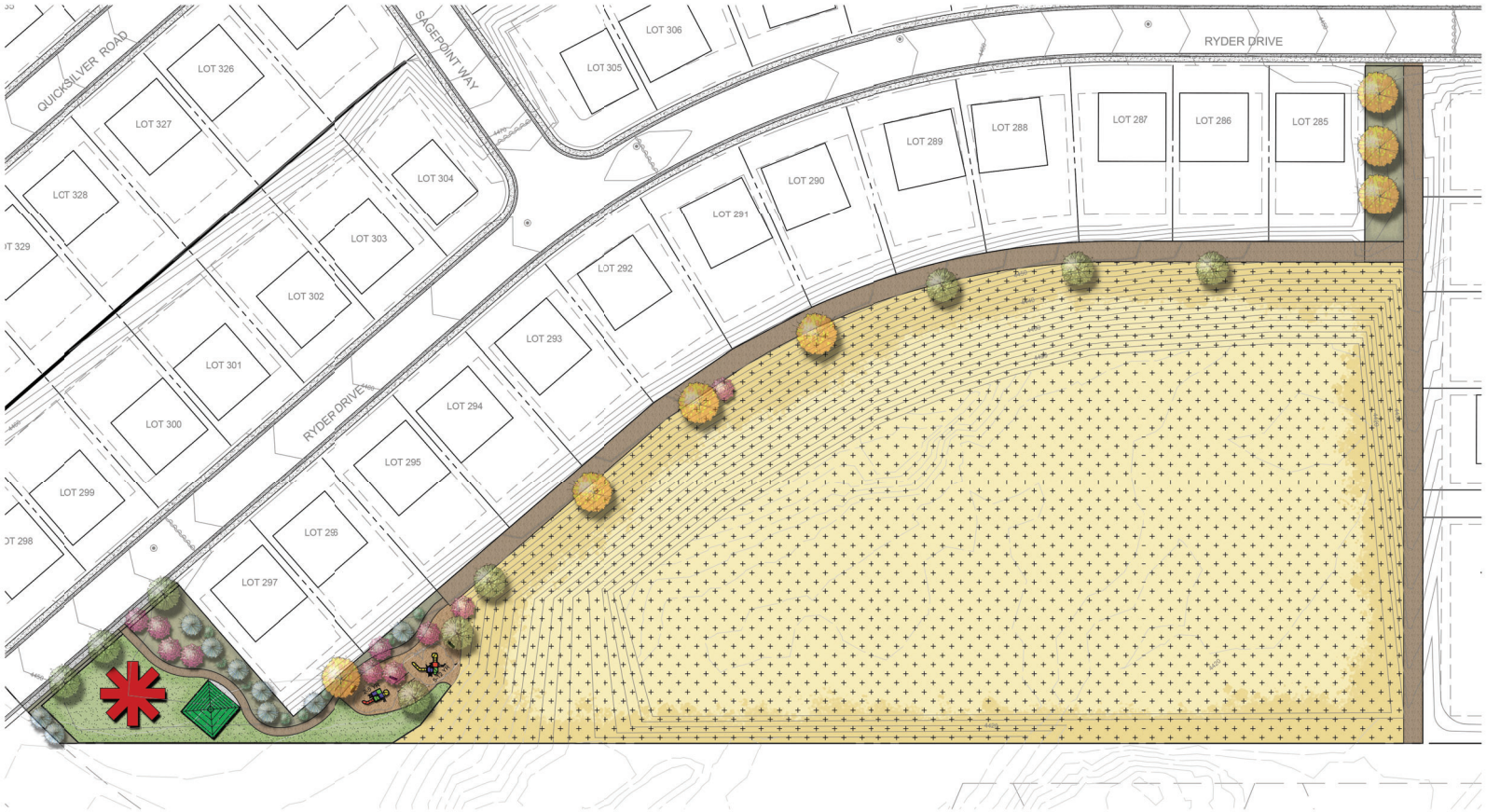
(NTS)



PLANT LEGEND

SYMBOL	DESCRIPTION
	ACCENT TREES
	DECIDUOUS SHADE TREES
	EVERGREEN TREES
	LANDSCAPE AREA
	PLAYGROUND AREA
	LAWN AREA
	TRAILS
	DETENTION BASIN

CONCEPTUAL AMENITY LIST

DEVELOPER TO CHOOSE THE NUMBER OF AMENITIES IN CORRELATION WITH PARK SIZE PER TRADITIONS NORTH PUD STANDARDS.

- BENCH SEATING AREA
- BIKE PARKING/REPAIR STATION
- DOG PARK
  - DOG STATION
- FITNESS CENTER/STATIONS
- LAWN PLAY AREA
- PLAYGROUNDS
  - AGES 2-5, 5-12, & 13+
- PICNIC SHELTER
- REGIONAL TRAIL CONNECTOR
- RESTROOM
- WALKING PATH

NEIGHBORHOOD PARK #1

Know what's below. Call before you dig.

0' 40' 80' 120'

Scale in Feet

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the landscape architecture studio
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www.lastudionevada.com

Neighborhood Park #1
TRADITIONS NORTH
Traditions North, LLC
Lyon Co. Nevada

Dayton

No.	Revision Date

LA No. 104-501-08-25
Designed: AM
Drawn: KRE
Checked: MAC
Date: 11/7/2025

PROGRESS SET
Not for Construction

Sheet L1 of 5

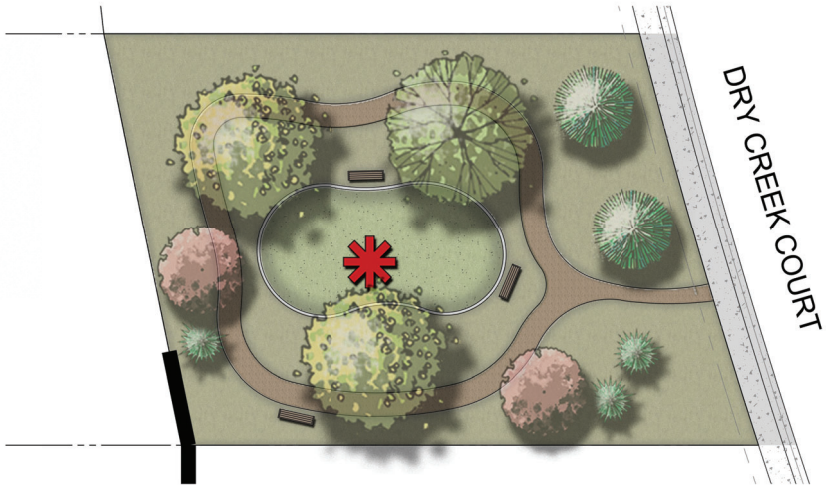
PLANT LEGEND

SYMBOL	DESCRIPTION
	ACCENT TREES
	DECIDUOUS SHADE TREES
	EVERGREEN TREES
	D.G. AREA
	LANDSCAPE AREA
	LAWN AREA

CONCEPTUAL AMENITY LIST

DEVELOPER TO CHOOSE THE NUMBER OF AMENITIES IN CORRELATION WITH PARK SIZE PER TRADITIONS NORTH.

- BENCH SEATING AREA
- BIKE PARKING/REPAIR STATION
- DOG PARK
  - DOG STATION
- FITNESS CENTER/STATIONS
- LAWN PLAY AREA
- PICNIC SHELTER
- RESTROOM
- WALKING PATH



POCKET PARK #2

811 Know what's below. Call before you dig.

0' 10' 20' 30'

Scale in Feet

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Neighborhood Park #2
TRADITIONS NORTH
Traditions North, LLC
Lyon Co. Nevada
Dayton

No.	Revision Date

LA No. 104-501-08-25
Designed: AR
Drawn: KHK
Checked: RPH
Date: 11/7/2025

PROGRESS SET
Not for Construction

Sheet L2 of 5

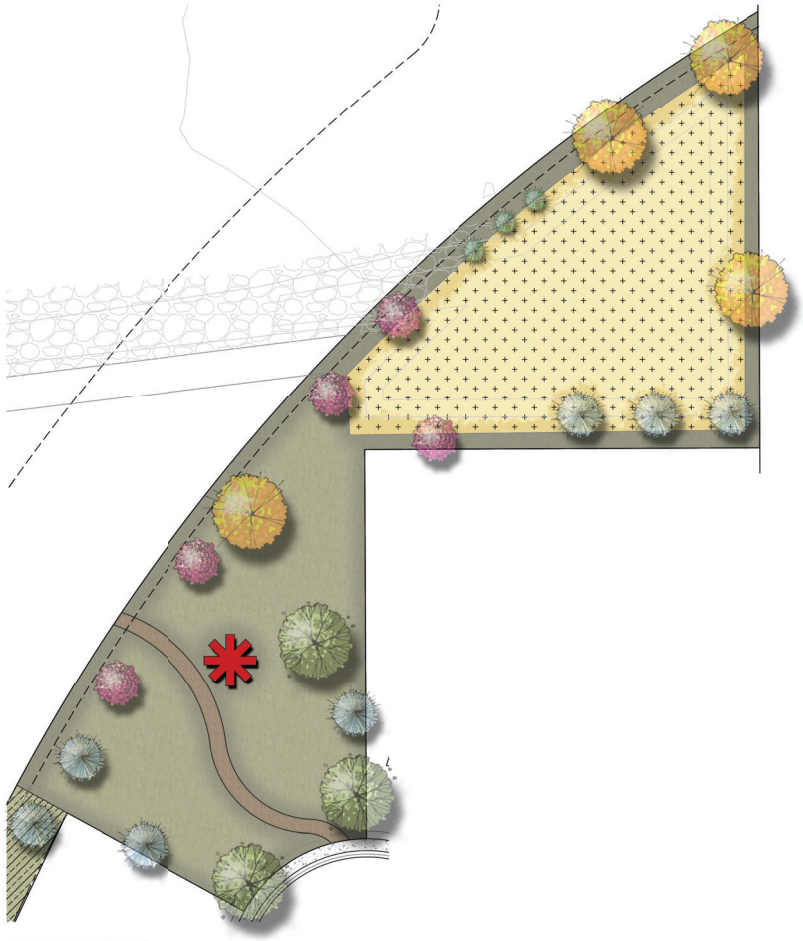
PLANT LEGEND

SYMBOL	DESCRIPTION
	ACCENT TREES
	DECIDUOUS SHADE TREES
	EVERGREEN TREES
	PARKWAY STRIP LANDSCAPE
	LANDSCAPE AREA
	DETENTION AREA

CONCEPTUAL AMENITY LIST

DEVELOPER TO CHOOSE THE NUMBER OF AMENITIES IN CORRELATION WITH PARK SIZE PER TRADITIONS NORTH.

- BENCH SEATING AREA
- BIKE PARKING/REPAIR STATION
- DOG PARK
  - DOG STATION
- FITNESS CENTER/STATIONS
- LAWN PLAY AREA
- PICNIC SHELTER
- RESTROOM
- WALKING PATH



POCKET PARK #3

811 Know what's below. Call before you dig.

0' 20' 40' 60'

Scale in Feet

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Neighborhood Park #3
TRADITIONS NORTH
Traditions North, LLC
Lyon Co. Nevada
Dayton

No.	Revision Date

LA No. 104-501-08-25
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Drawn: KHK
Checked: RPH
Date: 11/7/2025

PROGRESS SET
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Sheet L3 of 5

PLANT LEGEND

SYMBOL	DESCRIPTION
	ACCENT TREES
	DECIDUOUS SHADE TREES
	EVERGREEN TREES
	D.G. AREA
	LANDSCAPE AREA
	LAWN AREA

CONCEPTUAL AMENITY LIST

DEVELOPER TO CHOOSE THE NUMBER OF AMENITIES IN CORRELATION WITH PARK SIZE PER TRADITIONS NORTH.

- BENCH SEATING AREA
- BIKE PARKING/REPAIR STATION
- DOG PARK
  - DOG STATION
- FITNESS CENTER/STATIONS
- LAWN PLAY AREA
- PICNIC SHELTER
- RESTROOM
- WALKING PATH

811 Know what's below. Call before you dig.

0' 10' 20' 30'

Scale in Feet

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Neighborhood Park #4
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Lyon Co. Nevada
Dayton

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Checked: RPH
Date: 11/11/2025

PROGRESS SET
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Sheet L4 of 5

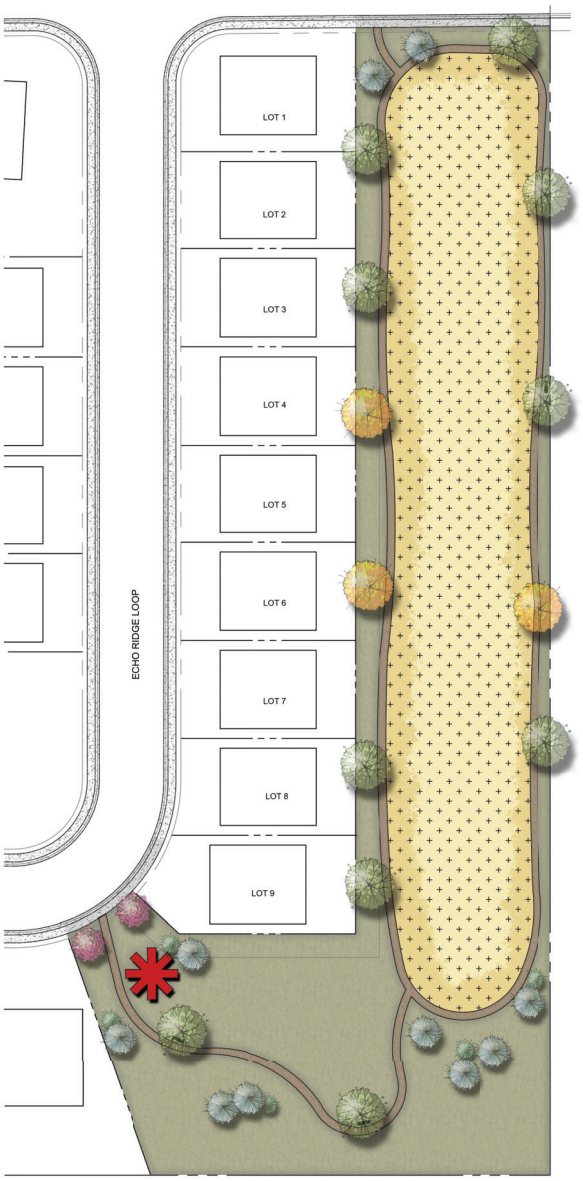
PLANT LEGEND

SYMBOL	DESCRIPTION
	ACCENT TREES
	DECIDUOUS SHADE TREES
	EVERGREEN TREES
	LANDSCAPE AREA
	DETENTION AREA

CONCEPTUAL AMENITY LIST

DEVELOPER TO CHOOSE THE NUMBER OF AMENITIES IN CORRELATION WITH PARK SIZE PER TRADITIONS NORTH.

- BENCH SEATING AREA
- BIKE PARKING/REPAIR STATION
- DOG PARK
  - DOG STATION
- FITNESS CENTER/STATIONS
- LAWN PLAY AREA
- PICNIC SHELTER
- RESTROOM
- WALKING PATH



POCKET PARK #5

811 Know what's below. Call before you dig.

0' 30' 60' 90'

Scale in Feet

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Neighborhood Park #5
TRADITIONS NORTH
Traditions North, LLC
Lyon Co. Nevada
Dayton

No.	Revision Date

LA No. 104-501-08-25
Designed: AR
Drawn: KHK
Checked: RPH
Date: 11/7/2025

PROGRESS SET
Not for Construction

Sheet L5 of 5

TRADITIONS NORTH

PLANNED UNIT DEVELOPMENT

Adopted March 5, 2026

Prepared for Traditions North, LLC

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Appendix C: Preliminary Drainage Report
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1.0 Executive Summary

1.1 Project Area

The Traditions North Planned Unit Development (PUD) encompasses a ±220.75-acre area in Dayton, Nevada, consisting of assessor's parcel number (APN) 016-406-07. This parcel is currently undeveloped and may be developed in the future in accordance with the PUD development standards outlined in this handbook. The Traditions North PUD is generally located north of Nevada Station Parkway and west of Enterprise Way. The project is located northeast of the Historic Sutro Tunnel.

1.2 Purpose

The purpose of this handbook is to:

1) Encourage innovations in residential development by introducing a greater variety of lot sizes to encourage variation in building typology.
2) Improve and enhance Lyon County's trail and park system by providing trails and open space that provide continuity and access to Federal public lands adjacent to the project.
3) Provide clear, consistent development standards through a design handbook that is easy for Lyon County staff and interested parties to interpret and manage.
4) Draw inspiration from Nevada's frontier heritage by incorporating authentic, natural textures into fencing and monumentation, creating a distinctive neighborhood identity that reflects the region's rugged character and historic mining and farming roots.

1.3 Land Use Changes

Land use changes in this PUD include a reconfiguration of the existing residential land uses, along with increasing the amount of open space. These changes are designed to be a logical extension of the adjacent land use, including:

- Reconfiguration of the residential uses into a more logical land use pattern.
- A trailhead on the west side of the development to enhance connectivity and access to outdoor recreation opportunities.

Figure 1: Property Location

2.0 Administration

The Traditions North PUD describes in general terms when, where, and how development will occur. It establishes base quantitative standards and design parameters for each individual project built within the PUD and is intended to offer design flexibility while maintaining minimum standards, integrating with existing Lyon County land development regulations.

2.1 Open Space Maintenance

Prior to the recordation of the first final map, a homeowner's association, landscape maintenance district or association, or similar entity shall be established.

2.2 Individual Project Approvals

Individual projects within The PUD shall be subject to review and approval as outlined in the Lyon County Land Use and Development Code (LCC), including tentative subdivision maps and administrative design reviews, etc., unless otherwise provided in this PUD handbook.

New development shall be reviewed in context with the standards and requirements of this PUD. All statutory public review requirements set forth in NRS and LCC shall remain in full effect and shall be applied to new development requests within Traditions North where applicable.

2.3 Flexibility

Sufficient flexibility shall be allowed to permit detailed planning and design at the time of actual development.

Modifications to the PUD

The standards and requirements outlined within this PUD handbook shall be used to review the planning entitlements necessary to implement the PUD. However, it is recognized that unusual or unique circumstances may arise from time to time. Any modification to these standards, land uses, densities, etc. that exceed 10% shall require the review by the Lyon County Planning Commission and approval by Lyon County Board of County Commissioners. Modifications that do not exceed 10% may be granted with the approval of the Community Development Director or his or her designee. Modifications to the PUD boundary shall be subject to the review of a PUD Amendment and the associated requirements and public review defined within LCC.

Modifications that require alterations to the internal street network can be approved administratively through the final map without an amendment to the PUD or tentative map approvals. For instance, if lot sizes of one planning area increased based on market conditions and the street network is to be reconfigured, an update to the PUD or tentative map approval would not be required.

Planning Area Modification

Planning areas may be modified/reconfigured by up to 10% (acreage) as long as the required amount of open space does not decrease and the total number of residential units does not exceed the maximum number of residential units permitted pursuant to Table 1: Land Use Table.

Maximum Number of Residential Units

The maximum number of residential units within the Traditions North PUD may not exceed 415. The Developer shall be responsible for providing a running total of units to be provided with each individual tentative map or residential project to demonstrate compliance with this standard.

2.4 Amendments

Amendments to this PUD Handbook may be initiated by the property owner, developer, or their authorized representative.

2.5 Conflicts

In the event of a conflict between this PUD Handbook and LCC, these standards shall govern development of the Traditions North PUD. When a specific standard or development requirement is not addressed by the PUD, the development will be reviewed subject to state statutes and Lyon County codes and regulations in effect at the time of application, as amended.

2.6 Appeals

The applicant and developer shall have all rights to appeal decisions pursuant to state statutes and Lyon County codes and regulations, as amended.

3.0 Land Use Plan

Traditions North PUD aims to enhance community design and compatibility by offering a more desirable, balanced, and well-integrated mix of residential uses and open space. The open space area will provide active and passive recreation opportunities and provide access to the Sutro Trail.

The planning areas are shown on Figure 2: Land Use Plan. This plan reflects the overall goals and intent of the Traditions North PUD, emphasizing connectivity, compatibility, and better quality of life.

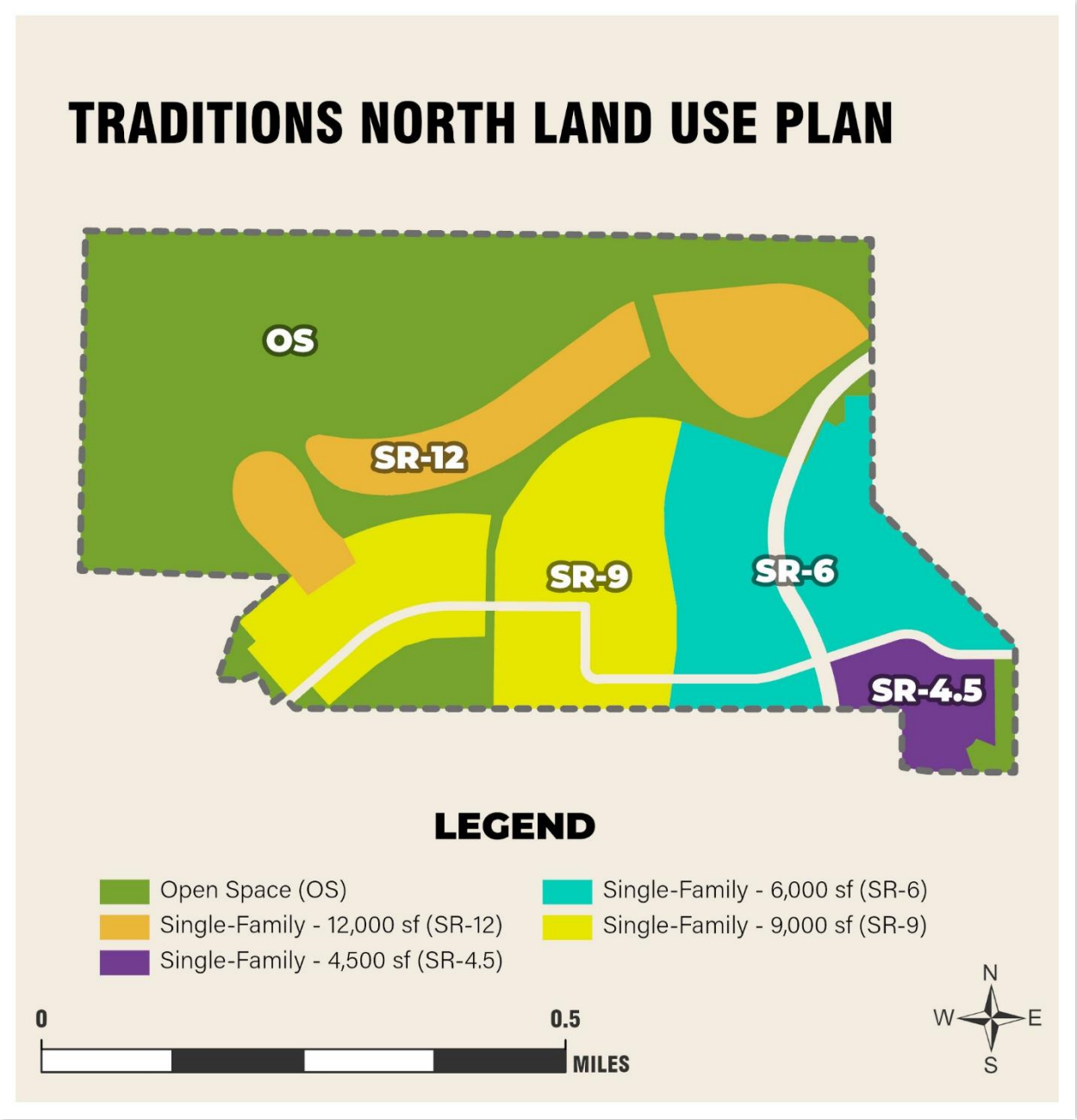
3.1 Planning Areas

Individual projects within each planning area will be reviewed as part of separate entitlement applications as needed, i.e. Tentative Subdivision Maps, allowing for flexibility in addressing market conditions while providing for consistency with this PUD. Planning areas may be modified/reconfigured by up to 10% (based on acreage and number of units) so long as the minimum amount of open space does not change, and the number of residential units does not exceed the maximum number of residential units permitted within the PUD.

Table 1: Land Use Table

PLANNING AREA	LAND AREA	ALLOWED UNITS
Single-Family Residential 4,500 SF	±6.9 acres	52
Single-Family Residential 6,000 SF	±26.1 acres	147
Single-Family Residential 9,000 SF	±34.5 acres	147
Single-Family Residential 12,000 SF	±20.5 acres	69
Trails and Open Space	90 acres minimum	-
Backbone Roads/ROW	Varies with final design	-
TOTAL	**±220.75**	**415**

Figure 2: Land Use Plan



Single-Family Residential – 4,500 SF (SR-4.5)

The Single-Family Residential 4,500 sf planning area supports smaller single-family lots with a minimum size of 4,500 square feet, at an effective gross density of 7.53 units per acre. This medium-density neighborhood adds to the overall density mix of the development. Within the PUD, the 4,500 sf lots are thoughtfully located along the southeast corner of the property boundary to provide a gradual transition to larger residential lots to the northwest.

The SR-4.5 planning area is intended to be consistent with the Neighborhood Residential, 4,500 sf min. (NR) zone, with respect to land use and design standards. Uses allowed within the SR-4.5 planning area include single-family, detached and attached residential, duplexes, and cottage housing.

Table 2: SR-4.5 Development Standards

Lot Requirements

Lot Size	4,500 sq ft
Lot Street Frontage Width	30 ft
Minimum Lot Width	40 ft/ 50 ft for corner lots

Primary Building Setbacks

Front & Side Street	10 ft
Front-facing Garage Setback	20 ft
Rear	10 ft
Side	5 ft

Site and Building Requirements

Building Height	35 ft
Parking Requirements	Residential: 2 per dwelling unit (tandem allowed)
Miscellaneous Requirements	Other than the development standards listed above, development shall comply with the regulations of LCC 15.312.06 – Neighborhood Residential, 4,500 sf min, or in compliance with standards in place at the time of application.

Single-Family Residential – 6,000 SF (SR-6)

The Single-Family Residential 6,000 sf planning area accommodates single-family homes on lots with a minimum size of 6,000 square feet, at an effective gross density of 5.63 units per acre. Within the PUD, the 6,000 sf lots are situated between the larger 9,000 sf lots and the smaller 4,500 sf lots, serving as a transitional land use that provides a gradual shift in residential density. This placement supports the Master Plan's Suburban Character District goals by ensuring a compatible and well-integrated neighborhood layout.

The SR-6 planning area allows for detached single-family residential uses.

Table 3: SR-6 Development Standards

Lot Requirements

Lot Size	6,000 sq ft
Lot Street Frontage Width	30 ft
Minimum Lot Width	50 ft/ 60 ft for corner lots

Primary Building Setbacks

Front & Side Street	10 ft
Front-facing Garage Setback	20 ft
Rear	10 ft
Side	5 ft

Site and Building Requirements

Building Height	35 ft
Parking Requirements	Residential: 2 per dwelling unit (tandem allowed)
Miscellaneous Requirements	Other than the development standards listed above, development shall comply with the regulations of LCC 15.312.06 – Neighborhood Residential, 4,500 sf min, or in compliance with standards in place at the time of application.

Single-Family Residential – 9,000 SF (SR-9)

The Single-Family Residential 9,000 sf planning area accommodates single-family homes on lots with a minimum size of 9,000 square feet, at an effective gross density of 4.26 units per acre. This planning area has multiple points of access to trails and parks integrated into the development.

Within the PUD, the 9,000 sf lots are situated between the larger 12,000 sf lots and the smaller 6,000 sf lots, serving as a transitional land use that provides a gradual shift in residential density. This placement supports the Master Plan's Suburban Character District goals by ensuring a compatible and well-integrated neighborhood layout.

The SR-9 planning area allows for detached single-family residential uses.

Table 4: SR-9 Development Standards

Lot Requirements

Lot Size	9,000 square feet
Lot Street Frontage Width	40 ft

Primary Building Setbacks

Front & Side Street	10 ft
Front-facing Garage Setback	20 ft
Rear	20 ft to primary building (12 ft to attached shade structure)
Side	5 ft

Site and Building Requirements

Building Height	35 ft
Parking Requirements	Residential: 2 per dwelling unit (tandem allowed)
Miscellaneous Requirements	Other than the development standards listed above, development shall comply with the regulations of LCC 15.312.05 – Suburban Residential, 9,000 sf min, or in compliance with standards in place at the time of application.

Single-Family Residential – 12,000 SF (SR-12)

The Single-Family Residential 12,000 sf planning area accommodates single-family homes on lots with a minimum size of 12,000 square feet, at an effective gross density of 3.37 units per acre. Within the PUD, the 12,000 sf lots are located adjacent to the 9,000 sf lots and serve as the lowest density single-family housing within the boundary of the PUD. This placement supports the Master Plan's Suburban Character District goals by ensuring a compatible and well-integrated neighborhood layout.

The SR-12 planning area allows for detached single-family residential uses.

Table 5: SR-12 Development Standards

Lot Requirements

Lot Size	12,000 sq ft
Lot Street Frontage Width	60 ft (30 ft if located on a cul-de-sac bulb)

Primary Building Setbacks

Front & Side Street	15 ft
Front-facing Garage Setback	25 ft
Rear	20 ft to primary building (12 ft to attached shade structure)
Side	10 ft

Site and Building Requirements

Building Height	35 ft
Parking Requirements	Residential: 2 per dwelling unit (tandem allowed)
Miscellaneous Requirements	Other than the development standards listed above, development shall comply with the regulations of LCC 15.312.04 – Suburban Residential, 12,000 sf min, or in compliance with standards in place at the time of application.

Open Space (OS)

The Open Space planning area is a minimum of 90 acres and will be integrated throughout the site, exceeding the 20% minimum open space requirement. The open space will provide active and passive recreational amenities that will promote physical activity and interaction among residents within the development. Additionally, a trailhead will be incorporated along the western property boundary, enhancing connectivity and access to outdoor recreation opportunities. Amenities will improve the comfort and use of open space and encourage a sense of community and socialization.

The OS planning area is to remain largely undisturbed but acceptable uses and development include trails, passive and active recreation, equestrian facilities, community gardens, hydraulic features, roadways, and other improvements in support of such uses.

Although a minimum of 90 acres is designated as Open Space land area, additional common/open space will be provided throughout the PUD in other land use designations that will count towards the total common area/open space acreage. In addition to this, 10 acres of the property will be donated to the benefit of the Friends of Sutro Tunnel Charity in support of their preservation work for the Sutro Tunnel historical site.

Open Space areas will be developed in accordance with the following standards:

- Minimum of one amenity for each 1,500 linear feet of trail. Amenities may be grouped together if the total number of amenities is based on the length of the associated trail.
- Split-rail fencing may serve as a decorative or functional boundary of open space areas

4.0 Parks and Trails

The PUD envisions a cohesive community with active and passive recreation amenities that contain a trail system for pedestrians.

Figure 3: Master Parks and Trails Plan

4.1 Neighborhood Park

The neighborhood park is proposed on the southern portion of the development. To provide for a variety of active and passive recreational opportunities, the neighborhood park will include a mix of amenities. Amenities may include but are not limited to:

- Benches/seating areas
- Bike parking/Repair Station
- Dog park
- Fitness equipment
- Picnic shelter
- Lawn play area
- Playground/Tot lot
- Litter receptacles

The neighborhood park will include walking paths to significant amenities and connectivity to neighborhoods. The park will also include a connection to the regional trail system.

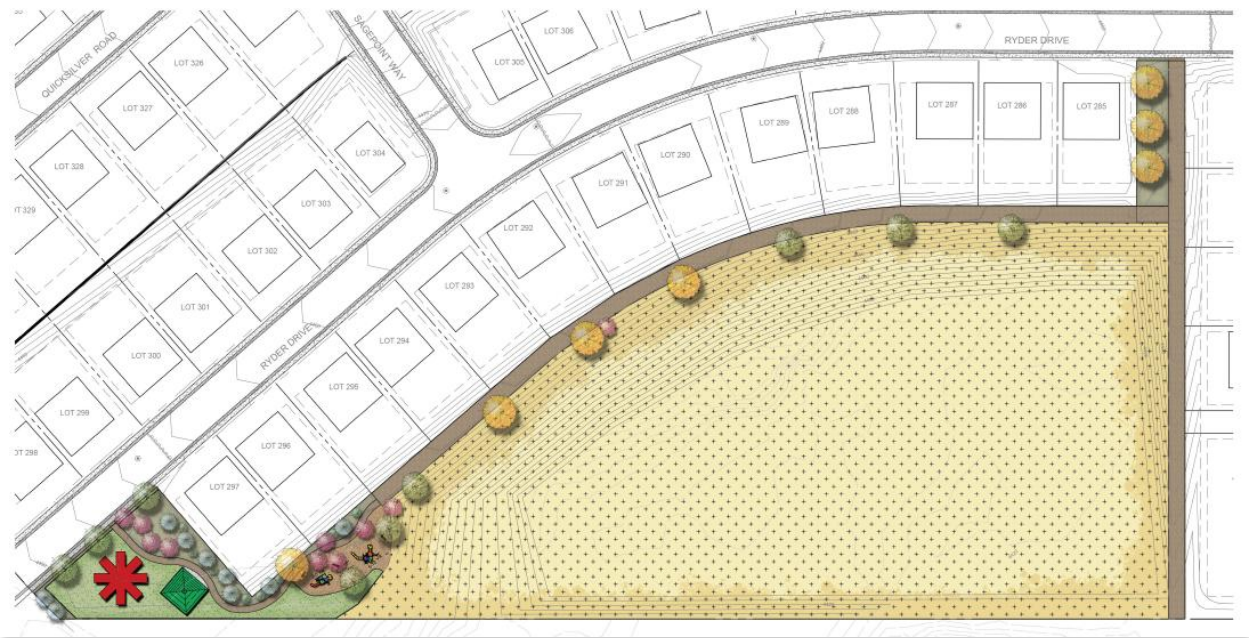
The Neighborhood park will be fully improved by the developer of each residential development, with grading, landscaping, installation of irrigation systems, utilities, and park amenities where applicable. Maintenance will be provided by the Homeowners Association, Landscape Maintenance Association, or similar entity as approved by Lyon County.

Neighborhood Park Standards

The park is to be constructed prior to obtaining the Certificate of Occupancy for the 150th unit within the project area. The Neighborhood Park shall meet the following standards:

- Minimum of 5 acres in size (including drainage facilities)
- Provide a bike rack with a minimum of five bicycle parking spaces at each entrance to the park
- Minimum of three amenities
- A minimum 4-foot walking path with access to the regional trail system
- Split-rail fencing can serve as a decorative or functional boundary within park spaces

Figure 4: Conceptual Neighborhood Park Design



4.2 Pocket Parks

Several pocket parks are proposed throughout the development and will have amenities to provide for the needs of immediate residences. Typical amenities may include but are not limited to:

- Bench/seating areas
- Fitness stations
- Lawn play area
- Playground/Tot lot
- Picnic areas
- Walking paths

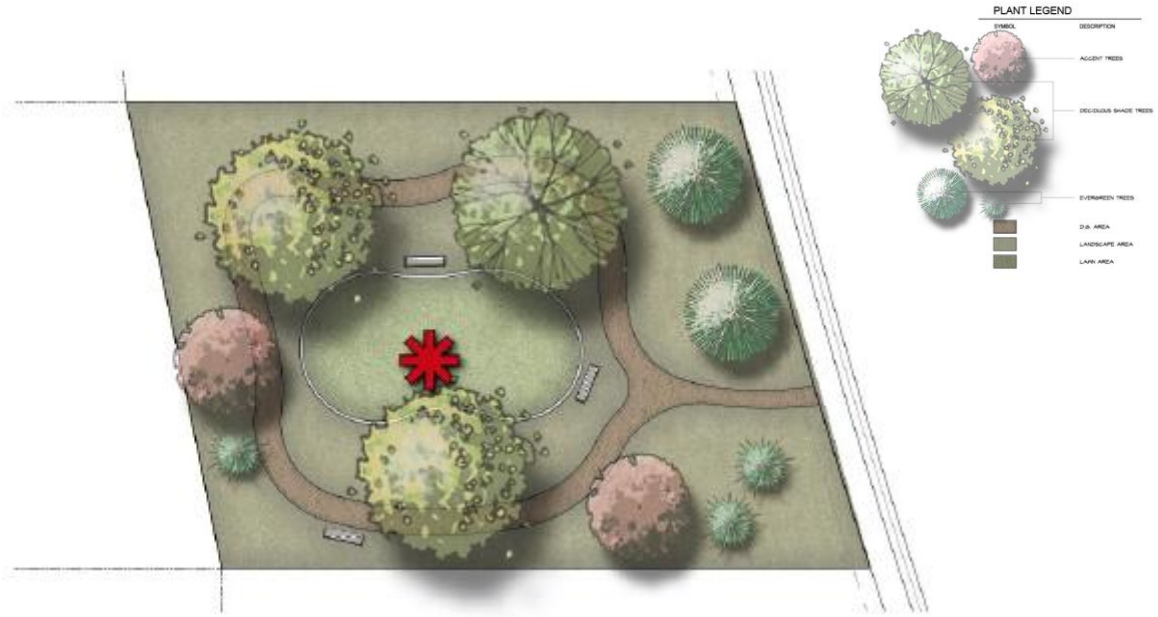
Pocket Park Standards

Pocket parks shall be constructed in accordance with the schedule in Section 4.3 of this handbook. Pocket parks shall meet the following standards:

- A minimum of four pocket parks shall be provided
- Minimum of 300 sq. ft. in size

- Minimum of two amenities
- Split-rail fencing can serve as a decorative or functional boundary within park spaces

Figure 5: Conceptual Pocket Park



4.3 Park Construction Phasing

All parks shall be constructed in accordance with the following milestones. Milestones will be considered reached based on the issuance of certificates of occupancy for the following units:

- **Pocket Park 1:** 90th unit
- **Neighborhood Park:** 150th unit
- **Pocket Park 2:** 180th unit
- **Pocket Park 3:** 270th unit
- **Pocket Park 4:** 300th unit

4.4 Trails

The trail system will link the neighborhood park, open space area, the regional trail system, and Federal public land to the multi-use paths and sidewalks throughout the PUD.

Trailhead Standards

The Sutro Trailhead shall meet the following standards:

- Provide a minimum of two amenities
- Provide a parking area with a minimum of 10 parking spaces
- Split-rail fencing may serve as a decorative or functional boundary within the trailhead area

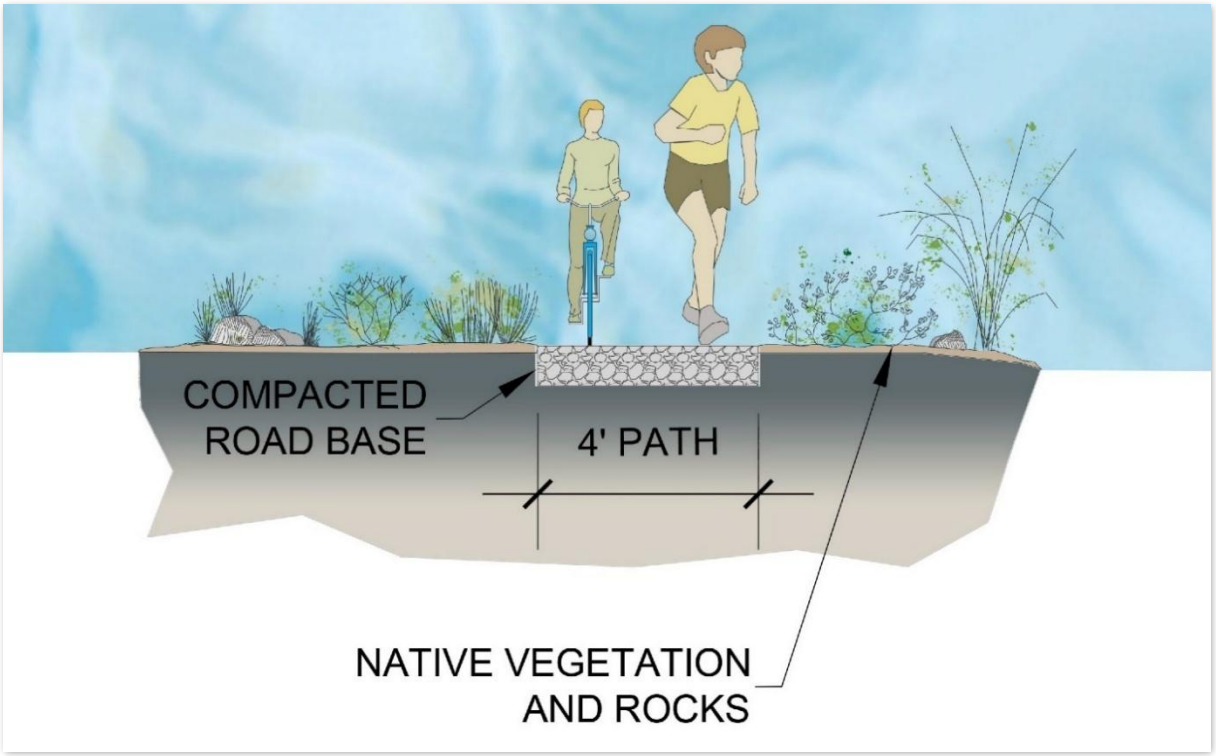
Trail Standards

Trails constructed within the boundaries of the PUD shall meet the following standards:

- Minimum width of four feet
- Developed trails constructed of compacted base
- Split-rail fencing may serve as a decorative or functional boundary within park spaces

Figure 6: Split-Rail Fence Example

Figure 7: Conceptual Trail Design



5.0 Access and Circulation

Traditions North includes a hierarchy of streets intended to provide access between neighborhoods and to facilitate pedestrian connections to trails, open space and recreational facilities.

5.1 Access

The overall vehicle circulation plan for the Traditions North PUD is outlined below in Figure 15: Circulation Plan. Primary access to the subject site is anticipated from the southeast and southwest access points.

Figure 8: Circulation Plan

Cross sections have been provided for each street type: Collector (60 ft. ROW) and Local (50 ft. ROW). All roads are proposed to be public and will comply with relevant Lyon County standards and requirements. The northeast access point and upper portion of the collector not necessary to support phases 1, 2 and 3 of the development is contemplated to be constructed with phase 4 of development.

Figure 9: Street Sections—Collector

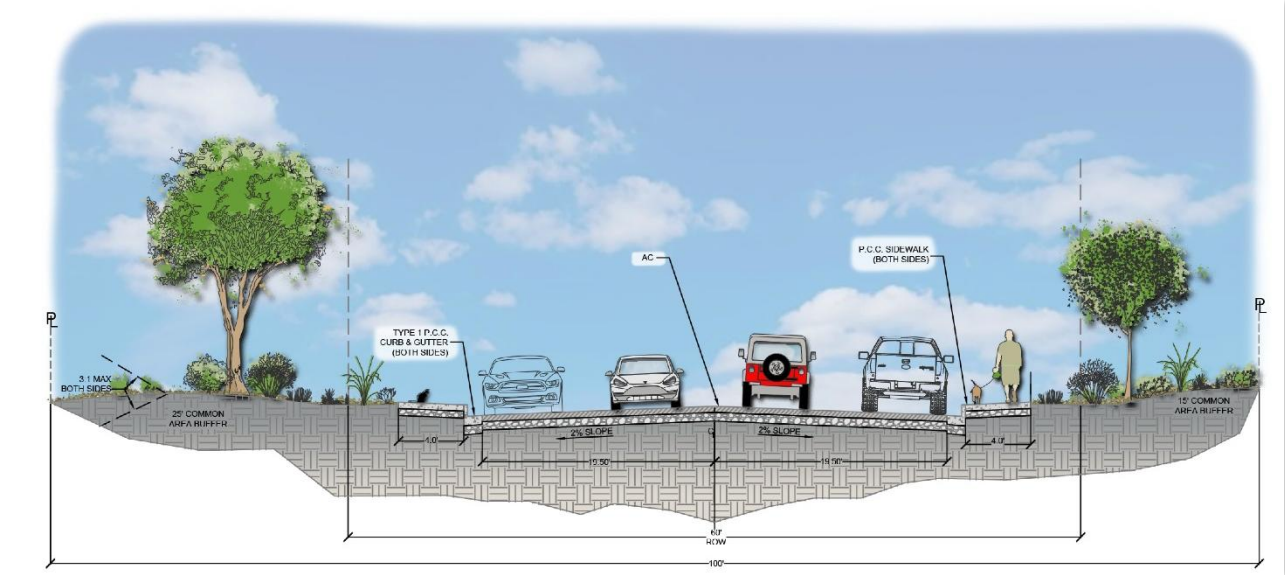
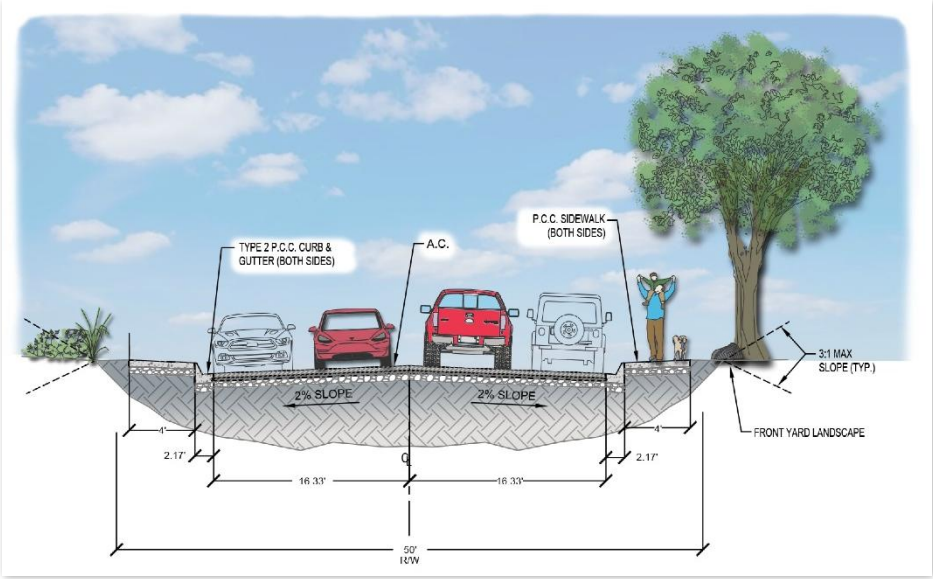


Figure 10: Street Sections—Local



Sidewalks are required on both sides of the street to provide connectivity throughout the development, with pedestrian access to residential areas, parks, open space, and trails. Sidewalks shall comply with Lyon County standard details.

The project originally contemplated a connection to Enterprise Way; however, due to circumstances separate from the traffic study, a vehicle connection to Enterprise Way is no longer being considered and was not included in this traffic analysis and report. If individual project developers wish to pursue a vehicle connection to Enterprise Way in the future, a traffic analysis shall be conducted at that time.

5.2 Traffic Impacts

A traffic study was performed to evaluate the anticipated impacts of the proposed development on the existing and proposed street network. The project is not expected to result in significant traffic impacts that would require project related mitigation. Development of the project will be performed in coordination with the Nevada Department of Transportation as they implement corridor safety improvements to US Highway 50.

6.0 Design Standards

6.1 General

Each individual project or improvement plan submittal shall include a signage and fencing plan that shows the specific location of proposed signage and fencing, that complies with the requirements in this section.

6.2 Landscaping

Residential Lots

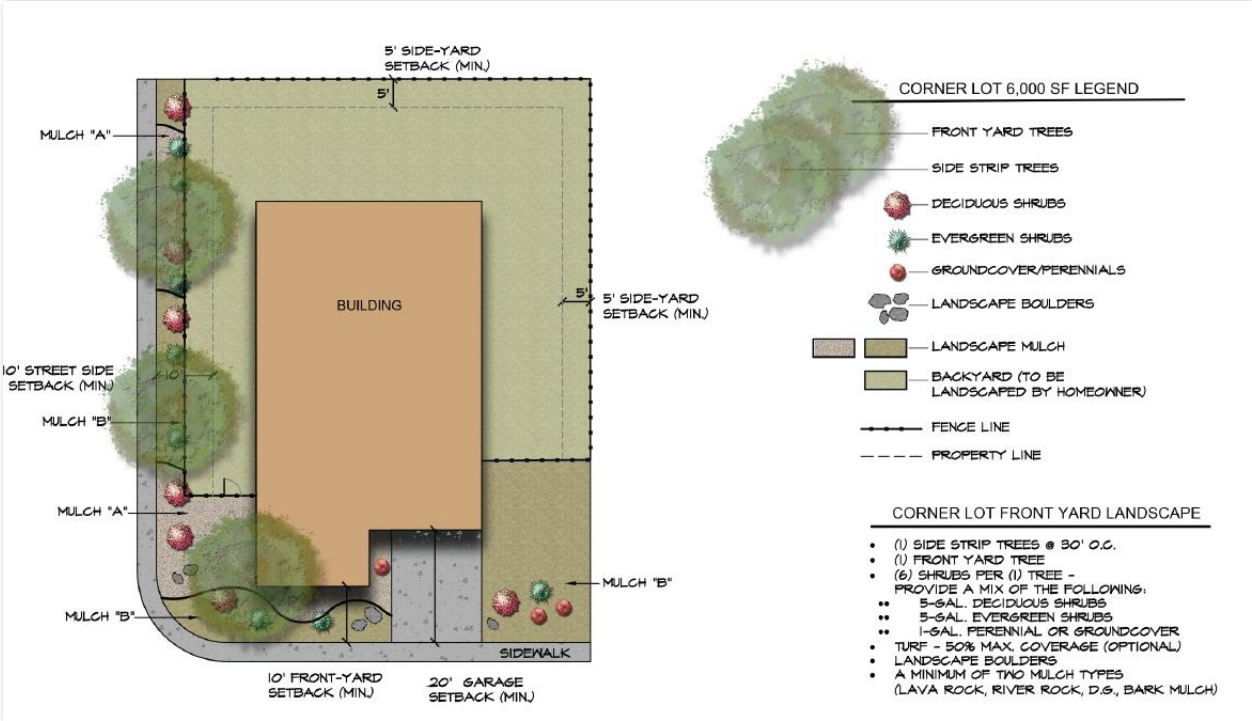
Front yards shall be entirely landscaped and shall include:

- One tree per lot plus additional tree per each 50 linear feet of frontage
- Six shrubs per tree
- Optional Turf – 50% maximum coverage
- Landscape boulders
- A minimum of two mulch types

Each street-side yard shall include:

- One tree plus additional tree per each 50 linear feet of frontage
- Six shrubs per tree

Figure 11: Typical Lot Landscaping



6.3 Signage

Entry Monument Standards

Monument signage may be installed at entrances to the Traditions North development, and shall be subject to the following standards:

- Maximum height of eight feet
- Indirect illumination only (no internal or direct illumination allowed)
- Constructed from natural-looking materials such as dry-stacked stone, weathered timber, or brick, with options for textured and earth-toned alternatives that complement the surrounding landscape

Figure 12: Conceptual Entry Monument

6.4 Fencing

Fencing shall be consistent throughout the PUD area in design and color to ensure uniformity in the overall appearance of the PUD.

Privacy fencing will be used internally between all single-family detached residential lots and may be made of a variety of typical fencing materials, including wood, composite, or vinyl (Figure 13: Privacy Fencing Example). This fencing will allow adequate privacy for rear and side yards in the single-family residential areas.

Figure 13: Privacy Fencing Example

7.0 Phasing Plan

Each phase will be entitled through a separate, project-specific application process, as applicable (i.e. Tentative Subdivision Map). It is anticipated, although not required, that the phasing will follow the numbered sequence as shown in the Phasing Plan.

Individual projects are required to meet all access and utility standards independently pursuant to this PUD and Lyon County Code.

The project phasing plan includes up to four phases, as detailed below in the Phasing Plan. It is anticipated that certain phases will be constructed concurrently.

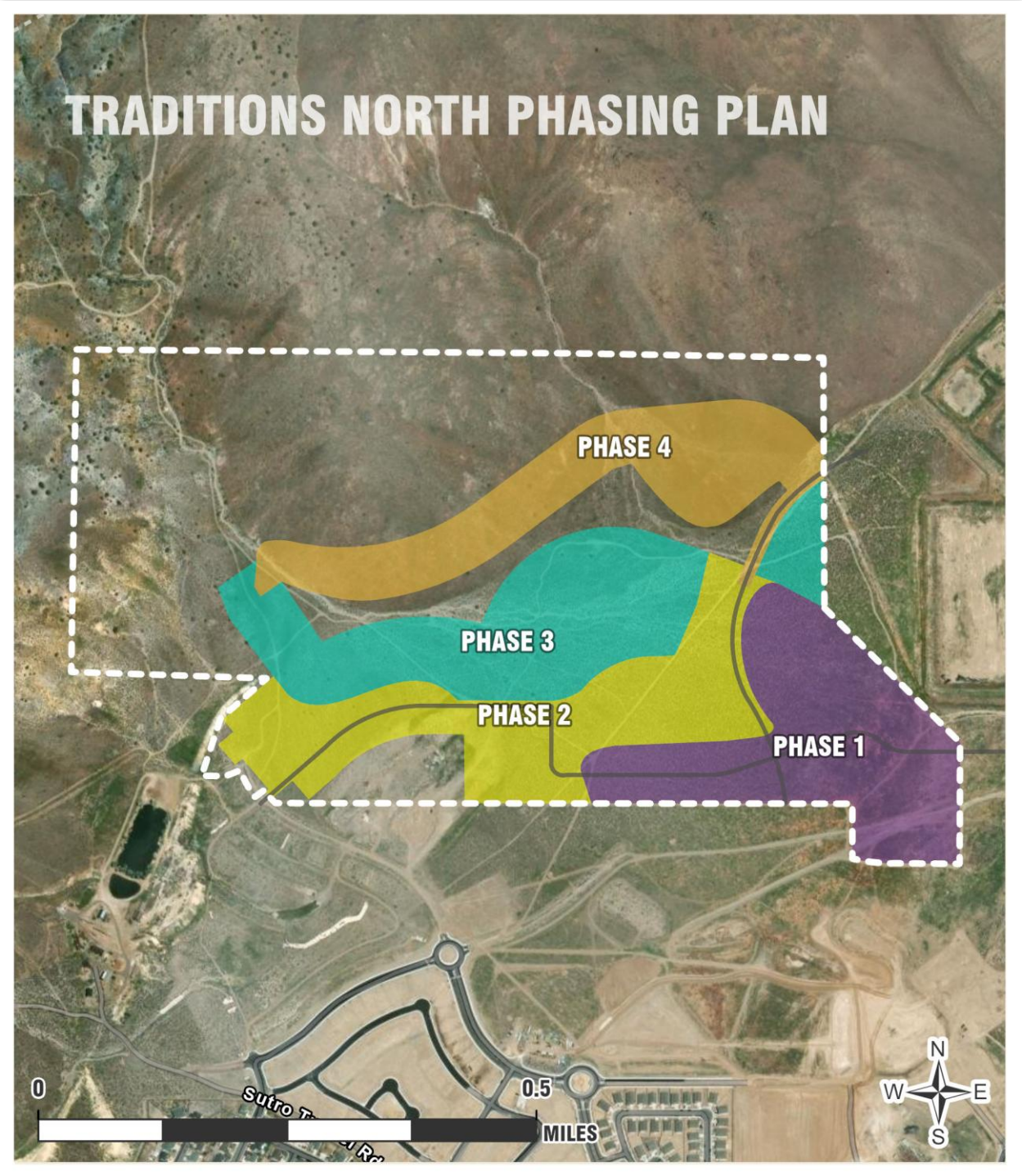
Initial phases will include required infrastructure improvements, including:

- The southern portion of the collector (as delineated by the phasing plan) and access roadways from the south.
- Stormwater detention facilities

Residential development is anticipated to begin with the SR-4.5, SR-6, and SR-9 Planning Areas (±131 lots) as soon as Spring of 2027. Each phase will be developed with the required common area improvements; drainage, utility and local road infrastructure; utility connections from previous phases; and utility stubs for future buildout of development. Associated parks, open space, and trails facilities will be constructed with each phase as required to meet PUD requirements.

The phasing plan meets the requirements for Title 15 and NRS 278.360 regarding presentation of final maps.

Figure 14: Phasing Plan



APPENDIX A: Legal Description

APPENDIX B: Preliminary Geotechnical Study

PRELIMINARY
GEOTECHNICAL DESIGN REPORT
Traditions North

Dayton, Lyon County, Nevada

Submitted To:

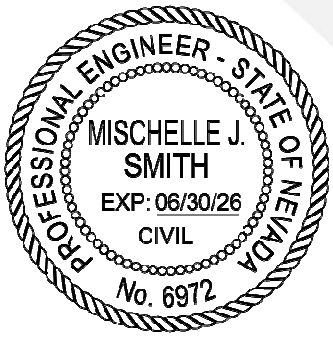
Jarred Corbell
GF DEVELOPMENT, LLC.
3527 S. Federal Way, Suite 103 #1020
Boise, ID 83705

Project Number

4627001

Date

July 2025
Revised: August 2025



Mischelle J. Smith, PE
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August 28, 2025
Project No. 4627001

Jarred Corbell
GF DEVELOPMENT, LLC.
3527 S. Federal Way, Suite 103 #1020
Boise, ID 83705

Re: Traditions North – Amendment # 01
Alternative Pavement Section
Dayton, Lyon County, Nevada

Ref: 2024 International Residential Code and 2024 Northern Nevada Amendments

Preliminary Geotechnical Design Report
Traditions North
Dayton, Lyon County, Nevada
Wood Rodgers' Project No. 4627001
Submitted: July, 2025

Dear Jarred:

Per our discussions, this letter provides updated recommendations to the pavement sections for the referenced project. Unless specifically modified herein, the recommendations presented in the referenced report are considered valid as written.

STRUCTURAL PAVEMENT SECTIONS

Materials and workmanship shall be consistent with the requirements of the agency having jurisdiction and the Standard Specifications for Public Works Construction. These sections have been developed with the expectation that the separation requirements presented in Section 5.2.4 of the referenced report have been met. Table 5 provides updates to the structural pavement sections for the project.

Table 5 (Amendment #01) - Structural Pavement Sections[1]

Road Type	Pavement Thickness (In.)	Pavement Type	Type II Class B Base Course Thickness (In.)[2]
Local Residential	3	Type 3	6
Collector Residential	4	Type 2	8

[1] Per Drawing No. L-1, Roadway Sections, Lyon County.
[2] Base Course thickness is in addition to structural fill separation requirements presented in Section 5.2.4.

Oil for all mixes should consist of PG-64-28NV. If fine-grained soils greater than one foot in thickness are encountered at roadbed grade, over-excavation in accordance with Section 5.2.4 of the referenced report is required. If granular soils, or fine grained soils less than one foot in thickness, are encountered at roadbed grade meeting the requirements of Table 2 of the referenced report, the need for over-excavation and replacement with 12" of import structural fill should be assessed.

Please let us know if you have any questions or need further clarification regarding these updates.

Sincerely,
WOOD RODGERS, INC.

Andrew Mayse, E.I.
Geotechnical Professional

Mischelle J. Smith, P.E.
Principal Engineer
RE Number: 6972
Expires: 06/30/2026

Enclosures:
July 2025 Wood Rodgers Preliminary Geotechnical Design Report

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Figure 2 – Improvement Plan & Approximate Exploration Locations
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Appendix D – ASCE 7 Hazards Report

EXECUTIVE SUMMARY

This report presents preliminary grading and design recommendations for the project. Given the project area, anticipated cuts, and depths of proposed fills, it is our opinion the final grading plan should be reviewed and the need for additional exploration and analysis be considered and appropriately proposed.

The project consists of constructing approximately 364 one-to-two-story single family residences with associated public streets. The residences are anticipated to be wood framed and supported by standard spread foundations with slab-on-grade flooring. Foundation loads are anticipated to be light. Street improvements, underground services, and project access will be designed to Lyon County standards and in accordance with the Standard Specifications for Public Works Construction (SSPWC). Based on preliminary grading plans (Piñon Design Group, 2025), cuts and fills are anticipated to approach ± 10-feet and ± 30-feet, respectively.

The project is in Dayton, Lyon County, Nevada and encompasses an area of approximately 231-acres and is located at a central latitude and longitude of 39.2846°N and -119.5772°E, respectively. The site is bordered by the Traditions Village 2 project to the south and undeveloped land to the north, east, and west. Vegetation across the site is moderate consisting of small and large brush, weeds, and grasses. The site is predominantly undeveloped with the exceptions of excavation and stockpiling operations near the south boundary of the site, a constructed berm on the western boundary of the site and dirt trails that transect the property. Per Google Earth imagery, the area near the south boundary of the site has been subject to excavation and stockpiling operations since at least June 2003.

Based on the Geologic Map of the Flowery Peak Quadrangle, Storey and Lyon counties, Nevada, the site is mapped in an area of Holocene Piedmont alluvial deposits consisting of alluvium of varying age (Qay), Miocene biotite-hornblende andesite flows (Tvba), and extensively disturbed areas (Qx) observed as the excavation and stockpiling operations on the southern boundary of the project site.

The soils encountered in our explorations typically consisted of complex interbedded sands, silts, and clays, as well as poorly graded sandy gravels with varying degrees of fines. Additionally, cobbles and boulders are present in the subsurface profile, typically at depths below 3 feet. Undocumented fill soils were observed from excavation and stockpiling operations near the southern boundary of the site were observed during our investigation. Stockpiles must be processed and qualified before receiving structural improvements.

Groundwater was not encountered in our exploration locations and is anticipated to be at a depth that will not affect the proposed improvements. Depth to groundwater may vary based on seasonal changes in precipitation and near-surface seepage.

Standard spread foundations with slab-on-grade flooring have been recommended for the support of structures.

Sands present at the site may allow excavations and utility trenches to slough or cave and must be adequately considered and planned for by the contractor. Oversize material to 18-inches in diameter may be encountered at depths greater than 3-feet below the ground surface during trenching and excavations. Therefore, excavatability will probably be more difficult in utility trenches where removal of larger sized particles can be difficult within the confines of a trench, and which will likely result in irregular trench profiles where cobbles and boulders must be removed.

Structural pavement sections have been presented for local and collector roads. These sections have been developed based on understanding that materials and workmanship shall be consistent with the provisions of the Standard Specifications of Public Works Construction (SSPWC).

1. INTRODUCTION

Presented herein are the results of Wood Rodgers' geotechnical exploration, laboratory testing, and associated geotechnical design recommendations for the proposed Traditions North development in Dayton, Lyon County, Nevada. The assessments and recommendations presented in this geotechnical report have been determined, in part, around the surface and subsurface conditions identified by our exploration program which was developed to be consistent with locally accepted industry practices regarding exploratory means and methods for geotechnical investigations of similar projects. The proposed structural elements, topography, grading design, soils, and geology are all unique; therefore, the engineering judgment employed by those in responsible charge of geotechnical design is in general conformance with the accepted standards of care for engineering analyses as defined by the Nevada State Board of Engineers and Land Surveyors.

This report has been prepared in consideration of the applicable provisions of the International Residential Code (IRC, 2024), ASCE 7, and the amendments and modifications adopted by Lyon County. These documents establish the minimum requirements to safeguard the public health, safety and general welfare of the occupants as well as the minimum level of structural integrity, life safety, and fire safety for inhabitants of new and existing structures. Geotechnical considerations for public improvements have been formulated around the requirements of Lyon County and the Standard Specifications for Public Works Construction. Performance standards around which our primary recommendations have been framed are based upon the requirements of the referenced documents. Any expectations of performance inconsistent with, outside the purview of, or exceeding the requirements of the referenced documents are subjective and, therefore, a function of materials, design, workmanship, and ownership. Unless these expectations of performance are specifically stipulated or quantified herein, they are considered in excess to the scope and design standards of this report.

The objectives of this study were to:

1. Explore, test, and assess general soil, geology, and ground water conditions pertaining to design and construction for the proposed development as required by the IRC and the Homebuilders' Guide to Earthquake Resistant Design and Construction (FEMA 232, 2024).
2. Provide recommendations associated with the design and construction of the project, as related to the identified geotechnical conditions and the stipulated design levels and performance standards established herein, and the requirements of the IRC and guidelines presented in FEMA 232.

Because of the preliminary status of site layout and project development and design, this geotechnical design report is preliminary.

2. SCOPE OF SERVICES

As indicated in our proposal, upon completion of our field and office studies, a geotechnical investigation report consistent with the requirements of the 2024 International Residential Code (IRC) will be completed for the project and will present the following:

- Description of the project site with the approximate locations of our explorations, shown on a Site Plan.
- Descriptive logs of the explorations performed for this study.
- General summary of the site soils and geology.
- Summary of noted surface drainage features and ground water conditions encountered.
- Seismic design considerations consistent with FEMA 232.
- Site preparation and grading recommendations developed for standard spread foundations.
- Types of suitable foundations including appropriate footing depths and widths, and anticipated settlement.
- Concrete and concrete slab-on-grade support options.
- Drainage considerations that may affect foundation and concrete slab-on-grade performance.
- Structural pavement sections for local and collector streets.
- Recommendations for additional exploration as appropriate.

Our study included field exploration, laboratory testing, and engineering analyses to identify the physical and mechanical properties of the various on-site materials. Results of our field exploration and testing programs are included in this report; in consideration of the stated design levels and performance standards, these results form the basis for our conclusions and recommendations.

3. PROJECT CHARACTERIZATION

3.1. Project Description

The project is located in Dayton, Lyon County, Nevada (Figure 1 – *Vicinity Map*, Appendix A) and consists of constructing approximately 364 one-to-two-story single family residences with associated public streets. The residences are anticipated to be wood framed and supported by standard spread foundations with slab-on-grade flooring. Foundation loads are anticipated to be light.

Street improvements, underground services, and project access for the residential development are to be dedicated and consistent with Lyon County's design standards and in accordance with the materials and workmanship requirements of the Standard Specifications for Public Works Construction (SSPWC). The overall project layout is presented on Figure 2 – *Improvement Plan & Approximate Exploration Locations* (Appendix A).

3.2. Site Conditions

The overall site encompasses an area of approximately 231-acres and is located at a central latitude and longitude of 39.2846°N and -119.5772°E, respectively. The site is bordered by the Traditions Village 2 project to the south and undeveloped land to the north, east, and west. Vegetation across the site is moderate consisting of small and large brush, weeds, and grasses. Cuts and fills are anticipated to approach ± 10-feet and ± 30-feet, respectively. The site is predominantly undeveloped with the exception of excavation and stockpiling operations near the south boundary of the site, a constructed berm on the western boundary of the site, and dirt trails that transect the property. Per Google Earth imagery, the area near the south boundary of the site has been subject to excavation and stockpiling operations since at least June 2003.

3.3. Exploration

3.3.1. Excavating and Sampling

The project was explored in June 2025 by advancing a series of eleven test pits with a track mounted excavator, utilizing a 48-inch bucket. Approximate exploration locations are presented on Figure 2 - *Improvement Plan & Approximate Exploration Locations* and Figure 3 - *Site Map & Approximate Exploration Locations* in Appendix A of this report. Maximum depths of exploration advance extended to 15 feet. Refusal was not encountered. Wood Rodgers' personnel examined and classified soils in the field in general accordance with ASTM D2488 (Description and Identification of Soils). Representative bulk samples were sampled from select layers in the soil profile and placed in sealed plastic bags or buckets and returned to our Reno, Nevada laboratory for testing.

3.3.2. Geophysical Methods

Seismic refraction methods (ReMi ™) were performed to measure shear wave velocity and to establish $V_{S_{100}}$. Shear wave velocity measurements have been relied upon to aid in the determination of an

appropriate Site Class (ASCE 7). Figure B-3 (Appendix B) presents the measured shear wave geophysical profile.

3.4. Sampling, Classification and Reporting

Wood Rodgers' personnel examined and classified soils in the field in general accordance with ASTM D2488 (Description and Identification of Soils). During exploration, representative bulk samples were placed in sealed plastic bags and returned to our Reno, Nevada laboratory for testing. Additional soil classifications, as well as verification of the field classifications, were performed in accordance with ASTM D2487 (Unified Soil Classification System [USCS]) upon completion of laboratory testing as described in the Laboratory Testing section. Logs of the explorations are presented as B-1a through B-1k in Appendix B. The USCS explanatory chart of soil unit symbols and related descriptions has been included as B-2 - Unified Soil Classification and Key to Soil Descriptions.

3.5. Laboratory Testing

Soil testing performed in the Wood Rodgers' laboratory was conducted in general accordance with the standards and methods described in Volume 4.08 (Soil and Rock; Dimension Stone; Geosynthetics) of the ASTM Standards. Samples of significant soil types were analyzed to determine in-situ moisture contents (ASTM D2216), grain size distributions (ASTM D6913), plasticity indices (ASTM D4318), and resistance value (R-Value) (ASTM D2844). Test results were used to classify the soils according to the USCS (ASTM D2487) and to verify the field logs which were then updated.

Test results are presented in Appendix C on C-1a through C-1c. Table 1 also presents a summary of the test data.

Table 1 - Summary of Test Data

Test Hole	Depth (Ft.)	Moisture (%)	%Gravel (+ #4)[1]	% Sand (#4-#200)	%Fines (-#200)	Liquid Limit	Plastic Index	R-Value	USCS
ASTM Standard		D2216	D6913			D4318		D2844	D2487
TP-2	2-5	7.4	49.0	41.1	9.9	30	11	---	GP-GC
TP-5	0-2	4.4	---	---	20.7	---	---	32	SM[2]
TP-6	2-3	4.3	25.9	63.5	10.6	NP	NP	---	SP-SM
TP-9	4-6	4.6	22.6	70.9	6.5	NP	NP	---	SW-SM

Table 1 - Summary of Test Data

Test Hole	Depth (Ft.)	Moisture (%)	%Gravel (+ #4)[1]	% Sand (#4-#200)	%Fines (-#200)	Liquid Limit	Plastic Index	R-Value	USCS
ASTM Standard		D2216	D6913			D4318		D2844	D2487
TP-11	1-4	15.5	1.4	36.2	62.4	30	14	---	CL

[1] Since ASTM D2487 is limited by a maximum particle size of 3", the gradation test data presented is based on a maximum particle size of 3". Larger particles (i.e., 8 to 12" in diameter) if observed in our test holes would be documented on the logs and should be anticipated as part of grading.
[2] Visually classified in accordance with ASTM D2488.

As a courtesy, resistivity, pH, chlorides, oxidation-reduction potential, sulfides and moisture were also tested to aid others in the assessment of potential corrosivity to ductile iron pipe and/or steel reinforcement; refer to Appendix C, C-2 for test methods and results.

Wood Rodgers, Inc. is not a corrosion engineering firm. Therefore, a corrosion engineer or structural engineer knowledgeable in the project steel specifications should be consulted for final assessments of corrosion potential at the site.

3.6. Geologic and General Soil and Groundwater Conditions

Based on the National Geologic Map Database (NGMDB, 2013), shown in Figure 4, the site is mapped in an area by Castor et. al. as Holocene Piedmont alluvial deposits consisting of alluvium of varying age (Qay), Miocene biotite-hornblende andesite flows (Tvba), and extensively disturbed areas (Qx) observed as the excavation and stockpiling operations on the southern boundary of the project site.

The soils encountered in our explorations typically consisted of complex interbedded sands, silts, and clays, as well as poorly graded sandy gravels with varying degrees of fines. Additionally, cobbles and boulders are present in the subsurface profile, typically at depths below 3 feet. Undocumented fill soils were observed from excavation and stockpiling operations near the southern boundary of the site were observed during our investigation. Stockpiles must be processed and qualified before receiving structural improvements.

Groundwater was not encountered in our exploration locations and is anticipated to exist at a depth not expected to affect the proposed improvements. Depth to groundwater may vary based on seasonal changes in precipitation and near-surface seepage.

4. SEISMIC HAZARDS

The International Building Code (IBC) requires that structures assigned to Seismic Design Category D, E, or F be evaluated for the following potential geologic and seismic hazards: surface rupture or displacement due to faulting, slope instability, liquefaction including the potential for seismically induced spreading or lateral flow, and slope instability. The following sections present our discussion and assessments of the stipulated hazards. Discussions regarding total and differential settlement are incorporated with the foundation design considerations.

4.1. Surface Rupture

4.1.1. Evaluation Guidelines

In 1998, the Nevada Earthquake Safety Council formulated guidelines for evaluating potential surface rupture due to faulting. The intent of the guidelines is to provide *a standardized minimum level of investigation for fault rupture in Nevada*; these guidelines have been adopted with the 2018 Northern Nevada Amendments of the IBC. Specifically, the guidelines state that investigation of sites for potential surface rupture or hazards shall be included in all geotechnical investigations. Further, if any Quaternary age surface rupture is mapped or otherwise interpreted to be present on the site, the feature is to be investigated further.

In addition to establishing the minimum level of investigation for fault rupture, the guidelines also offer recommendations for dealing with or mitigating identified hazards, including:

- Holocene active faults (evidence of movement within the past 10,000 years) shall be set-back a minimum distance of 50-feet for occupied structures.
- Late Quaternary (evidence of movement within the past 130,000 years) faults shall not be spanned by any critical facilities (hospitals, schools, fire stations, etc.). The facility under investigation does not meet the requisite requirements to be considered critical.

These guidelines allow for set-back distances to be adjusted by the competent professional. No additional constraints regarding fault-structure location are presented in the guidelines.

4.1.2. Investigation

MyHazards NV interactive fault map was accessed to determine the presence of any mapped features transecting the property. A trace of the Carson Lineament fault is mapped intersecting the northeastern corner and extending approximately 0.4 mi into the property. The fault is described to be of Quaternary age (< 1.8 million years regarding recency of movement) and is not considered to be Holocene nor Late Quaternary active. Therefore, this structure is sufficiently distant and of an age that offsets or additional considerations are not recommended nor presented by the Guidelines for the planned improvements; surface rupture due to the identified structure is considered unlikely. Should the final development plan

place a critical facility, such as a fire station, within this portion of the development, deeper examination of the structure may be required.

4.2. Soil Profile Type Amplification Factors

Seismic design values were determined based on a representative latitude and longitude of 39.2846°N and -119.5772°E, respectively. In accordance with ASCE 7-22 (Table 20.2-1) and the Northern Nevada Amendments of the 2024 IRC, Site Class CD and Seismic Design Category D_1 have been assigned to the project. Per ASCE 7-22, the site's modified Peak Ground Acceleration (PGA_M) to be used for engineering analyses is equal to 0.61g.

4.3. Liquefaction

Liquefaction is a loss of soil shear strength that can occur during a seismic event as excessive pore water pressure between the soil grains is induced by cyclic shear stresses. This phenomenon is limited to poorly consolidated (Standard Penetration Test less than 30, overburden stress corrected shear wave velocity less than 700 fps) clean to silty sand/sandy silt lying below the ground water table (typically less than 50 feet deep). In addition, we are using AASHTO's recommendation of Bray and Sancio (2006) criteria for assessing liquefaction susceptibility in clays and silts which suggests that a soil with a plasticity index less than 12 and a water content to liquid limit ratio greater than 0.85 will be susceptible to liquefaction. Neither of which are evidenced in our site data. Therefore, due to the stiffness of the underlying soil profile and anticipated depth to groundwater, a potential for liquefaction (and therefore lateral spread) does not exist at the project site.

4.4. Seismic Compression

Seismic compression is an accrual of volumetric strains during seismic events in unsaturated soil and is typically confined to poorly compacted engineered fills and Holocene soils. Significant deposits of Holocene soils are not indicated on the geologic map and deep, loose engineered fills are not anticipated, therefore, the settlement potential due to seismic compression is considered negligible.

5. DISCUSSION AND RECOMMENDATIONS

5.1. General Information

- *Conformance with the Geotechnical Report:* The recommendations provided herein, particularly under Earthwork, Structures, Concrete, and Public Improvements are intended to reduce risks of structural distress related to consolidation or expansion of native soils and/or structural fills. These recommendations, along with proper design and construction of the planned structure(s) and associated improvements, work together as a system to improve overall performance. If any aspect of this system is ignored or poorly implemented, the performance of the project will suffer.

- *Clarification of Structural Areas:* Structural areas referred to in this report include all areas of buildings, concrete slabs, asphalt pavements, as well as pads for any minor structures or retaining walls. Areas which extend behind or under rockery or other retaining structures are considered structural zones. In addition, the structural zone shall be considered to extend at a 1:1 (H:V) slope out from the edge of the structural footprint. All compaction requirements presented in this report are relative to ASTM D 1557 (ASTM D Volume 4, 2022).

- *Hazardous Materials:* Any evaluation of the site for the presence of surface or subsurface hazardous substances is beyond the scope of this study. When suspected hazardous substances are encountered during routine geotechnical investigations, they are noted in the exploration logs and reported to the client. No such substances were identified during our exploration.

- *Backfill of Exploration Locations:* Explorations were advanced at the approximate locations shown on the Site Map and Approximate Exploration Locations (Figure 3). Each exploration was backfilled upon completion of the field portion of our study, and the backfill was compacted to the extent possible with the equipment on hand. However, the backfill was not compacted to the requirements presented herein under Grading and Filling. If structures, concrete flatwork, pavement, utilities or other improvements are to be located in the vicinity of any of the test pits, the backfill should be removed and re-compacted in accordance with the requirements contained in the soils report. Failure to properly compact backfill could result in excessive settlement of improvements located over test pits.

- *SWPPP Requirements:* The site-specific Stormwater Pollution Prevention Plan (SWPPP), as required by the State of Nevada, will be the responsibility of the general contractor and/or owner. Recommendations presented herein regarding moisture conditioning are for the benefit of creating a targeted fill behavior. Moisture conditioning recommendations are not intended to direct the contractor in their means and methods for dust and SWPPP control.

- *Public Improvements:* Recommendations for paved improvements in right-of-way areas will be consistent with Standard Specifications for Public Works Construction (SSPWC) and the agency having jurisdiction (AHJ) standards. Driveway recommendations are in general conformance with

AASHTO's Low Volume Road design protocols, the Portland Cement Association (PCA) and American Concrete Institute (ACI) recommendations. Underground utilities will be provided by a variety of public and private companies; trenching and backfill recommendations presented herein are generally consistent with OSHA and the AHJ requirements, respectively.

5.2. Earthwork

5.2.1. Clarification of Geomaterials

Based on materials encountered in our investigation, the following definitions characterize terms utilized in this report:

- Rock fill possesses more than 30-percent retained on the 3/4-inch sieve and may present particles up to 12-inches.
- Fine grained soil possesses more than 40 percent passing the number 200 sieve and exhibits a plasticity index greater than 15.
- Granular soil possesses less than 40 percent passing the number 200 sieve, exhibits a plasticity index less than or equal to 15, and has a maximum particle size less than 6-inches.

It should be noted these definitions have been formulated around anticipated soil behavior and may not coincide with classifications provided by the Unified Soil Classification System.

5.2.2. Clearing and Grubbing

- All vegetation and topsoil are to be cleared and grubbed from structural areas. A minimum stripping depth of 0.3 to 0.5 feet is anticipated.
- Localized deeper areas of clearing may be required in areas of large brush and trees or where large root balls are encountered.
- Vegetation and organic debris should be disposed of offsite or placed in designated non-structural areas.
- If on-site disposal is approved, vegetation could be blended with soil (at a maximum ratio of 1:10 vegetation to soil, by mass) prior to placement in nonstructural fill or landscape areas.
- Organic material should be broken up using a large sheep's foot roller or chipper prior to blending with soil and moisture conditioning.

5.2.3. Undocumented Fill

- Excavation and stockpiling operations near the southern boundary of the site were observed during our investigation. Existing stockpiles must be processed and qualified as granular soil or rock fill before being placed as structural fills.

- Refer to Section 5.2.4 for subgrade preparation requirements for structures to be located in the footprint of the existing excavation and stockpiling operations.

5.2.4. Subgrade Preparation

- To allow for the preparation of subgrade soils, any undocumented fill encountered within the development area should be removed or stockpiled for qualification and later use.

- Any fine-grained soils encountered at structural grade (bottom of footing, roadbed grade, slab subgrade) shall be verified to be greater than 1-foot in thickness prior to removal and replacement with structural fill. If the fine-grained layer is less than 1-foot in thickness, no additional action is required.

- A maximum fill differential of 8-feet below foundation grade shall be observed. To meet this requirement, cut depths may need to be extended within a structure footprint to increase the net fill differential. Based on existing topography, this requirement is anticipated to be localized if present.

- Grade preparation for any fill to be placed adjacent to a slope steeper than 4:1 (H:V) shall include a keyway and excavation of horizontal benches as fill is placed.
    - The keyway should be at least 6-feet wide and extend at least 2-feet in depth below lowest adjacent grade.
    - Benches shall maintain a minimum bench width of 4-feet.
    - Vertical height of bench cuts shall be consistent with what is necessary for the benches to step uniformly up the slope.
    - Benches should be scarified, moisture conditioned and capped with a thin fill lift prior to compaction to facilitate the development of a uniform meld between the in-situ soils and fills.
- Where oversized material (i.e. > 6 in) is present, subgrade shall be moisture conditioned and proof-rolled with a fully loaded water truck prior to placing fill or constructing improvements.

- In-situ granular or fine-grained soils should be scarified for a minimum depth of 12-inches, moisture conditioned to within 3-percent of optimum and compacted to not less than 90-percent of the soil's maximum dry density (ASTM D1557) prior to placing fill or constructing improvements.

- Any resulting void created by removal of oversize during subgrade preparation may be filled with structural fill placed and compacted to 90 percent of the soil's maximum dry density in accordance with ASTM D1557 or lean concrete.

- In all cases, the final subgrade shall be smooth, firm, and relatively unyielding as determined by the testing agencies' qualified representative.

5.2.5. Subgrade Stabilization

- The fine-grained soils encountered within the project limits may tend to pump and or destabilize when moisture content exceeds optimum.
- Care should be taken during grading to ensure precipitation, or construction activities do not lead to an increase in or ponding of water on exposed grade.
- Pumping soils may be scarified and allowed to dry or removed and replaced with a layer of clean, angular, 12-inch minus rock fill or stabilized with a geogrid.
- Subgrade stabilization is a trial-and-error process, and it is recommended that a test section of suitable depth and length be conducted.
- The contractor should propose a stabilization protocol that is consistent with their readily available means and methods, and this proposal presented for review, by the owner, the general contractor, and grading inspector.
- Subgrade stabilization is considered adequate if the subgrade is firm and relatively unyielding (as approved by the engineer) when proof-rolled with a fully loaded water truck.
- Subgrade stabilization may not be required for walkways or private improvements subject solely to foot traffic providing the required compaction levels are achieved.

5.2.6. Mass Grading

- Verification testing of onsite soils to be qualified as structural fill shall be in accordance with ASTM D75, ASTM D6913, and ASTM D4318 and shall meet the requirements of Table 2.
- Based on our explorations, undocumented fill may be used as structural fill tested and verified to meet the granular soil definition.
- Undocumented fill has not been verified for degree of compaction and shall therefore be reworked in accordance with this section.
- Existing fill and native soils generated from cut and meeting the definition of granular soil (Section 5.2.1) may be placed as structural fill within the 1-foot separation zone.
- The site is anticipated to be designed for a cut-fill balance. However, should import be required it should meet the requirements of Table 2.
- Prior to importing material to the site, a submittal verifying import quality shall be received and approved by Wood Rodgers.

Table 2 - Guideline Specification for Import Structural Fill

Sieve Size (ASTM D6913)	Percent by Weight Passing Sieve
6 Inch[1]	100
4 Inch	90 - 100
¾ Inch[2]	50 - 100
No. 200	5 - 40
Maximum Liquid Limit (ASTM D4318)[3]	50
Maximum Plasticity Index (ASTM D4318)[3]	15
Soluble Sulfate Level (ACI 318, Table 4.3.1)	Negligible
R-Value (ASTM D2844)[4]	30 Min.

[1] Pending approval of the means and methods of the contractor, maximum particle size may be increased to 12-inches.

[2] Material presenting more than 30-percent material retained on the ¾" sieve shall be referred to as rockfill. (Section 5.2.1)

[3] Dry Method

[4] Within right-of-way only.

- With the approval of the geotechnical engineer, maximum particle size for the materials presented in Table 2 may be increased to 12-inches. Refer to Section 5.2.7 for rockfill placement requirements.
- An increased maximum particle size to 12-inches will impact the uniformity of trench profiles and trench spoils may need to be screened prior to reuse as trench backfill.
- A nominal maximum particle size of 6-inches is recommended for the final 24-inches of pad fills, to facilitate fine grading and advancing utility and footing trenches.
- Generation of oversized rock, i.e., greater than 6-inches, should be anticipated during mass grading of cut zones and trenching.
- For granular fill generated on-site, material should be excavated, dozed and processed into a uniform stockpile prior to being sampled and tested for material quality prior to acceptance.
- If the site is mass graded cut to fill, without the benefit of selective grading and processing, it is likely some of the soils placed as fill may present clay pockets or zones and regrading could be required.

- Granular or fine-grained soil placed as fill shall be moisture conditioned to within 3-percent of optimum, placed in 12-inch maximum loose lifts, and compacted to not less than 90-percent of the soil's maximum dry density.

- Minimum compaction requirements shall be increased to 95-percent in areas where total fill thickness exceeds 10-feet.

5.2.7. Rockfill Placement and Verification

Soils that are classified as rockfill should be placed and verified in conformance with the following placement procedures.

- Oversize (i.e., rock > 6-inches in least dimension) must be blended and placed in such a manner that: nesting of the rock does not occur, rock is uniformly distributed throughout the fill lift, and voids are uniformly filled with the soil matrix.

- A maximum lift thickness of 12-inches should be observed for 6-inch minus rock fill. A maximum lift thickness of 18-inches should be observed for 12-inch minus rock fill.

5.2.7.a. Rockfill Verification Protocols

- Determine a moisture-density relationship (ASTM D1557 Method C) on the portion of the sample passing the ¾-inch sieve.

- Rockfill shall be placed and compacted with the ¾-inch minus fraction moisture conditioned to at least optimum as determined in accordance with ASTM D1557, Method C.

- Where standard density testing cannot be performed due to oversize material, performance criteria for acceptance of the compacted fill shall be established; otherwise rockfill shall be compacted to not less than 90-percent of the soil's maximum dry density.

- For acceptance based on performance criteria, an initial rolling pattering consisting of at least five single passes with a minimum 20-ton roller (815 Caterpillar "Sheepsfoot" compactor, or equivalent) for mass grading, or five complete passes with hand compactors or pneumatic trench roller in footing trenches is recommended.

- Increase the number of passes as necessary until no notable increase in density can be measured (ASTM D6938, Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods) or notable deflection is reduced to negligible.

- Modifications to the rolling pattern will be required with change in percentage of + ¾-inch rock and/or changes in moisture content of the ¾-inch minus portion of the rockfill.

- The established rolling patterns, and estimated percentage of + ¾-inch material, shall be

recorded.

5.2.8. Trenching and Excavations

- OSHA - Regulations amended in Part 1926, Volume 54, Number 209 of the Federal Register (Table B-1, October 31, 1989) require that the temporary sidewall slopes be limited to maintain trench stability. Minimum sidewall slopes and acceptable trench configurations are also presented in the referenced register.
- In some areas of the parcel, oversize material (> 6-inches) will be encountered during trenching and excavations. Excavatability will probably be more difficult in utility trenches where removal of larger sized particles can be difficult within the confines of a trench, and which will likely result in irregular trench widths where boulders or fractured bedrock must be removed.
- Oversize material which may be generated during excavating and trenching may require off-hauling or placement in non-structural areas.
- Open excavations should be protected from flooding.
- Based on the results of our exploration program, it is our opinion that the bulk of the native site soils appear to be predominately Type C, although variations exist.
- All fills should conservatively be considered Type C unless directed otherwise by the contractor's competent individual trained in trench safety.
- Some of the sands present at the site may allow excavations and utility trenches to slough or cave and therefore, must be adequately considered and planned for by the contractor.
- All trenching should be performed and stabilized in accordance with local, state, and OSHA standards. Bank stability is the responsibility of the contractor or contractor's qualified representative who is present at the site, able to observe changes in ground conditions, and has control over personnel and equipment.
- Pipe bedding, initial backfill, and trench backfill shall be consistent with the approved civil and/or utility plans.

5.2.9. Earthwork Testing and Observation

- Verification of subgrade and fills should be performed by a firm that is AMRL accredited in ASTM E329.
- Special inspection of fill soils is required during mass grading of the development; the Special Inspector should be ICC certified in soils or NAQTC certified in Sampling and Density disciplines.
- The special inspector shall verify and document that placement of fill and rockfill are consistent with the Mass Grading (5.2.6) and Rockfill Placement and Verification Requirements (5.2.7).

- Density testing of fills should be in accordance with ASTM D6938 (Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods) or ASTM D1556 (Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method).
- Subgrade should be density tested approximately every 500 square yards.
- Fill should be density tested once for every 1,000 square yards per lift of material placed during mass grading and one test per 300 feet of footing trenches or over-excavation of footings.
- One density test should be performed for each 500 square yards or per each lift for smaller, localized fill zones.
- Full time construction observation is required for mass graded fills and for any rock fill placement.
- The testing frequency should be increased if the contractor is having difficulty achieving and maintaining the required moisture levels.
- Utility bedding and trench backfill should be density tested per the requirements of the governing agency. Typically, agencies prescribe density testing per foot of bedding/backfill thickness, at a frequency of one test between manholes or valves, or one test every 500 lineal feet, including laterals.
- Nonstructural fills should be density tested for every 2,000 yards or for every 2-feet of fill for smaller, localized fill zones.

5.2.10. Embankments

- The surface of any embankment should be compacted to the same percentage compaction as the body of the fill. This may be accomplished by compacting the surface of the embankment as it is constructed or by overbuilding the fill and cutting back to its compacted core.
- The exterior face of embankments should be constructed with an inclination no steeper than 2H:1V.
- Minor variations in slope gradient due to sculpting or landscaping of the slope face should not be considered inconsistent with the recommendations of this report or adverse to the ultimate performance of the global stability of the overall slope.
- Refer to Section 5.6.1 Slopes and Drainage for erosion protection considerations.

5.3. Structures

The following sections have been developed based on the understanding and expectation that the requirements specified in Section 5.2 Earthwork of this report have been met.

5.3.1. Standard Spread Foundations

The following table and supporting statements present design values and considerations for use in the development of standard spread foundation design.

Table 3 - Allowable Foundation Bearing Pressures for Standard Spread Foundations

Loading Condition	Maximum Net Allowable Bearing Pressure (PSF)[1]
Dead Load Plus Full Time Live Load	2,500
Dead Load Plus Live Loads, Plus Transient Wind or Seismic Loads	3,300

[1] Net allowable bearing pressure is that pressure at the base of the footing is in addition to the adjacent overburden pressure.

- For frost protection, footings should be founded at least 1 ½ feet below adjacent outside or unheated interior finish grades.
- Interior footings not located within frost prone areas should be founded at least 12 inches below surrounding ground or 16 inches below slab level for confinement.
- Regardless of loading, individual pad foundations and continuous spread foundations should be at least 18 and 12 inches wide, respectively, or as required by code.
- The minimum footing sizes recommended are based on the ability to develop bearing capacity. Footing dimensions should be determined by the engineer responsible for structural design.
- Lateral loads, such as wind or seismic, may be resisted by passive soil pressure and friction on the bottom of the footing. A coefficient of base friction of 0.45 is typical to the structural fills.
- Design values for active and passive equivalent fluid pressures of 35 and 350 pounds per square foot per foot of depth, respectively, can be utilized.
- When designing for passive pressure, the upper one foot of the soil profile should not be included unless confined by a concrete slab, or pavement.
- The integrity of the foundation support soils shall be maintained until concrete is placed.
- Total post-construction settlement for the structures is anticipated to be on the order of ½-inch, or less.
- Differential settlement between foundations with similar loads and sizes is anticipated to be half of the total settlement across 40-feet.

5.3.2. Retaining Structures

- Recommended lateral earth pressures for consideration in the design of retaining walls and landscaping walls are presented in Table 4.

Table 4 - Lateral Earth Pressures[1]

Condition	Active (psf/f)		Passive (psf/f)		At Rest
	Static	Pseudo-Static	Static	Pseudo-Static	
Level	35	65	350	250	55

[1] Walls retaining sloping backfill or are greater than six feet in exposed height, require specific analyses and design values should be evaluated and presented by the geotechnical engineer.

- Changes in earth pressures due to seismic influences were assessed via the AASHTO LRFD protocol that considers some component of cohesion will be maintained within the backfill.
- In addition, it has been assumed that some displacement is allowable during the design event, and our recommended values have therefore been based on 50% of the USGS' predicted PGA.
- The values presented in Table 4 do not consider hydrostatic pressures or surcharge loading.
- Excessive wall pressures can be developed due to heavy compaction equipment proximate to the wall during backfill placement. Therefore, due care during placement and compaction of backfill is required.
- Backfill behind retaining structures should be granular and compacted to not less than 90 percent of the soils' maximum dry density.
- French drains, a drainage gravel backfill layer wrapped in geotextile such as Mirafi 140 N, or a prefabricated drainage composite should be utilized if buildup of hydrostatic pressure is possible.
- Moisture proofing must be considered for retaining walls facing interior living spaces or where the development of efflorescence is undesirable.
- Site preparation and foundations for retaining structures shall be consistent with Section 5.2 Earthwork and Section 5.3.1 Standard Spread Foundations.
- Walls retaining sloping backfill or are greater than six feet in exposed height, require specific analyses and design values should be evaluated and presented by the Geotechnical Engineer.

5.3.3. Site Drainage

- Adequate surface drainage must be constructed and maintained away from the structures. The permanent finish slopes away from the structure should be constructed to allow water to drain away quickly from and prevent any ponding of water adjacent to the structure per code

requirements. Runoff should be collected within permanent drainage paths that can convey water off the property or to designated collection facilities.

- Foundation and stem wall backfill should be densified to at least 90 percent relative compaction in accordance with the requirements given in the Mass Grading section (5.2.6). Compacting the backfill material decreases permeability and reduces the amount of irrigation and storm water available to enter under floor areas.

5.4. Concrete

The American Concrete Institute (ACI) considers three different exposure classes to address the degree of severity for environmental conditions: freezing and thawing (Exposure Category F), concrete in contact with soil that contains water soluble sulfate ions (Exposure Category S), and Exposure Class W for concrete in contact with water. Exposure categories F and S, and potential mitigation, are discussed in Section 5.4.1.

5.4.1. Materials

The concrete material recommendations vary between Exposure Class F and Exposure Class S. Therefore, those specifying concrete subject to both freezing and thawing and water-soluble sulfate ions should consider the potential exposure conditions for Class F and Class S and select the most appropriate.

5.4.1.a. Exposure Class F (Exterior Slabs-on-Grade)

- The potential exists for some portions of concrete to absorb sufficient water to be saturated prior to freezing (Exposure Class F2).
- Where deicing chemicals are anticipated to be used (civil improvements), exposure Class F3 would be assigned.
- Therefore, as presented in the Standard Specifications for Public Works Construction concrete requirements for Portland cement concrete exposed to freeze-thaw cycles, should include air entrainment (4 – 7%), maximum water: binder ratio of 0.45, and a minimum 28-day compressive strength of 4,000 psi.

5.4.1.b. Exposure Class S

The summary below presents excerpts from ACI and SSPWC. Refer to the referenced standards in their entirety when specifying sulfate resistance exceeding the presented geotechnical or civil considerations.

- Sulfate test results on the native soils yielded results in the S0 negligible range (ACI 318, < 0.10 percent SO_4^{2-} by mass).
- Per the SSPWC, no special concrete provisions are required to address sulfate resistance. Type II cement is recommended for use.

5.4.1.c. Chlorides

- Chemical test results on the native soils presented non-detected chloride ion concentrations (mg/kg).

5.4.2. Construction

- Slabs-on-grade should be supported on a 6-inch, minimum, layer of Type 2, Class B aggregate base layer compacted to not less than 95-percent of the soil's maximum dry density unless subject solely to foot traffic. Concrete slabs-on-grade subject solely to foot traffic should be supported on a 4-inch, minimum, layer of Type 2, Class B aggregate based compacted to not less than 95-percent of the soil's maximum dry density.

- A moisture vapor retarder (Stego Wrap 15 mil) should be considered for slab areas covered by moisture sensitive floor coverings or equipment. Moisture vapor layers should be placed in accordance with the manufacturer's instructions and below the base layer on a properly prepared subgrade.

- All concrete placement and curing should be performed in accordance with procedures outlined by the American Concrete Institute. Special considerations should be given to concrete placed and cured during hot or cold weather conditions.

- The occurrence of concrete shrinkage cracking may be reduced and/or controlled by limiting the amount of water within the mix (water cement ratio of 0.45 or less), the incorporation of crack control joints and proper concrete placing and curing practices including ACI 318 provisions for areas subject to freeze thaw conditions.

- Proper curing, finishing, control joints and reinforcing should be provided to minimize any damage resulting from shrinkage including cracks and slab curling. Joint spacing, locally, is typically on 10-to-12-foot centers for large slabs and no more than five feet for sidewalks.

- Western Nevada is a region with absorptive aggregates and exceptionally low relative humidity. Therefore, concrete flatwork will shrink and curl in a manner which is not typical of many other US regions.

- Proper site preparation and placement of reinforcement are imperative to the performance of slab-on-grade improvements.

- Cracking that occurs within the slab-on-grade floors will often reflect through overlying improvements even if adequate substrate preparation has occurred.

- Control of the rate of moisture loss in concrete slab-on-grade improvements by using curing compounds, fogging, or other suitable means is imperative to protecting the slab from excessive curling.

- Slabs-on-grade will still exhibit some cracking and curling. The occurrence of concrete shrinkage cracks is independent of the soil supporting characteristics.

5.5. Public Improvements

Unless noted otherwise, dedicated improvements shall be designed and constructed in accordance with the approved civil plans, the Standard Specifications for Public Works Construction, and the jurisdiction's standard details.

5.5.1. Slopes and Drainage

- Surface drainage shall be per the approved project Civil design drawings.
- Stability of cut and filled surfaces involves two separate aspects. The first concerns slope stability related to mass wasting, landslides, or the surficial downward movement (or slumping) of soil or rock.
- Cut and fill slopes, with gradients of 2H:1V (horizontal to vertical) or flatter, are suitable for the project soils.
- The specified slope is based on an overall slope average. Localized sculpting of the slope face, resulting in limited minor increases to slope gradient at isolated locations, is considered consistent with the global stability considerations of this report.
- The second aspect of slope stability involves erosion potential which is dependent on numerous factors involving grain size distribution, cohesion, moisture content, slope angle and the velocity of the water or wind across the ground surface.
- Erosion protection should be as indicated on the approved Civil drawings and/or per the jurisdiction's design standards.
- Typically, 2:1 (H:V) slopes require armoring. Slopes steeper than 3:1 (H:V) are typically addressed with a combination of revegetation and localize armoring or landscape retaining walls.
- Temporary (during construction) and permanent (after construction) erosion control will be required for all disturbed areas.
- Brow ditches are recommended above any slopes greater than 10-feet in height and should be incorporated into the overall drainage considerations presented on the civil drawings.
- Provisions for drainage from behind common retaining walls should be considered and presented in the approved civil plans.
- In compliance with all applicable city, county, state and federal regulations the contractor shall prevent dust from being generated during construction, and the contractor shall submit an acceptable dust control plan prior to starting site preparation or earthwork.

5.5.2. Structural Pavement Sections

- Materials and workmanship shall be consistent with the requirements of the jurisdiction and the Standard Specifications for Public Works Construction.
- Table 5 presents the recommended minimum structural pavement sections for the development based on planned use. Minimum sections required by the jurisdictions shall govern if more than specified in Table 6.
- These sections have been developed with the expectation that the requirements of Section 5.2.4 – Subgrade Preparation have been satisfied.
- Depending on final site grading, structural pavement sections may be re-evaluated by the Geotechnical Engineer in consideration of the subgrade R-Value (ASTM D2844 – Standard Test Method for Resistance R-Value and Expansion Pressure of Compacted Soils).

Table 5 - Structural Pavement Sections[1]

Road Type	Pavement Thickness (In.)	Pavement Type[2]	Type II Class B Base Course Thickness (In.)[3]
Local	4	2" Type 3 + Lime / 2" Type 2	6
Collector	5	Type 2 + Lime	8

[1] Per the Standard Specifications for Public Works Construction
[2] Base Course thickness is in addition to structural fill separation requirements presented in Table 2.

- The Contractor should submit a pavement mix design to the Owner or Engineer, for approval, at least five working days prior to paving. When pavement is placed directly adjacent to concrete flatwork, the finish compacted grade of the pavement should be at least ½ of an inch higher than the edge of adjacent concrete surface to allow adequate compaction of the pavement without damaging the concrete.

5.5.3. Pavement Design Life

- Maintenance is mandatory to ensure long-term pavement performance and to meet or exceed the assumed 20-year design life.
- Maintenance refers to any activity performed on the pavement that is intended to preserve its original service life or load-carrying capacity. Examples of maintenance activities include patching, crack or joint sealing, and seal coats. If these maintenance activities are ignored or deferred, premature failure of the pavement will occur.

- Premature failure of asphaltic concrete frequently occurs adjacent to poorly graded ponding areas and/or landscape areas. Failures may occur due to excessive precipitation, irrigation and landscaping water infiltrating into the subgrade soils causing subgrade failure.

- In areas where saturation of the subgrade soils beneath asphaltic pavement may occur, it is strongly recommended the owner/project manager include provisions by design for a subdrain system to eliminate the potential for saturation of subgrade soils. The subdrain system should discharge into a permanent drainage area that will not impede drainage flow to cause the system to back-up and/or clog. Appropriate maintenance procedures should be implemented to ensure the subdrain system does not plug and allow for proper drainage of surface and subsurface water beneath paved areas. Subdrain location and configuration should be evaluated once final grading and landscaping plans have been prepared.

- If the ultimate traffic exceeds the anticipated levels, it may be necessary to reevaluate and overlay the pavement at some time in the future.

- The cost associated with proper maintenance is generally much less than the cost for reconstruction due to the premature failure of the pavement. Therefore, it is strongly recommended the owner/project manager implement a pavement management program.

6. SUPPLEMENTARY SERVICES

- A design level geotechnical report should be prepared once final design grades have been established and reviewed.
- Verification of existing fills may be required.
- Additional exploration (test pits with material testing and/or geophysical surveys) may be warranted where final grade extends beyond the depth of the exploratory test pits.
- An additional investigation of the mapped fault structure may be required if any critical facilities are planned along the lineament.

7. CONSTRUCTION OBSERVATION AND TESTING SERVICES

- The recommendations presented in this report assume that the contractors perform their work as required by the project documents and that owner/project manager provides for sufficient field-testing and construction review during each phase of construction.
- Prior to construction, the owner/project manager should schedule a pre-construction conference including, but not limited to representatives of the owner, architect, civil engineer, the general contractor, earthwork and materials subcontractors, building official, and geotechnical engineer.
- It is the owner's/project manager responsibility to set-up this meeting and contact all responsible parties. The conference will allow parties to review the project plans, specifications, scheduling and recommendations presented in this report, and discuss applicable material quality and mix design requirements.
- Quality control reports should be submitted to the owner/project manager for review and distributed to the appropriate parties. It is essential that any changes or revisions to project plans be provided to Wood Rodgers in a timely fashion to ensure contractor compliance and avoid construction delays or the need to remove completed work.
- During construction, Wood Rodgers Incorporated should have the opportunity to provide sufficient on-site observation of site preparation and grading, over-excavation, fill placement, foundation installation, and paving.

These observations would allow us to document the geotechnical conditions are as anticipated and that the contractor's work meets with the criteria in the approved plans and specifications. Verification of horizontal and vertical control must be provided by whoever was responsible for establishing those boundaries and constructing associated improvements.

8. EXPECTATION OF PERFORMANCE

- The planned residences will incorporate either a standard slab-on-grade foundation with perimeter footings extending to a minimum depth of 18 inches below finished exterior grade.
- In lieu of solely off-hauling and importing, the developer/owner has selected to grade the site using cut to fill practices and selective grading.
- Therefore, the potential exists that soils within various building pads may fall outside the specified limits of Structural Fill.
- This deviation should not be considered a failure to adhere to recommendations presented within this report but should be considered a limitation to mass-grading when a natural, virgin material is used for a fill source.
- These inherent variations should not be considered to comprise a non-conformity with the project specifications unless the Weighted Plasticity (% of material passing the #200 sieve x Plasticity Index) of the weighted structural fill separation layer exceeds 7.5.
- Single family residential construction results in a complex composite of steel, concrete, lumber, and earth. Each element responds differently to loading and consequently cracking and distortion occur.
- Occurrence of cracking or distortion is not in and of itself evidence of the structure failing to meet a reasonable standard or level of performance.
- Repair of unsightly, non-structural, cracks should be considered part of the homeowner maintenance program.
- Cracks that continue to reappear or widen or propagate may be indicative of extenuating issues that require redress.
- Our design protocols and recommended construction testing procedures rely upon ASTM Standards and Guidelines; therefore, any subsequent studies to evaluate completed product or construction practices shall be in accordance with ASTM E 141 AND shall employ the same testing means and methods available at the time of construction.
- Where access or testing limits do not allow continuity in testing methods, a correlation program must be performed that establishes that the testing and evaluation methods employed by the reviewing agency present results consistent with and comparable to the test methods prescribed by this report and employed during construction.
- Failure to follow these prescribed protocols would result in test data being compromised when compared to ASTM standards and requirements.

- In addition, failure to follow the referenced statistical and sampling ASTM assessment protocols would result in a forensic assessment program rife with inconsistencies and variations which would result in the forensic investigation failing to meet the level of precision necessary to accurately evaluate the site conditions.

9. STANDARD LIMITATION CLAUSE

- This report has been prepared in accordance with generally accepted local geotechnical practices.
- The analyses and recommendations submitted are based upon field exploration performed at the specific locations identified and the conditions encountered, as discussed in our report.
- No guarantee or warranty as to the continuity of soil conditions between exploration points is implied or intended.
- Therefore, this report does not reflect soil or water variations that may become evident during the construction period, at which time re-evaluation of the recommendations may be necessary.
- Final plans and specifications should be reviewed by the design engineer responsible for this geotechnical report to determine if they have been prepared in accordance with the recommendations contained in this report prior to submitting to the building department for review.
- It is the owner's/project manager responsibility to provide the plans and specifications to the engineer.
- This report is issued with the understanding that it is the responsibility of the owner or their representative to ensure that the information and recommendations contained herein are brought to the attention of the design team for the project and incorporated into the plans and specifications, and that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.
- We recommend our firm be retained to perform construction observation in all phases of the project related to geotechnical factors to document compliance with our recommendations.
- The owner/project manager is responsible for distribution of this geotechnical report to all designers and contractors whose work is related to geotechnical factors.
- It is the contractor’s responsibility for the grading and construction of the designed improvements. This responsibility includes the means, methods, techniques, sequence, and procedures of construction and safety of construction at the site.
- All construction shall conform to the requirements of the most recently adopted version of the Standard Specifications for Public Works Construction and the requirements of the agency having jurisdiction (AHJ).
- Failure to inspect the work shall not relieve the contractor from their obligation to perform sound and reliable work as described herein and as described in the Standard Specifications for Public Works Construction.

- In the event of changes in the design, location, or ownership of the project after presentation of this report, our recommendations should be reviewed and possibly modified by the Geotechnical Engineer.
- If the Geotechnical Engineer is not afforded the privilege of making this recommended review, we can assume no responsibility for misinterpretation or misapplication of our recommendations or their validity in the event changes have been made in the original design concept without our prior review. The engineer makes no other warranties, either expressed or implied, as to the professional advice provided under the terms of this agreement and included in this report.
- This report was prepared by Wood Rodgers, Inc. for the benefit of GF Development, LLC and their duly assigned agents or other responsible parties.
- The material in this report reflects Wood Rodgers' best judgment considering the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties.
- Wood Rodgers accepts no responsibility for damages, if any, suffered by any third party because of decisions made by third parties or actions based on this report without consultation with Wood Rodgers and written approval for such actions.

10. REFERENCES

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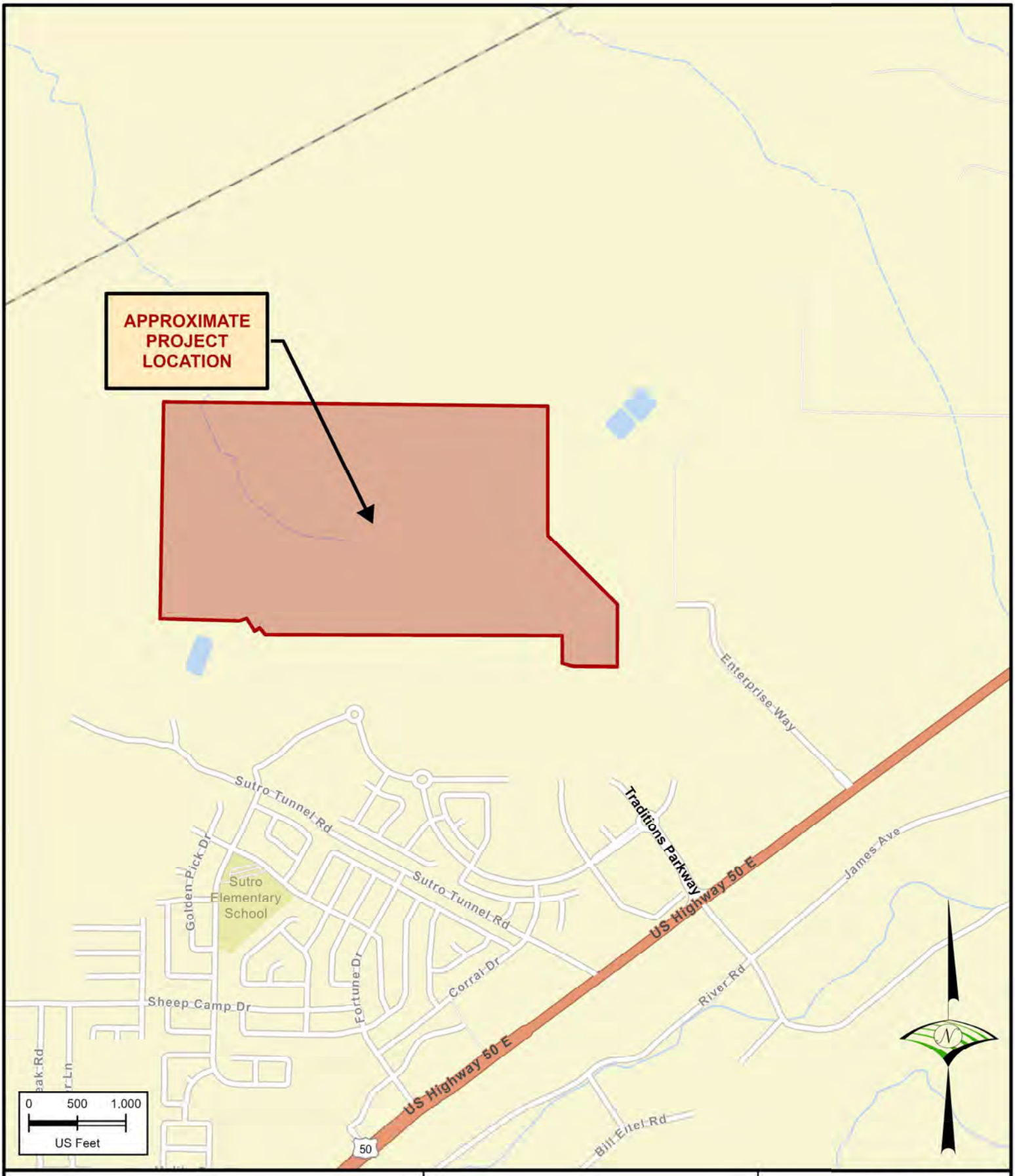
APPENDIX A
FIGURES

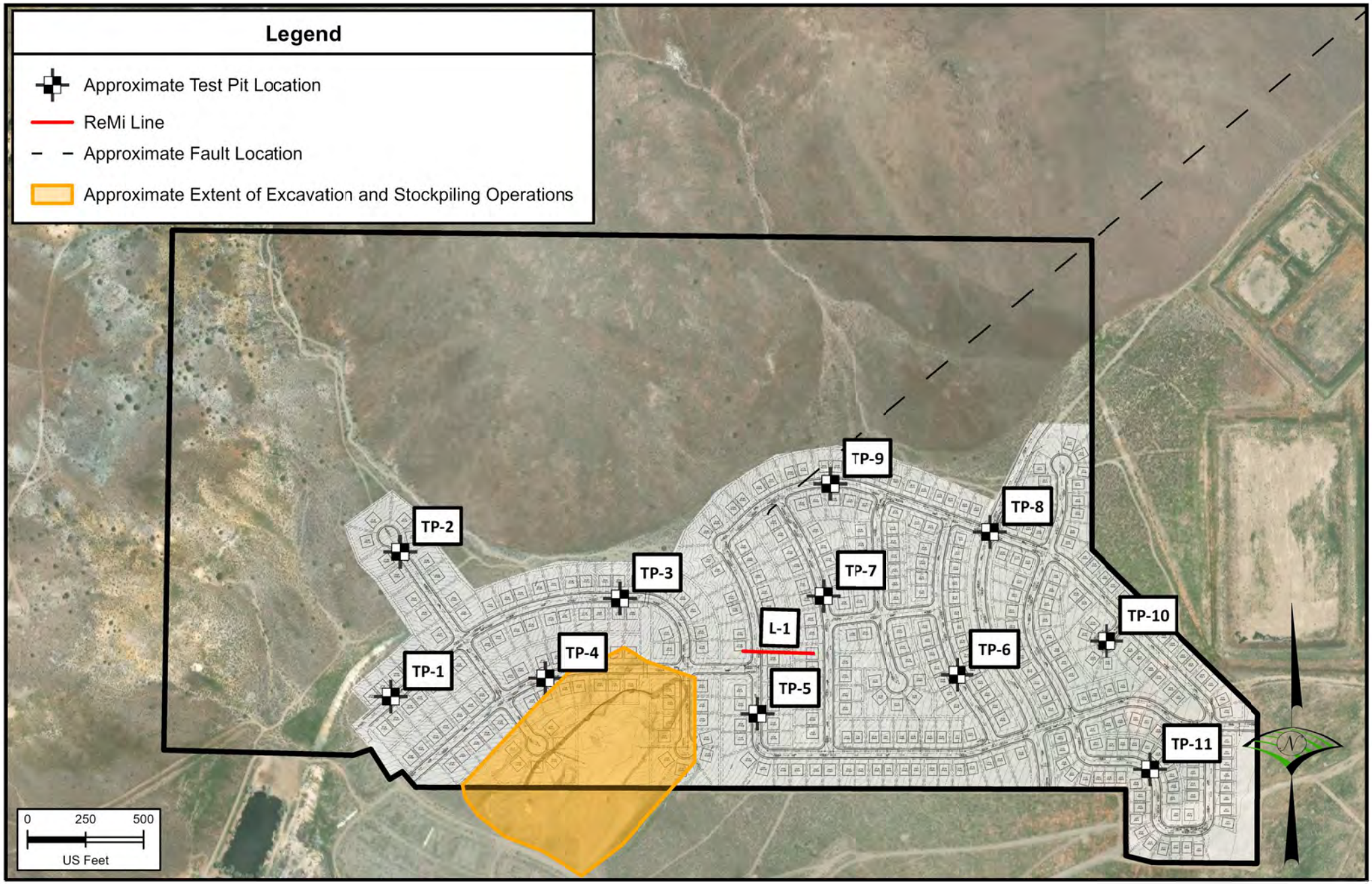


TRADITIONS NORTH
PROJECT NO. 4627001

VICINITY MAP

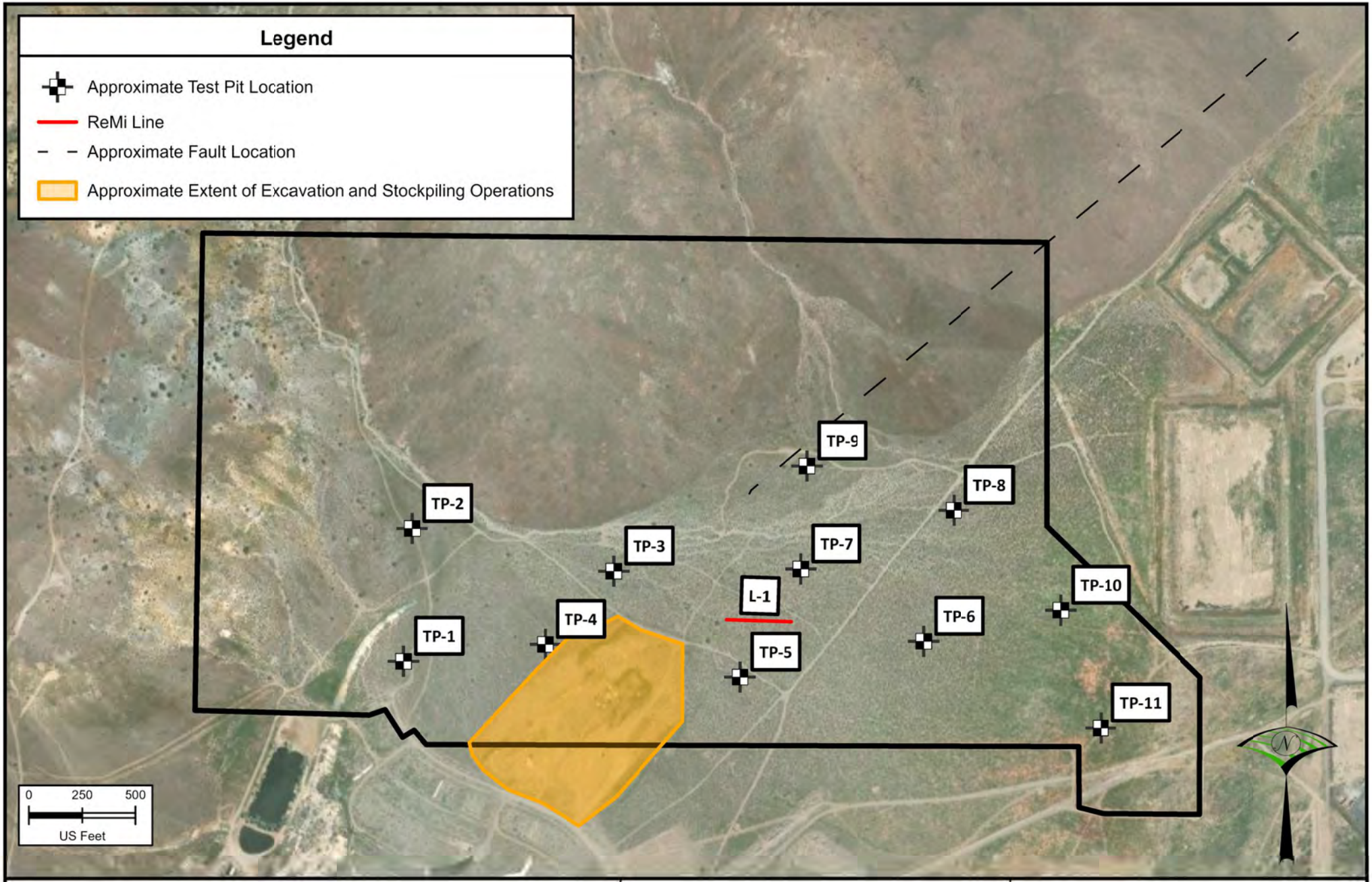
FIGURE 1

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Blvd
Reno, NV 89502
Tel: 775.823
Fax: 775.823



TRADITIONS NORTH PROJECT NO. 4627001	IMPROVEMENT PLAN AND APPROXIMATE EXPLORATION LOCATIONS	FIGURE 2

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Blvd
Reno, NV 89502
Tel: 775.823.4068
Fax: 775.823.4066



TRADITIONS NORTH
PROJECT NO. 4627001

SITE MAP & APPROXIMATE
EXPLORATION LOCATIONS

FIGURE 3

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Blvd
Reno, NV 89502
Tel: 775.823.4068
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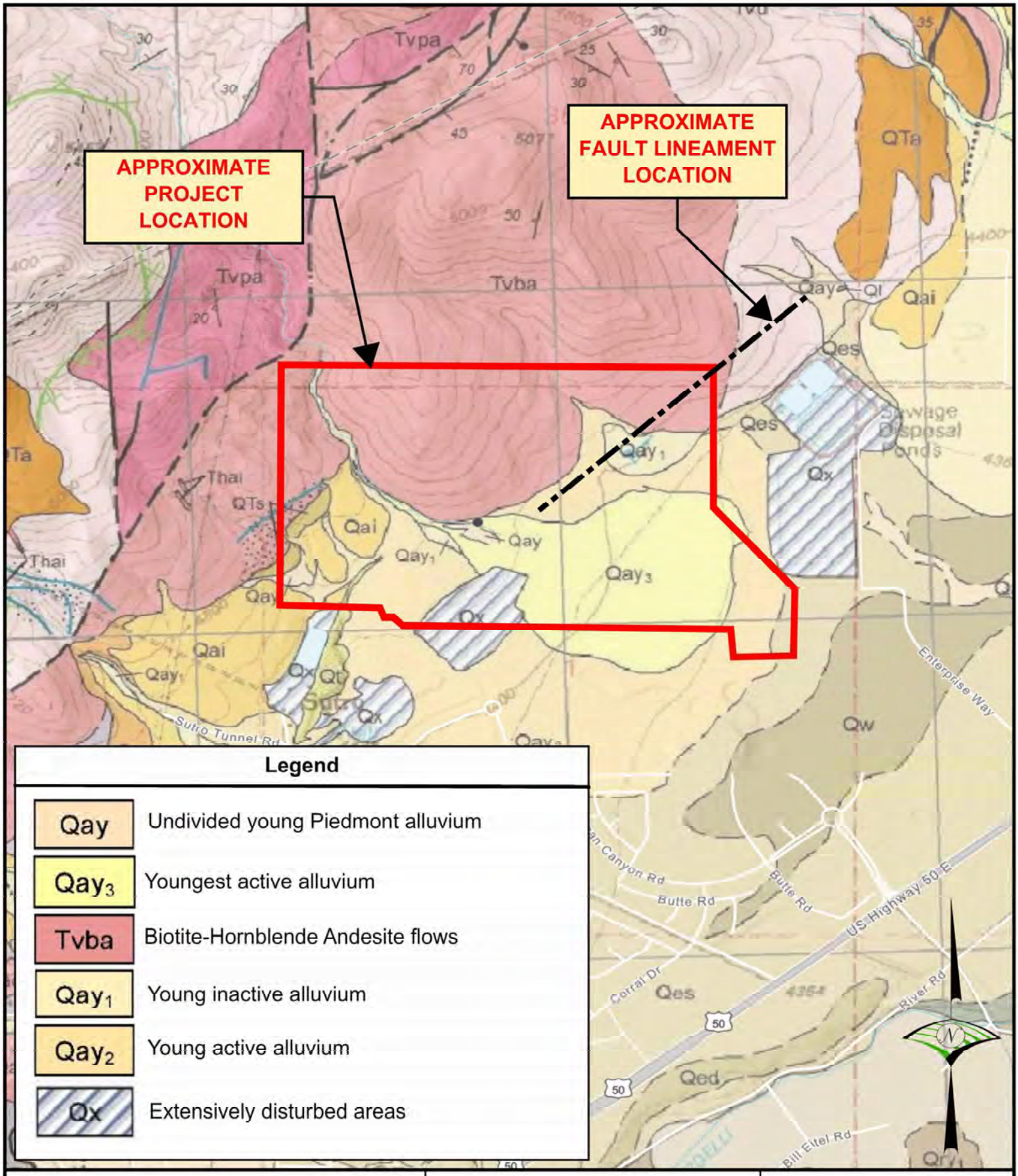

TRADITIONS NORTH PROJECT NO. 4627001	GEOLOGIC MAP	FIGURE 4

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Blvd
Reno, NV 89502
Tel: 775.823
Fax: 775.823

APPENDIX B
FIELD EXPLORATION

Wood Rodgers Inc.
1361 Corporate Blvd
Reno NV 89521
Telephone: 775-823-4068
Fax: 775-823-4066

TEST PIT NUMBER TP-1

CLIENT GF Development, LLC
PROJECT NAME Traditions North
PROJECT NUMBER 4627001
PROJECT LOCATION Dayton, Lyon County, Nevada
DATE STARTED 6/24/25 **COMPLETED** 6/24/25
GROUND ELEVATION 4,468 feet **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Sierra View Equipment
GROUND WATER LEVELS:
EXCAVATION METHOD Komatsu PC 228 Excavator
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Joseph Toth
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Traditions North Conceptual Grading Plan (PDG, 2025)
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	R-VALUE	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		CLAYEY SAND WITH GRAVEL (SC), medium dense, dry, dark brown, low to medium plasticity	GB 1A									
2.5		SILTY, CLAYEY GRAVEL WITH SAND AND COBBLES (GC-GM), dense, slightly moist, tan, low plasticity Visually Estimated From Stockpile: ~20% cobbles to 6" diameter	GB 1B									
5.0												
7.5		CLAYEY SAND WITH GRAVEL (SC), dense, slightly moist, light brown, low plasticity	GB 1C									
10.0												
12.5		POORLY GRADED GRAVEL WITH SAND AND COBBLES (GP), very dense, dry, tan, nonplastic										

Bottom of Test Pit at 13.0 Feet.

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Wood Rodgers Inc.
1361 Corporate Blvd
Reno NV 89521
Telephone: 775-823-4068
Fax: 775-823-4066

TEST PIT NUMBER TP-2

CLIENT GF Development, LLC
PROJECT NAME Traditions North
PROJECT NUMBER 4627001
PROJECT LOCATION Dayton, Lyon County, Nevada
DATE STARTED 6/24/25 **COMPLETED** 6/24/25
GROUND ELEVATION 4,504 feet **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Sierra View Equipment
GROUND WATER LEVELS:
EXCAVATION METHOD Komatsu PC 228 Excavator
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Joseph Toth
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Traditions North Conceptual Grading Plan (PDG, 2025)
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	R-VALUE	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		FAT CLAY (CH), stiff, dry, dark brown, high plasticity	GB 2A									
2.5		POORLY GRADED GRAVEL WITH CLAY, SAND, AND COBBLES (GP-GC), very dense, dry, white tan, low to medium plasticity, moderately to strongly cemented	GB 2B					7.4	30	19	11	9.9
5.0		POORLY GRADED GRAVEL WITH SILT, SAND, AND COBBLES (GP-GM), very dense, dry to slightly moist, light tan brown, nonplastic										
7.5			GB 2C									
10.0		Visually Estimated From Stockpile: ~30% cobbles to 6" diameter ~10% oversize to 18" diameter										
12.5												
15.0		Bottom of Test Pit at 15.0 Feet.										

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Wood Rodgers Inc.
1361 Corporate Blvd
Reno NV 89521
Telephone: 775-823-4068
Fax: 775-823-4066

TEST PIT NUMBER TP-3

CLIENT GF Development, LLC
PROJECT NAME Traditions North
PROJECT NUMBER 4627001
PROJECT LOCATION Dayton, Lyon County, Nevada
DATE STARTED 6/24/25 **COMPLETED** 6/24/25
GROUND ELEVATION 4,459 feet **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Sierra View Equipment
GROUND WATER LEVELS:
EXCAVATION METHOD Komatsu PC 228 Excavator
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Joseph Toth
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Traditions North Conceptual Grading Plan (PDG, 2025)
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	R-VALUE	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		CLAYEY SAND WITH GRAVEL (SC), medium dense, dry, dark brown, low to medium plasticity	GB 3A									
2.5		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), very dense, dry to slightly moist, light tan brown, nonplastic										
5.0												
7.5			GB 3B									
10.0												
12.5												

Bottom of Test Pit at 13.5 Feet.

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 7/16/25 08:11 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS\4627_TRADITIONS_GF_DEV\TRADITIONS_GF_DEV_OA\GEOTECH\GEOTECH\04 GINT\TRADITIONS NORTH.GPJ

Wood Rodgers Inc.
1361 Corporate Blvd
Reno NV 89521
Telephone: 775-823-4068
Fax: 775-823-4066

TEST PIT NUMBER TP-4

CLIENT GF Development, LLC
PROJECT NAME Traditions North
PROJECT NUMBER 4627001
PROJECT LOCATION Dayton, Lyon County, Nevada
DATE STARTED 6/24/25 **COMPLETED** 6/24/25
GROUND ELEVATION 4,464 feet **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Sierra View Equipment
GROUND WATER LEVELS:
EXCAVATION METHOD Komatsu PC 228 Excavator
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Joseph Toth
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Traditions North Conceptual Grading Plan (PDG, 2025)
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	R-VALUE	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		CLAYEY SAND (SC), medium dense, dry, medium brown, low plasticity	GB 4A									
2.5		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), dense, dry to slightly moist, tan, nonplastic										
		Sloughing from 2' - 7'										
5.0												
7.5			GB 4B									
10.0												
12.5												
15.0		Bottom of Test Pit at 15.0 Feet.										

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Wood Rodgers Inc.
1361 Corporate Blvd
Reno NV 89521
Telephone: 775-823-4068
Fax: 775-823-4066

TEST PIT NUMBER TP-5

CLIENT GF Development, LLC
PROJECT NAME Traditions North
PROJECT NUMBER 4627001
PROJECT LOCATION Dayton, Lyon County, Nevada
DATE STARTED 6/24/25 **COMPLETED** 6/24/25
GROUND ELEVATION 4,421 feet **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Sierra View Equipment
GROUND WATER LEVELS:
EXCAVATION METHOD Komatsu PC 228 Excavator
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Joseph Toth
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Traditions North Conceptual Grading Plan (PDG, 2025)
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	R-VALUE	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		CLAYEY SAND (SC), medium dense, dry, medium brown, low plasticity	GB 5A									
2.5		SILTY SAND WITH GRAVEL AND COBBLES (SM), dense, dry, light brown, nonplastic										
5.0			GB 5B									20.7
7.5		Visually Estimated From Stockpile: ~5% cobbles to 6" diameter <5% oversize to 18" diameter										
10.0												
12.5												
15.0		Bottom of Test Pit at 15.0 Feet.										

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Wood Rodgers Inc.
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TEST PIT NUMBER TP-6

CLIENT GF Development, LLC
PROJECT NAME Traditions North
PROJECT NUMBER 4627001
PROJECT LOCATION Dayton, Lyon County, Nevada
DATE STARTED 6/24/25 **COMPLETED** 6/24/25
GROUND ELEVATION 4,384 feet **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Sierra View Equipment
GROUND WATER LEVELS:
EXCAVATION METHOD Komatsu PC 228 Excavator
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Joseph Toth
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Traditions North Conceptual Grading Plan (PDG, 2025)
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	R-VALUE	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), medium dense to dense, dry, light brown, nonplastic, gravel/sand interbeds										
2.5			GB 6A					4.3	NP	NP	NP	10.6
5.0			GB 6B									
7.5												
10.0												
12.5												
15.0		Bottom of Test Pit at 15.0 Feet.										

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Wood Rodgers Inc.
1361 Corporate Blvd
Reno NV 89521
Telephone: 775-823-4068
Fax: 775-823-4066

TEST PIT NUMBER TP-7

CLIENT GF Development, LLC
PROJECT NAME Traditions North
PROJECT NUMBER 4627001
PROJECT LOCATION Dayton, Lyon County, Nevada
DATE STARTED 6/24/25 **COMPLETED** 6/24/25
GROUND ELEVATION 4,414 feet **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Sierra View Equipment
GROUND WATER LEVELS:
EXCAVATION METHOD Komatsu PC 228 Excavator
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Joseph Toth
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Traditions North Conceptual Grading Plan (PDG, 2025)
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	R-VALUE	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), dense, dry, gray tan, nonplastic	GB 7A									
2.5												
5.0												
7.5		SILTY, CLAYEY GRAVEL WITH SAND (GC-GM), dense, slightly moist, light brown, low plasticity	GB 7B									
10.0												

Bottom of Test Pit at 11.5 Feet.

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 7/16/25 08:11 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS\4627_TRADITIONS_GF_DEV\TRADITIONS_GF_DEV_OA\GEOTECH\GEOTECH\04 GINT\TRADITIONS NORTH.GPJ

Wood Rodgers Inc.
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Fax: 775-823-4066

TEST PIT NUMBER TP-8

CLIENT GF Development, LLC
PROJECT NAME Traditions North
PROJECT NUMBER 4627001
PROJECT LOCATION Dayton, Lyon County, Nevada
DATE STARTED 6/24/25 **COMPLETED** 6/24/25
GROUND ELEVATION 4,384 feet **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Sierra View Equipment
GROUND WATER LEVELS:
EXCAVATION METHOD Komatsu PC 228 Excavator
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Joseph Toth
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Traditions North Conceptual Grading Plan (PDG, 2025)
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	R-VALUE	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		POORLY GRADED SAND WITH SILT (SP-SM), medium dense, dry, brown, nonplastic										
2.5			GB 8A									
5.0												
		SILTY, CLAYEY SAND (SC-SM), medium dense, dry, light tan, low plasticity										
7.5			GB 8B									
		POORLY GRADED SAND WITH SILT (SP-SM), medium dense to dense, dry, light brown, nonplastic										
10.0			GB 8C									
12.5		Bottom of Test Pit at 13.0 Feet.										

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Wood Rodgers Inc.
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Reno NV 89521
Telephone: 775-823-4068
Fax: 775-823-4066

TEST PIT NUMBER TP-9

CLIENT GF Development, LLC
PROJECT NAME Traditions North
PROJECT NUMBER 4627001
PROJECT LOCATION Dayton, Lyon County, Nevada
DATE STARTED 6/24/25 **COMPLETED** 6/24/25
GROUND ELEVATION 4,407 feet **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Sierra View Equipment
GROUND WATER LEVELS:
EXCAVATION METHOD Komatsu PC 228 Excavator
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Joseph Toth
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Traditions North Conceptual Grading Plan (PDG, 2025)
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	R-VALUE	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		SILTY SAND (SM), medium dense, dry, medium brown, nonplastic	GB 9A									
2.5		WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), dense, dry, light brown, nonplastic										
5.0			GB 9B					4.6	NP	NP	NP	6.5
7.5		CLAYEY SAND WITH GRAVEL (SC), dense, dry, light brown, medium plasticity	GB 9C									
10.0		POORLY GRADED GRAVEL WITH SAND (GP), very dense, dry, light brown, nonplastic										

Bottom of Test Pit at 11.5 Feet.

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Wood Rodgers Inc.
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Reno NV 89521
Telephone: 775-823-4068
Fax: 775-823-4066

TEST PIT NUMBER TP-10

CLIENT GF Development, LLC
PROJECT NAME Traditions North
PROJECT NUMBER 4627001
PROJECT LOCATION Dayton, Lyon County, Nevada
DATE STARTED 6/24/25 **COMPLETED** 6/24/25
GROUND ELEVATION 4,368 feet **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Sierra View Equipment
GROUND WATER LEVELS:
EXCAVATION METHOD Komatsu PC 228 Excavator
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Joseph Toth
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Traditions North Conceptual Grading Plan (PDG, 2025)
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	R-VALUE	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		SILTY SAND (SM), medium dense, dry to slightly moist, medium brown, nonplastic										
2.5			GB 10A									
5.0		CLAYEY SAND (SC), medium dense, slightly moist, medium brown, low plasticity										
7.5			GB 10B									
10.0		Bottom of Test Pit at 11.8 Feet.										

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Wood Rodgers Inc.
1361 Corporate Blvd
Reno NV 89521
Telephone: 775-823-4068
Fax: 775-823-4066

TEST PIT NUMBER TP-11

CLIENT GF Development, LLC
PROJECT NAME Traditions North
PROJECT NUMBER 4627001
PROJECT LOCATION Dayton, Lyon County, Nevada
DATE STARTED 6/24/25 **COMPLETED** 6/24/25
GROUND ELEVATION 4,360 feet **TEST PIT SIZE** 48 inches
EXCAVATION CONTRACTOR Sierra View Equipment
GROUND WATER LEVELS:
EXCAVATION METHOD Komatsu PC 228 Excavator
AT TIME OF EXCAVATION --- NO FREE WATER ENCOUNTERED
LOGGED BY Jackson Beadell **CHECKED BY** Joseph Toth
AT END OF EXCAVATION --- NO FREE WATER ENCOUNTERED
NOTES: Elevations: Traditions North Conceptual Grading Plan (PDG, 2025)
AFTER EXCAVATION --- NO FREE WATER ENCOUNTERED

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	R-VALUE	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		SANDY LEAN CLAY (CL), stiff, dry, gray tan, medium plasticity										
2.5			GB 11A					15.5	30	16	14	62.4
5.0		LEAN CLAY TO FAT CLAY (CL-CH), very stiff, dry, medium brown, medium to high plasticity	GB 11B									
7.5		POORLY GRADED SAND (SP), medium dense, dry, light gray, nonplastic										
10.0		Sloughing from 7' - 12'										

Bottom of Test Pit at 12.0 Feet.

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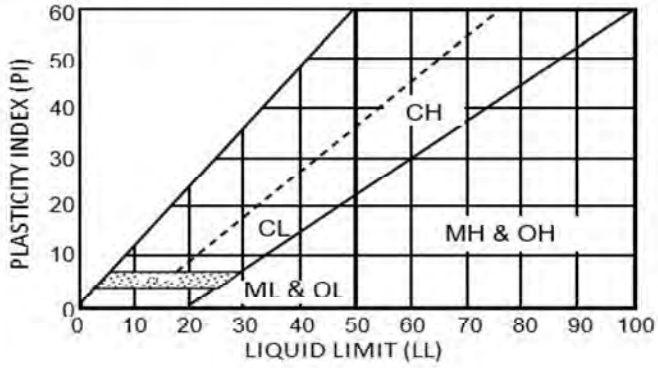
MAJOR DIVISION				TYPICAL NAMES	
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVEL MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN SANDS WITH LITTLE OR NO FINES		GW	WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
				GP	POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES		GM	SILTY GRAVELS, SILTY GRAVELS WITH SAND
				GC	CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SAND MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS WITH LITTLE OR NO FINES		SW	WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
				SP	POORLY GRADED SAND WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES		SM	SILTY SANDS WITH OR WITHOUT GRAVEL
				SC	CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILT AND CLAY LIQUID LIMIT 50% OR LESS			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
				OL	ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILT AND CLAY LIQUID LIMIT GREATER THAN 50%			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOLID, ELASTIC SILTS
				CH	INORGANIC CLAYS OR HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC SILTS OR CLAYS MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT AND OTHER HIGHLY ORGANIC SOILS



CONSISTENCY		RELATIVE DENSITY	
SILTS & CLAYS	SPT BLOW* COUNTS (N)	SANDS & GRAVELS	SPT BLOW* COUNTS (N)
VERY SOFT	0 - 2	VERY LOOSE	0 - 4
SOFT	3 - 4	LOOSE	5 - 10
MEDIUM STIFF	5 - 8	MD DENSE	11 - 30
STIFF	9 - 15	DENSE	31 - 50
VERY STIFF	16 - 30	VERY DENSE	50 +
HARD	30 +		

* The Standard Penetration Resistance (N) In blows per foot is obtained by the ASTM D1586 procedure using 2" O.D., 1 3/8" I.D. samplers.

PLASTICITY DESCRIPTIONS			
DESCRIPTION	RANGE	DESCRIPTION	RANGE
NONPLASTIC	<5	MEDIUM	10-20
LOW	< 10	MEDIUM-HIGH	15 - 25
LOW-MEDIUM	5 - 15	HIGH	>25

DESCRIPTION OF ESTIMATED PERCENTAGES OF GRAVEL, SAND, AND FINES	
TRACE	Particles are present but est. < 5%
FEW	5% - 10%
LITTLE	15% - 20%
SOME	30% - 45%
MOSTLY	50% - 100%

DEFINITIONS OF SOIL FRACTIONS	
SOIL COMPONENT	PARTICLE SIZE RANGE
BOULDERS	> 12 INCHES
COBBLES	3 to 12 Inches
GRAVEL	3 IN. TO NO. 4 SIEVE
COARSE GRAVEL	3 IN. TO 3/4 IN.
FINE GRAVEL	3/4 IN. TO NO. 4 SIEVE
SAND	NO. 4 TO NO. 200
COARSE SAND	NO. 4 TO NO. 10
MEDIUM SAND	NO. 10 TO NO. 40
FINE SAND	NO. 40 TO NO. 200
FINES (SILT OR CLAY)	MINUS NO. 200 SIEVE

NOTE: Percentages are presented within soil description for soil horizon with laboratory tested soil samples.

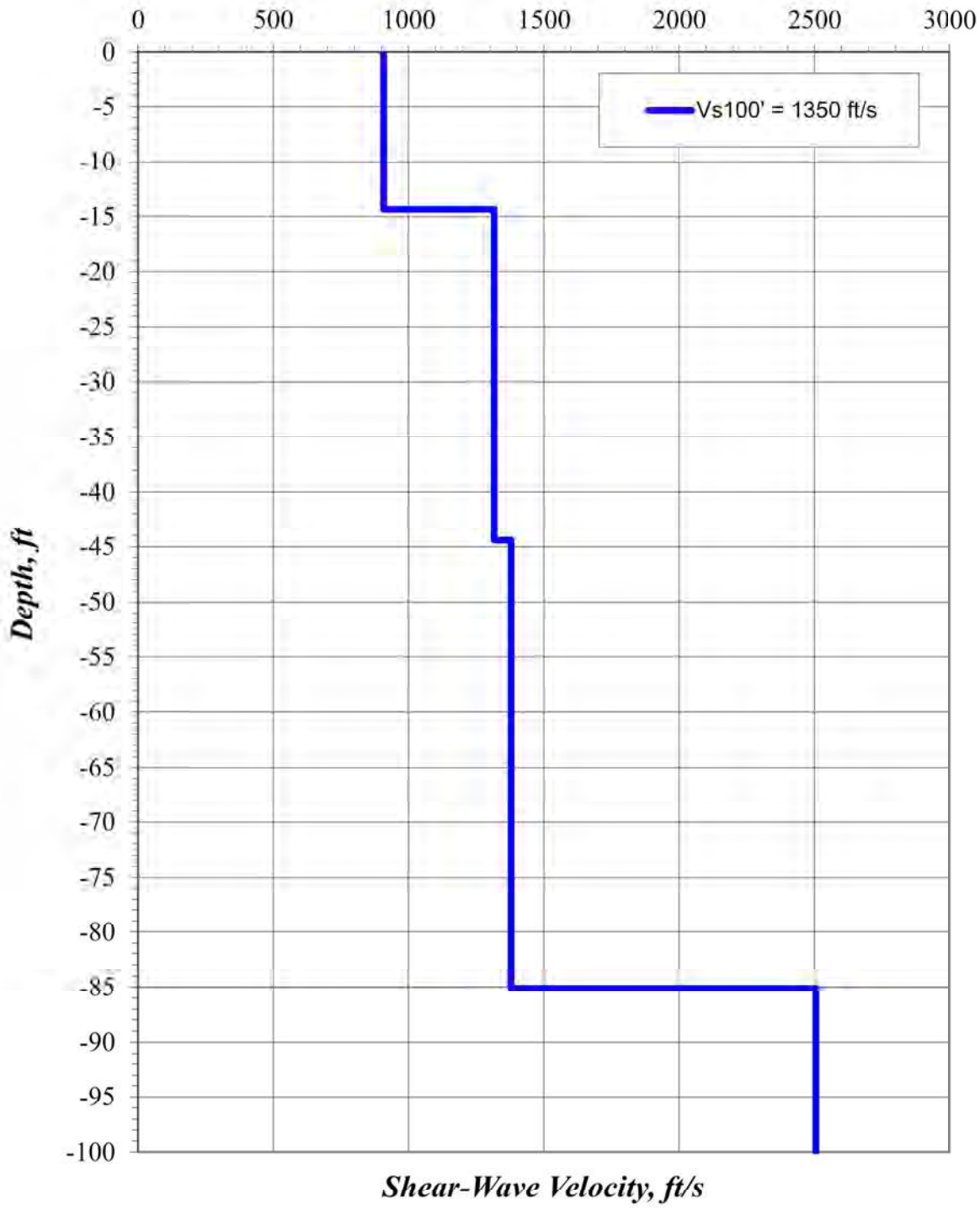
TRADITIONS NORTH
PROJECT NO. 4627001

UNIFIED SOIL CLASSIFICATION AND KEY TO SOIL DESCRIPTIONS

B-2

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
1361 Corporate Blvd
Reno, NV 89502
Tel: 775.823
Fax: 775.823

Traditions North, 300': Vs Model



TRADITIONS NORTH PROJECT NO. 4627001	S-WAVE REMI RESULTS	B-3

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME
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Reno, NV 89502
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APPENDIX C
LABORATORY TEST RESULTS

Wood Rodgers Inc.
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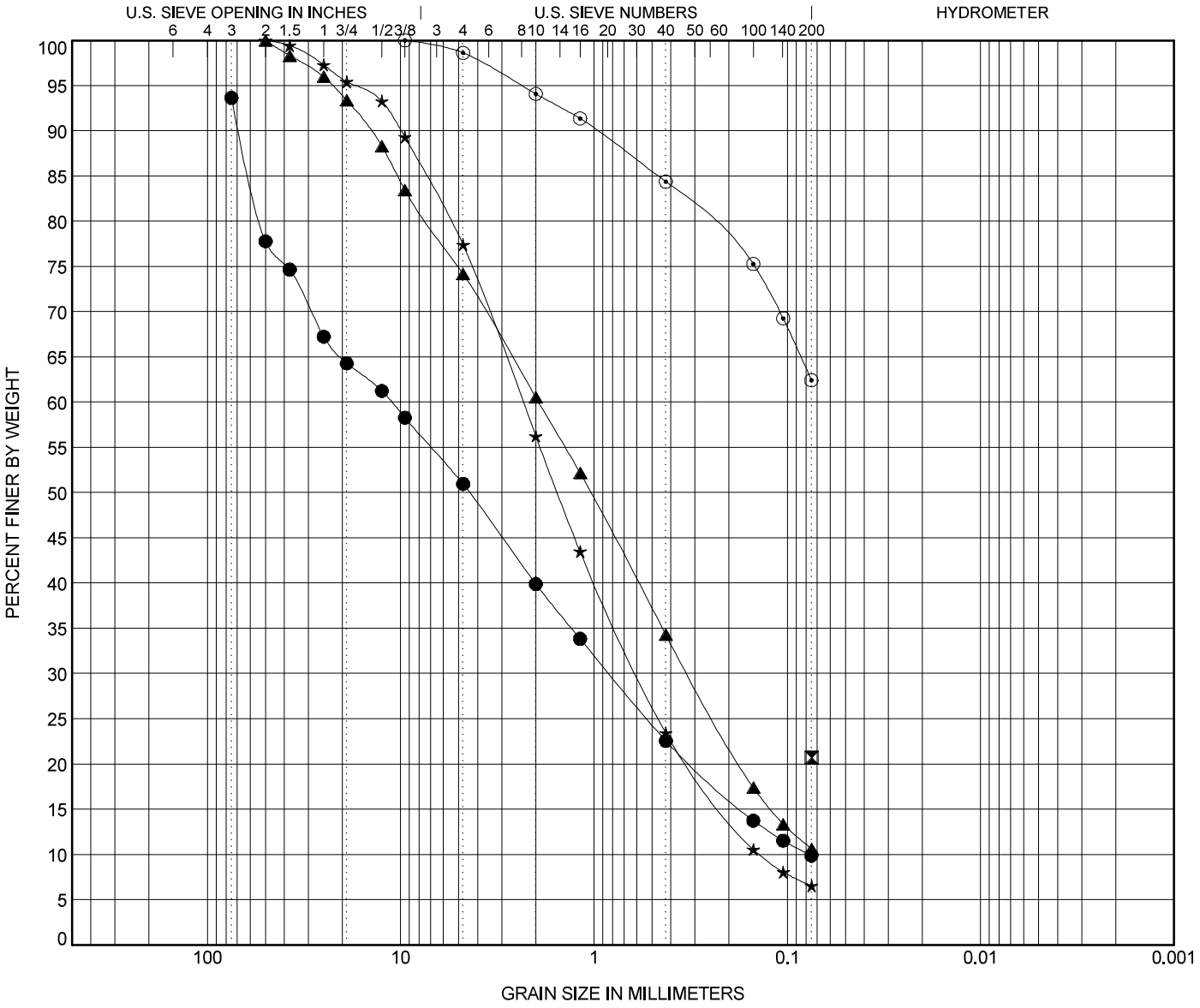
Reno NV 89521
Telephone: 775-823-4068
Fax: 775-823-4066

GRAIN SIZE DISTRIBUTION

CLIENT GF Development, LLC **PROJECT NAME** Traditions North

PROJECT NUMBER 4627001 **PROJECT LOCATION** Dayton, Lyon County, Nevada



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	TEST PIT	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	TP-2	2.0	POORLY GRADED GRAVEL with CLAY and SAND(GP-GC)	30	19	11	0.81	144.48
⊠	TP-5	5.0	SILTY SAND with GRAVELS and COBBLES (SM) (ASTM D2488)					
▲	TP-6	2.0	POORLY GRADED SAND with SILT and GRAVEL(SP-SM)	NP	NP	NP	0.79	27.93
★	TP-9	4.0	WELL-GRADED SAND with SILT and GRAVEL(SW-SM)	NP	NP	NP	1.09	16.79
⊙	TP-11	1.0	SANDY LEAN CLAY(CL)	30	16	14		

	TEST PIT	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	TP-2	2.0	75	11.142	0.834	0.077	42.7	41.1	9.9	
⊠	TP-5	5.0	0.075						20.7	
▲	TP-6	2.0	50	1.935	0.326		25.8	63.5	10.6	
★	TP-9	4.0	50	2.331	0.594	0.139	22.6	70.9	6.5	
⊙	TP-11	1.0	9.5				1.4	36.2	62.4	

GRAIN SIZE DEPTH - GINT STD US LAB.GDT - 7/16/25 08:06 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS\4627_TRADITIONS_GF_DEV\TRADITIONS_GF_DEV_OA\GEOTECH\GEOTECH\04 GINT\TRADITIONS NORTH.GPJ

Wood Rodgers Inc.
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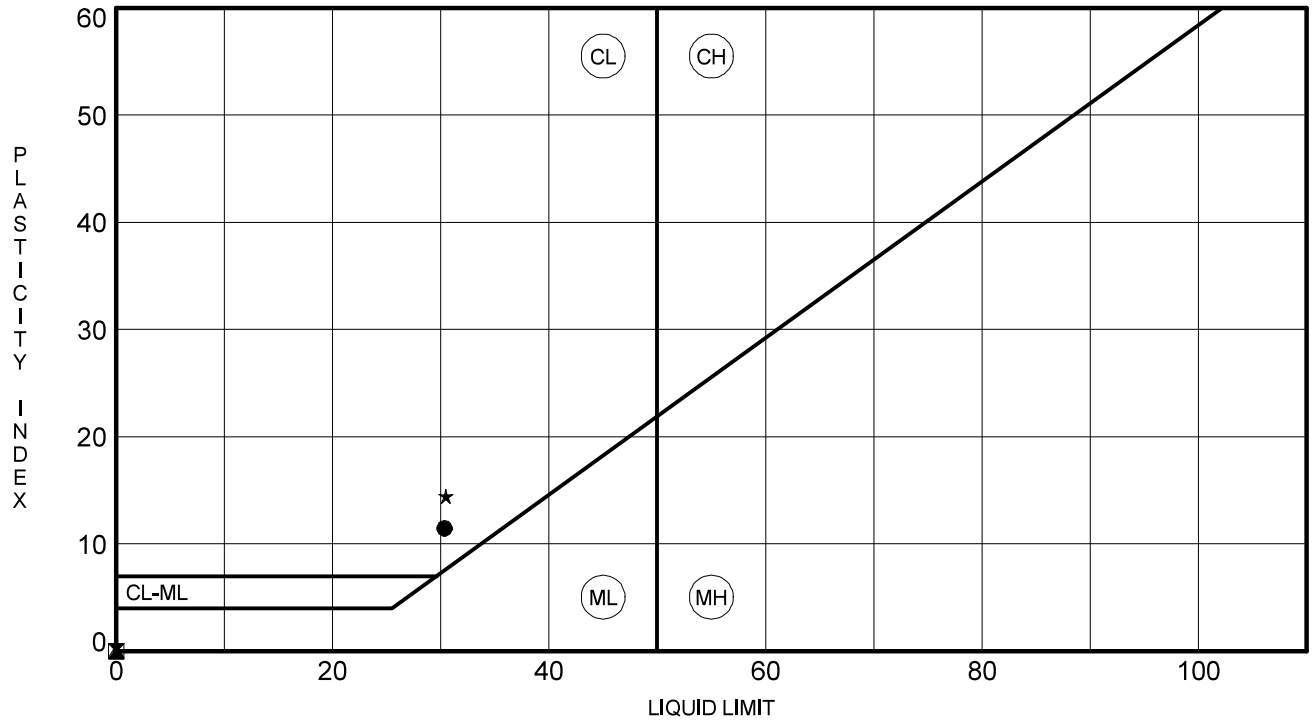
ATTERBERG LIMITS' RESULTS

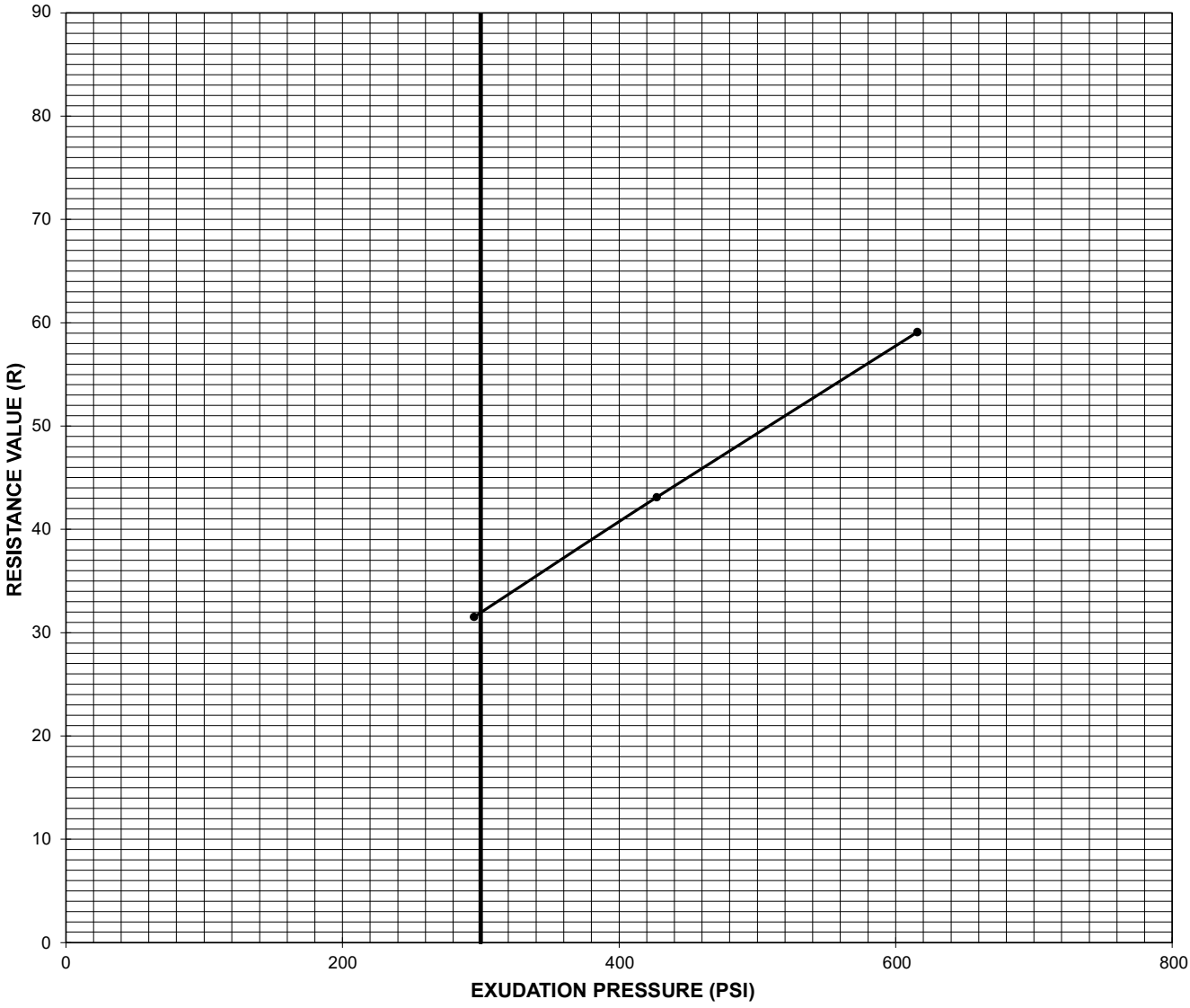
CLIENT GF Development, LLC **PROJECT NAME** Traditions North

PROJECT NUMBER 4627001 **PROJECT LOCATION** Dayton, Lyon County, Nevada



	TEST PIT	DEPTH	LL	PL	PI	Fines	Classification
●	**TP-2**	**2.0**	**30**	**19**	**11**	**9.9**	**POORLY GRADED GRAVEL with CLAY and SAND(GP-GC)**
⊠	**TP-6**	**2.0**	**NP**	**NP**	**NP**	**10.6**	**POORLY GRADED SAND with SILT and GRAVEL(SP-SM)**
▲	**TP-9**	**4.0**	**NP**	**NP**	**NP**	**6.5**	**WELL-GRADED SAND with SILT and GRAVEL(SW-SM)**
★	**TP-11**	**1.0**	**30**	**16**	**14**	**62.4**	**SANDY LEAN CLAY(CL)**

ATTERBERG LIMITS DEPTH - GINT STD US LAB.GDT - 7/16/25 08:07 - \\WOODRODGERS.LOC\PRODUCTIONDATA\JOBS-RENO\JOBS\4627_TRADITIONS_GF_DEV\TRADITIONS_GF_DEV_OA\GEOTECH\GEOTECH\04 GINT\TRADITIONS NORTH.GPJ



C-1aD 2844 Symbol	Sample Source	Classification	Expansion Pressure (psf)	R-value
o	Traditions North - Project #4627001 - Test Pit 5 @ 0' - 2'	Native	0.0	32

POINT #	WATER CONTENT (%)	DRY DENSITY (PCF)	EXUDATION PRESS. (PSI)	EXPANSION PRESS. (PSF)	RESISTANCE VALUE (R)
1	11.9	123.4	616	0.0	59
2	13.0	119.8	427	0.0	43
3	13.6	120.1	295	0.0	32
4					
5					
6					

EASTERN SIERRA ENGINEERING
CIVIL ENGINEERING & CONSTRUCTION SERVICES

RESISTANCE VALUE TEST DATA
Wood Rodgers
2025 General Lab Services

FIGURE
C-1c

DRAWN	ESE BULK #	JOB NUMBER	APPROVED	DATE	REVISED	DATE
CM	9163	25-043-01	BF	7/23/2025		

SGS Silver State Analytical Laboratories
3626 E. Sunset Road, Suite 100
Las Vegas, NV 89120
(702) 873-4478
www.ssalabs.com

Analytical Report

Workorder#: **25070484**
Date Reported: **7/23/2025**

Client: Wood Rodgers
Project Name: 4627001
PO #:

Sampled By: Client

Laboratory Accreditation Number: NV930/CA3029

Laboratory ID	Client Sample ID	Date/Time Sampled	Date Received
25070484-01	TP-3 @ 0'-2'	07/07/2025 7:28	7/10/2025

Parameter	Method	Result	Units	PQL	Analyst	Date/Time Analyzed	Data Flag
Chloride	SM 4500CL B	ND	mg/Kg	10	LJ	07/16/2025 10:46	
Oxidation-Reduction Potential	SM 2580 B	169	mV	1	KR	07/16/2025 13:54	
Resistivity, Minimum #	AASHTO T288	3490	Ohms-cm	0.1	DT	07/17/2025 10:51	
Sulfate #	ASTM C1580	0.020	%	0.02	LJ	07/17/2025 12:12	
Sulfide	SM 4500S2 F	ND	mg/Kg	1	LJ	07/17/2025 13:23	

Laboratory Accreditation Number: NV930/CA3029

Laboratory ID	Client Sample ID	Date/Time Sampled	Date Received
25070484-02	TP-10 @ 1'-5'	07/07/2025 7:28	7/10/2025

Parameter	Method	Result	Units	PQL	Analyst	Date/Time Analyzed	Data Flag
Chloride	SM 4500CL B	ND	mg/Kg	10	LJ	07/16/2025 10:46	
Oxidation-Reduction Potential	SM 2580 B	117	mV	1	KR	07/16/2025 13:54	
Resistivity, Minimum #	AASHTO T288	3400	Ohms-cm	0.1	DT	07/17/2025 10:51	
Sulfate #	ASTM C1580	ND	%	0.02	LJ	07/17/2025 12:12	
Sulfide	SM 4500S2 F	ND	mg/Kg	1	LJ	07/17/2025 13:23	

Laboratory Accreditation Number: NV015/CA2990

Laboratory ID	Client Sample ID	Date/Time Sampled	Date Received
25070484-03	TP-3 @ 0'-2'	07/07/2025 7:28	7/10/2025

Parameter	Method	Result	Units	PQL	Analyst	Date/Time Analyzed	Data Flag
pH	SW-846 9045D	7.96	pH Units		HG	07/21/2025 10:58	
pH Temperature	SW-846 9045D	23.0	°C		HG	07/21/2025 10:58	

Laboratory Accreditation Number: NV015/CA2990

Laboratory ID	Client Sample ID	Date/Time Sampled	Date Received
25070484-04	TP-10 @ 1'-5'	07/07/2025 7:28	7/10/2025

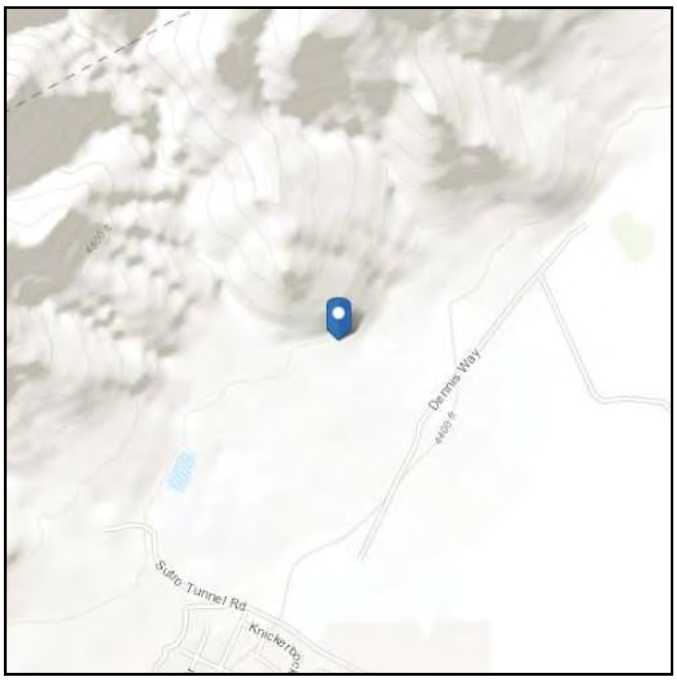
Parameter	Method	Result	Units	PQL	Analyst	Date/Time Analyzed	Data Flag
pH	SW-846 9045D	7.93	pH Units		HG	07/21/2025 10:58	
pH Temperature	SW-846 9045D	23.0	°C		HG	07/21/2025 10:58	

APPENDIX D
ASCE 7 HAZARDS REPORT

ASCE Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-22	**Latitude:**	39.284699
Risk Category:	II	**Longitude:**	-119.577258
Soil Class:	CD	**Elevation:**	4468.601399839073 ft (NAVD 88)



Seismic

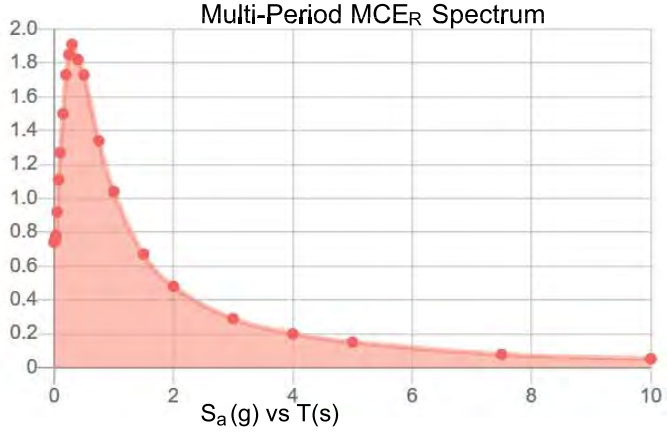
Site Soil Class: CD

Results:

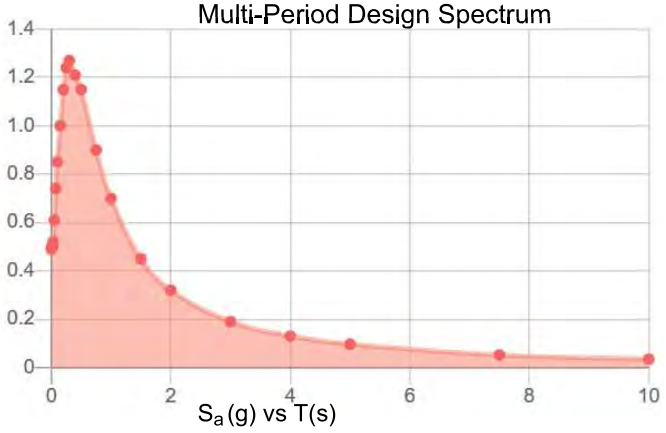
PGA_M :	0.61	T_L :	6
S_{MS} :	1.72	S_S :	1.61
S_{M1} :	1.04	S_1 :	0.52
S_{DS} :	1.14	V_{S30} :	365
S_{D1} :	0.7		

Seismic Design Category: D

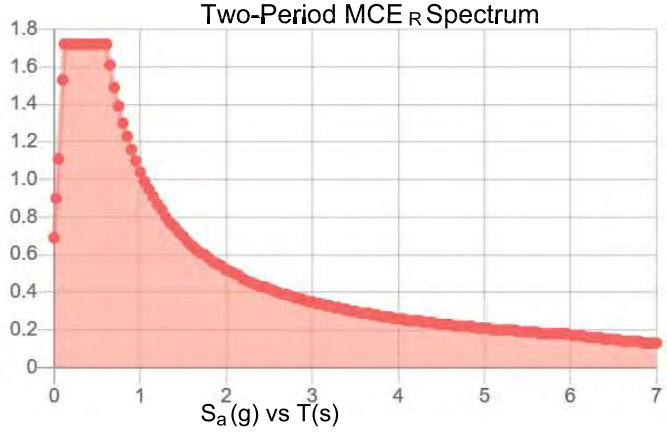
Multi-Period MCE_R Spectrum



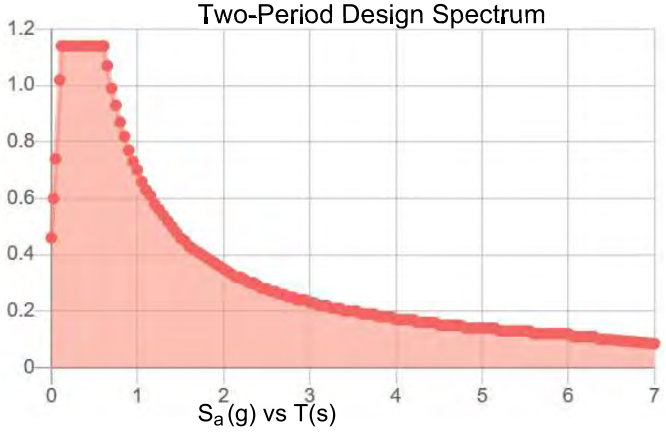
Multi-Period Design Spectrum



Two-Period MCE_R Spectrum



Two-Period Design Spectrum



MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: Mon Jul 14 2025

Date Source:
USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

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APPENDIX C: Preliminary Drainage Report

TRADITIONS NORTH

Conceptual Drainage Report

November 2025

Traditions North

APN: 016-406-07 • 230.76 acres
Dayton, Nevada

By: Piñon Design Group

PROFESSIONAL ENGINEER-STATE OF NEVADA
DANIEL C. BIRCHFIELD
Exp: 12-31-26
CIVIL
No. 20844

Digitally signed by Daniel Birchfield
DN: C=US, E=dan@pinondg.com, O=Pinon Design Group, CN=Daniel Birchfield
Location: Reno, NV
Reason: I am approving this document
Date: 2025.11.16 17:59:43-08'00'

PIÑON DESIGN GROUP

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IV. PROPOSED DRAINAGE SYSTEM 6

V. FLOOD HAZARD COMPLIANCE 10

VII. CONCLUSIONS 11

VIII. APPENDICES 12

II. INTRODUCTION

This Conceptual Drainage Study has been prepared for the Traditions North subdivision in Dayton, Nevada. The report evaluates existing drainage conditions, proposed improvements, hydrologic calculations, detention design requirements, and compliance with Lyon County Drainage Guidelines (Revised September 2024).

A. Site Location

1) **Street Location & APN**
The proposed Traditions North subdivision is located in Dayton, Nevada, northeast of Highway 50 and north of existing Traditions development areas. The property is identified as **APN 016-406-07** and comprises **230.76 acres.**

2) **Section, Township, Range & Coordinates**
Approximate location:
- S1, T16N, R21E
- Latitude: 39.2836°, Longitude: -119.5778°

3) **Adjacent Developments**
- North: Undeveloped land (BLM)
- South: Traditions Subdivisions (existing/planned)
- East: Undeveloped land and drainage corridors (BLM)
- West: Mixed undeveloped private property and Lyon County land

Figure 1A: Project Location

B. Site Description

1) Topography, Ground Cover, Soils

The 230.76-acre site consists of gently sloping alluvial fan terrain, generally draining from northeast to southwest toward the Carson River watershed. Elevations vary by approximately 170 feet across area of proposed development. Ground cover consists primarily of native desert vegetation and disturbed soils. On-site NRCS soils consist of Hydrologic Soil Groups A and C typical of Dayton area alluvium.

2) Existing Drainage Facilities & Conditions

The project area currently conveys stormwater as **shallow overland sheet flow** across the site toward existing drainage paths trending southwest. No manmade drainage systems currently exist onsite. Off-site drainage entering the parcel comes from minor upstream watershed areas north and east of the property.

3) **FEMA Zone**
The site is located within FEMA Zone X. No areas of special flood hazard (Zone A, AE, or AO) exist within the project boundary.

C. Proposed Project Description

1) Traditions North proposes a **residential subdivision** across the 230.76-acre parcel, including new internal streets, drainage conveyance improvements, and potential open space/trail corridors. Phasing is anticipated to include multi-phase development (approximately 4 subdivisions), generally progressing from south to north.

D. Previous Studies

1) North Dayton Valley Area Drainage Master Plan (ADMP) dated August 1, 2019.

III. HISTORIC DRAINAGE SYSTEM

A. Area Drainage Master Plan (ADMP) Applicability

1) Historic drainage conditions are based on the North Dayton Valley Area Drainage Master Plan (NDVADMP) dated August 1, 2019. The ADMP identifies major flow paths and regional inflow cross sections relevant to this project.

B. Basins

1) **Relationship to Major Drainage Facilities**
The site drains toward regional off-site flow paths ultimately tributary to the Carson River watershed.

2) **Basin Characteristics**
- Terrain: alluvial fan slopes
- Runoff behavior: shallow, unconfined and moderately confined flows
- Vegetation: sparse desert vegetation with moderate infiltration
- Erosion potential: moderate due to sandy soils and slope gradients

3) **Existing Drainage Patterns**
Runoff flows in shallow concentrated flow patterns toward the east and south, exiting the site along the southern and eastern boundaries.

4) **Historic Data**

NDVADMP Cross Section	100YR-24HR (cfs)	100YR-6H (cfs)	25YR-24HR (cfs)
12	18.7	38.5	11.1
162	4.0	11.0	2.8
165.8	313.1	8.41	106.0

5) **Effects on Adjacent Properties**
Historically, runoff disperses widely across the alluvial surface. Concentrated discharge is not present under existing conditions. Development must avoid increasing flow concentration onto undeveloped neighboring properties.

IV. PROPOSED DRAINAGE SYSTEM

The project proposes a residential subdivision using engineered conveyance, storm drain infrastructure, open space corridors, and four regional detention basins (NE-BASIN, NW-BASIN, SE-BASIN, SW-BASIN).

A. Design Storm Criteria

1) **Design Storm**
The 100-year – 6-hour design storm was analyzed because this event was nearly double the peak runoff of the 100-year –24-hour event, according to the NDVADMP.

2) **Hydrologic Method**
Hydrologic modeling was completed using Autodesk Storm and Sanitary Analysis (SSA) with the HEC-1 Unit Hydrograph method and the SCS Curve Number (CN) loss method.

3) **Rainfall Information Used** (NOAA Atlas 14, Lyon County)
- 5-yr, 24-hr: ~ 1.36 inches
- 25-yr, 24-hr: ~ 1.89 inches
- 100-yr, 24-hr: ~ 2.77 inches
- **100-yr, 6-hr: ~ 1.66 inches**

B. Runoff

1) **Historic (Pre-Development) Flow Rates and Paths**

For this study, the **baseline (pre-development) peak flows** at these cross sections are taken from the ADMP and incorporated into the post-development model as upstream boundary inflows. Conceptually, this ensures that **existing watershed inflows are preserved** and only the incremental contribution from the project is modified by development.

2) **Developed (Post-Development) Flow Rates and Paths**
For post-development conditions, the project watershed has been divided into **seven local subbasins (Sub-01 through Sub-07)** representing the Traditions North site, plus imported ADMP inflows represented as **X-SEC-12, X-SEC-162, and X-SEC-170** within the SSA model.

Total modeled area of local subbasins is approximately **93.26 acres**, which reflects the portion of the 230.76-acre site included in the hydrologic model at this conceptual stage (remaining area to remain undeveloped or be incorporated in future refinement or represented via additional subbasins as design advances).

Regional inflows from the ADMP are carried into the model as **X-SEC-12, X-SEC-162, and X-SEC-170.** These are summarized above and represent the **external pre-development inflows** to which project runoff is added.

All local and regional flows are routed through the proposed conveyance and detention system to the **NE-OUTFALL** node, which represents the primary discharge point from the Traditions North site to the downstream system. The SE-OUTFALL and SW-OUTFALL were modeled to have zero discharge in the design storm event; however, the final design report may indicate flow. In any case, the basins will have constructed outlets/spillways in the event of storm in excess of the design storm.

C. Proposed Improvements

1) Flows will be conveyed using a combination of:
   - Drainage swales
   - Curb and gutter
   - Underground storm drain pipes
   - Open space drainage corridors
   - Four regional flow storage basins (Detention/Water Quality)
   - Three project outfalls

2) A detailed pipe by pipe analysis of the proposed storm drain systems is not appropriate for this conceptual drainage study but will be analyzed at final design to ensure they meet Lyon County Drainage Guidelines. The storm drain systems were analyzed as conceptual system with water catchment subbasin areas delineated for each system. The design storm was applied to each of these systems to properly route the proposed drainage distribution and ensure the overall system and storage basins are adequately sized.

Local Project Subbasins (From SSA): **Table 1:**

Subbasin	**Area (ac)**	**Peak Flow (cfs)**
Sub-01	10.14	8.57
Sub-02	7.01	5.93
Sub-03	10.01	8.41
Sub-04	14.83	12.51
Sub-05	4.21	3.56
Sub-06	39.87	33.59
Sub-07	7.18	6.04

D. Detention Basins

Four flow storage basins are planned for Traditions North:

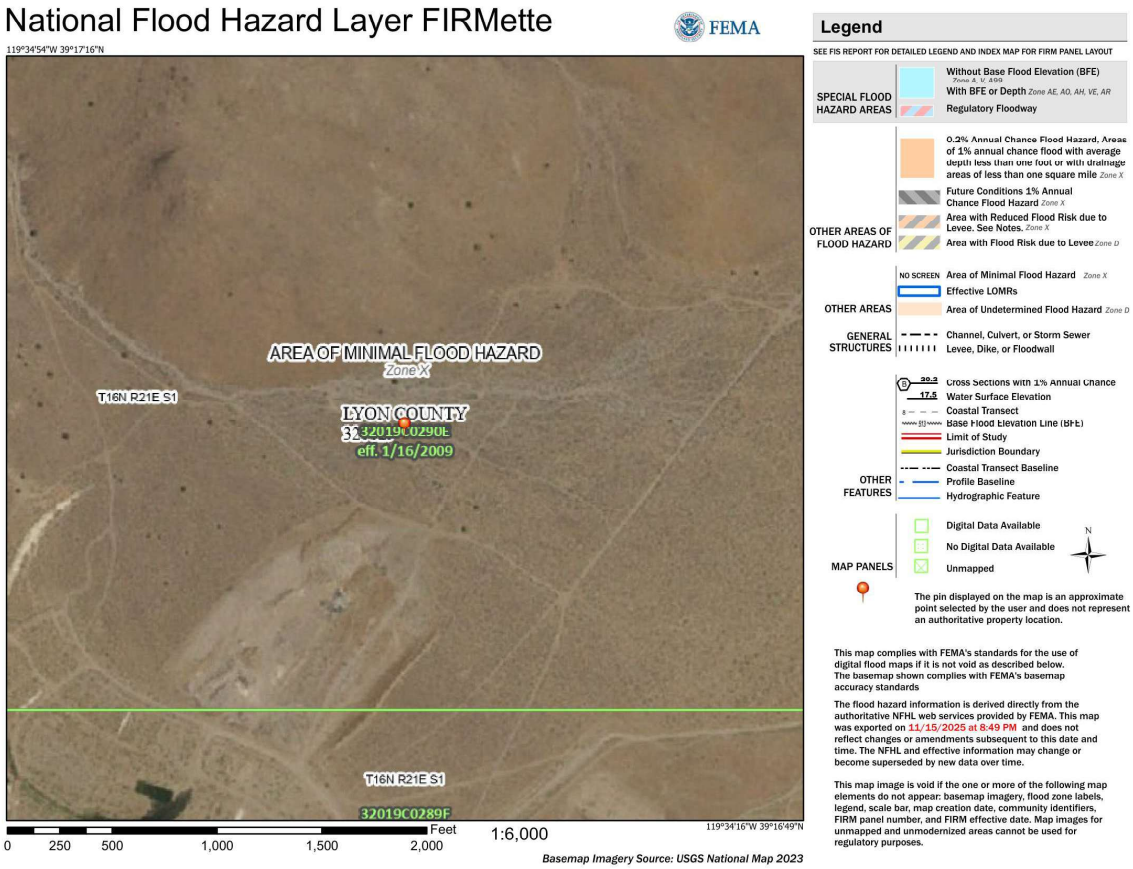
1) NW Basin – Acts primarily as a water quality basin to settle out sediment from offsite flows prior to conveying them through the site. This basin also act to divert a portion of the flow to the SW Basin while the majority of the flow will continue within the cutoff channel to the east.
2) SW Basin – Existing Retention Basin and material borrow pit that was constructed as part of the original Traditions Master Plan mass grading in the early 2000s. This basin will be graded to suit the development and installation of a neighborhood park. It will be retrofitted with an outlet pipe to discharge to the Traditions Village 2 cutoff channel. The existing basin bottom lies several feet below the downstream discharge and will also provide sediment transport mitigation.
3) SE Basin – Located at the lowest point of the site, this basin will collect flow from the on-site southeastern areas. The discharge will need to be a wide weir to distribute outflow back to sheet flow condition. This basin will also serve as a neighborhood park.
4) NE Basin – This basin collects a majority of the offsite runoff and sends it eastward along the predevelopment drainage pattern. The outlet structure will need detailed analysis and design at the final design stage.

Detention basin performance (From SSA): **Table 2:**

Basin	**Invert (ft)**	**Rim (ft)**	**Peak Inflow (cfs)**	**Max HGL (ft)**
NE-BASIN	4364.0	4372.0	253.66	4368.75
NW-BASIN	4446.1	4452.0	291.49	4452.49
SE-BASIN	4347.8	4453.5	39.15	4351.48
SW-BASIN	4415.8	4426.0	78.84	4420.19

V. FLOOD HAZARD COMPLIANCE

The site is located within FEMA Zone X**.** No areas of special flood hazard (Zone A, AE, or AO) exist within the project boundary**.**



VII. CONCLUSIONS

A. Benefits

The proposed drainage design complies with Lyon County Drainage Guidelines. Post-development discharges at the NE-OUTFALL (215.62 cfs) remain below the ADMP pre-development peak at Cross Section 170 (313.14 cfs), satisfying the County's no-adverse-impact requirement. Organized drainage system replaces the uncontrolled sheet flow. Water quality basins will improve sediment transport.

B. Adverse Effects & Mitigation

No adverse impacts are anticipated. All flows will be detained and released at or below pre-development peak rates. Overland flow paths and open space drainage corridors further reduce downstream impacts.

C. Compliance Statement

The conceptual drainage design for **Traditions North** complies with **Lyon County Drainage Guidelines (2024)** and satisfies stormwater conveyance, flood protection, and downstream impact requirements for Tentative Map review.

VIII. APPENDICES

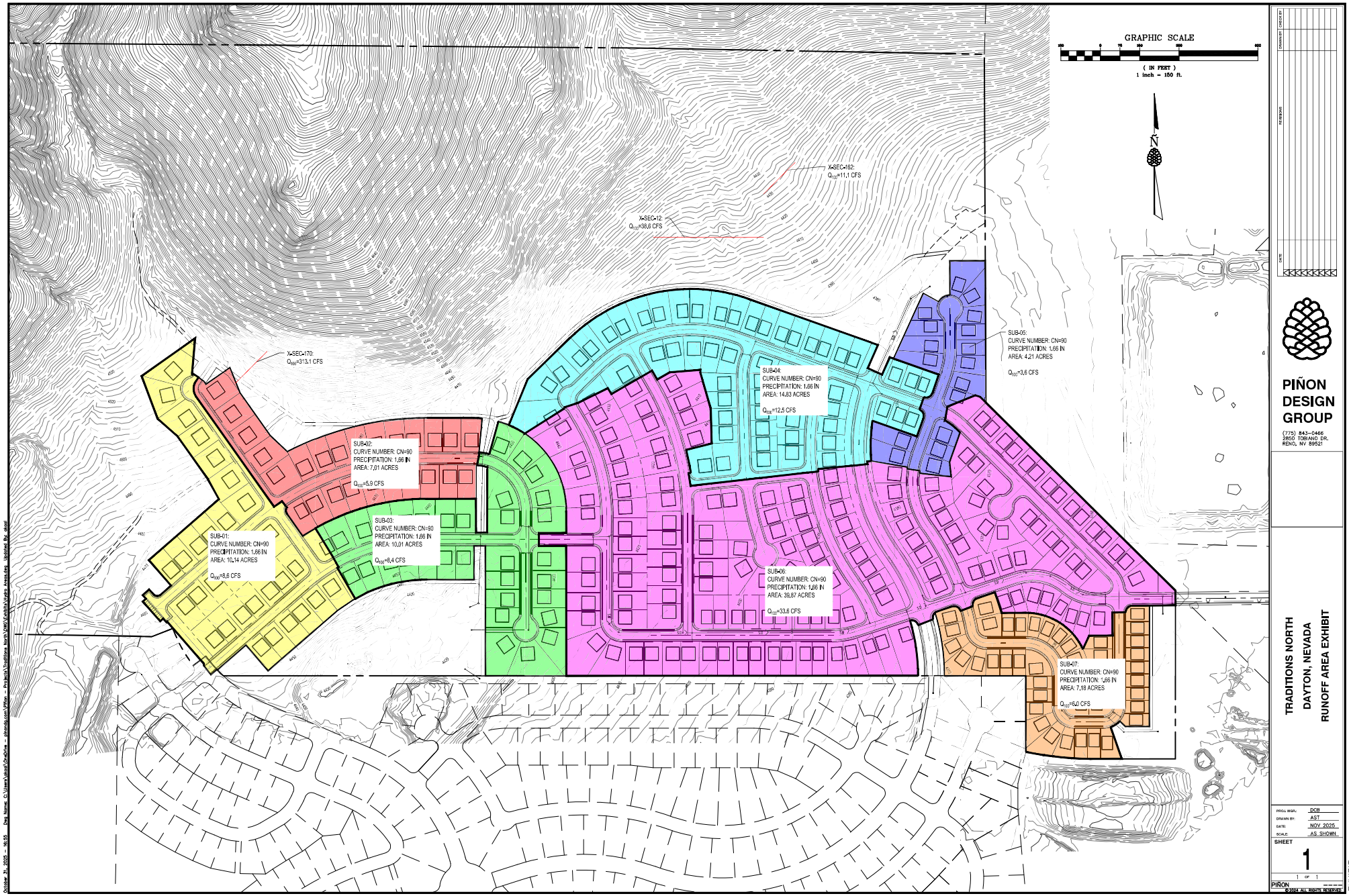
Appendix A – Runoff Area Exhibit

Appendix B – SSA Subbasin Output

Appendix C – Detention Basin Stage–Storage

Appendix D – Background Data

Appendix A – Runoff Area Exhibit



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DATE	REVISIONS	DRAWN BY	CHECK BY

PIÑON DESIGN GROUP

(775) 843-0466
2850 TOBIANO DR.
RENO, NV 89521

TRADITIONS NORTH
DAYTON, NEVADA
RUNOFF AREA EXHIBIT

PROJ. MGR.:	DCB
DRAWN BY:	AST
DATE:	NOV 2025
SCALE:	AS SHOWN

SHEET 1

1 OF 1

PIÑON

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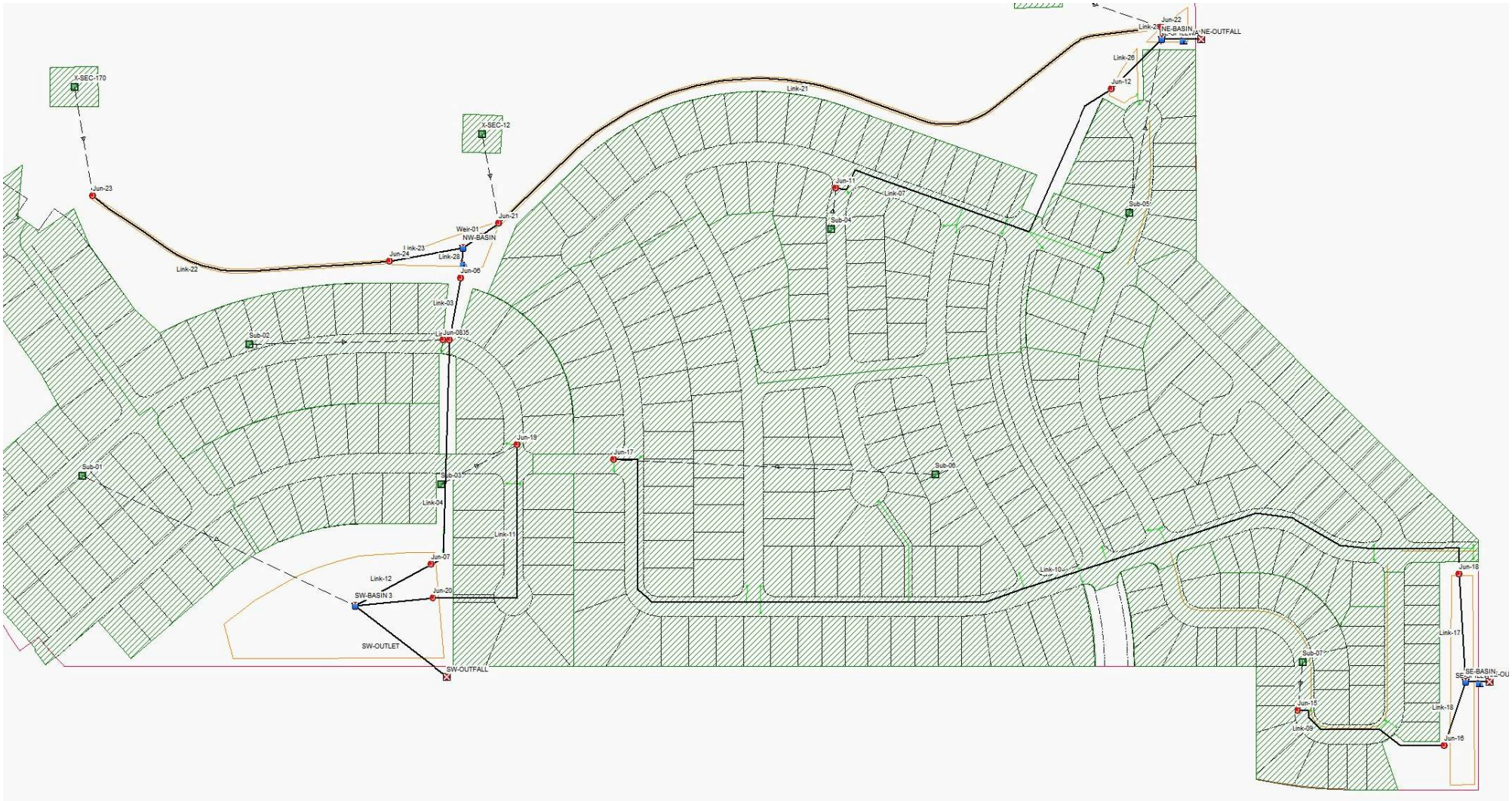
EXHIBIT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X-SEC-12
Jun-23
Jun-21
Weir-01
NW-BASIN
Link-23
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Link-28
Jun-06
Link-22
Link-03
Sub-02
Jun-0835
Jun-19
Sub-01
Sub-01
Link-04
Link-11
Jun-07
Link-12
SW-BASIN 3
Jun-20
SW-OUTLET
SW-OUTFALL
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Sub-08
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Jun-11
Link-07
Sub-04
Sub-05
Jun-12
Link-21
Link-26
Jun-22
NE-BASIN
NE-OUTFALL
Jun-18
Link-17
Sub-07
Jun-15
Link-18
Link-09
Jun-16
SE-BASIN

Appendix B – SSA Subbasin Output

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	HEC-1
Time of Concentration (TOC) Method	User-Defined
HEC-1 unit hydrograph method	Clark
HEC-1 loss method	SCS Curve Number
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	YES

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	Rain Gage-01	Time Series	TS-01	Cumulative	inches	Nevada	Lyon	100.00	1.66	SCS 6-hr

Subbasin Summary

Subbasin ID	Area	Total Rainfall	Peak Runoff
	(ac)	(in)	(cfs)
Sub-01	10.14	1.66	8.6
Sub-02	7.01	1.66	5.9
Sub-03	10.01	1.66	8.4
Sub-04	14.83	1.66	12.5
Sub-05	4.21	1.66	3.6
Sub-06	39.87	1.66	33.6
Sub-07	7.18	1.66	6.0
X-SEC-12	45.73	1.66	38.6
X-SEC-162	28.50	1.66	11.1
X-SEC-170	371.70	1.66	313.1

Node Summary

Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Min Freeboard Attained (ft)
5-Jun	Junction	4444.0	4456.0	63.2	4447.4	8.6
6-Jun	Junction	4446.0	4452.0	58.5	4449.7	2.3
7-Jun	Junction	4416.0	4426.0	63.2	4420.9	5.2
8-Jun	Junction	4449.5	4456.0	5.9	4449.9	6.1
11-Jun	Junction	4394.0	4400.0	12.5	4395.1	4.9
12-Jun	Junction	4367.0	4372.0	12.8	4368.8	3.2
15-Jun	Junction	4352.0	4357.0	6.0	4352.8	4.2
16-Jun	Junction	4348.0	4353.0	6.0	4351.5	1.5
17-Jun	Junction	4416.0	4422.0	33.6	4417.5	4.5
18-Jun	Junction	4348.0	4353.0	33.4	4351.8	1.2
19-Jun	Junction	4434.0	4440.0	8.4	4434.6	5.4
20-Jun	Junction	4416.0	4426.0	8.4	4420.2	5.8
21-Jun	Junction	4448.5	4454.0	225.0	4450.1	4.0
22-Jun	Junction	4364.5	4370.0	231.0	4369.1	0.9
23-Jun	Junction	4500.0	4505.0	313.1	4501.7	3.3
24-Jun	Junction	4446.5	4452.5	312.8	4452.5	0.0
NE-OUTFALL	Outfall	4367.0		215.6	4367.0	
SE-OUTFALL	Outfall	4351.5		0.0	4351.5	
SW-OUTFALL	Outfall	4420.0		0.0	4420.0	
NE-BASIN	Storage Node	4364.0	4372.0	253.7	4368.8	
NW-BASIN	Storage Node	4446.1	4452.0	291.5	4452.5	
SE-BASIN	Storage Node	4347.8	4453.5	39.2	4351.5	
SW-BASIN	Storage Node	4415.8	4426.0	78.8	4420.2	

Subbasin Hydrology

Subbasin : Sub-01

Input Data

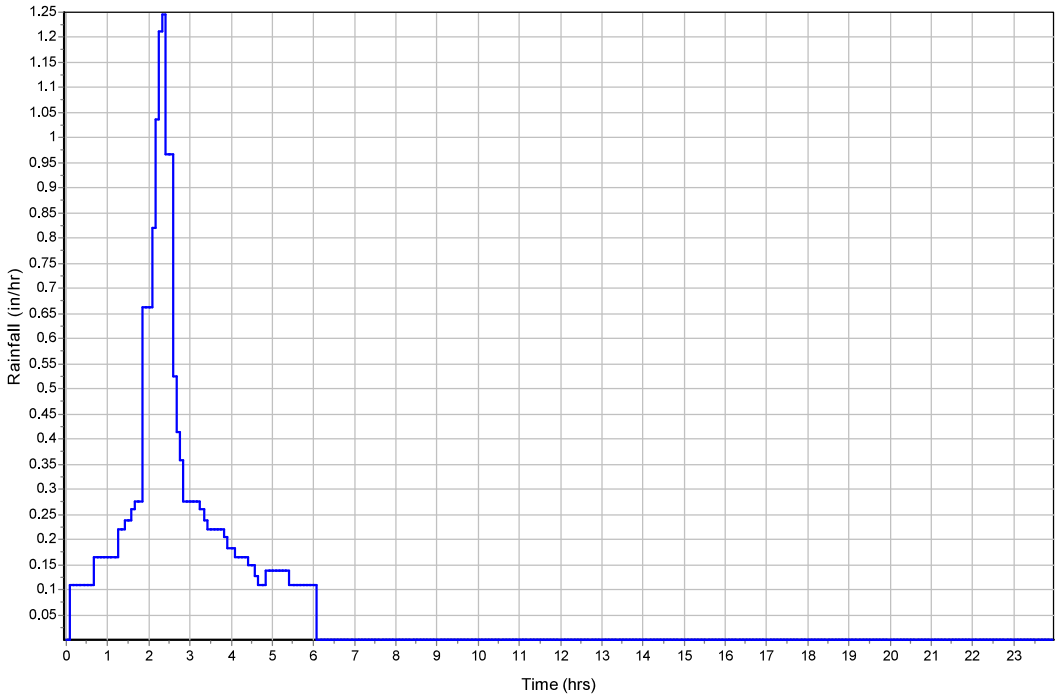
Area (ac)	10.14

Subbasin Runoff Results

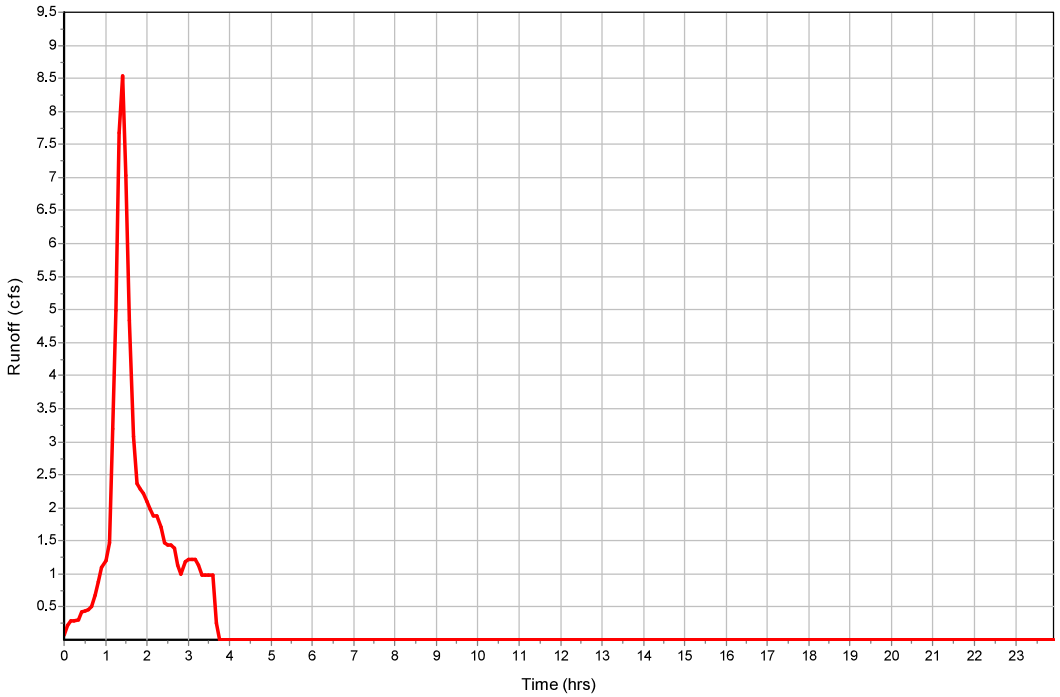
Total Rainfall (in)	1.66
Total Runoff (in)	0.66
Peak Runoff (cfs)	8.57
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Sub-01

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : Sub-02

Input Data

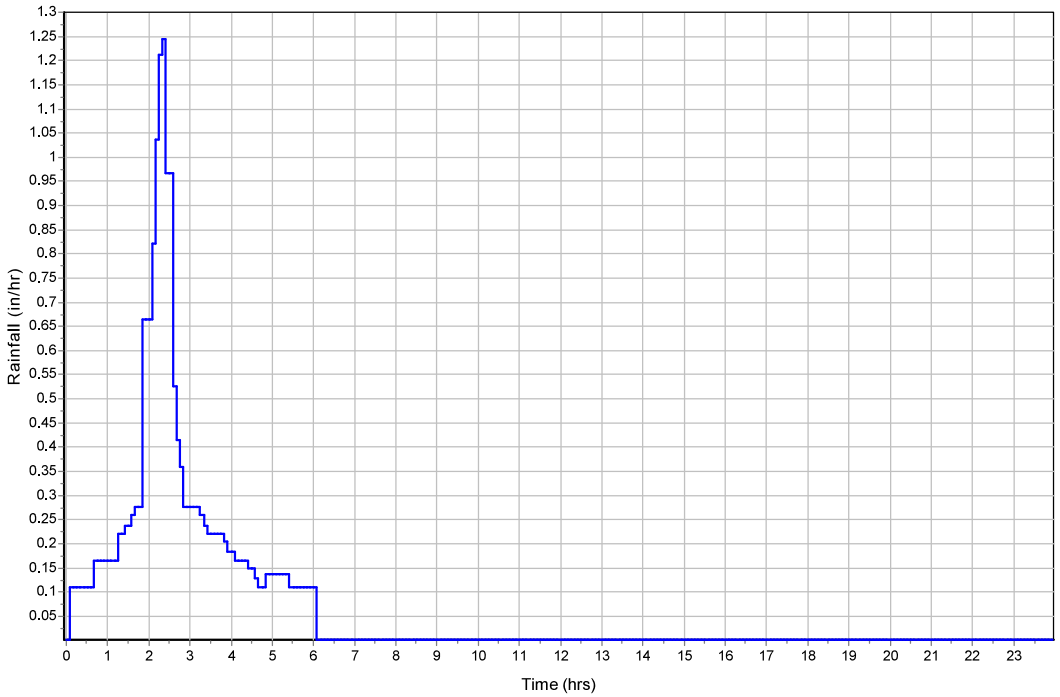
Area (ac)	7.01

Subbasin Runoff Results

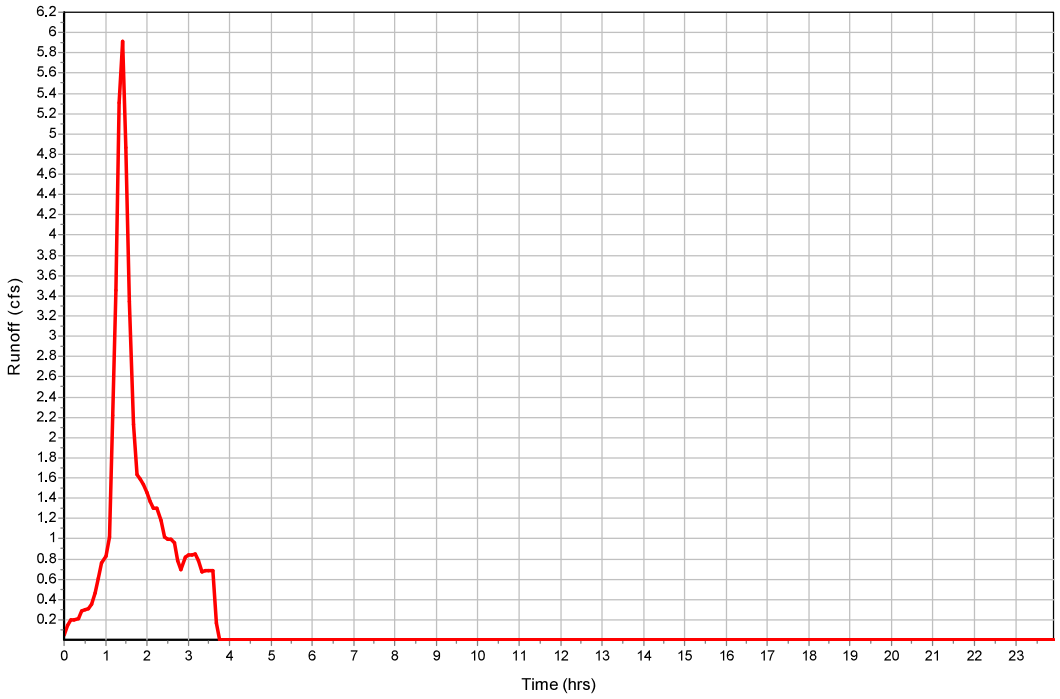
Total Rainfall (in)	1.66
Total Runoff (in)	0.66
Peak Runoff (cfs)	5.93
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Sub-02

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : Sub-03

Input Data

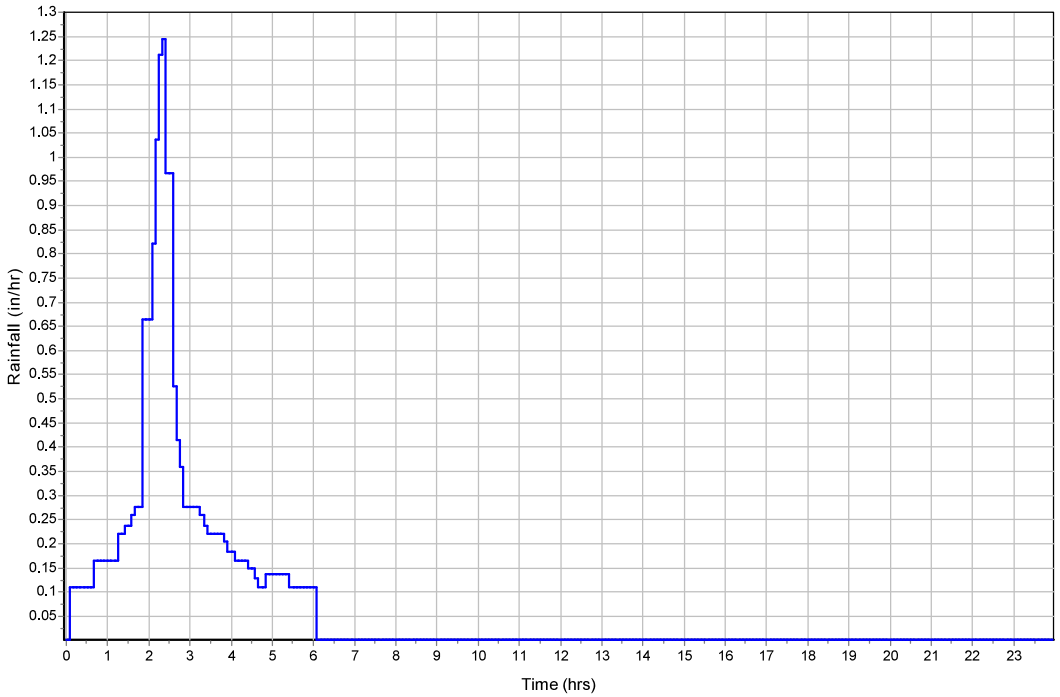
Area (ac)	10.01

Subbasin Runoff Results

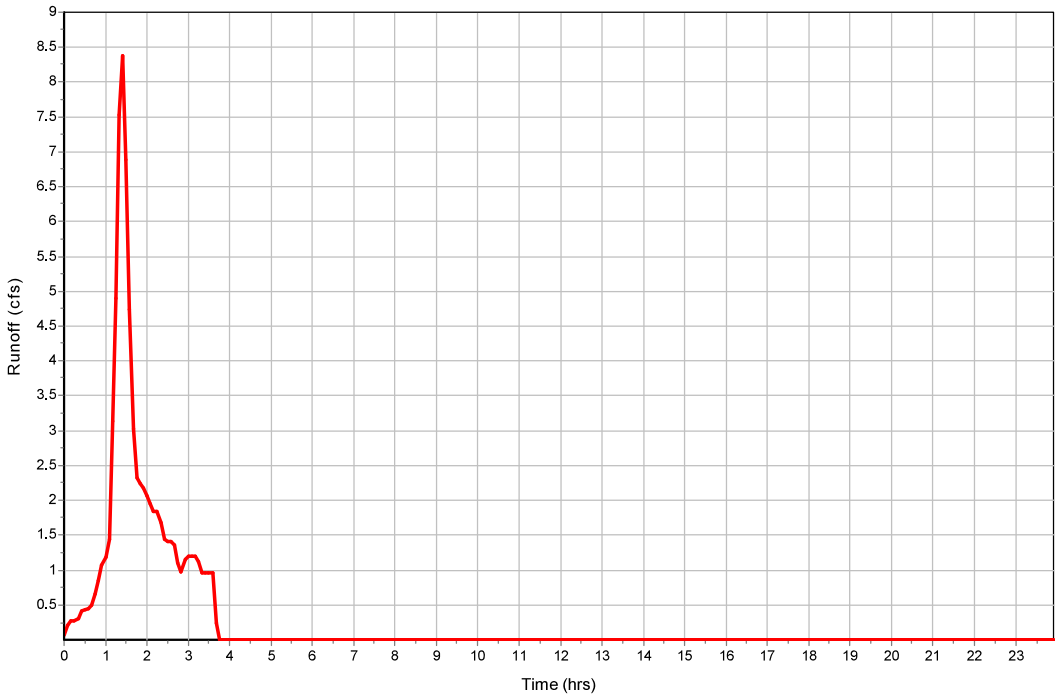
Total Rainfall (in)	1.66
Total Runoff (in)	0.66
Peak Runoff (cfs)	8.41
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Sub-03

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : Sub-04

Input Data

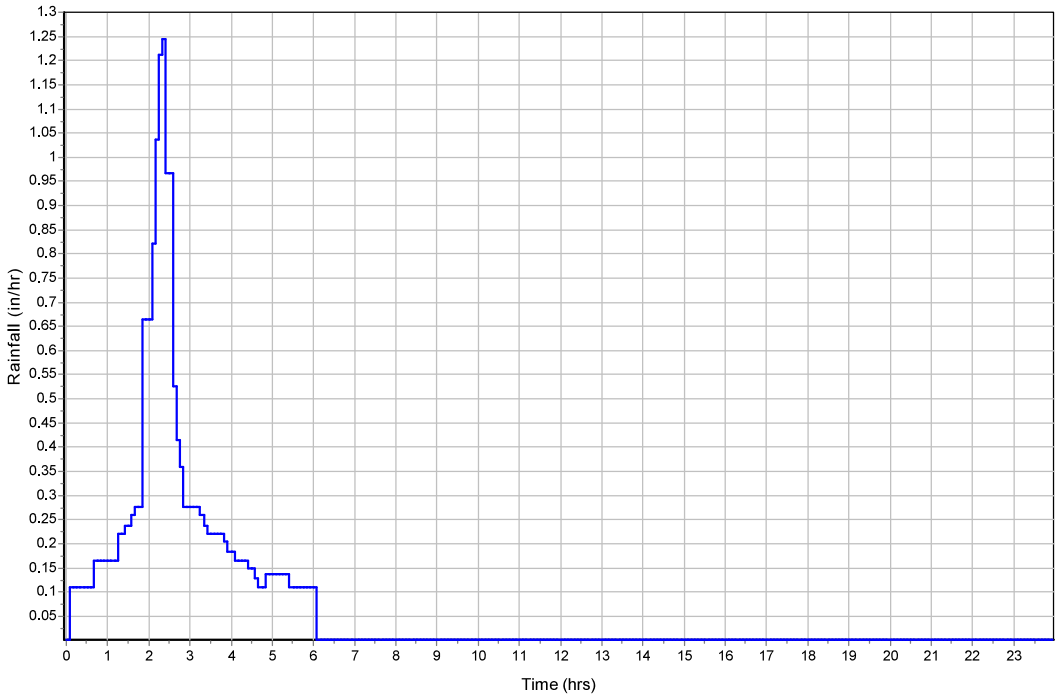
Area (ac)	14.83

Subbasin Runoff Results

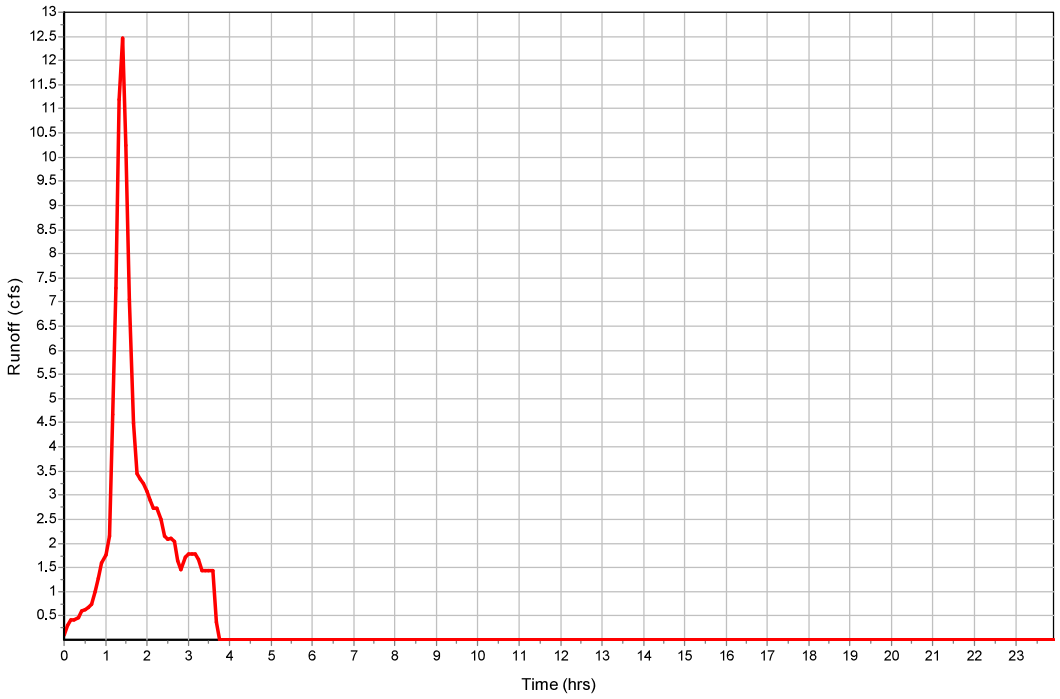
Total Rainfall (in)	1.66
Total Runoff (in)	0.66
Peak Runoff (cfs)	12.51
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Sub-04

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : Sub-05

Input Data

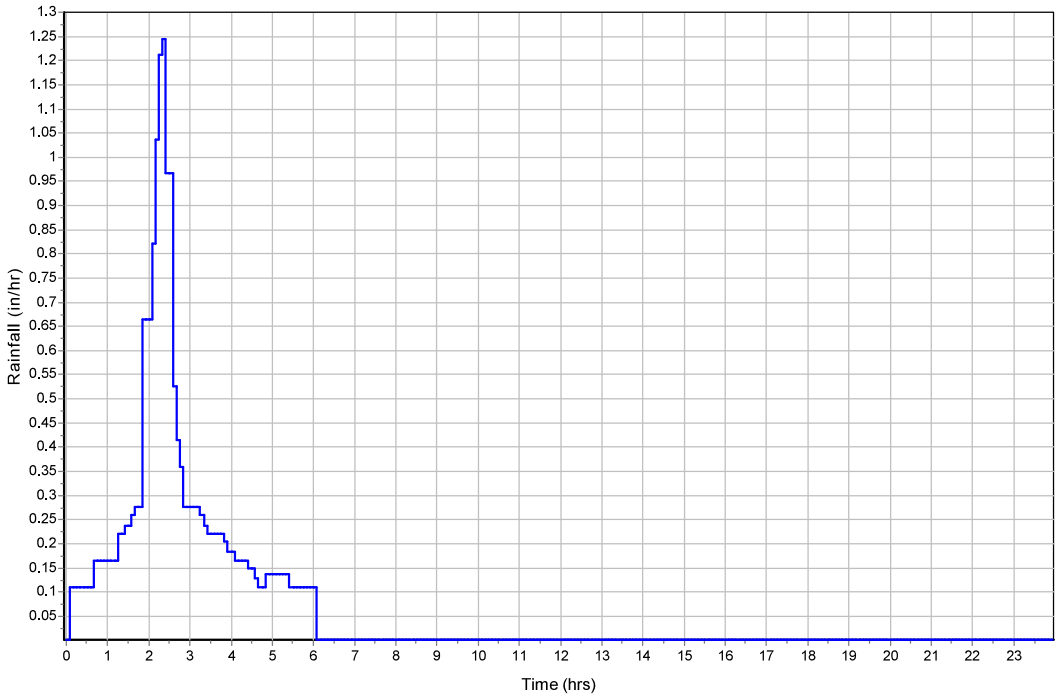
Area (ac)	4.21

Subbasin Runoff Results

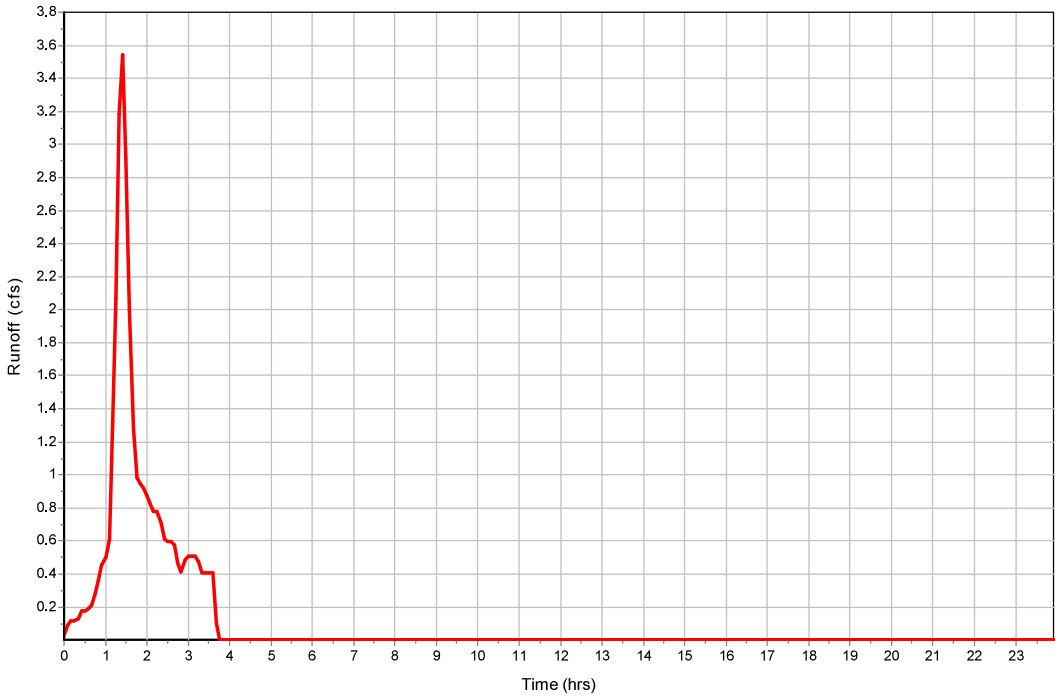
Total Rainfall (in)	1.66
Total Runoff (in)	0.66
Peak Runoff (cfs)	3.56
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Sub-05

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : Sub-06

Input Data

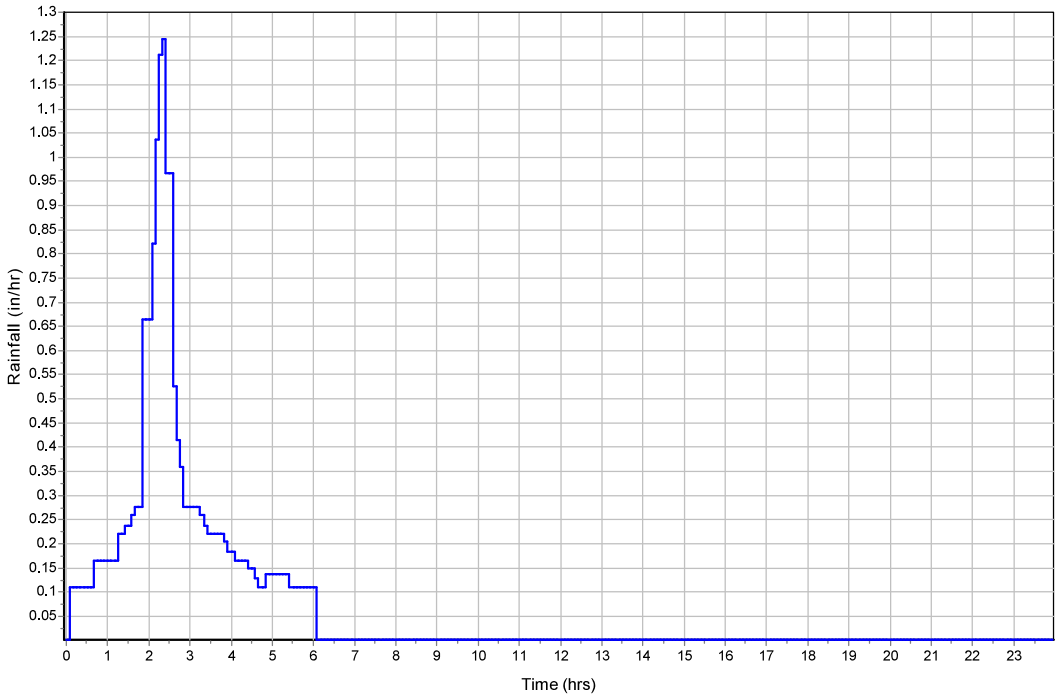
Area (ac)	39.87

Subbasin Runoff Results

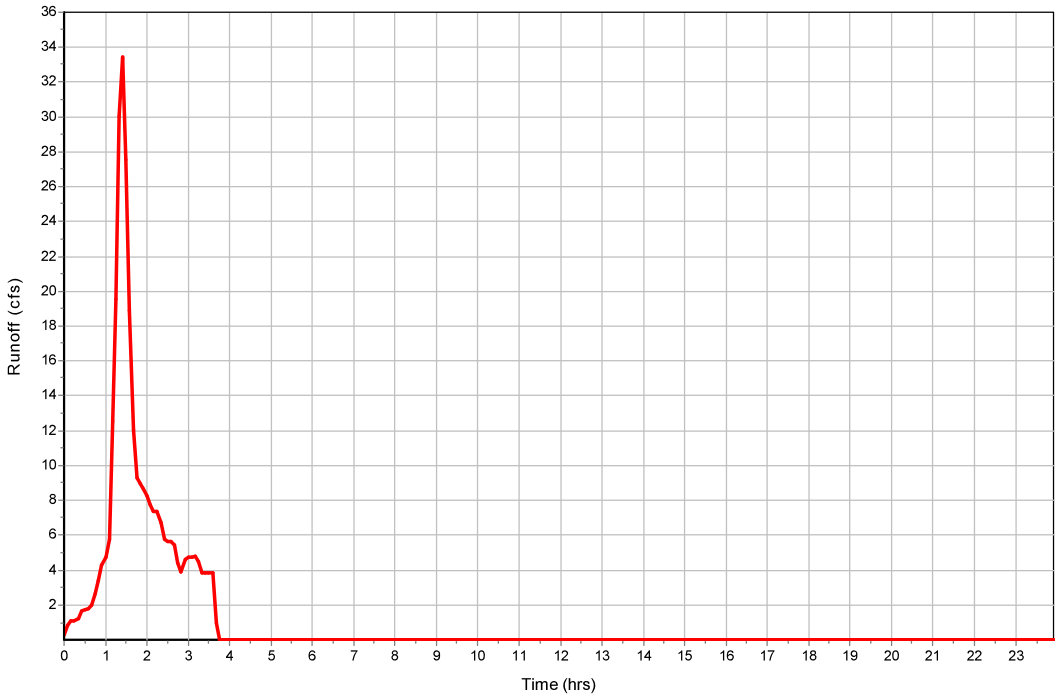
Total Rainfall (in)	1.66
Total Runoff (in)	0.66
Peak Runoff (cfs)	33.59
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Sub-06

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : Sub-07

Input Data

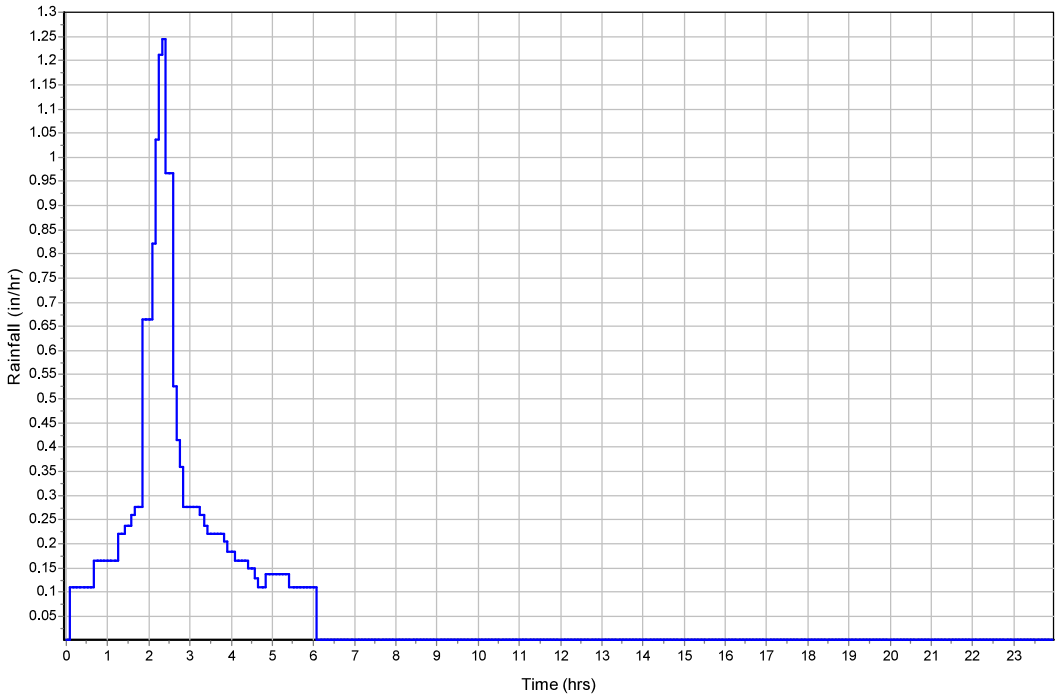
Area (ac)	7.18

Subbasin Runoff Results

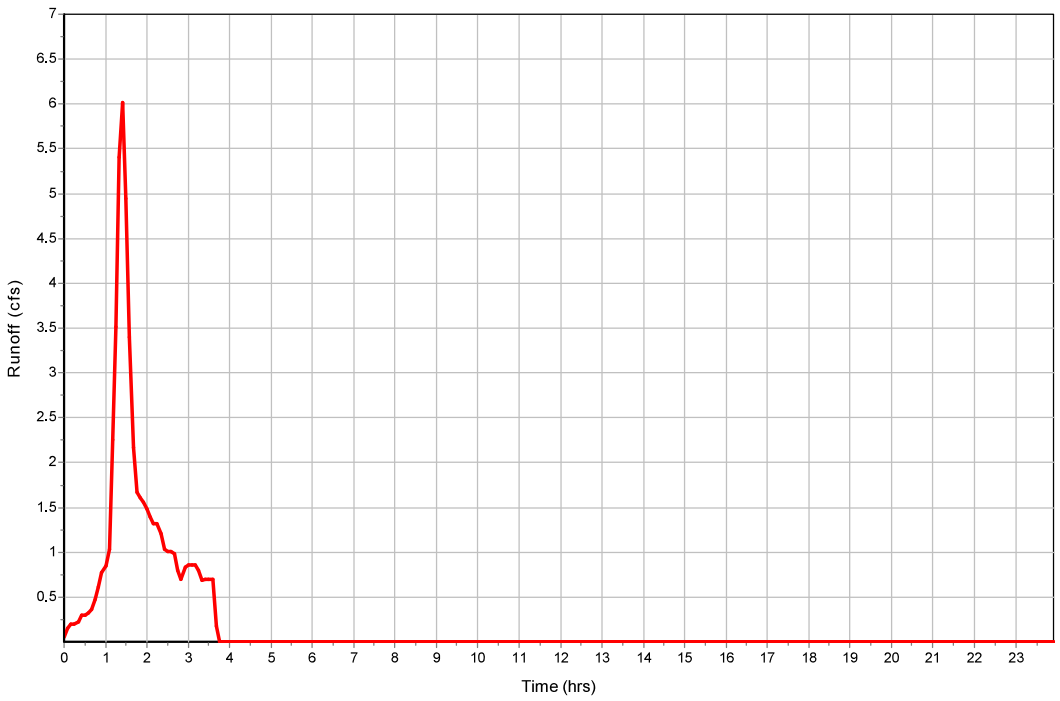
Total Rainfall (in)	1.66
Total Runoff (in)	0.66
Peak Runoff (cfs)	6.04
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : Sub-07

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : X-SEC-12

Input Data

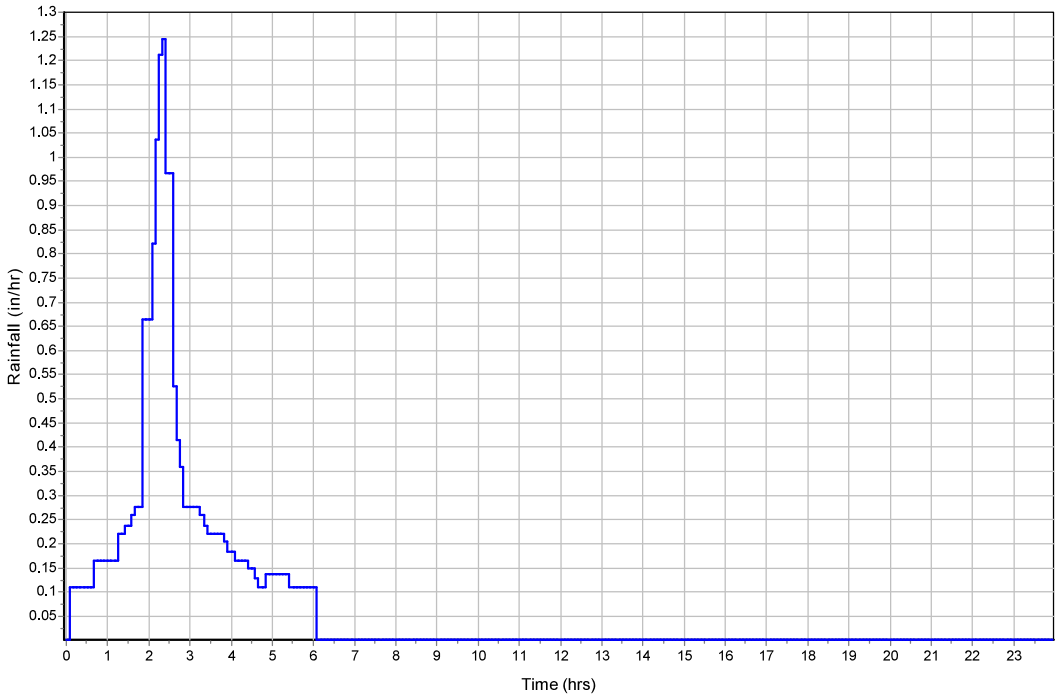
Area (ac)	45.73

Subbasin Runoff Results

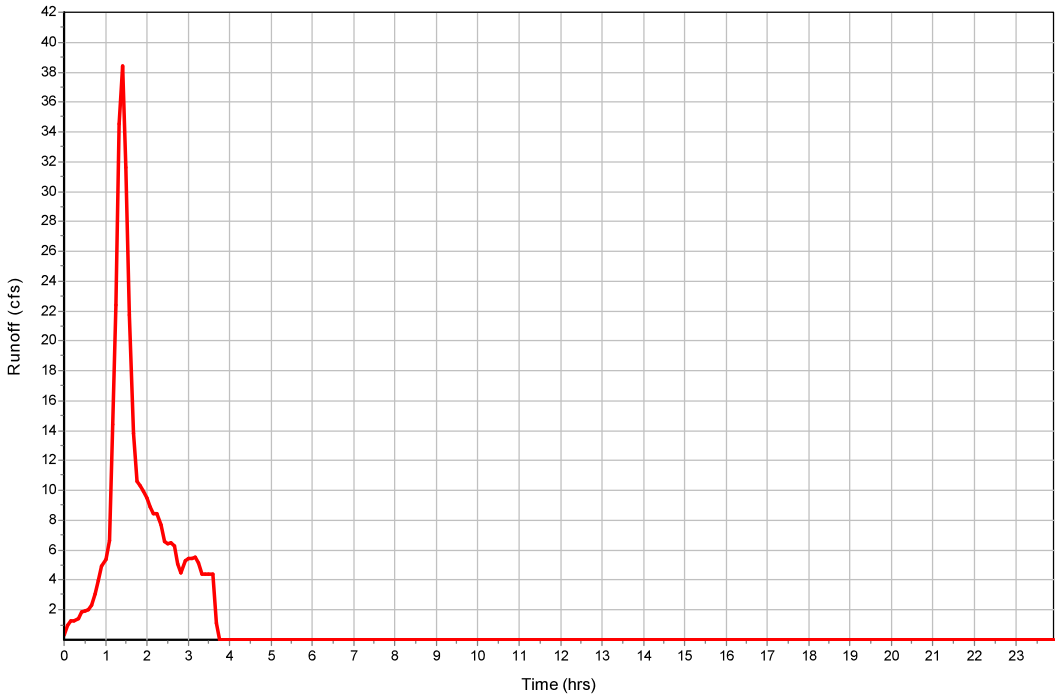
Total Rainfall (in)	1.66
Total Runoff (in)	0.66
Peak Runoff (cfs)	38.55
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : X-SEC-12

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : X-SEC-162

Input Data

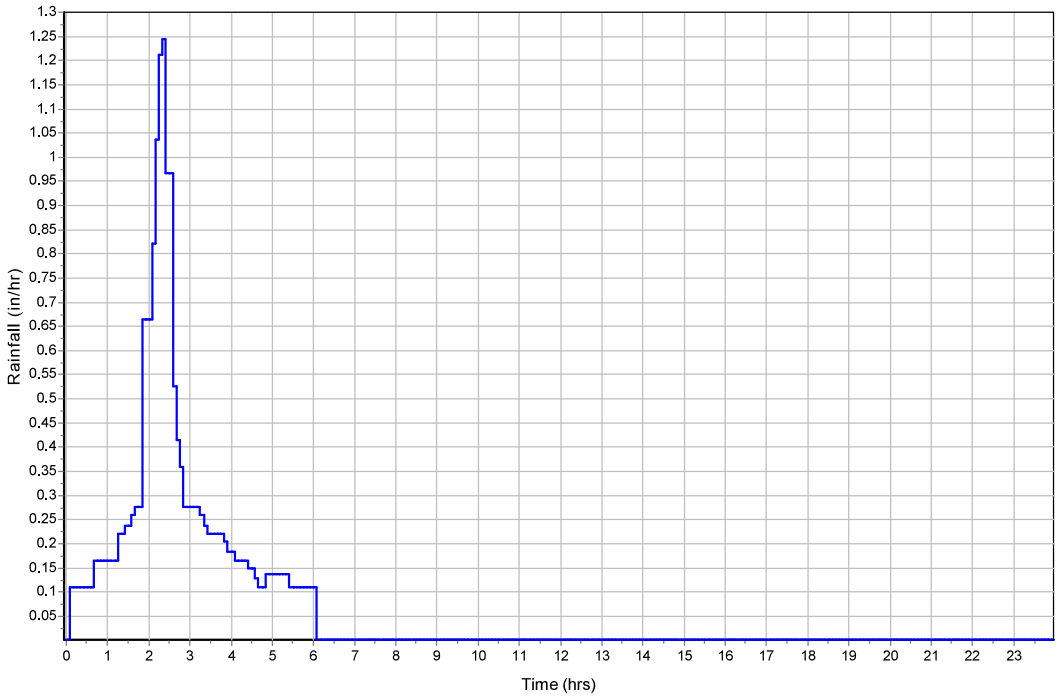
Area (ac)	28.5

Subbasin Runoff Results

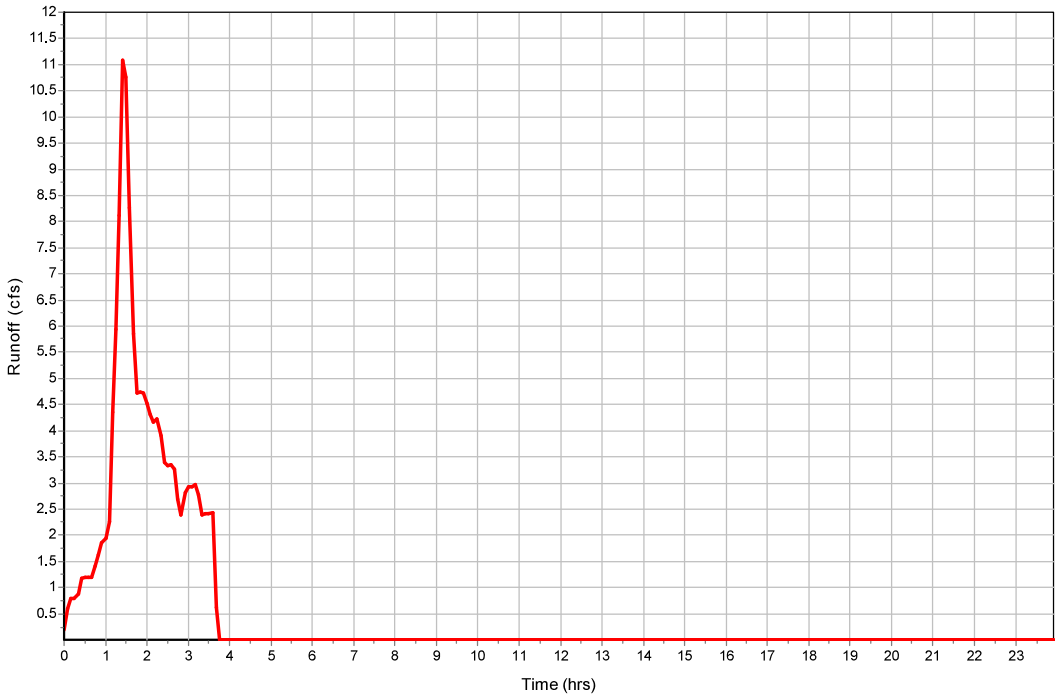
Total Rainfall (in)	1.66
Total Runoff (in)	0.43
Peak Runoff (cfs)	11.09
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : X-SEC-162

Rainfall Intensity Graph



Runoff Hydrograph



Subbasin : X-SEC-170

Input Data

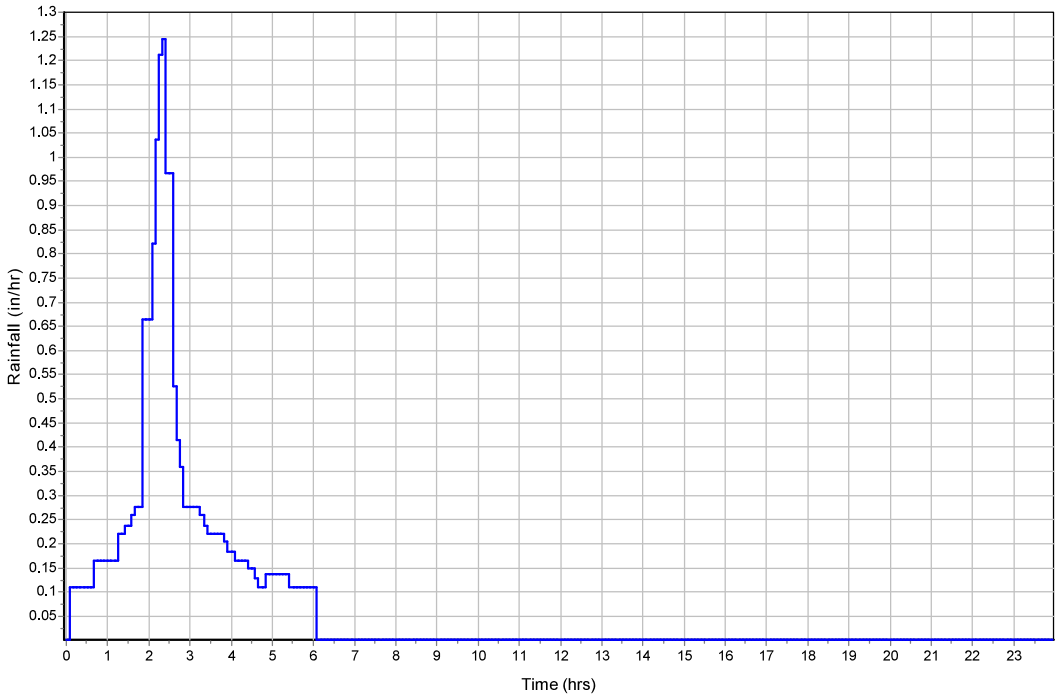
Area (ac)	371.7

Subbasin Runoff Results

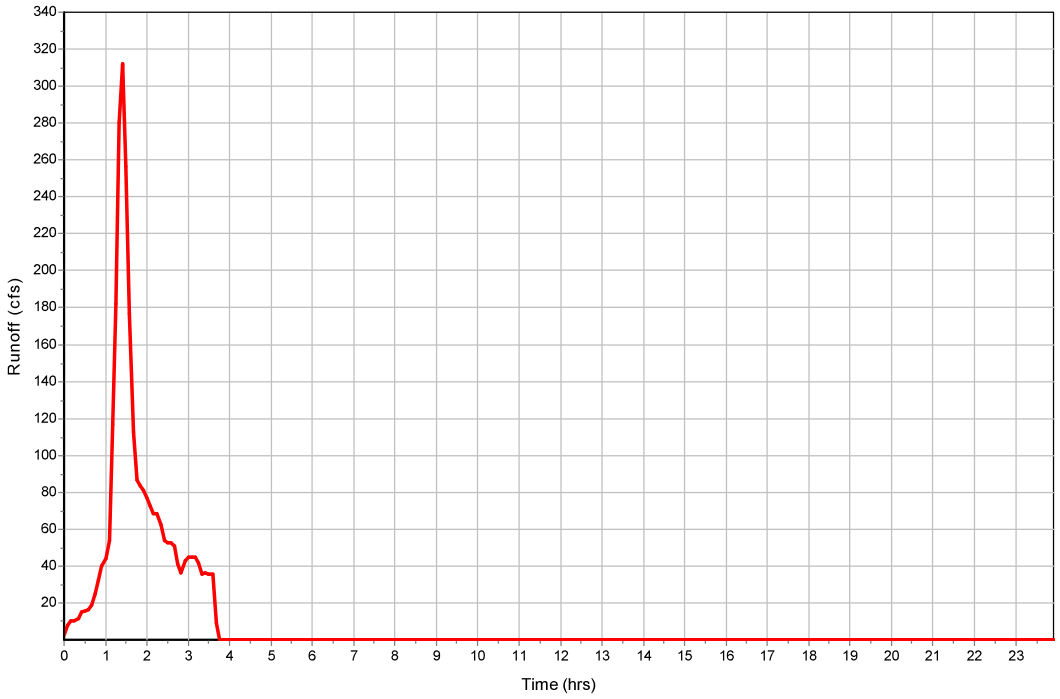
Total Rainfall (in)	1.66
Total Runoff (in)	0.66
Peak Runoff (cfs)	313.15
Time of Concentration (days hh:mm:ss)	0 00:10:00

Subbasin : X-SEC-170

Rainfall Intensity Graph



Runoff Hydrograph



Channel Results

Element ID	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Reported Condition
Link-21	221.0	747.7	0.30	9.99	2.26	0.76	
Link-22	312.8	923.0	0.34	9.13	2.33	0.78	
Link-23	291.5	2871.0	0.10	4.60	5.86	1.00	
Link-25	244.3	1137.4	0.21	5.09	3.00	1.00	

Appendix C – Detention Basin Stage–Storage

Storage Nodes

Storage Node : NE-BASIN

Input Data

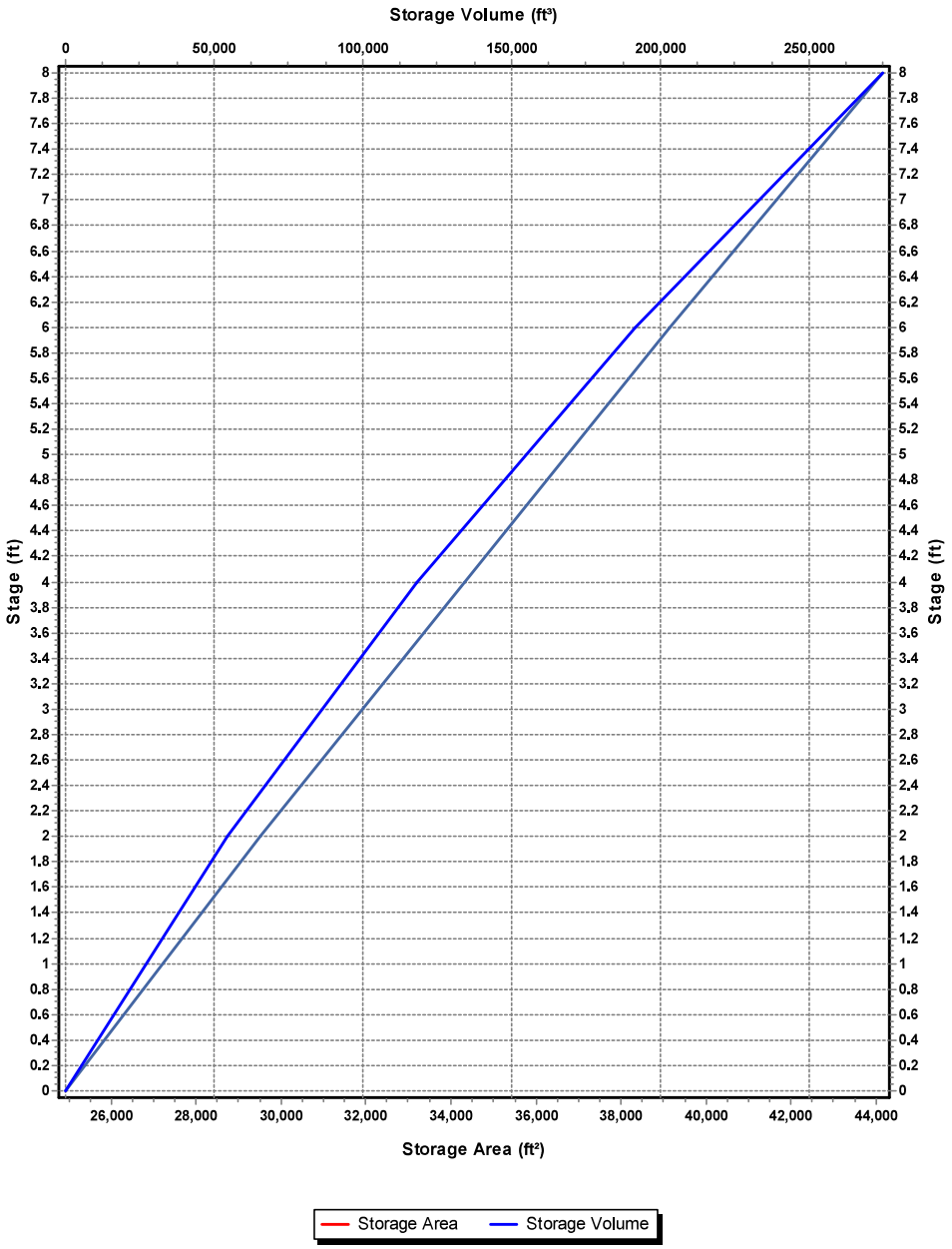
Invert Elevation (ft)	4364.00
Max (Rim) Elevation (ft)	4372.00
Max (Rim) Offset (ft)	8.00
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-4364.00
Ponded Area (ft^2)	100.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : SE-stage storage

Stage (ft)	Storage Area (ft^2)	Storage Volume (ft^3)
0	24929	0
2	29506	54435
4	34300	118241
6	39148	191689
8	44158	274995

Storage Area Volume Curves



Storage Node : NE-BASIN (continued)

Output Summary Results

Peak Inflow (cfs)	253.66
Peak Lateral Inflow (cfs)	3.56
Peak Outflow (cfs)	215.62
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	4368.75
Max HGL Depth Attained (ft)	4.75
Average HGL Elevation Attained (ft)	4367.69
Average HGL Depth Attained (ft)	3.69
Time of Max HGL Occurrence (days hh:mm)	0 01:41
Total Exfiltration Volume (1000-ft^3)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Storage Node : NW-BASIN

Input Data

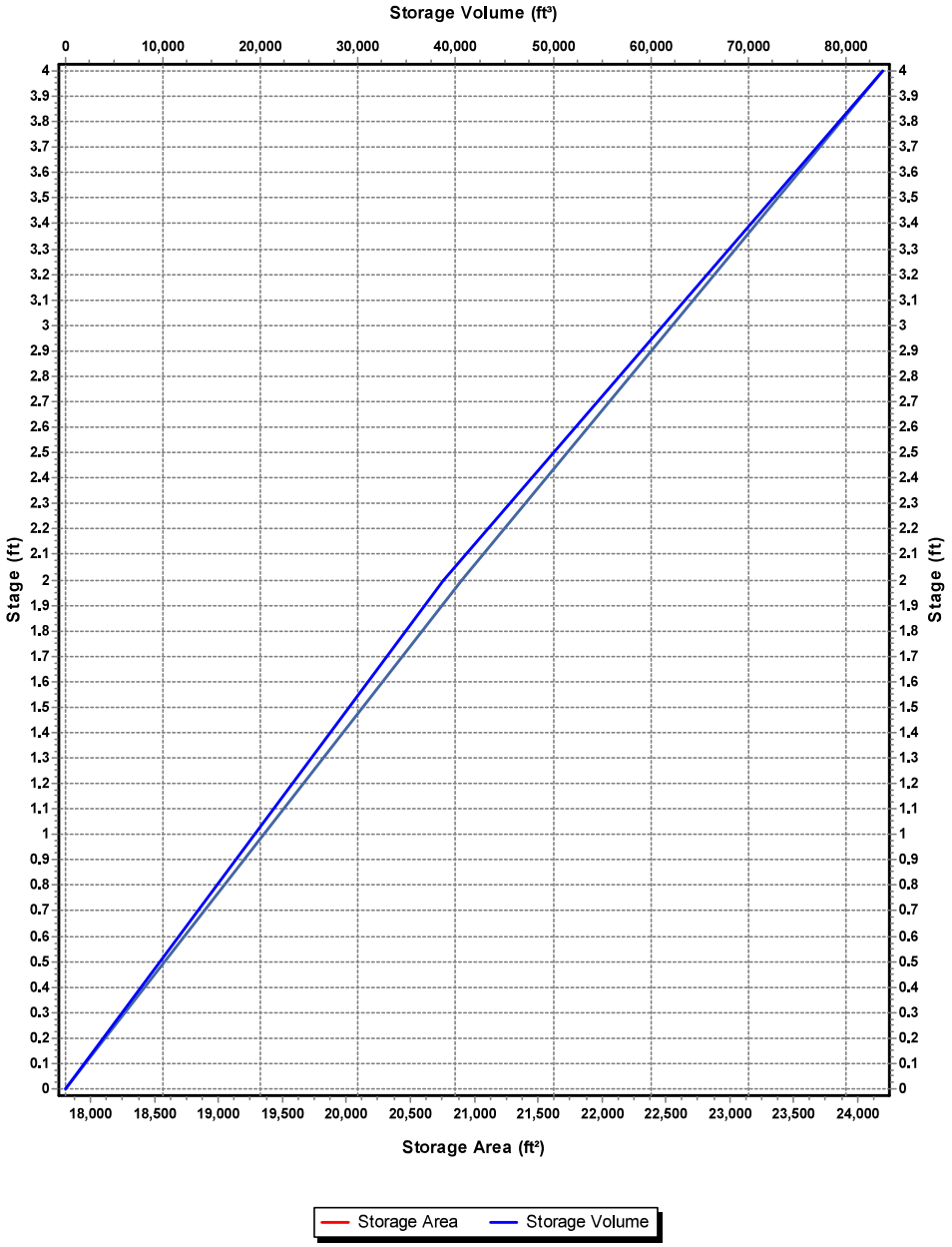
Invert Elevation (ft)	4446.10
Max (Rim) Elevation (ft)	4452.00
Max (Rim) Offset (ft)	5.90
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-4446.10
Ponded Area (ft^2)	100.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : NW-stage storage

Stage (ft)	Storage Area (ft^2)	Storage Volume (ft^3)
0	17800	0
2	20900	38700
4	24200	83800

Storage Area Volume Curves



Storage Node : NW-BASIN (continued)

Output Summary Results

Peak Inflow (cfs)	291.49
Peak Lateral Inflow (cfs)	0
Peak Outflow (cfs)	251.67
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	4452.49
Max HGL Depth Attained (ft)	6.39
Average HGL Elevation Attained (ft)	4448.07
Average HGL Depth Attained (ft)	1.97
Time of Max HGL Occurrence (days hh:mm)	0 01:36
Total Exfiltration Volume (1000-ft^3)	0
Total Flooded Volume (ac-in)	0.34
Total Time Flooded (min)	6
Total Retention Time (sec)	0

Storage Node : SE-BASIN

Input Data

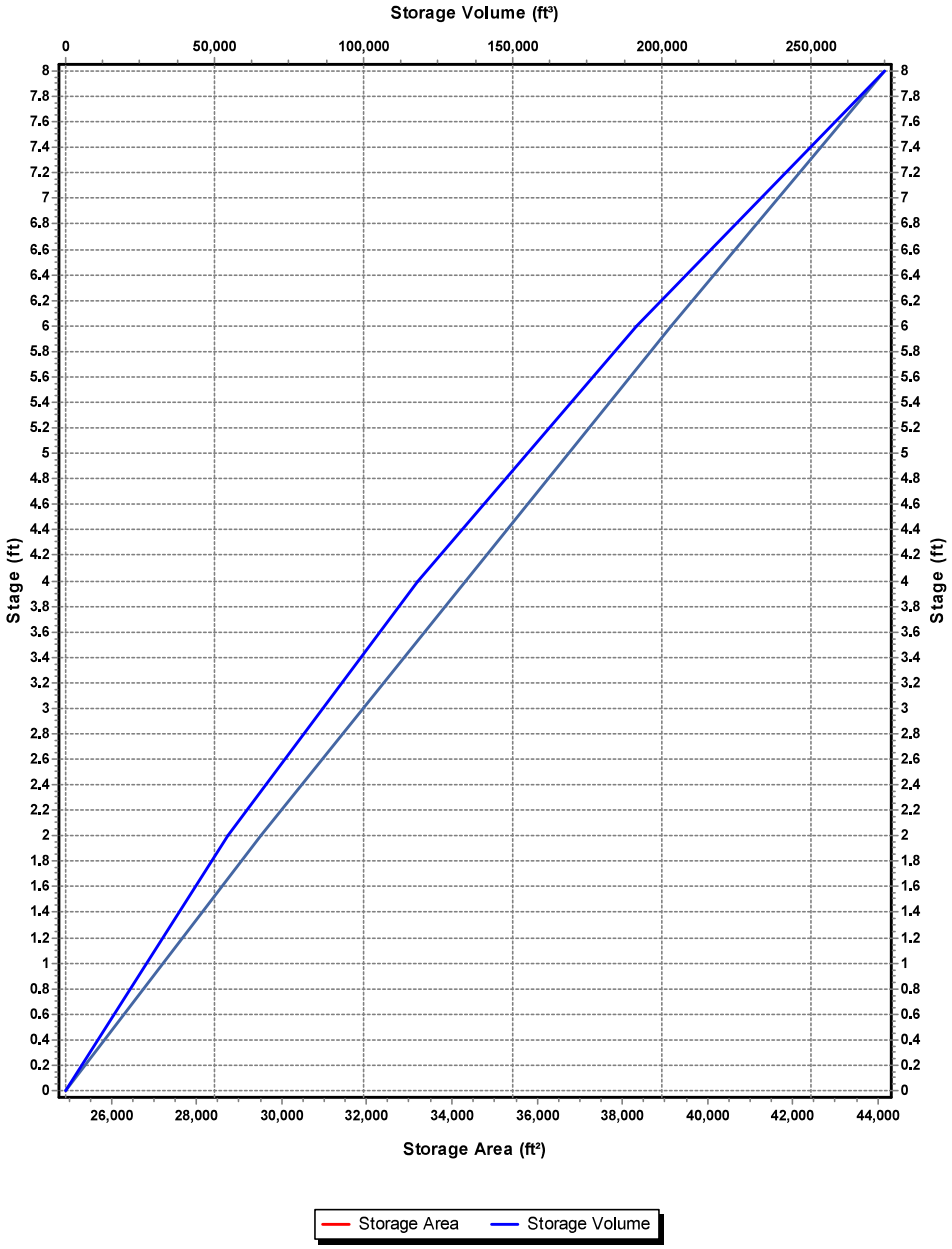
Invert Elevation (ft)	4347.80
Max (Rim) Elevation (ft)	4453.50
Max (Rim) Offset (ft)	105.70
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-4347.80
Ponded Area (ft^2)	100.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : SE-stage storage

Stage (ft)	Storage Area (ft^2)	Storage Volume (ft^3)
0	24929	0
2	29506	54435
4	34300	118241
6	39148	191689
8	44158	274995

Storage Area Volume Curves



Storage Node : SE-BASIN (continued)

Output Summary Results

Peak Inflow (cfs)	39.15
Peak Lateral Inflow (cfs)	0
Peak Outflow (cfs)	0
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	4351.48
Max HGL Depth Attained (ft)	3.68
Average HGL Elevation Attained (ft)	4350.72
Average HGL Depth Attained (ft)	2.92
Time of Max HGL Occurrence (days hh:mm)	0 22:41
Total Exfiltration Volume (1000-ft^3)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Storage Node : SW-BASIN

Input Data

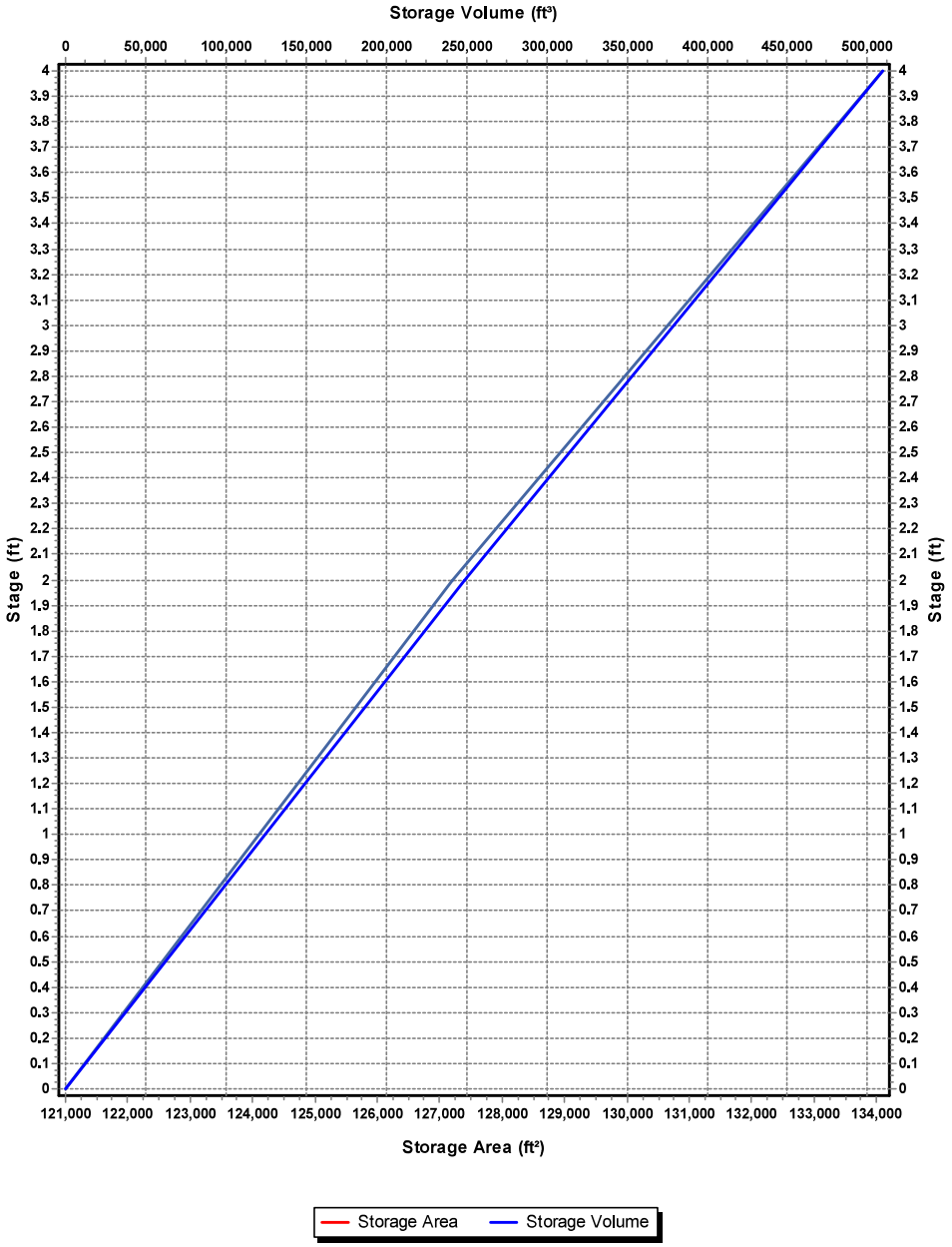
Invert Elevation (ft)	4415.80
Max (Rim) Elevation (ft)	4426.00
Max (Rim) Offset (ft)	10.20
Initial Water Elevation (ft)	0.00
Initial Water Depth (ft)	-4415.80
Ponded Area (ft^2)	100.00
Evaporation Loss	0.00

Storage Area Volume Curves

Storage Curve : SW-stage storage

Stage (ft)	Storage Area (ft^2)	Storage Volume (ft^3)
0	121000	0
2	127200	248200
4	134100	509500

Storage Area Volume Curves



Storage Node : SW-BASIN (continued)

Output Summary Results

Peak Inflow (cfs)	78.84
Peak Lateral Inflow (cfs)	8.57
Peak Outflow (cfs)	0.05
Peak Exfiltration Flow Rate (cfm)	0
Max HGL Elevation Attained (ft)	4420.19
Max HGL Depth Attained (ft)	4.39
Average HGL Elevation Attained (ft)	4418.86
Average HGL Depth Attained (ft)	3.06
Time of Max HGL Occurrence (days hh:mm)	1 00:00
Total Exfiltration Volume (1000-ft^3)	0
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0

Appendix D – Background Data

NOAA Atlas 14, Volume 1, Version 5
Location name: Dayton, Nevada, USA*
Latitude: 39.2836°, Longitude: -119.5778°
Elevation: 4466 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.096 (0.082-0.115)	0.120 (0.103-0.144)	0.162 (0.137-0.194)	0.200 (0.168-0.240)	0.263 (0.214-0.315)	0.321 (0.253-0.387)	0.388 (0.296-0.473)	0.469 (0.344-0.582)	0.597 (0.413-0.760)	0.713 (0.470-0.923)
10-min	0.146 (0.125-0.175)	0.183 (0.157-0.219)	0.246 (0.209-0.295)	0.305 (0.255-0.365)	0.400 (0.326-0.480)	0.488 (0.385-0.589)	0.591 (0.451-0.721)	0.714 (0.523-0.886)	0.909 (0.628-1.16)	1.08 (0.715-1.41)
15-min	0.182 (0.155-0.217)	0.227 (0.194-0.272)	0.305 (0.259-0.365)	0.378 (0.317-0.452)	0.496 (0.404-0.596)	0.605 (0.477-0.730)	0.733 (0.559-0.893)	0.885 (0.649-1.10)	1.13 (0.779-1.43)	1.34 (0.886-1.74)
30-min	0.244 (0.209-0.292)	0.305 (0.262-0.366)	0.411 (0.348-0.492)	0.508 (0.427-0.609)	0.668 (0.544-0.802)	0.814 (0.642-0.984)	0.987 (0.753-1.20)	1.19 (0.874-1.48)	1.52 (1.05-1.93)	1.81 (1.19-2.35)
60-min	0.303 (0.258-0.362)	0.378 (0.324-0.453)	0.509 (0.431-0.609)	0.629 (0.528-0.753)	0.827 (0.673-0.993)	1.01 (0.795-1.22)	1.22 (0.932-1.49)	1.48 (1.08-1.83)	1.88 (1.30-2.39)	2.24 (1.48-2.90)
2-hr	0.394 (0.344-0.460)	0.490 (0.429-0.573)	0.630 (0.546-0.735)	0.752 (0.644-0.877)	0.937 (0.780-1.10)	1.10 (0.896-1.30)	1.29 (1.02-1.54)	1.52 (1.16-1.84)	1.90 (1.39-2.41)	2.26 (1.60-2.93)
3-hr	0.463 (0.407-0.532)	0.578 (0.512-0.667)	0.731 (0.641-0.841)	0.854 (0.742-0.984)	1.03 (0.881-1.19)	1.18 (0.992-1.38)	1.36 (1.12-1.60)	1.58 (1.27-1.89)	1.94 (1.51-2.44)	2.28 (1.73-2.96)
6-hr	0.615 (0.543-0.700)	0.770 (0.681-0.881)	0.965 (0.848-1.10)	1.12 (0.977-1.28)	1.33 (1.14-1.52)	1.49 (1.27-1.72)	1.66 (1.38-1.94)	1.86 (1.52-2.20)	2.17 (1.72-2.61)	2.44 (1.90-2.99)
12-hr	0.780 (0.687-0.886)	0.984 (0.867-1.12)	1.25 (1.10-1.42)	1.45 (1.27-1.65)	1.73 (1.49-1.98)	1.94 (1.65-2.24)	2.16 (1.81-2.52)	2.39 (1.96-2.82)	2.69 (2.15-3.24)	2.95 (2.30-3.61)
24-hr	0.859 (0.784-0.946)	1.07 (0.981-1.18)	1.36 (1.24-1.49)	1.58 (1.44-1.73)	1.89 (1.71-2.08)	2.14 (1.92-2.34)	2.39 (2.13-2.64)	2.64 (2.34-2.95)	3.00 (2.61-3.38)	3.28 (2.82-3.72)
2-day	1.01 (0.920-1.12)	1.27 (1.15-1.40)	1.60 (1.45-1.76)	1.85 (1.68-2.04)	2.21 (1.98-2.44)	2.48 (2.22-2.76)	2.77 (2.45-3.10)	3.06 (2.68-3.45)	3.45 (2.97-3.94)	3.75 (3.18-4.34)
3-day	1.10 (1.00-1.22)	1.38 (1.25-1.53)	1.74 (1.59-1.93)	2.03 (1.84-2.24)	2.43 (2.19-2.69)	2.75 (2.45-3.05)	3.08 (2.72-3.44)	3.42 (2.98-3.84)	3.88 (3.33-4.42)	4.25 (3.59-4.90)
4-day	1.19 (1.08-1.32)	1.50 (1.36-1.66)	1.89 (1.72-2.09)	2.21 (2.01-2.44)	2.66 (2.40-2.94)	3.01 (2.69-3.34)	3.39 (2.99-3.77)	3.78 (3.29-4.23)	4.32 (3.69-4.91)	4.74 (3.99-5.46)
7-day	1.38 (1.25-1.54)	1.73 (1.56-1.93)	2.20 (1.99-2.45)	2.57 (2.32-2.86)	3.08 (2.76-3.43)	3.48 (3.09-3.89)	3.89 (3.43-4.36)	4.32 (3.76-4.87)	4.89 (4.19-5.60)	5.33 (4.52-6.16)
10-day	1.52 (1.36-1.70)	1.91 (1.71-2.14)	2.45 (2.20-2.74)	2.86 (2.56-3.20)	3.43 (3.04-3.84)	3.86 (3.41-4.34)	4.30 (3.77-4.85)	4.74 (4.12-5.38)	5.33 (4.57-6.12)	5.78 (4.90-6.70)
20-day	1.77 (1.60-1.98)	2.24 (2.02-2.50)	2.87 (2.59-3.19)	3.34 (3.01-3.71)	3.97 (3.55-4.41)	4.43 (3.95-4.95)	4.90 (4.33-5.49)	5.36 (4.70-6.03)	5.95 (5.16-6.76)	6.38 (5.48-7.33)
30-day	1.96 (1.77-2.18)	2.47 (2.23-2.75)	3.14 (2.83-3.48)	3.63 (3.27-4.03)	4.28 (3.84-4.75)	4.76 (4.24-5.30)	5.23 (4.64-5.86)	5.69 (5.01-6.41)	6.28 (5.46-7.15)	6.70 (5.77-7.70)
45-day	2.29 (2.07-2.54)	2.89 (2.60-3.20)	3.67 (3.31-4.04)	4.22 (3.81-4.64)	4.92 (4.43-5.39)	5.40 (4.86-5.92)	5.84 (5.25-6.42)	6.22 (5.59-6.86)	6.64 (5.95-7.37)	6.87 (6.15-7.78)
60-day	2.62 (2.37-2.90)	3.31 (2.99-3.66)	4.19 (3.79-4.61)	4.81 (4.35-5.27)	5.57 (5.04-6.10)	6.09 (5.50-6.69)	6.56 (5.91-7.20)	6.96 (6.26-7.66)	7.38 (6.64-8.15)	7.59 (6.85-8.42)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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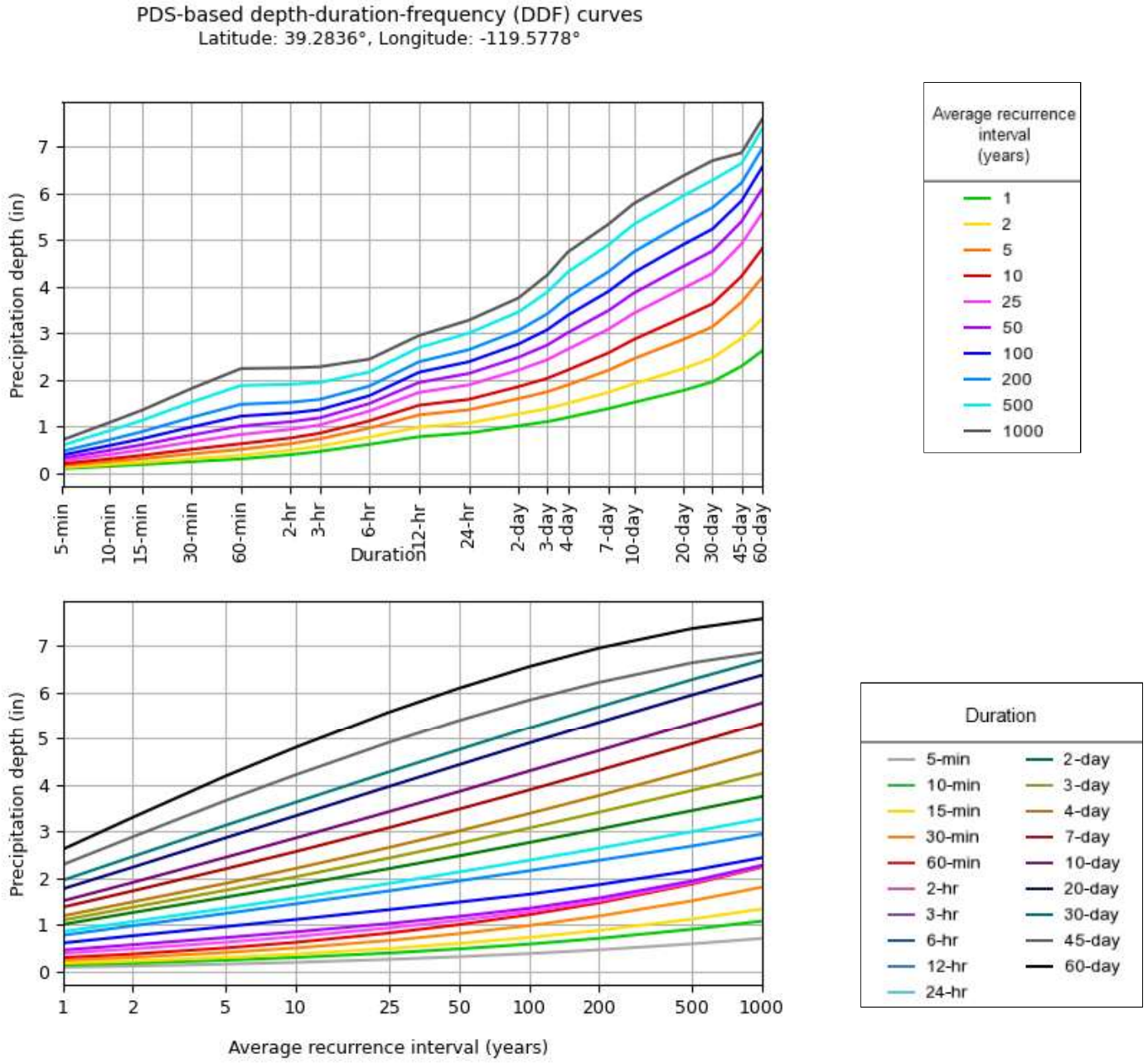
PF graphical



NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Fri Nov 14 01:44:12 2025

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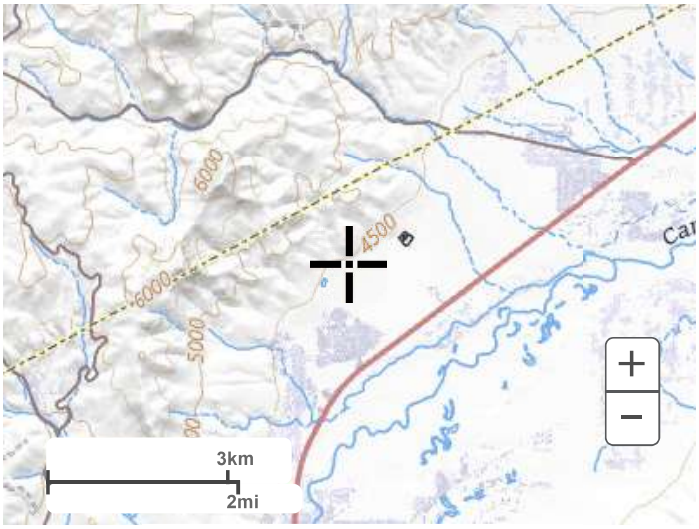
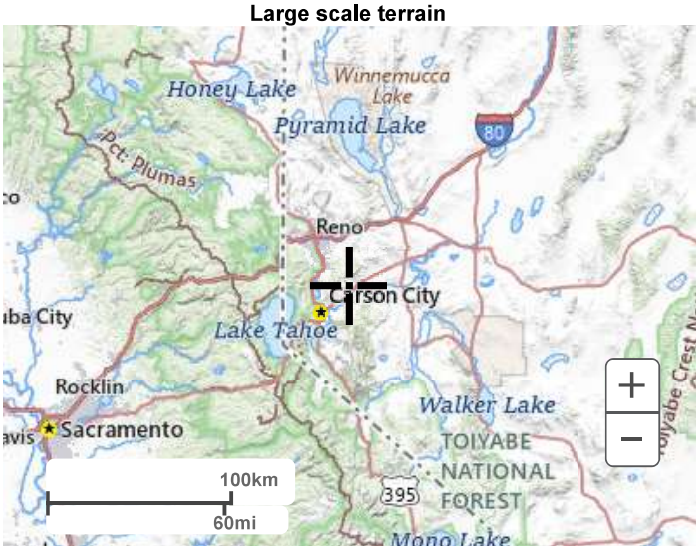
Maps & aerials

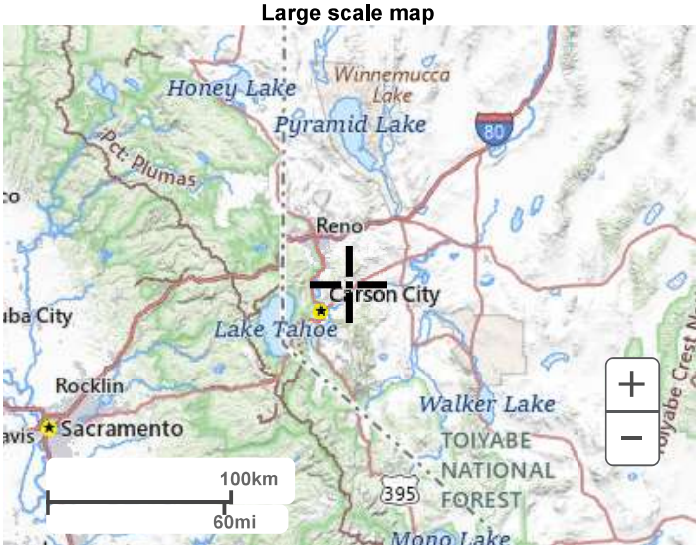
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

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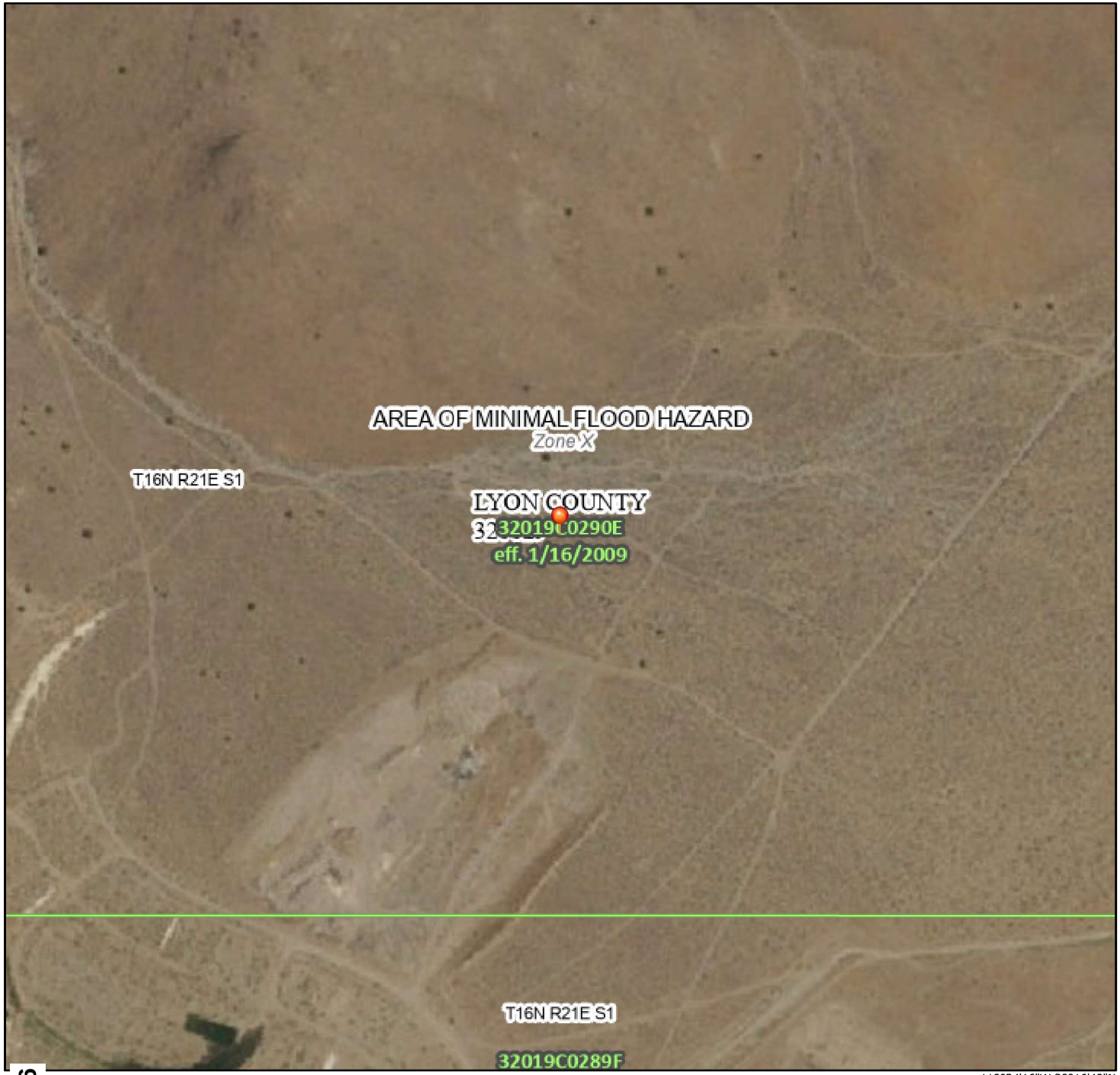
US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

National Flood Hazard Layer FIRMette

FEMA

119°34'54"W 39°17'16"N



979

0 250 500 1,000 1,500 2,000 Feet

1:6,000

119°34'16"W 39°16'49"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

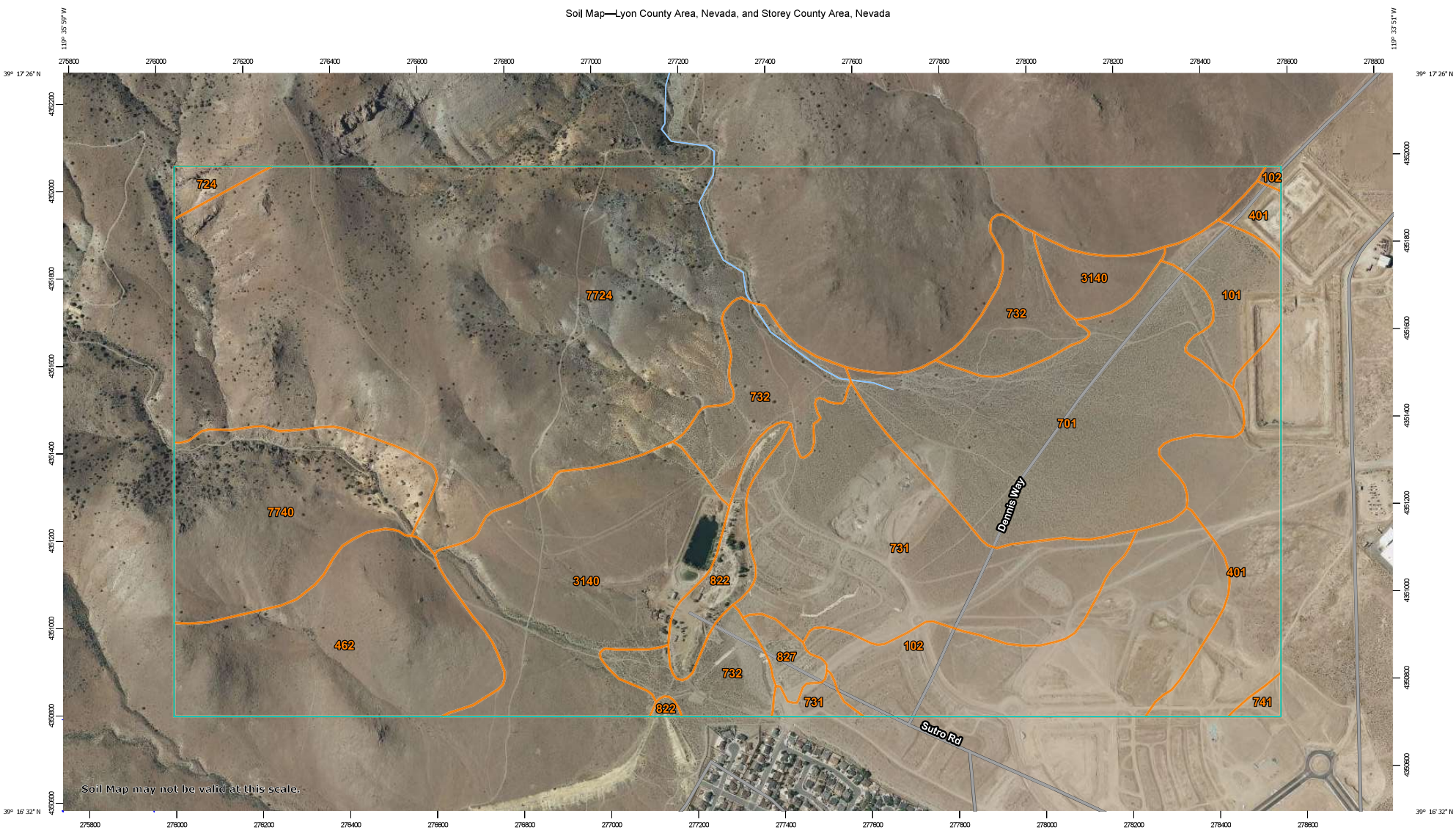
N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/15/2025 at 8:49 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



Map Scale: 1:8,230 if printed on B landscape (17" x 11") sheet.

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lyon County Area, Nevada
Survey Area Data: Version 24, Aug 29, 2025

Soil Survey Area: Storey County Area, Nevada
Survey Area Data: Version 25, Sep 2, 2025

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 10, 2022—Jun 14, 2022

MAP LEGEND

MAP INFORMATION

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
101	Ackley sandy loam, 0 to 2 percent slopes	14.7	1.8%
102	Ackley gravelly sandy loam, 2 to 4 percent slopes	54.3	6.8%
401	Lahontan silty clay loam, strongly saline-alkali	37.6	4.7%
462	Olac-Rock outcrop complex, 8 to 15 percent slopes	54.7	6.9%
701	Veta association	77.1	9.7%
731	Hunewill sandy loam, 4 to 8 percent slopes	73.1	9.2%
732	Hunewill stony loam, 8 to 15 percent slopes	47.0	5.9%
741	Wedertz-Wellington-Saralegui complex, 0 to 2 percent slopes	1.6	0.2%
822	Dumps, mine	11.0	1.4%
827	Slickens	4.4	0.6%
3140	Fulstone-Reno complex, 2 to 30 percent slopes	73.5	9.3%
7724	Ceejay-Doorkiss-Skeddadle association	293.8	37.0%
7740	Reywat-Ister-Rock outcrop association	48.3	6.1%
Subtotals for Soil Survey Area		**790.9**	**99.6%**
Totals for Area of Interest		**794.3**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
724	Ceejay-Doorkiss-Skeddadle	3.4	0.4%
Subtotals for Soil Survey Area		**3.4**	**0.4%**
Totals for Area of Interest		**794.3**	**100.0%**

Hydrologic Soil Group and Surface Runoff

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

Report—Hydrologic Soil Group and Surface Runoff

Absence of an entry indicates that the data were not estimated. The dash indicates no documented presence.

Hydrologic Soil Group and Surface Runoff–Lyon County Area, Nevada			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
101—Ackley sandy loam, 0 to 2 percent slopes			
Ackley	85	Low	B

Hydrologic Soil Group and Surface Runoff–Lyon County Area, Nevada			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**
102—Ackley gravelly sandy loam, 2 to 4 percent slopes			
Ackley	85	Very low	B
401—Lahontan silty clay loam, strongly saline-alkali			
Lahontan	90	High	C
462—Olac-Rock outcrop complex, 8 to 15 percent slopes			
Olac	70	Very high	D
Rock outcrop	20	—	D
701—Veta association			
Veta	65	Very low	A
Veta	20	Low	A
731—Hunewill sandy loam, 4 to 8 percent slopes			
Hunewill	85	High	C
732—Hunewill stony loam, 8 to 15 percent slopes			
Hunewill	85	High	C
741—Wedertz-Wellington-Saralegui complex, 0 to 2 percent slopes			
Wedertz	40	Medium	C
Wellington	30	Very high	D
Saralegui	20	Very low	A
822—Dumps, mine			
Dumps	100	—	—
827—Slickens			
Slickens	100	—	—
3140—Fulstone-Reno complex, 2 to 30 percent slopes			
Fulstone	45	High	D
Reno	40	High	D
7724—Ceejay-Doorkiss-Skeddadle association			
Ceejay	40	Very high	D
Doorkiss	20	Very high	D
Skedaddle	20	Very high	D
7740—Reywat-Ister-Rock outcrop association			
Reywat	45	Very high	D
Ister	30	High	C
Rock outcrop	10	—	D

Hydrologic Soil Group and Surface Runoff–Storey County Area, Nevada			
Map symbol and soil name	**Pct. of map unit**	**Surface Runoff**	**Hydrologic Soil Group**

Hydrologic Soil Group and Surface Runoff–Storey County Area, Nevada			
Map symbol and soil name	Pct. of map unit	Surface Runoff	Hydrologic Soil Group
724—Ceejay-Doorkiss-Skeddadle			
Ceejay	40	Very high	D
Doorkiss	20	Very high	D
Skedaddle	20	Very high	D

Data Source Information

Soil Survey Area: Lyon County Area, Nevada
Survey Area Data: Version 24, Aug 29, 2025

Soil Survey Area: Storey County Area, Nevada
Survey Area Data: Version 25, Sep 2, 2025

APPENDIX D: Traffic Impact Study

TRAFFIC IMPACT STUDY

FOR

TRADITIONS NORTH

November 12, 2025

PREPARED FOR:

GF Development, LLC

PREPARED BY:

GCW, Inc.
5482 Longley Lane, Suite B, Reno, Nevada 89511
775.322.4300
www. gcwengineering.com

YOUR QUESTIONS ANSWERED QUICKLY

Why did you perform this study?

This Traffic Impact Study evaluates the potential traffic impacts associated with the proposed Traditions North project in Dayton, Nevada. This study of potential transportation impacts was undertaken for planning purposes and to assist in determining what traffic controls or mitigations may be needed to reduce potential impacts, if any are found.

What does the project consist of?

The project consists of approximately 364 single family residential housing units located north of US Highway 50 (US 50), Nevada Station Parkway, and the Traditions Village 1 and Village 2 developments.

The project will access US 50 via Fortune Drive and Traditions Parkway. The project originally contemplated a connection to Enterprise Way as well, however due to circumstances separate from the traffic study, a vehicle connection to Enterprise Way is no longer being considered and was not included in this traffic analysis and report. If the project wishes to pursue a vehicle connection to Enterprise Way in the future, a separate traffic analysis will need to be conducted at that time.

How much traffic will the project generate?

The project is anticipated to generate approximately 3,433 Daily, 255 AM peak hour, and 342 PM peak hour trips to the external roadway network.

How will project traffic affect the roadway network?

Under Opening Year Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds.

Under Future Year conditions, the US 50/Fortune Drive intersection is anticipated to operate at level of service E during the AM peak hour. The poor level of service is primarily due to the high southbound right-turn volume on Fortune Drive. The southbound Fortune Drive approach currently contains a hatched-out lane which can be converted to a second right-turn lane. With dual southbound right-turn lanes and protected plus overlap phasing, the overall US 50/Fortune Drive intersection is anticipated to operate within policy level of service thresholds. Capacity improvements for the Future Year condition should be undertaken by NDOT as regional improvements since the poor future operating conditions will occur unrelated to this project

Under Future Year Plus Project conditions, the analysis includes the needed regional capacity improvements (dual southbound right-turn lanes) at the US 50/Fortune Drive intersection. The study intersections are expected to operate at overall LOS D or better (within policy level of service thresholds).

What are the recommended improvements?

The project is not expected to result in levels of service below policy thresholds and therefore no project related mitigations are recommended. The following regional improvements by NDOT are included in the *US 50 Corridor Study* or as part of the corridor safety improvements that are currently at the 90% design stage, and were included in the Future Year analysis as a background condition:

- Lower the speed limit on US 50 from 60 mph to 55 mph from east of Fortune Drive to James Avenue to provide a more gradual transition in speed limits through the expanding urbanized area
- Widen US 50 to six lanes for the Future Year per the *US 50 Corridor Study*. With the widening project:
    - Construct/restripe a second southbound right-turn lane on Fortune Drive at US 50
    - Construct a westbound right-turn lane on US 50 at Fortune Drive (not shown in the *US 50 Corridor Study*) as exists today
    - Construct a westbound right-turn lane on US 50 at Traditions Parkway (not shown in the *US 50 Corridor Study*) as exists today
    - Improve the south leg of the US 50/Traditions Parkway/Segale Road intersection

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6. Future Year Traffic Volumes, Lane Configurations, and Controls
7. Project Trips – Opening Year
8. Project Trips – Future Year
9. Opening Year Plus Project Traffic Volumes, Lane Configurations, and Controls
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F. Future Year LOS Calculations
G. Opening Year Plus Project LOS Calculations
H. Future Year Plus Project LOS Calculations

INTRODUCTION

This report presents the findings of a Traffic Impact Study completed to assess the potential traffic impacts on local intersections associated with the Traditions North project in Dayton, Nevada. This traffic impact study has been prepared to document existing traffic conditions, quantify traffic volumes generated by the proposed project, identify potential impacts, document findings, and make recommendations to mitigate impacts, if any are found. The location of the project is shown on **Figure 1** and **Figure 2**, and the project site plan is shown on **Figure 3**.

Study Area and Evaluated Scenarios

The project consists of approximately 364 single family residential housing units. The project is located north of US Highway 50 (US 50), Nevada Station Parkway, and the Traditions Village 1 and Village 2 developments. The study intersections were identified as those most likely to be impacted by project traffic and are shown on **Figure 2**. The following intersections are included in this study:

1. Fortune Drive/Sugarloaf Drive
2. US 50/Fortune Drive
3. US 50/Traditions Parkway

This study includes analysis of both the weekday AM and PM peak hours as these are the periods of time in which peak traffic is anticipated to occur. The evaluated development scenarios are:

- Existing Conditions
- Opening Year Conditions – this scenario analyzes a 4-year horizon (Year 2029)
- Opening Year Plus Project Conditions
- Future Year Conditions (20-year horizon) – this scenario analyzes the 20-year horizon beyond the Opening Year (Year 2049)
- Future Year Plus Project Conditions

GCW ENGINEERS \ SURVEYORS

NO SCALE

- Project Site

Figure 1

Traditio 994 th

Traffic Impact Study

Regional Project Location

GCW ENGINEERS \ SURVEYORS

NO SCALE

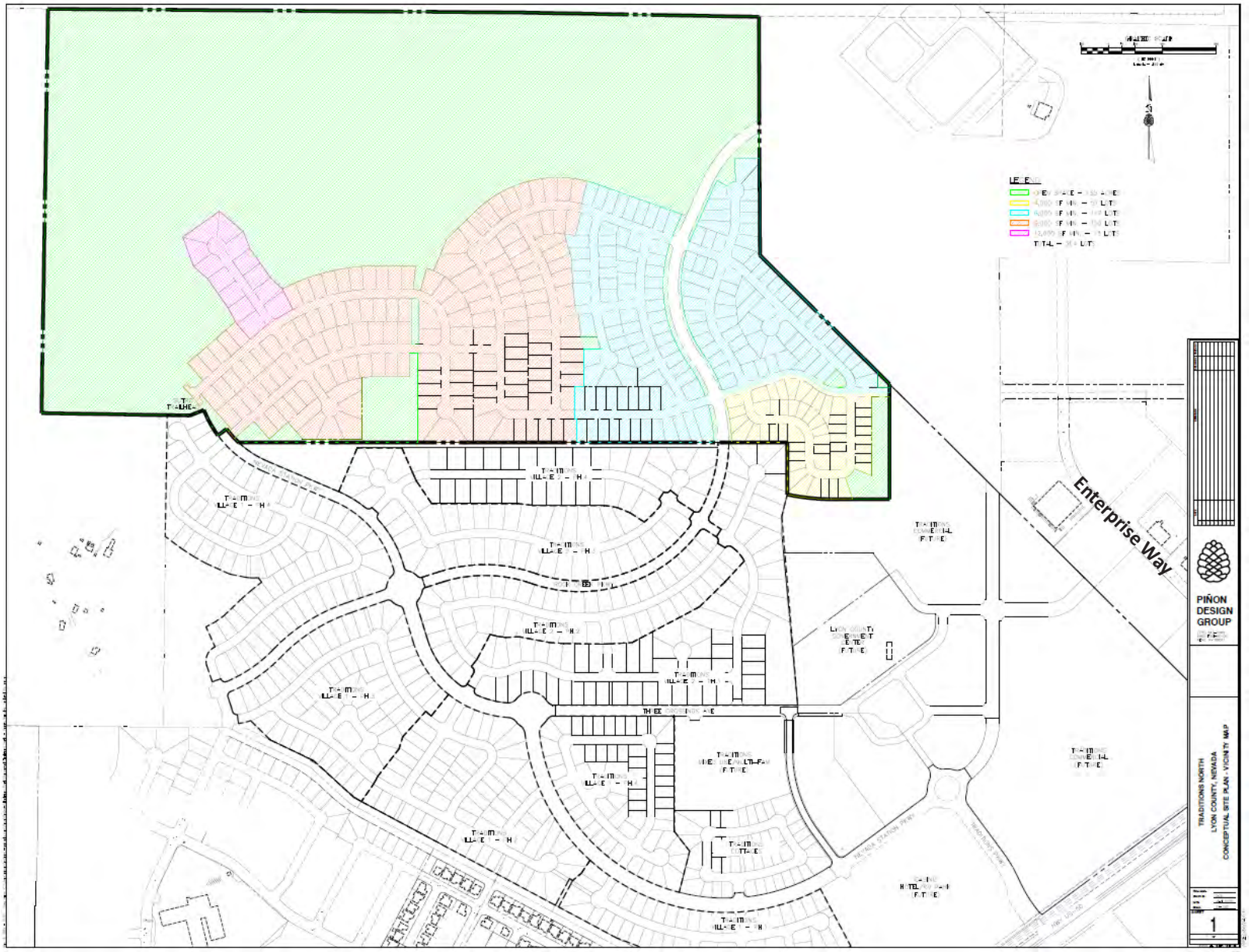
- Project Site (#) - Study Intersection

Figure 2

Traditio 995 th

Traffic Impact Study

Study Intersections



GCW ENGINEERS \ SURVEYORS

NO SCALE

Figure **3**

Traditio **996** th

Traffic Impact Study

Preliminary Site Plan

ANALYSIS METHODOLOGY

Level of service (LOS) is a term commonly used by transportation practitioners to measure and describe the operational characteristics of intersections, roadway segments, and other facilities. This term equates seconds of delay per vehicle at intersections to letter grades "A" through "F" with "A" representing optimum conditions and "F" representing breakdown or over capacity flows.

Intersections

The complete methodology for intersection level of service analysis is established in *the Highway Capacity Manual (HCM), 7th Edition* published by the Transportation Research Board (TRB). **Table 1** presents the delay thresholds for each level of service grade at signalized and unsignalized intersections.

Table 1: Level of Service Definition for Intersections

Level of Service	Brief Description	Average Delay (seconds per vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Free flow conditions.	< 10	< 10
B	Stable conditions with some affect from other vehicles.	10 to 20	10 to 15
C	Stable conditions with significant affect from other vehicles.	20 to 35	15 to 25
D	High density traffic conditions still with stable flow.	35 to 55	25 to 35
E	At or near capacity flows.	55 to 80	35 to 50
F	Over capacity conditions.	> 80	> 50

Source: *Highway Capacity Manual, 7th Edition*

Level of service calculations were performed for the study intersections using the Synchro 12 software package with analysis and results reported in accordance with *HCM* methodology.

Level of Service Policy

Lyon County

Chapter 4 – Transportation of the *2020 Lyon County Master Plan* (adopted December 16, 2021) includes the following level of service policies:

> *Signalized Intersections*
> *Level of Service at signalized intersections should be calculated using the Highway Capacity Manual, 2016 methodology. Delay at signalized intersections will be calculated on a peak hour basis and reported for the intersection overall. The overall intersections should operate at LOS D or better for the peak hour condition.*

Unsignalized Intersections

Level of Service at unsignalized intersections should be calculated using the Highway Capacity Manual, 2016 methodology. Delay at unsignalized intersections will be calculated on a peak hour basis and reported for both the approach with the highest delay and the intersection overall. The intersection approaches should operate at LOS D or better for the peak hour condition.

Nevada Department of Transportation

The Nevada Department of Transportation (NDOT) *Traffic Impact Study Requirements* publication states:

Level of service "C" will be the design objective for capacity and under no circumstances will less than level of service "D" be accepted for site and non-site traffic

Hence, LOS "D" was used as the threshold criteria for this analysis.

EXISTING CONDITIONS

Roadway Facilities

A brief description of the key roadways in the study area is provided below.

US Highway 50 is a highway with four-lane (two lanes in each direction and left-turn pockets at intersections) and five-lane (two lanes in each direction and two-way left-turn lane) sections within the study area. The roadway runs in a northeast-southwest direction and is considered an east-west roadway in this analysis. US 50 is classified as a Principal Arterial per NDOT roadway classification. The posted speed limit on US 50 at Fortune Drive is 45 mph and transitions to 60 mph just east of Fortune Drive.

Fortune Drive is a four-lane roadway with two lanes in each direction and turn pockets at intersections between US 50 and Dayton Village Parkway/Corral Drive. North of Dayton Village Parkway/Corral Drive, Fortune Drive is a two-lane residential roadway. The posted speed limit on Fortune Drive is 25 mph.

Traditions Parkway is a four-lane roadway north of US 50 that intersects Nevada Station Parkway at a roundabout intersection. The south leg of the US 50/Traditions Parkway intersection is a two-lane roadway called Segale Road that serves rural residential properties. The posted speed limit on Traditions Parkway north of US 50 is 35 mph.

Sugarloaf Drive is a two-lane residential roadway. The posted speed limit on Sugarloaf Drive is 25 mph.

Alternative Modes of Travel

Bicycle and pedestrian facilities do not exist on US 50 in the project area. Sidewalk exists on both sides of Fortune Drive and Sugarloaf Drive for the entire length of each roadway. Sidewalk also exists on both sides of Traditions Parkway from approximately 450 feet north of US 50 to Nevada Station Parkway. The US

50/Fortune Drive intersection has a marked crosswalk on the north leg of the intersection. Bicycle lanes do not exist on the study roadways.

Lyon County does not provide fixed route bus service.

Crash History

Vehicle crash data was obtained from NDOT and includes information from the 2019 to 2023 five-year period (the most current data available). The data shows the following:

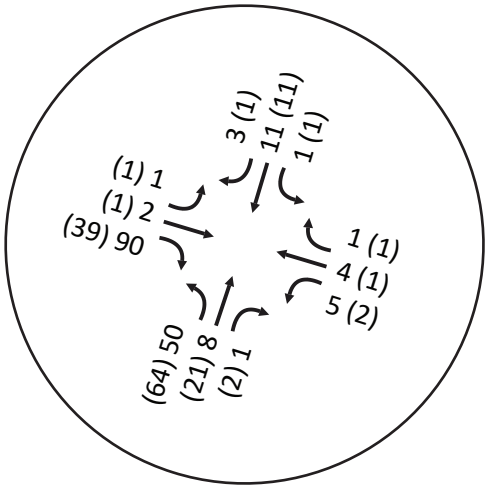
- Fortune Drive/Sugarloaf Drive – Zero crashes were reported at the intersection during the five year period
- US 50/Fortune Drive – Fourteen (14) crashes were reported at or within approximately 300 feet of the intersection during the five year period, including:
    - One (1) fatal crash – single vehicle run-off-the-road type crash involving alcohol
    - Six (6) injury crashes – 5 rear-end type crashes and 1 head-on type crash
    - Seven (7) property damage only (PDO) crashes – 5 single vehicle run-off-the-road type crashes and 2 rear-end type crashes
- US 50/Traditions Parkway – Four (4) crashes were reported at or within approximately 300 feet of the intersection during the five year period, including:
    - Two (2) injury crashes – 2 angle type crashes
    - Two (2) PDO crashes – 1 single vehicle run-off-the-road type crash and 1 rear-end type crash

There do not appear to be any trends or recurring crash types that require mitigations. The crash data sheets are provided in **Appendix A**.

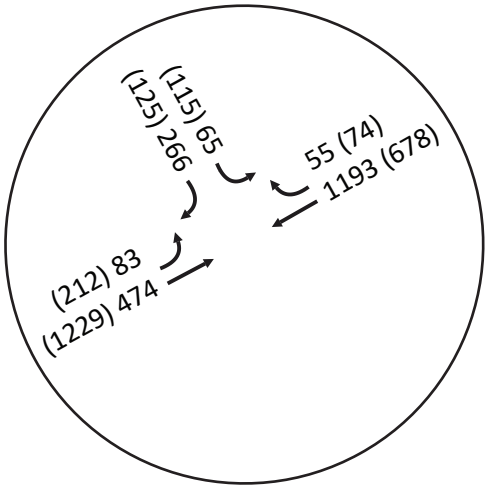
Traffic Volumes

AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak hour traffic volumes were collected at the study intersections on Tuesday, June 3, 2025. A review of NDOT's Annual Traffic Reports including the *2024 Seasonal Growth Factors* report (the most recent available) shows that traffic volumes in June are typically higher than the annual average, therefore, a seasonal factor was not applied to the existing traffic count data. The traffic count data sheets are provided in **Appendix B**. **Figure 4** shows the existing traffic volumes at the study intersections.

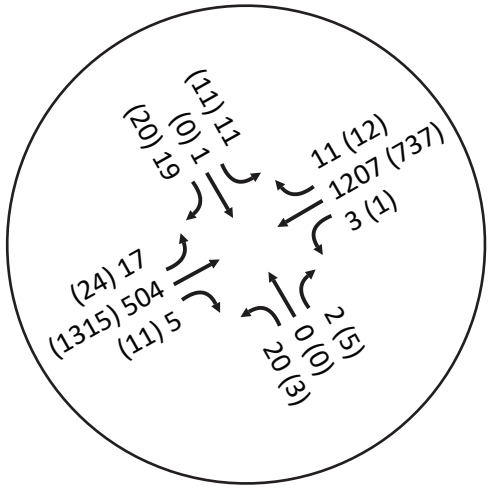
1 *Fortune Dr / Sugarloaf Dr*



2 *US 50 / Fortune Dr*



3 *US 50 / Traditions Pkwy*



GCW ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

(#) - Study Intersection STOP - Stop - Signal YIELD - Yield

Figure 4

Tradit 1000 th

Traffic Impact Study

Existing Traffic Volumes, Lane Configurations, and Controls

Intersection Level of Service Analysis

Existing weekday AM and PM peak hour intersection level of service analysis was performed for the study intersections using Synchro 12 and HCS 2025 analysis software programs. The existing intersection lane configurations and controls are shown on **Figure 4. Table 2** shows the existing conditions level of service results and the technical calculations are provided in **Appendix C**.

Table 2: Existing Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS
1	Fortune Dr/Sugarloaf Dr	Side Street Stop				
	Overall		7	A	6	A
	EB Approach (Sugarloaf Dr)		9	A	9	A
	WB Approach (Sugarloaf Dr)		11	B	10	A
	NB Left (Fortune Dr)		7	A	7	A
	SB Left (Fortune Dr)		7	A	7	A
2	US 50/Fortune Dr	Signalized High-T				
	Overall		23	C	18	B
	EB Left (US 50)		45	D	24	C
	WB Approach (US 50)		18	B	15	B
	SB Approach (Fortune Dr)		36	D	23	C
	EB Merge (Fortune Dr to US 50)[3]		6	A	13	B
3	US 50/Traditions Pkwy	Side Street Stop				
	Overall		1	A	1	A
	NB Approach (Segale Rd)		39	E	47	E
	SB Approach (Traditions Pkwy)		36	E	30	D
	EB Left (US 50)		12	B	10	A
	WB Left (US 50)		9	A	13	B

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections and for the worst approach/movement for side street stop controlled intersections.
2. Average Density is reported for the EB Merge from the Fortune Dr SB left-turn to US 50 EB through movement.
3. Merge analysis was performed using HCS 2025 software.
Source: GCW, 2025

As shown in the table, the northbound and southbound approaches of the US 50/Traditions Parkway intersection are expected to operate at LOS E with minor street stop control. While the overall intersection is expected to operate at LOS A during the AM and PM peak hours, Lyon County standards state that unsignalized intersection "approaches should operate at LOS D or better for the peak hour condition." A traffic signal at the US 50/Traditions Parkway intersection is currently under construction. The other study intersections are expected to operate within policy level of service thresholds.

OPENING YEAR CONDITIONS

The Opening Year of the project is anticipated to be 2029.

Traffic Volumes

Opening Year traffic volumes were developed by applying a regional growth rate to the existing traffic volumes at the study intersections for 4 years. An annual growth rate of 0.5 percent per year was used, since trip generation estimates from other significant planned/approved projects in the area were also added. The 0.5 percent annual growth rate is consistent with the methodology used on other projects approved by NDOT and accounts for regional background growth that is not included in the trip generation of other projects. Trips generated by the following planned/approved, but not yet built, projects in the area were added to the study intersections:

- Traditions Town Center Phases 1-3
- Dayton Six

The resulting annual growth for the Opening Year volumes is generally higher than the traffic volume growth outlined in the *US 50 Corridor Study* (approximately 8-9 percent vs. 4-5 percent) due to the planned/approved project trips. The Opening Year (2029) AM and PM peak hour intersection turning movement volumes are shown on **Figure 5**. The growth rate and traffic volume development calculations are provided in **Appendix D**.

Intersection Level of Service Analysis

Opening Year weekday AM and PM peak hour intersection level of service analysis was performed for the study intersections based on the Opening Year traffic volumes, the existing peak hour factors from the counts, and the lane configurations and controls shown on **Figure 5**. A traffic signal at the US 50/Traditions Parkway intersection is currently under construction and will be completed prior to the Opening Year (2029) of the project. The Opening Year analysis was conducted with a traffic signal at the intersection. **Table 3** shows the Opening Year level of service results and the technical calculations are provided in **Appendix E**.

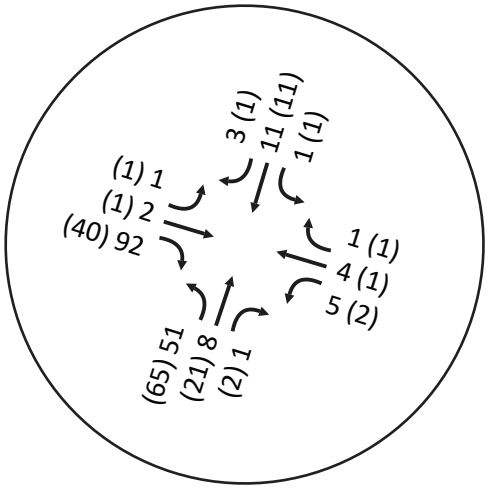
Table 3: Opening Year Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS
1	Fortune Dr/Sugarloaf Dr	Side Street Stop				
	Overall		7	A	6	A
	EB Approach (Sugarloaf Dr)		9	A	9	A
	WB Approach (Sugarloaf Dr)		11	B	10	A
	NB Left (Fortune Dr)		7	A	7	A
	SB Left (Fortune Dr)		7	A	7	A
2	US 50/Fortune Dr	Signalized High-T				
	Overall		25	C	20	B
	EB Left (US 50)		49	D	34	C
	WB Approach (US 50)		21	C	16	B
	SB Approach (Fortune Dr)		39	D	36	D
	EB Merge (Fortune Dr to US 50)[3]		12	B	17	B
3	US 50/Traditions Pkwy	Signal				
	Overall		20	B	20	C
	EB Approach (US 50)		14	B	17	B
	WB Approach (US 50)		21	C	21	C
	NB Approach (Segale Rd)		42	D	49	D
	SB Approach (Traditions Pkwy)		36	D	33	C

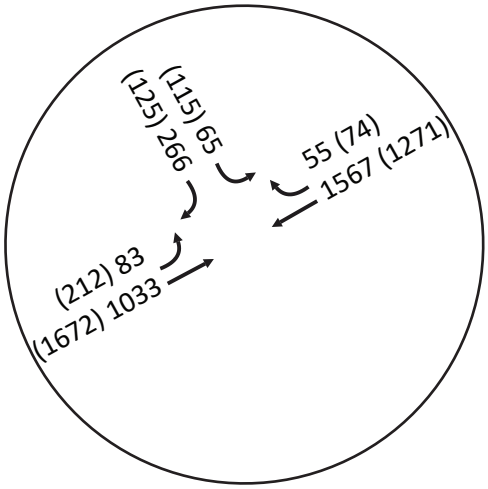
Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections and for the worst approach/movement for side street stop controlled intersections.
2. Average Density is reported for the EB Merge from the Fortune Dr SB left-turn to US 50 EB through movement.
3. Merge analysis was performed using HCS 2025 software.
Source: GCW, 2025

As shown in the table, the study intersections are expected to operate within policy level of service thresholds during the AM and PM peak hours under Opening Year conditions.

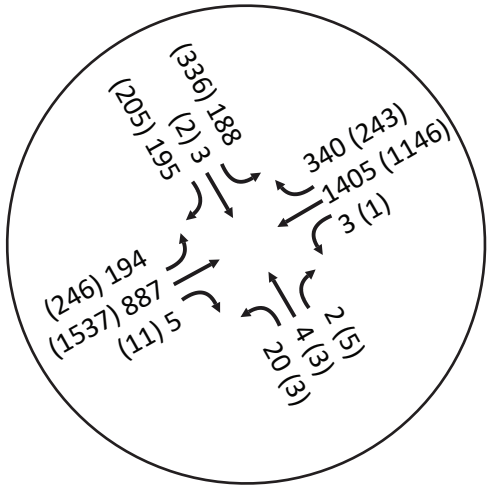
1 *Fortune Dr / Sugarloaf Dr*



2 *US 50 / Fortune Dr*



3 *US 50 / Traditions Pkwy*



GCW ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

(#) - Study Intersection STOP - Stop - Signal YIELD - Yield

Figure 5

Tradit 1004 th

Traffic Impact Study

Opening Year Traffic Volumes, Lane Configurations, and Controls

FUTURE YEAR CONDITIONS

The Future Year analysis estimates operating conditions for the 20-year horizon after Opening Year (Year 2049).

Planned Roadway Improvements

The *US 50 Corridor Study - Pine Cone Road to Neigh Road Traffic Report* (CA Group, Inc.) documents planned roadway improvements in the study area. The corridor study includes three build alternatives with improvements for the overall corridor – the Arterial Alternative, Parkway Alternative, and Controlled Access Alternative. Based on input from NDOT staff, the Arterial Alternative is understood to be the NDOT preferred alternative and was used as the basis for this study. Improvements at the US 50 intersections with Fortune Drive and Traditions Parkway are included in the Arterial Alternative. The Arterial Alternative improvements for the study intersections include:

- Six through lanes (three lanes in each direction) on US 50
- US 50/Fortune Drive – signalized High-T intersection with dual eastbound left-turn lanes
- US 50/Traditions Parkway – signalized intersection with full access (all movement allowed) for all approaches of the intersection

It is important to note that the improvements identified in the corridor study do not include westbound right-turn deceleration lanes at the US 50/Fortune Drive and US 50/Traditions Parkway intersections, however these lanes exist today. NDOT's access management standards include warrants for right-turn lanes, which are clearly met based on Future Year (no project) traffic volumes. It is anticipated, and the analysis assumes, that these existing right-turn lanes will continue to be provided for the Future Year condition (without the project) by NDOT as part of the US 50 widening project.

The Future Year lane configurations and controls used in the analysis are shown on **Figure 6**.

Planned/Anticipated Developments & Traffic Volume Forecasts

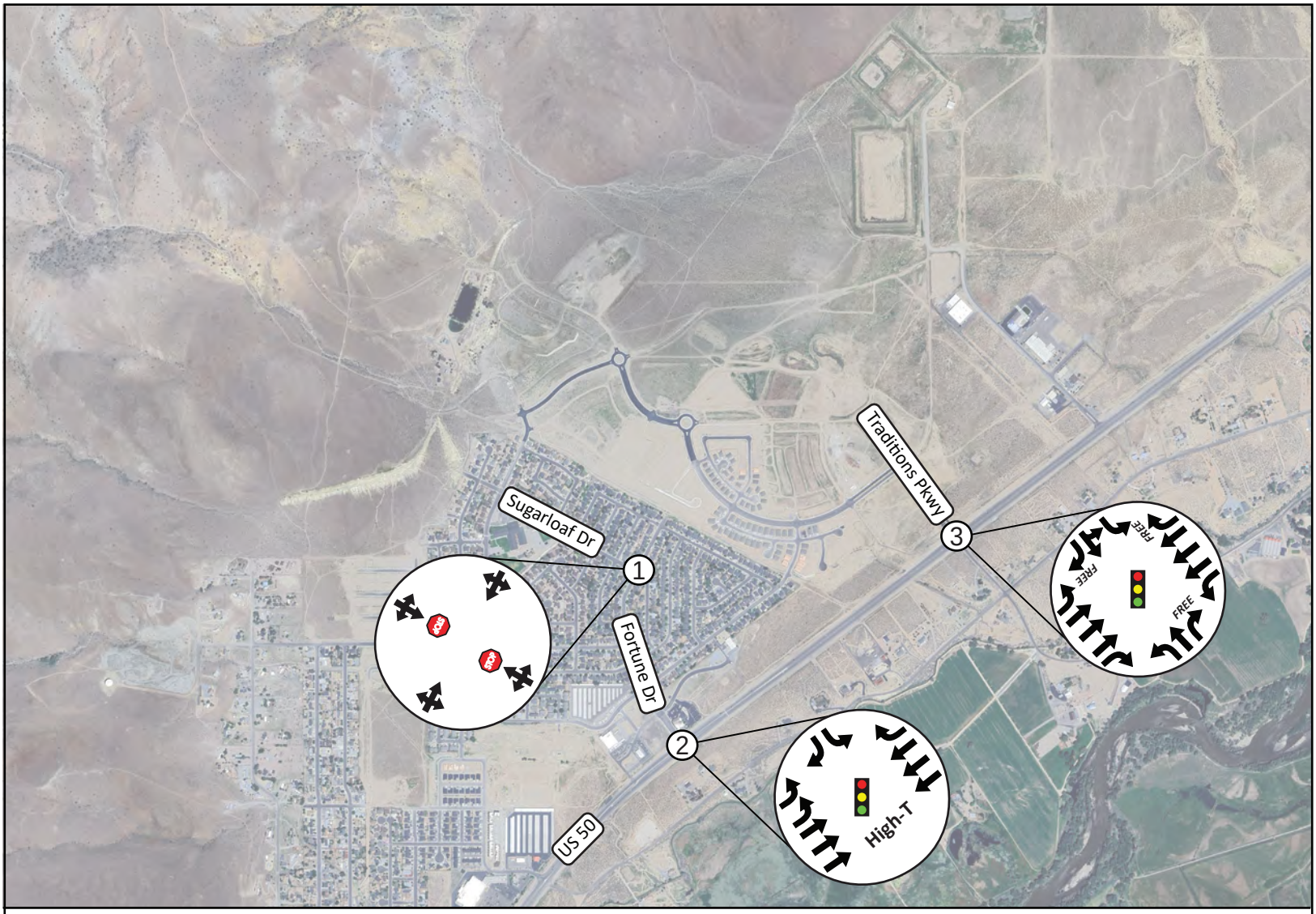
The *US 50 Corridor Study Traffic Report* includes analysis of multiple intersections on US 50 including the US 50/Fortune Drive and the US 50/Traditions Parkway intersections. The corridor study analyzes Future Year (2040) traffic volume forecasts that were developed using a regional growth rate and trip generation estimates from planned projects in the area. "Appendix 3 – 2040 Traffic Forecasting and Assumptions" of the *US 50 Corridor Study Traffic Report* (provided in **Appendix D**) includes a detailed description of how the forecasts were developed. The Future Year (2040) traffic volumes from the *US 50 Corridor Study Traffic Report* and from the *Traffic Impact Study for Traditions Town Center Phases 1-3* (Headway Transportation, September 27, 2023) were used as a starting point to develop Future Year (2049) forecasts for this analysis. The following steps were taken to develop Future Year (2049) traffic volumes at the study intersections:

1. Since the traffic volume forecasts in the *US 50 Corridor Study* represent the year 2040, background regional growth for an additional 9 years was calculated and added to the 2040 forecasts. An annual growth rate of 0.5 percent per year was used, since trip generation estimates from other planned/approved projects that were not included in the *US 50 Corridor Study* were also added and the 2040 volumes already account for known developments. The 0.5 percent annual growth rate is consistent with the methodology used on other projects approved by NDOT and accounts for regional background growth that is not included in the trip generation of other projects.

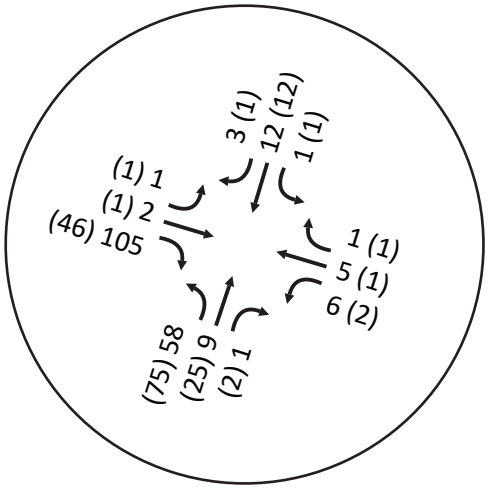
2. The *US 50 Corridor Study* traffic volume forecasts (2040) appear to already include a portion of the trips generated by the proposed Traditions project located north of US 50 between Fortune Drive and Traditions Parkway, but not the entire project. Trip generation estimates from the proposed Traditions Village 2 and Estates at Sutro (included in the Future Year forecasts for Traditions Town Center shown in Appendix D), Traditions Town Center Phases 1-3, and Dayton Six projects were added to the Future Year forecasts.

The Future Year (2049) traffic volumes are shown on **Figure 6** and represent the known long-term development in the study area.

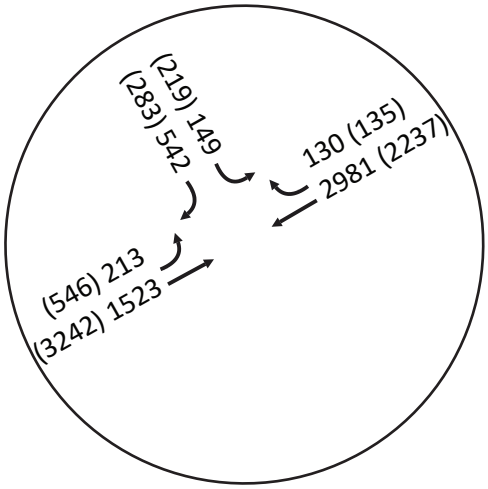
The overall Future Year forecasts presented in the *US 50 Corridor Study* result in an average annual growth rate of approximately 4-5 percent when compared to the existing volumes presented in that study. Consistent with the *US 50 Corridor Study*, the Future Year (2049) volumes used in this analysis also result in an average annual growth rate of approximately 4-5 percent when compared to the existing (2025) traffic volumes shown on **Figure 4**. The growth rate and traffic volume development calculations are provided in **Appendix D**.



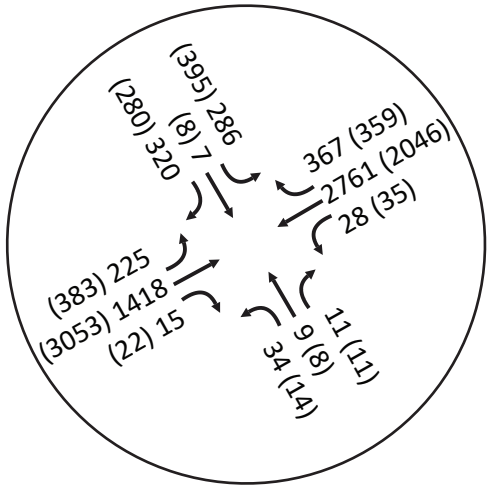
1 *Fortune Dr / Sugarloaf Dr*



2 *US 50 / Fortune Dr*



3 *US 50 / Traditions Pkwy*



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NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

(#) - Study Intersection STOP - Stop - Signal YIELD - Yield

Figure 6

Tradit 1007 th

Traffic Impact Study

Future Year Traffic Volumes, Lane Configurations, and Controls

Intersection Level of Service

AM and PM peak hour intersection level of service analysis was performed for the study intersections based on the Future Year traffic volumes, lane configurations, and controls shown on **Figure 6**. **Table 4** shows the Future Year conditions level of service results and the technical calculations are provided in **Appendix F**.

Table 4: Future Year Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS
1	Fortune Dr/Sugarloaf Dr	Side Street Stop				
	Overall		8	A	6	A
	EB Approach (Sugarloaf Dr)		9	A	9	A
	WB Approach (Sugarloaf Dr)		11	B	11	B
	NB Left (Fortune Dr)		7	A	7	A
	SB Left (Fortune Dr)		7	A	7	A
2	US 50/Fortune Dr	Signalized High-T				
	Overall		**74**	**E**	41	D
	EB Left (US 50)		**83**	**F**	67	E
	WB Approach (US 50)		53	D	33	C
	SB Approach (Fortune Dr)		**>120**	**F**	57	E
	EB Merge (Fortune Dr to US 50)[3]		18	B	35	D
3	US 50/Traditions Pkwy	Signal				
	Overall		36	D	38	D
	EB Approach (US 50)		21	C	31	C
	WB Approach (US 50)		38	D	43	D
	NB Approach (Segale Rd)		101	F	75	E
	SB Approach (Traditions Pkwy)		93	F	79	E

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections and for the worst approach/movement for side street stop controlled intersections.
2. Average Density is reported for the EB Merge from the Fortune Dr SB left-turn to US 50 EB through movement.
3. Merge analysis was performed using HCS 2025 software.
Source: GCW, 2025

As shown in **Table 4**, the overall US 50/Fortune Drive intersection and some movements are anticipated to operate at level of service E/F during the AM peak hour. The poor level of service is primarily due to the high southbound right-turn volume on Fortune Drive. The southbound Fortune Drive approach currently contains a hatched-out lane which can be converted to a second right-turn lane. With dual southbound right-turn lanes and protected plus overlap phasing, the overall US 50/Fortune Drive intersection is anticipated to operate within policy level of service thresholds. Capacity improvements for the Future Year condition should be undertaken by NDOT as regional improvements since the poor future operating conditions will occur unrelated to this project.

PROJECT CONDITIONS

The project consists of up to 364 single family residential units.

Trip Generation

Trip generation rates from *Trip Generation Manual, 11th Edition* published by the Institute of Transportation Engineers (ITE) were used to develop trip generation estimates for the proposed project based on the Single Family Detached Housing rates. **Table 5** shows the Daily, AM peak hour, and PM peak hour trip generation estimates.

Table 5: Trip Generation Estimates

Land Use (ITE Code)	Size[1]	Trips[2]				
		Daily	AM	AM In/Out	PM	PM In/Out
Single Family Detached Housing (210)	364 du	3,433	255	64 / 191	342	216 / 127

Notes: 1. du = dwelling units
2. Trips were calculated based on the following rates per du: Daily – 9.43; AM – 0.70 (25% in / 75% out); PM – 0.94 (63% in / 37% out)
Source: GCW, 2025

As shown in the table, the project is expected to generate 3,433 Daily, 255 AM peak hour, and 342 PM peak hour trips.

Trip Distribution

Project trips were distributed to the adjacent roadway network based on existing traffic volumes, the locations of complimentary land uses, and anticipated travel patterns. Under Future Year Plus Project conditions, it was assumed that some traffic would travel between the proposed project and the planned Traditions Town Center and Dayton Six projects without accessing US 50. Project trips were distributed based on the following:

<u>Opening Year</u>

- 70% to/from the west via US 50
- 30% to/from the east via US 50

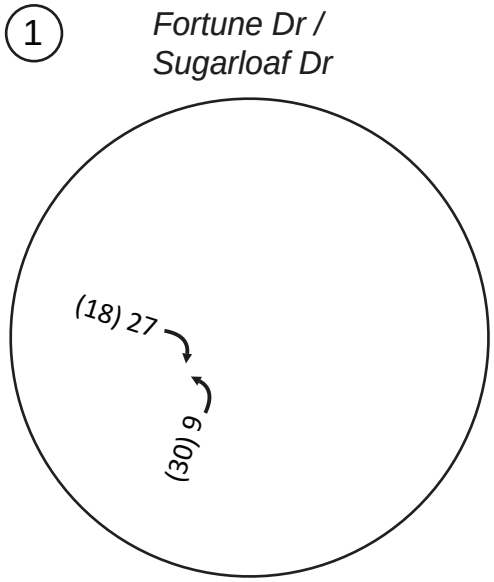
<u>Future Year</u>

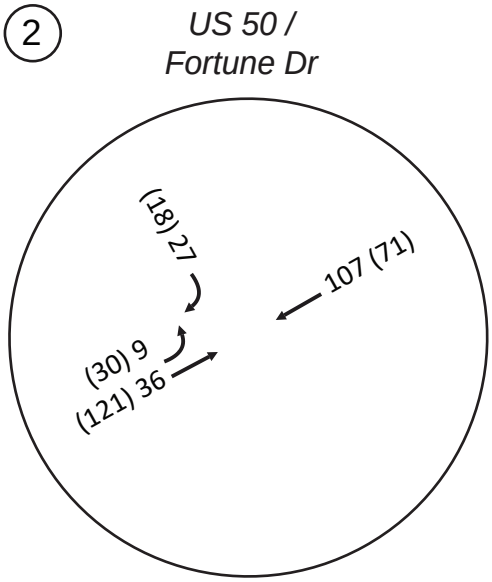
- 10% to/from Dayton Six
- 8% to from Traditions Town Center
- 82% to/from US 50
    - 70% to/from the west via US 50
    - 30% to/from the east via US 50

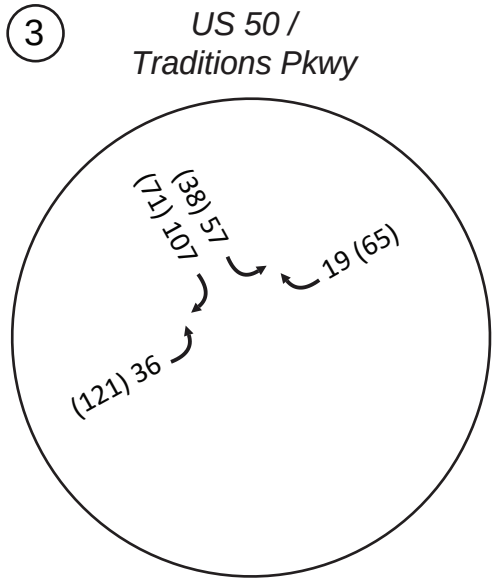
Figure 7 shows the project trip distribution and assignment for the Opening Year scenario. **Figure 8** shows the project trip distribution and assignment for the Future Year scenario.

Project Access

The project is located north of the Traditions Village 1 and Village 2 projects and will connect to US 50 via Fortune Drive and Traditions Parkway.







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NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

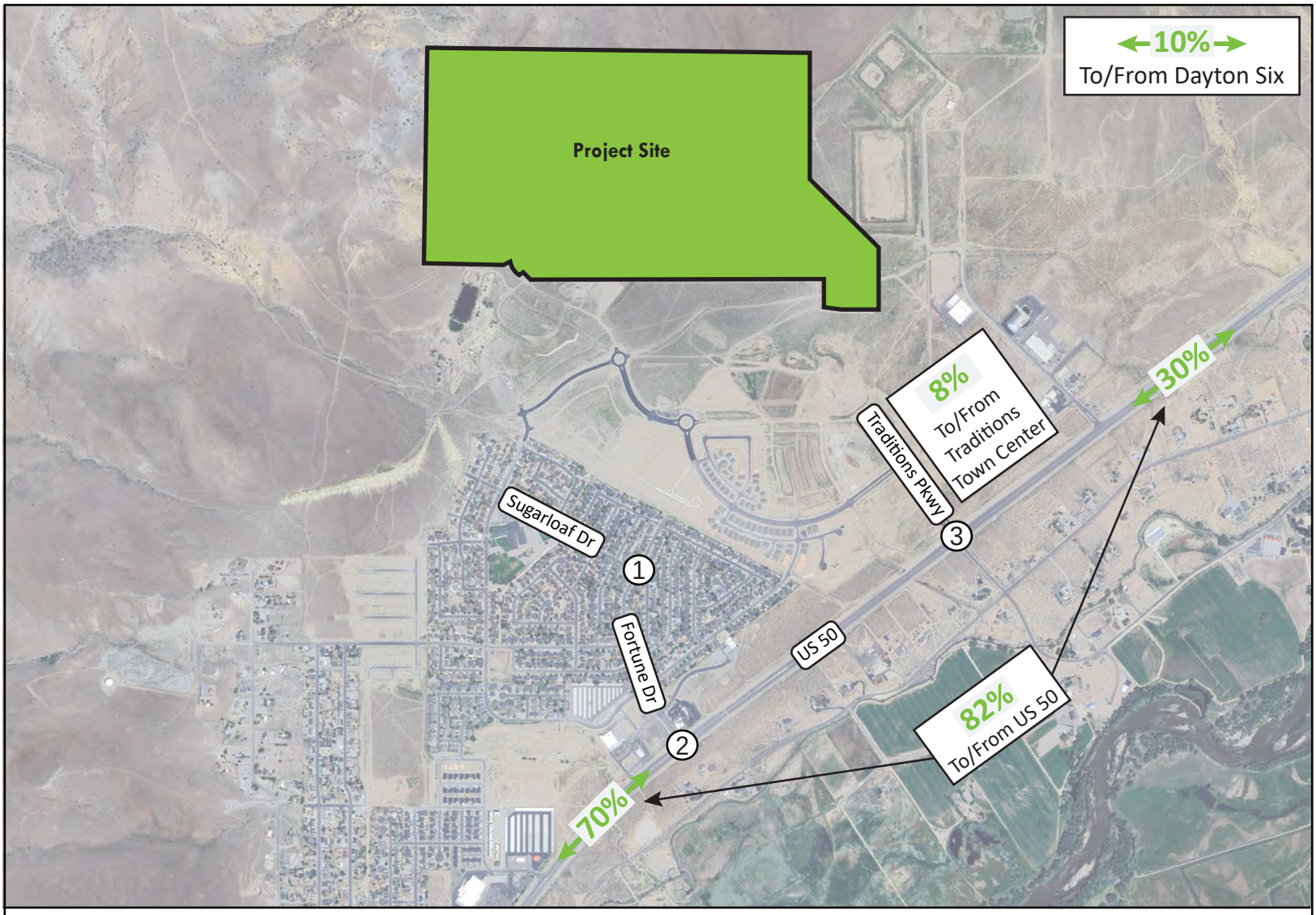
- Project Site
(#) - Study Intersection
←XX%→ - Trip Distribution

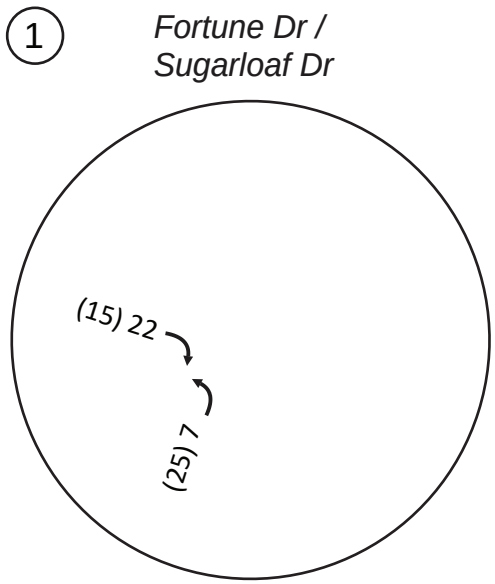
Figure 7

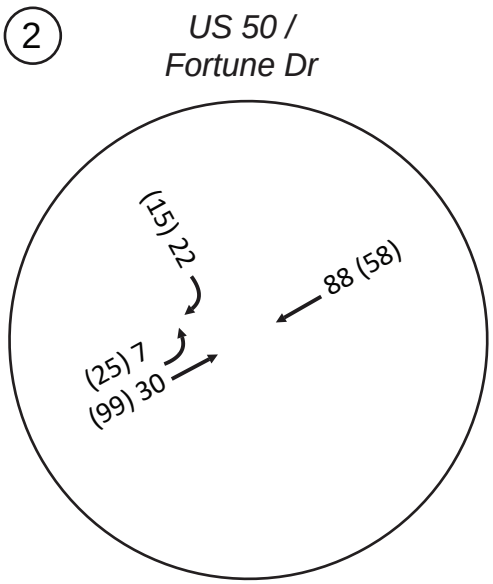
Tradit 1011 th

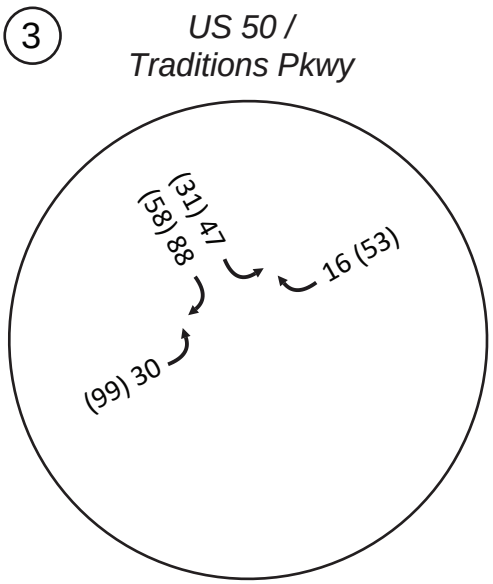
Traffic Impact Study

Project Trips - Opening Year









GCW ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
(#) - Study Intersection
←XX%→ - Trip Distribution

Figure 8

Tradit 1012 th

Traffic Im Study

Project Trips - Future Year

OPENING YEAR PLUS PROJECT CONDITIONS

Traffic Volumes

Project trips (**Figure 7**) were added to the Opening Year traffic volumes (**Figure 5**) to develop the Opening Year Plus Project conditions traffic volumes, shown on **Figure 9**.

Intersection Level of Service

AM and PM peak hour intersection level of service analysis was performed for the study intersections based on the Opening Year Plus Project traffic volumes, the existing peak hour factors from the counts, and the lane configurations and controls shown on **Figure 9**. **Table 6** shows the level of service results and the technical calculations are provided in **Appendix G**.

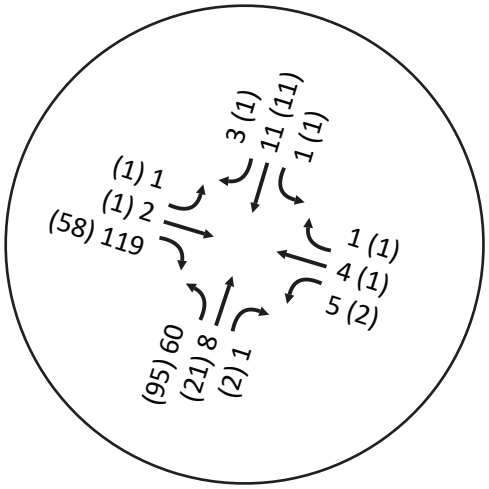
Table 6: Opening Year Plus Project Intersection Level of Service

Int. ID	Intersection	Control	Opening Year				Opening Year Plus Project			
			AM		PM		AM		PM	
			Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS
1	Fortune Dr/Sugarloaf Dr	Side Street Stop								
	Overall		7	A	6	A	8	A	7	A
	EB Approach (Sugarloaf Dr)		9	A	9	A	9	A	9	A
	WB Approach (Sugarloaf Dr)		11	B	10	A	11	B	11	B
	NB Left (Fortune Dr)		7	A	7	A	7	A	7	A
	SB Left (Fortune Dr)		7	A	7	A	7	A	7	A
2	US 50/Fortune Dr	Signalized High-T								
	Overall		25	C	20	B	32	C	25	C
	EB Left (US 50)		49	D	34	C	52	D	40	D
	WB Approach (US 50)		21	C	16	B	29	C	20	B
	SB Approach (Fortune Dr)		39	D	36	D	44	D	39	D
	EB Merge (Fortune Dr to US 50)[3]		12	B	17	B	12	B	18	B
3	US 50/Traditions Pkwy	Signal								
	Overall		20	B	20	C	26	C	28	C
	EB Approach (US 50)		14	B	17	B	18	B	23	C
	WB Approach (US 50)		21	C	21	C	25	C	34	C
	NB Approach (Segale Rd)		42	D	49	D	44	D	54	D
	SB App. (Traditions Pkwy)		36	D	33	C	48	D	35	C

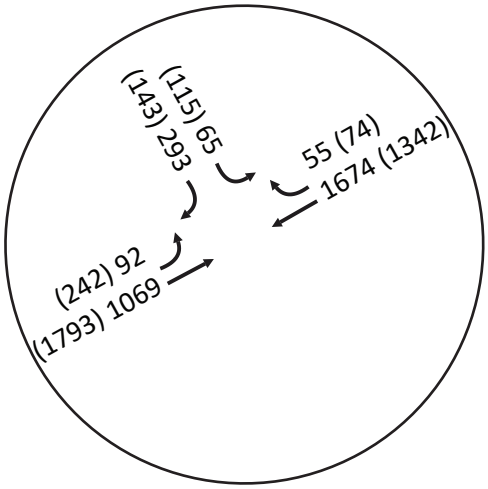
Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections and for the worst approach/movement for side street stop controlled intersections.
2. Average Density is reported for the EB Merge from the Fortune Dr SB left-turn to US 50 EB through movement.
3. Merge analysis was performed using HCS 2025 software.
Source: GCW, 2025

As shown in the table, the study intersections are expected to operate at LOS C or better with project traffic.

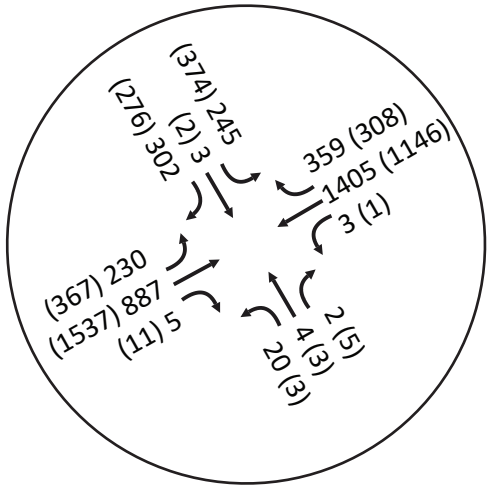
1 *Fortune Dr / Sugarloaf Dr*



2 *US 50 / Fortune Dr*



3 *US 50 / Traditions Pkwy*



GCW ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

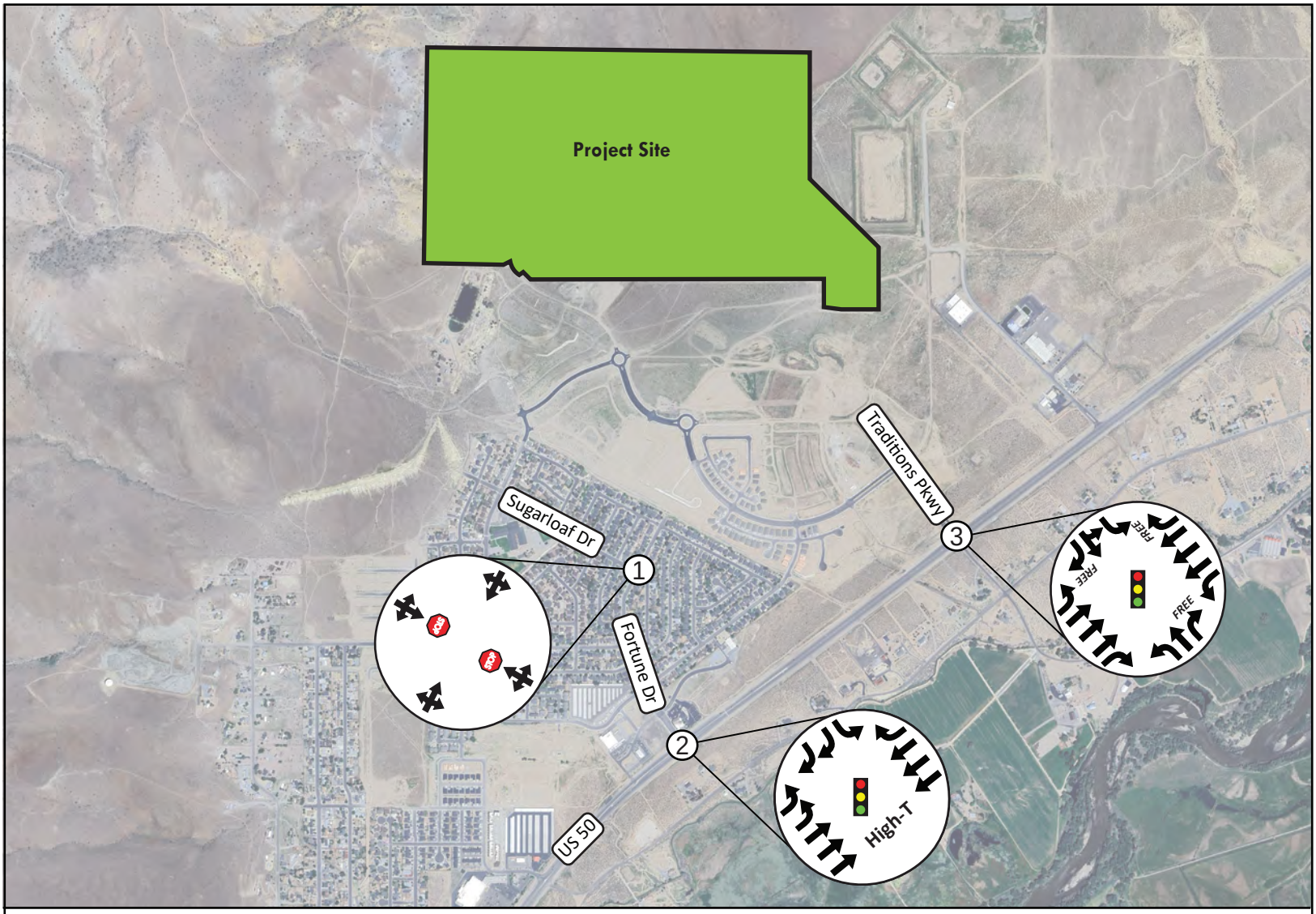
- Project Site
- Stop
- Signal
- Yield
- (#) - Study Intersection

Figure 9

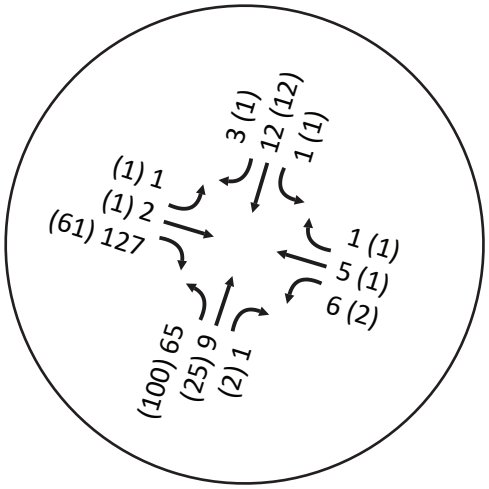
Tradit 1014 th

Traffic Impact Study

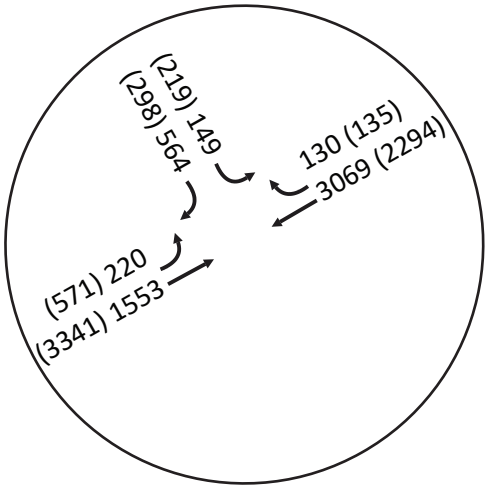
Opening Year Plus Project Traffic Volumes, Lane Configurations, and Controls



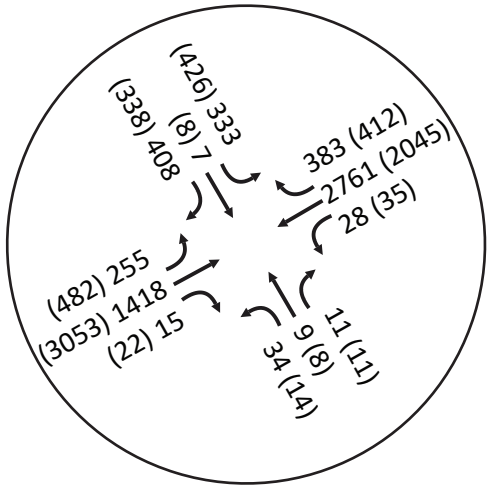
1 *Fortune Dr / Sugarloaf Dr*



2 *US 50 / Fortune Dr*



3 *US 50 / Traditions Pkwy*



GCW ENGINEERS \ SURVEYORS

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
- Stop
- Signal
- Yield
- (#) - Study Intersection

Figure 10

Tradit 1015 th

Traffic Impact Study

Future Year Plus Project Traffic Volumes, Lane Configurations, and Controls

FUTURE YEAR PLUS PROJECT CONDITIONS

Traffic Volumes

Project trips (**Figure 8**) were added to the Future Year traffic volumes (**Figure 6**) to develop the Future Year Plus Project conditions traffic volumes, shown on **Figure 10**.

Intersection Level of Service

AM and PM peak hour intersection level of service analysis was performed for the study intersections based on the Future Year Plus Project traffic volumes and the lane configurations and controls shown on **Figure 10**. The analysis includes the planned roadway improvements from the *US 50 Corridor Study*, including six lanes on US 50 (see the "Future Year Conditions" section of this report for more detail). Additionally, as discussed in the "Future Year Conditions" section of this report, a second southbound right-turn lane is needed at the US 50/Fortune Drive intersection to provide operations within policy thresholds and should be undertaken by NDOT as a regional improvement since the poor future operating conditions will occur unrelated to this project. The Future Year Plus Project conditions analysis assumes this capacity improvement is in place. **Table 7** shows the level of service results and the technical calculations are provided in **Appendix H**.

Table 7: Future Year Plus Project Intersection Level of Service

Int. ID	Intersection	Control	Future Year				Future Year Plus Project			
			AM		PM		AM		PM	
			Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS	Delay[1] Density[2]	LOS
1	Fortune Dr/Sugarloaf Dr	Side Street Stop								
	Overall		8	A	6	A	8	A	7	A
	EB Approach (Sugarloaf Dr)		9	A	9	A	9	A	9	A
	WB Approach (Sugarloaf Dr)		11	B	11	B	11	B	11	B
	NB Left (Fortune Dr)		7	A	7	A	7	A	7	A
	SB Left (Fortune Dr)		7	A	7	A	7	A	7	A
2	US 50/Fortune Dr	Signalized High-T with dual SB right-turn lanes[4]								
	Overall		49	D	37	D	55	D	40	D
	EB Left (US 50)		94	F	58	E	91	F	61	E
	WB Approach (US 50)		35	C	30	C	43	D	34	C
	SB Approach (Fortune Dr)		93	F	45	D	94	F	45	D
	EB Merge (Fortune Dr to US 50)[3]		18	B	35	D	18	B	36	D
3	US 50/Traditions Pkwy	Signal								
	Overall		36	D	38	D	44	D	50	D
	EB Approach (US 50)		21	C	31	C	25	C	35	C
	WB Approach (US 50)		38	D	43	D	49	D	67	E
	NB Approach (Segale Rd)		101	F	75	E	112	F	87	F
	SB App. (Traditions Pkwy)		93	F	79	E	95	F	94	F

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections and for the worst approach/movement for side street stop controlled intersections.
2. Average Density is reported for the EB Merge from the Fortune Dr SB left-turn to US 50 EB through movement.
3. Merge analysis was performed using HCS 2025 software.
4. The analysis assumes capacity improvements including dual southbound right-turn lanes are in place at this intersection.
Source: GCW, 2025

As shown in the table, the study intersections are expected to operate at overall LOS D or better (within policy thresholds) under Future Year Plus Project conditions.

CONCLUSIONS & RECOMMENDATIONS

The following is a list of our key findings and recommendations:

- The proposed project consists of approximately 364 single family housing units and is anticipated to generate approximately 3,433 Daily, 255 AM peak hour, and 342 PM peak hour trips to the external roadway network.
- The project is located north of US 50, Nevada Station Parkway, and the Traditions Village 1 and Village 2 projects.
- The project will access US 50 via Fortune Drive and Traditions Parkway. The project originally contemplated a connection to Enterprise Way as well, however due to circumstances separate from the traffic study, a vehicle connection to Enterprise Way is no longer being considered and was not included in this traffic analysis and report. If the project wishes to puruse a vehicle connection to Enterprise Way in the future, a separate traffic analysis will need to be conducted at that time.
- Under Existing conditions, the northbound and southbound approaches of the US 50/Traditions Parkway intersection are expected to operate at LOS E with minor street stop control. While the overall intersection is expected to operate at LOS A during the AM and PM peak hours, Lyon County standards state that unsignalized intersection "approaches should operate at LOS D or better for the peak hour condition." A traffic signal at the US 50/Traditions Parkway intersection is currently under construction and will be completed prior to the Opening Year (2029) of the project. The other study intersections are expected to operate within policy level of service thresholds.
- Under Opening Year and Opening Year Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds.
- Under Future Year conditions, the US 50/Fortune Drive intersection is anticipated to operate at level of service E during the AM peak hour. The poor level of service is primarily due to the high southbound right-turn volume on Fortune Drive. The southbound Fortune Drive approach currently contains a hatched-out lane which can be converted to a second right-turn lane. With dual southbound right-turn lanes and protected plus overlap phasing, the overall US 50/Fortune Drive intersection is anticipated to operate within policy level of service thresholds. Capacity improvements for the Future Year condition should be undertaken by NDOT as regional improvements since the poor future operating conditions will occur unrelated to this project
- Under Future Year Plus Project conditions, the analysis includes the needed regional capacity improvements (dual southbound right-turn lanes) at the US 50/Fortune Drive intersection. The study intersections are expected to operate at overall LOS D or better (within policy level of service thresholds).
- The project is not expected to result in levels of service below policy thresholds and therefore no project related mitigations are recommended. The following regional improvements by NDOT are

included in the *US 50 Corridor Study* or as part of the corridor safety improvements that are currently at the 90% design stage, and were included in the Future Year analysis as a background condition:

- Lower the speed limit on US 50 from 60 mph to 55 mph from east of Fortune Drive to James Avenue to provide a more gradual transition in speed limits through the expanding urbanized area
- Widen US 50 to six lanes for the Future Year per the US 50 Corridor Study. With the widening project:
  - Construct/restripe a second southbound right-turn lane on Fortune Drive at US 50
  - Construct a westbound right-turn lane on US 50 at Fortune Drive (not shown in the *US 50 Corridor Study*) as exists today
  - Construct a westbound right-turn lane on US 50 at Traditions Parkway (not shown in the *US 50 Corridor Study*) as exists today
  - Improve the south leg of the US 50/Traditions Parkway/Segale Road intersection

Appendix A
Crash Data

GCW
ENGINEERS \ SURVEYORS

Appendix A
Crash Data

US 50/Fortune Drive

OBJECT ID	Crash Date	Crash Year	Crash Time	Crash Severity	County	Primary Street	Distance	Direction	Secondary Street	Weather	Fatalities	Injured	Property Damage Only	Injury Type	Crash Type	Total Vehicles	V1 Type	V1 Dir	V1 Action	V1 Driver Factors	V1 Vehicle Factors
2936325	2/1/2019	2019	4:20:00 AM	FATAL CRASH	LYON	US50E	300	EAST	FORTUNE DR	CLEAR	1	1		K	NON-COLLISION	1	COUPE	WEST	GOING STRAIGHT	HAD BEEN DRINKING	
2939889	3/1/2019	2019	7:08:00 PM	PROPERTY DAMAGE ONLY	LYON	US50E	100	WEST	FORTUNE DR	CLOUDY	0	0	PDO		NON-COLLISION	1	UTILITY		GOING STRAIGHT	APPARENTLY NORMAL	
2968742	10/2/2019	2019	7:07:00 PM	INJURY CRASH	LYON	US50E	10	EAST	FORTUNE DR	CLEAR	0	1		C	REAR END	2	COUPE	WEST	GOING STRAIGHT	APPARENTLY NORMAL	DRIVING TOO FAST FOR CONDITIONS
2975120	11/6/2019	2019	9:05:00 PM	PROPERTY DAMAGE ONLY	LYON	US50E	200	WEST	FORTUNE DR	CLEAR	0	0	PDO		NON-COLLISION	1	SEDAN, 4 DOOR	EAST	GOING STRAIGHT	APPARENTLY NORMAL	
2995392	5/15/2020	2020	7:21:00 AM	PROPERTY DAMAGE ONLY	LYON	US50E	30	NORTH	FORTUNE DR	CLOUDY	0	0	PDO		REAR END	2	SEDAN, 2 DOOR	WEST	GOING STRAIGHT	ILLNESS	DRIVING TOO FAST FOR CONDITIONS
3011775	10/24/2020	2020	3:31:00 PM	PROPERTY DAMAGE ONLY	LYON	US50E	70	EAST	FORTUNE DR	CLEAR	0	0	PDO		REAR END	3	PICKUP	WEST	GOING STRAIGHT	APPARENTLY NORMAL	DRIVING TOO FAST FOR CONDITIONS
3207239	2/24/2021	2021	1608	PROPERTY DAMAGE ONLY	LYON	US50		WEST	FORTUNE DR	CLEAR	0	0	PDO	O	NON-COLLISION	2	PICKUP	EAST	STRAIGHT	APPARENTLY NORMAL	MECHANICAL DEFECTS|
3225908	10/15/2021	2021	1822	INJURY CRASH	LYON	US50E		EAST	FORTUNE DR	CLEAR	0	1		B	REAR END	2	PICKUP	WEST	STRAIGHT	APPARENTLY NORMAL;	OTHER|
3225711	11/29/2021	2021	1647	INJURY CRASH	LYON	US50E		EAST	Mile Post 8	CLEAR	0	2		B	HEAD ON	2	PICKUP	EAST	LEFT TURN	OTHER IMPROPER DRIVING;	FAILED TO YIELD ROW|
3226961	2/2/2022	2022	857	INJURY CRASH	LYON	US50E		WEST	Mile Post 8	CLEAR	0	4		C	REAR END	3	SEDAN	WEST	STRAIGHT	APPARENTLY NORMAL;	OTHER|
3230741	4/7/2022	2022	1904	PROPERTY DAMAGE ONLY	LYON	US50E		EAST	Mile Post 8	CLEAR	0	0	PDO	N	NON-COLLISION	1	SEDAN	EAST	STRAIGHT	APPARENTLY NORMAL;	RAN OFF ROAD|
3165626	9/19/2022	2022	840	PROPERTY DAMAGE ONLY	LYON	US50E		EAST	FORTUNE DR	<Null>	0	0	PDO	O	NON-COLLISION	1	UTILITY	EAST	ENTERING LANE	APPARENTLY NORMAL	<Null>
3171429	11/16/2022	2022	1735	INJURY CRASH	LYON	US50E		EAST	Mile Post 8	CLEAR	0	1		C	REAR END	2	UTILITY	WEST	STRAIGHT	OTHER IMPROPER DRIVING	OTH IMPROPER DRIVING|
3211721	4/29/2023	2023	757	INJURY CRASH	LYON	US50E			FORTUNE DR	CLEAR	0	1		C	REAR END	2	SUV/CARRY-ALL	SOUTH	RIGHT TURN	HAD BEEN DRINKING	FAILED TO YIELD ROW| DISREGARD CONTROL DEVICE| FOLLOWING TOO CLOSE|

US 50/Traditions Parkway

OBJECTID *	Crash Date	Crash Year	Crash Time	Crash Severity	County	Primary Street	Distance	Dir	Secondary Street	Weather	Fatalities	Injured	Property Damage Only	Injury Type	Crash Type	Total Vehicles	V1 Type	V1 Dir	V1 Action	V1 Driver Factors	V1 Vehicle Factors
2981655	12/24/2019	2019	1:23:00 PM	INJURY CRASH	LYON	US50E	20	WEST	SEGALE RD	CLEAR	0	2		B	ANGLE	2	SEDAN, 4 DOOR	NORTH	TURNING LEFT	HAD BEEN DRINKING	FAILED TO YIELD RIGHT OF WAY
2984109	1/15/2020	2020	6:15:00 PM	PROPERTY DAMAGE ONLY	LYON	US50E	100	EAST	SEGALE RD	CLOUDY	0	0	PDO		REAR END	2	PICKUP	EAST	GOING STRAIGHT	INATTENTION/DISTRACTED	OTHER IMPROPER DRIVING
3000737	7/15/2020	2020	10:19:00 PM	PROPERTY DAMAGE ONLY	LYON	US50E		AT INT	SEGALE RD	CLEAR	0	0	PDO		NON-COLLISION	1	UTILITY	EAST	GOING STRAIGHT	APPARENTLY NORMAL	FAILURE TO KEEP IN PROPER LANE OR RUNNING OFF ROAD
3199902	6/23/2021	2021	846	INJURY CRASH	LYON	US50E		WEST	SEGALE RD	CLEAR	0	1		C	ANGLE	2	PICKUP	WEST	U-TURN	APPARENTLY NORMAL	MADE IMPROPER TURN|

US 50/Fortune Drive

FATAL CRASH	1
INJURY CRASH	6
PROPERTY DAMAGE ONLY	7

US 50/Traditions Parkway

FATAL CRASH	0
INJURY CRASH	2
PROPERTY DAMAGE ONLY	2

V1 Most Harmful Event	V1 All Events	V2 Type	V2 Dir	V2 Action	V2 Driver Factors	V2 Most Harmful Event	V2 All Events	Factors Roadway	Lighting	HWY Factors
	NOT REPORTED: HIGHWAY TRAFFIC SIGN POST: RAN OFF ROAD RIGHT: GUARDRAIL END: OTHER POST, POLE OR SUPPORT							DRY	DARK - NO LIGHTING	NONE
HORSE	HORSE							DRY	DARK - NO LIGHTING	ANIMAL IN ROADWAY
SLOW/STOPPED VEHICLE	SLOW/STOPPED VEHICLE	COUPE	W	STOPPED	APPARENTLY NORMAL	MOTOR VEHICLE IN TRANSPORT		DRY	DARK - CONTINUOUS LIGHTING	OTHER HIGHWAY
HORSE	HORSE							DRY	DARK - SPOT LIGHTING	ANIMAL IN ROADWAY
SLOW/STOPPED VEHICLE	SLOW/STOPPED VEHICLE	HATCHBACK, 2 DOOR	W	STOPPED	APPARENTLY NORMAL	MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE
SLOW/STOPPED VEHICLE	SLOW/STOPPED VEHICLE	VAN	W	GOING STRAIGHT	APPARENTLY NORMAL	MOTOR VEHICLE IN TRANSPORT		DRY	DAYLIGHT	NONE
OTHER NON-COLLISION		HATCHBACK 4-DOOR	EAST	STOPPED		OTHER NON-COLLISION		NONE	DAYLIGHT	NONE
SLOW/STOPPED VEHICLE		PICKUP	WEST	STOPPED	APPARENTLY NORMAL;	MOTOR VEHICLE IN TRANSPORT		NONE	DUSK	NONE
MOTOR VEHICLE IN TRANSPORT		SEDAN	WEST	STRAIGHT	APPARENTLY NORMAL;	MOTOR VEHICLE IN TRANSPORT		NONE	DUSK	NONE
SLOW/STOPPED VEHICLE		SEDAN	WEST	STOPPED	APPARENTLY NORMAL;	MOTOR VEHICLE IN TRANSPORT	SLOW/STOPPED VEHICLE	NONE	DAYLIGHT	NONE
FENCE/WALL		<Null>		<Null>				NONE	DAYLIGHT	NONE
CROSS MEDIAN	RAN OFF ROAD RIGHT	<Null>		<Null>				WEATHER	DAYLIGHT	WEATHER
SLOW/STOPPED VEHICLE		UTILITY	WEST	STRAIGHT		MOTOR VEHICLE IN TRANSPORT		BACKUP DUE TO REGULAR CONGESTIONWORK ZONE (CONST. MAINT. UTILITY)	DARK - SPOT ROADWAY LIGHTING	BACKUP DUE TO REGULAR CONGESTIONWORK ZONE (CONST. MAINT. UTILITY)
MOTOR VEHICLE IN TRANSPORT		LUNCH WAGON	WEST	STRAIGHT	APPARENTLY NORMAL	MOTOR VEHICLE IN TRANSPORT		NONE	DAYLIGHT	NONE

V1 Most Harmful Event	V1 All Events	V2 Type	V2 Dir	V2 Action	V2 Driver Factors	V2 Most Harmful Event	V2 All Events	Factors Roadway	Lighting	HWY Factors
MOTOR VEHICLE IN TRANSPORT		CARRY-ALL	E	GOING STRAIGHT	APPARENTLY NORMAL	MOTOR VEHICLE IN TRANSPORT	OVERTURN/ROLLOVER	DRY	DAYLIGHT	NONE
SLOW/STOPPED VEHICLE	SLOW/STOPPED VEHICLE	UTILITY	E	GOING STRAIGHT	APPARENTLY NORMAL	MOTOR VEHICLE IN TRANSPORT		DRY	DARK - SPOT LIGHTING	NONE
RAN OFF ROAD LEFT	CROSS MEDIAN/CENTERLINE: RAN OFF ROAD LEFT							DRY	DARK - NO LIGHTING	NONE
MOTOR VEHICLE IN TRANSPORT		SEDAN 4-DOOR	WEST	STRAIGHT	APPARENTLY NORMAL	MOTOR VEHICLE IN TRANSPORT		NONE	DAYLIGHT	NONE

Appendix B
Traffic Count Data Sheets

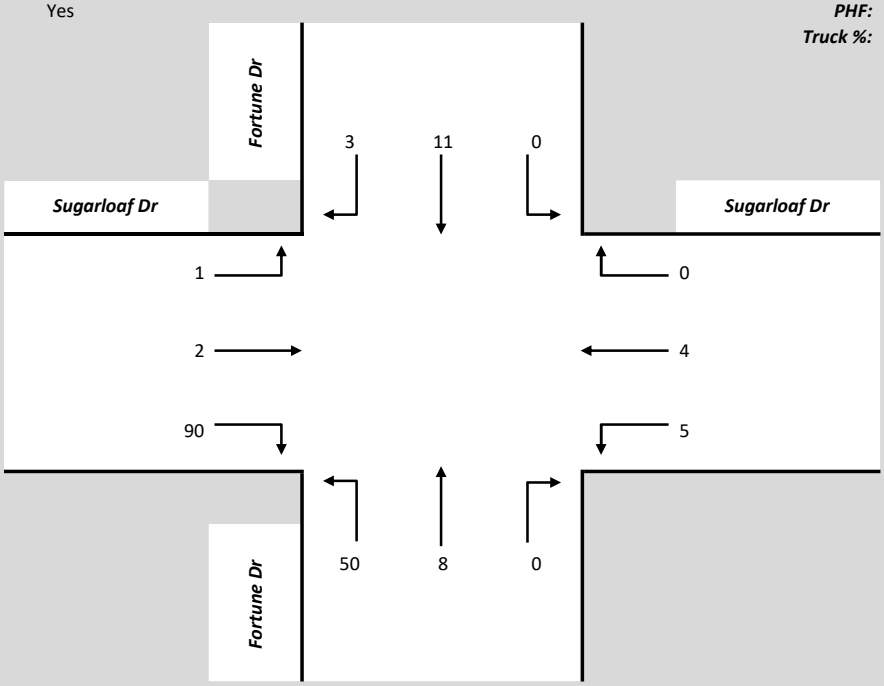
GCW
ENGINEERS \ SURVEYORS

Intersection: Fortune Dr & Sugarloaf Dr

AM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 6/3/2025
School in Session: Yes

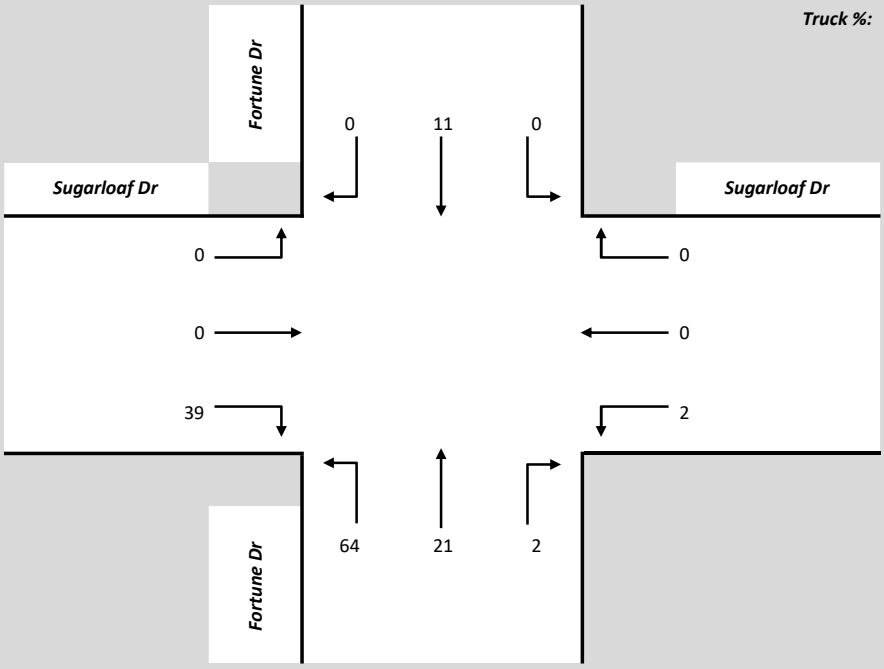
Peak Hour: 8:00 - 9:00
PHF: 0.58
Truck %: 4%



PM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 6/3/2025
School in Session: Yes

Peak Hour: 4:45 - 5:45
PHF: 0.85
Truck %: 0%

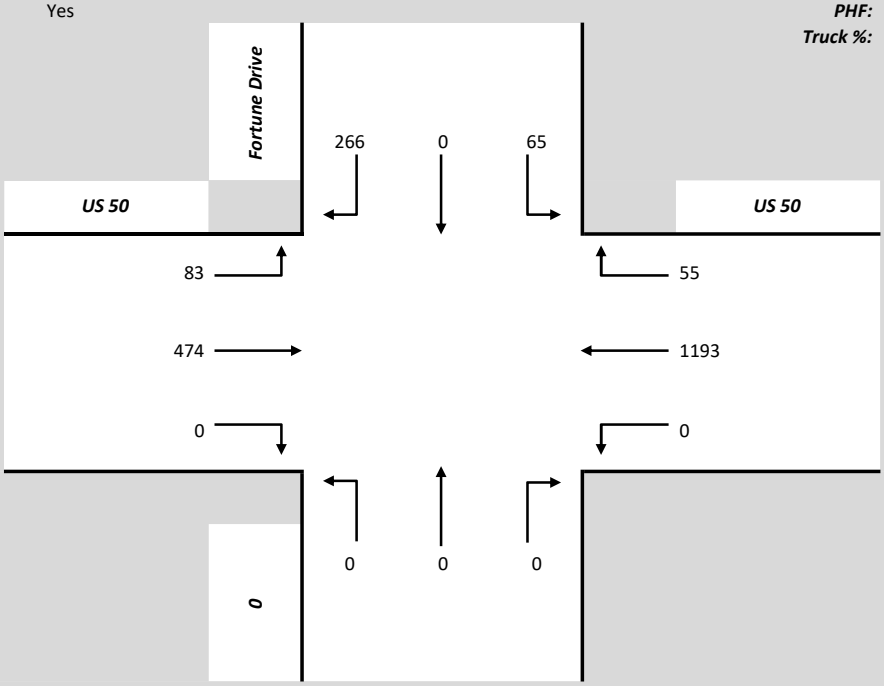


Intersection: US 50 & Fortune Dr

AM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 6/3/2025
School in Session: Yes

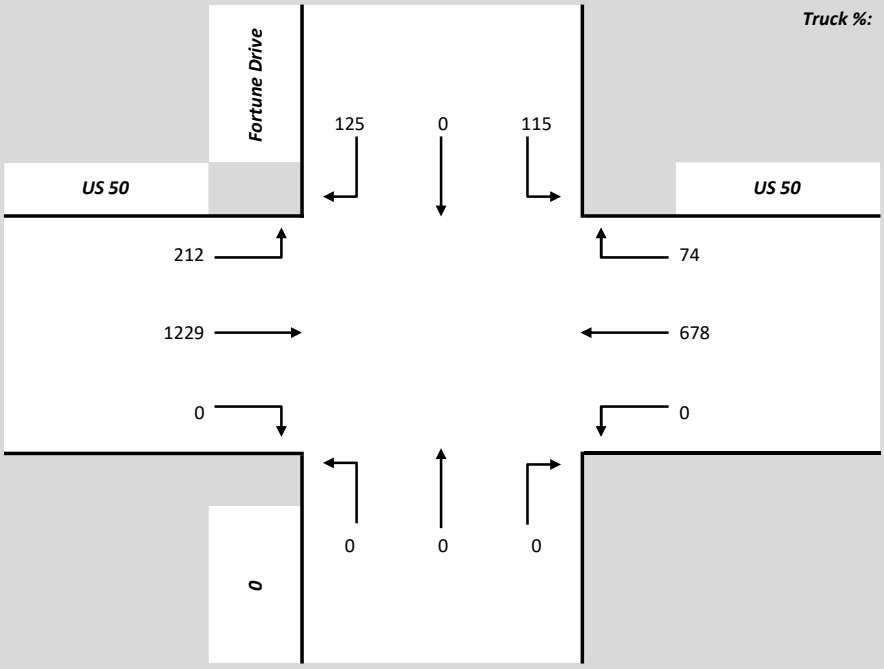
Peak Hour: 7:00 - 8:00
PHF: 0.92
Truck %: 4%



PM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 6/3/2025
School in Session: Yes

Peak Hour: 4:30 - 5:30
PHF: 0.97
Truck %: 1%

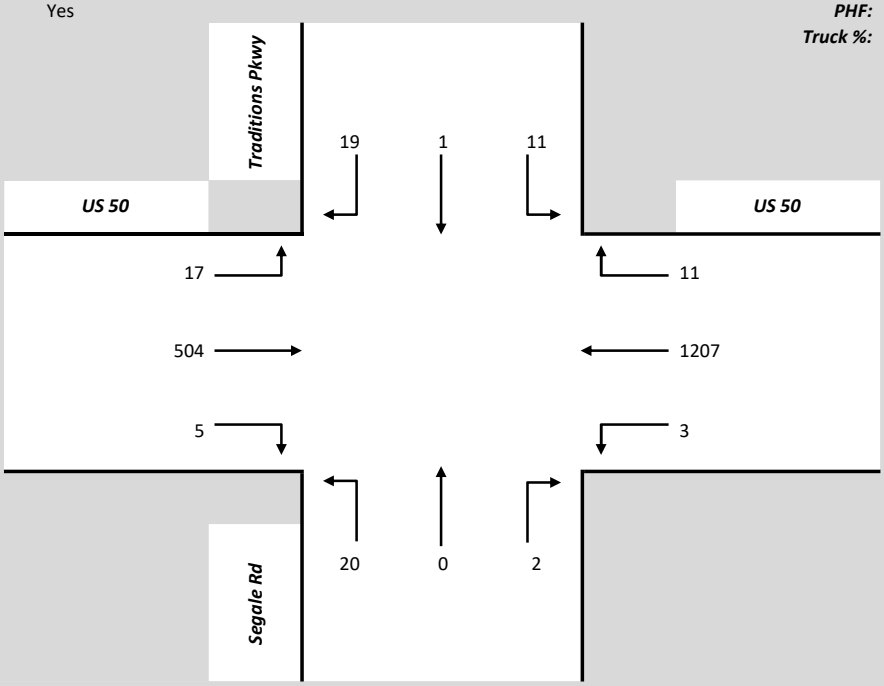


Intersection: US 50 & Traditions Pkwy

AM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 6/3/2025
School in Session: Yes

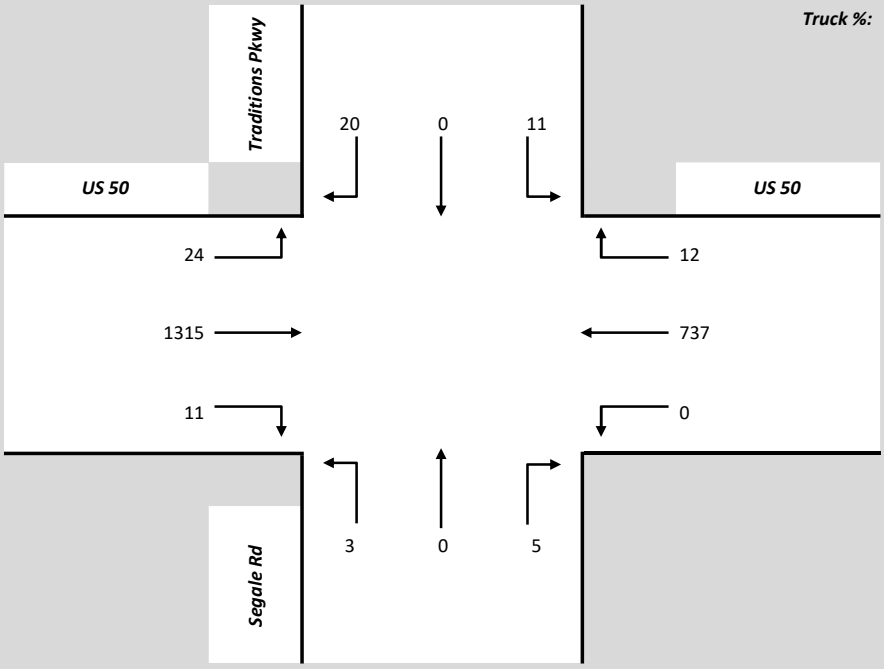
Peak Hour: 7:00 - 8:00
PHF: 0.94
Truck %: 4%



PM PEAK HOUR TURNING MOVEMENT VOLUME

Date Collected: 6/3/2025
School in Session: Yes

Peak Hour: 4:30 - 5:30
PHF: 0.97
Truck %: 1%



Appendix C
Existing LOS Calculations

GCW
ENGINEERS \ SURVEYORS

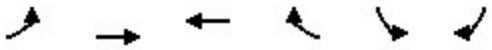
Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	2	90	5	4	1	50	8	1	1	11	3
Future Vol, veh/h	1	2	90	5	4	1	50	8	1	1	11	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	3	120	7	5	1	67	11	1	1	15	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	166	165	17	163	166	11	19	0	0	12	0	0
Stage 1	19	19	-	145	145	-	-	-	-	-	-	-
Stage 2	147	145	-	19	21	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	794	724	1057	797	723	1064	1585	-	-	1594	-	-
Stage 1	994	875	-	853	773	-	-	-	-	-	-	-
Stage 2	851	773	-	995	874	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	753	693	1057	674	692	1064	1585	-	-	1594	-	-
Mov Cap-2 Maneuver	753	693	-	674	692	-	-	-	-	-	-	-
Stage 1	994	875	-	817	741	-	-	-	-	-	-	-
Stage 2	808	740	-	879	873	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.93	10.19	6.25	0.48
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1492	-	-	1040	707	115	-	-
HCM Lane V/C Ratio	0.042	-	-	0.119	0.019	0.001	-	-
HCM Control Delay (s/veh)	7.4	0	-	8.9	10.2	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	83	0	1193	55	65	266
Future Volume (veh/h)	83	0	1193	55	65	266
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	90	0	1297	60	71	289
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	118	2237	1638	731	378	336
Arrive On Green	0.07	0.00	0.47	0.47	0.22	0.22
Sat Flow, veh/h	1753	3589	3589	1560	1753	1560
Grp Volume(v), veh/h	90	0	1297	60	71	289
Grp Sat Flow(s),veh/h/ln	1753	1749	1749	1560	1753	1560
Q Serve(g_s), s	3.9	0.0	24.2	1.6	2.6	13.8
Cycle Q Clear(g_c), s	3.9	0.0	24.2	1.6	2.6	13.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	118	2237	1638	731	378	336
V/C Ratio(X)	0.76	0.00	0.79	0.08	0.19	0.86
Avail Cap(c_a), veh/h	681	4113	2265	1010	568	505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	0.0	17.3	11.3	24.8	29.2
Incr Delay (d2), s/veh	9.6	0.0	1.4	0.0	0.2	9.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	8.4	0.5	1.1	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	45.0	0.0	18.7	11.4	25.0	38.6
LnGrp LOS	D		B	B	C	D
Approach Vol, veh/h		90	1357		360	
Approach Delay, s/veh		45.0	18.4		35.9	
Approach LOS		D	B		D	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	55.2	22.0	13.2	42.0
Change Period (Y+Rc), s	* 5.8	5.4	8.0	5.8
Max Green Setting (Gmax), s	* 91	25.0	30.0	50.0
Max Q Clear Time (g_c+I1), s	0.0	15.8	5.9	26.2
Green Ext Time (p_c), s	0.0	0.9	0.2	10.0

Intersection Summary	
HCM 7th Control Delay, s/veh	23.2
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

FREEWAY MERGE ANALYSIS

File Name:	US50_Fortune-Merge-AM.xuf
Analyst:	GCW
Agency:	NDOT
Jurisdiction:	NDOT
Date:	
Analysis Year:	Existing (2025)
Time Analyzed:	AM Peak Hour
Project Description:	Traditions North
Units:	U.S. Customary

LOS and Performance Measures

Ramp Type	Left-Sided One-Lane	
Density in On-Ramp (Merge) Influence Area, DR	5.4	pc/mi/ln
Level of Service, LOS	A	
Average Flow in Outer Lanes, vOA	-	pc/h/ln
Average Speed in Ramp Influence Area, SR	55.1	mi/h
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h
Average Speed for On-Ramp (Merge) Junction, S	55.1	mi/h
Density Across All Lanes, D	5.7	pc/mi/ln

Step 1: Specify Inputs and Convert Demand Volumes to Demand Flow Rates

Freeway Data			
Number of Freeway Lanes	2		ln
Measured or Base FFS	Measured		
Base Free-Flow Speed, BFFS	-		mi/h
Lane Width	-		ft
Lane Width Adjustment, fLW	-		mi/h
Right-Side Lateral Clearance	-		ft
Right-Side Lateral Clearance Adj., fRLC	-		mi/h
Total Ramp Density, TRD	-		ramps/mi
TRD Adjustment	-		mi/h
Free-Flow Speed, FFS	60.0		mi/h
Speed Adjustments			
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Adjusted Free-Flow Speed, FFSadj	60.0		mi/h
Segment Length	1500		ft
C-D Roadway?	Freeway		
Demand Volume, V	474		veh/h
Peak Hour Factor, PHF	0.92		
Ramp Data			
Number of Ramp Lanes	1		ln
Ramp Free-Flow Speed, SFR	35.0		mi/h
Ramp Side	Left		
Length of First Acceleration Lane, LA or LA1	800		ft
Length of Second Acceleration Lane, LA2	-		ft
Junction Components	Freeway	Ramp	
Demand Volume, V	474	65	veh/h
Peak Hour Factor, PHF	0.92	0.92	
Percent Total Trucks	8.00	2.00	%
Percent SUTs	-	-	%
Percent TTs	-	-	%
Prop. Total Trucks, PT	0.0800	0.0200	
Heavy Vehicle PCE, ET	2.00	2.00	
Heavy Vehicle Adj., fHV	0.926	0.980	
Terrain Type	Level	Level	

Percent Grade	-	-	%
Grade Length	-	-	mi
Demand Adj. Factor, DAF	1.000	1.000	
Demand Flow Rate, v	556	72	pc/h

Step 2: Estimate the Approaching Flow Rate in Lanes 1 and 2

Estimating Flow in Lanes 1 and 2 for On-Ramps			
Adjacent Upstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Adjacent Downstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Prop. Freeway Veh. in Lanes 1 and 2, PFM	1.000		
Flow Rate on Freeway, vF	556	pc/h	
Flow Rate in Lanes 1 and 2, v12	556	pc/h	

Step 3: Estimate Capacity of Ramp-Freeway Junction and Compare Flow Rates

Capacity Checks

	Actual	Maximum	Violation?
vFO	628	4600	No
vR	72	2000	No
vR12	628	4600	No

	Freeway	Ramp	
Unadjusted Capacity, cmd	4600	2000	pc/h
Driver Population	All Familiar	All Familiar	
Driver Population CAF	1.000	1.000	
Weather Type	Non-Severe Weather	Non-Severe Weather	
Weather Type CAF	1.000	1.000	
Incident Type	No Incident	-	
Incident Type CAF	1.000	-	
Proportion of CAVs in Traffic Stream	0	-	
Capacity Adjustment Factor for CAVs, CAFCAV	1.000	-	
Final Capacity Adj. Factor, CAF	1.000	1.000	
Final Adjusted Capacity, cmda	4600	2000	pc/h

Step 4: Estimate Density in Ramp Influence Area and Determine LOS

Demand Flow Rate on Ramp, vR	72	pc/h
Flow Rate in Lanes 1 and 2, v12	556	pc/h
Length of Acceleration Lane, LA	800	ft
Density in On-Ramp Influence Area, DR	5.4	pc/mi/ln
Density in On-Ramp Influence Area, DR	5.3	veh/mi/ln
Level of Service, LOS	A	

Step 5: Estimate Speeds in the Vicinity of Ramp-Freeway Junctions

Freeway Free-Flow Speed, FFS	60.0	mi/h
Ramp Free-Flow Speed, SFR	35.0	mi/h
Length of Acceleration Lane, LA	800	ft
Driver Population	All Familiar	
Driver Population SAF	1.000	
Weather Type	Non-Severe Weather	
Weather Type SAF	1.000	
Final Speed Adjustment Factor, SAF	1.000	
Flow Rate on Freeway, vF	556	pc/h
Flow Rate in Lanes 1 and 2, v12	556	pc/h
Total Flow Entering On-Ramp Infl. Area, vR12	628	pc/h
Number of Outer Lanes on Freeway, NO	0	ln
Speed Index for On-Ramp, MS	0.272	
Average Speed in Ramp Influence Area, SR	55.1	mi/h
Average Flow in Outer Lanes, vOA	-	pc/h/ln
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h
Average Speed for On-Ramp Junction, S	55.1	mi/h
Density Across All Lanes, D	5.7	pc/mi/ln

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	504	5	3	1207	11	20	0	2	11	1	19
Future Vol, veh/h	17	504	5	3	1207	11	20	0	2	11	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Yield
Storage Length	580	-	-	560	-	465	-	-	-	0	-	225
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	18	536	5	3	1284	12	21	0	2	12	1	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1284	0	0	541	0	0	1224	1865	271	1595	1868	642
Stage 1	-	-	-	-	-	-	575	575	-	1290	1290	-
Stage 2	-	-	-	-	-	-	649	1290	-	304	578	-
Critical Hdwy	4.18	-	-	4.18	-	-	7.58	6.58	6.98	7.58	6.58	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	6.58	5.58	-	6.58	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.58	5.58	-	6.58	5.58	-
Follow-up Hdwy	2.24	-	-	2.24	-	-	3.54	4.04	3.34	3.54	4.04	3.34
Pot Cap-1 Maneuver	525	-	-	1010	-	0	133	70	721	70	70	412
Stage 1	-	-	-	-	-	0	465	496	-	170	228	-
Stage 2	-	-	-	-	-	0	420	228	-	675	495	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	525	-	-	1010	-	-	120	68	721	67	67	412
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	68	-	67	67	-
Stage 1	-	-	-	-	-	-	449	479	-	169	228	-
Stage 2	-	-	-	-	-	-	396	228	-	650	478	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.39	0.02	38.79	35.24
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	130	525	-	-	1010	-	67	67	412
HCM Lane V/C Ratio	0.181	0.034	-	-	0.003	-	0.174	0.016	0.049
HCM Control Delay (s/veh)	38.8	12.1	-	-	8.6	-	69.4	59.2	14.2
HCM Lane LOS	E	B	-	-	A	-	F	F	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	0.6	0	0.2

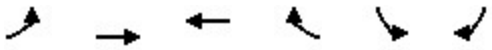
Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	39	2	1	1	64	21	2	1	11	1
Future Vol, veh/h	1	1	39	2	1	1	64	21	2	1	11	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	46	2	1	1	75	25	2	1	13	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	192	194	14	192	193	26	14	0	0	27	0	0
Stage 1	16	16	-	176	176	-	-	-	-	-	-	-
Stage 2	176	178	-	16	16	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	768	702	1067	767	702	1050	1604	-	-	1587	-	-
Stage 1	1004	882	-	825	753	-	-	-	-	-	-	-
Stage 2	826	752	-	1004	882	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	729	668	1067	698	668	1050	1604	-	-	1587	-	-
Mov Cap-2 Maneuver	729	668	-	698	668	-	-	-	-	-	-	-
Stage 1	1003	882	-	786	717	-	-	-	-	-	-	-
Stage 2	784	716	-	959	881	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.63	9.81	5.41	0.56
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1302	-	-	1040	752	136	-	-
HCM Lane V/C Ratio	0.047	-	-	0.046	0.006	0.001	-	-
HCM Control Delay (s/veh)	7.4	0	-	8.6	9.8	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	212	0	678	74	115	125
Future Volume (veh/h)	212	0	678	74	115	125
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	219	0	699	76	119	129
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	288	2279	1120	500	229	203
Arrive On Green	0.16	0.00	0.32	0.32	0.13	0.13
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	219	0	699	76	119	129
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	5.7	0.0	8.2	1.7	3.0	3.8
Cycle Q Clear(g_c), s	5.7	0.0	8.2	1.7	3.0	3.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	288	2279	1120	500	229	203
V/C Ratio(X)	0.76	0.00	0.62	0.15	0.52	0.63
Avail Cap(c_a), veh/h	1099	6638	3655	1630	916	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.5	0.0	14.2	12.0	19.8	20.1
Incr Delay (d2), s/veh	4.2	0.0	0.6	0.1	1.8	3.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	2.6	0.5	1.3	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	23.6	0.0	14.8	12.1	21.6	23.3
LnGrp LOS	C		B	B	C	C
Approach Vol, veh/h		219	775		248	
Approach Delay, s/veh		23.6	14.5		22.5	
Approach LOS		C	B		C	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	37.0	11.6	15.8	21.1
Change Period (Y+Rc), s	* 5.8	5.4	8.0	5.8
Max Green Setting (Gmax), s	* 91	25.0	30.0	50.0
Max Q Clear Time (g_c+I1), s	0.0	5.8	7.7	10.2
Green Ext Time (p_c), s	0.0	0.7	0.6	5.2

Intersection Summary	
HCM 7th Control Delay, s/veh	17.7
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

FREEWAY MERGE ANALYSIS

File Name:	US50_Fortune-Merge-PM.xuf
Analyst:	GCW
Agency:	NDOT
Jurisdiction:	NDOT
Date:	
Analysis Year:	Existing (2025)
Time Analyzed:	PM Peak Hour
Project Description:	Traditions North
Units:	U.S. Customary

LOS and Performance Measures

Ramp Type	Left-Sided One-Lane		
Density in On-Ramp (Merge) Influence Area, DR	11.5	pc/mi/ln	
Level of Service, LOS	B		
Average Flow in Outer Lanes, vOA	-	pc/h/ln	
Average Speed in Ramp Influence Area, SR	54.9	mi/h	
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h	
Average Speed for On-Ramp (Merge) Junction, S	54.9	mi/h	
Density Across All Lanes, D	12.9	pc/mi/ln	

Step 1: Specify Inputs and Convert Demand Volumes to Demand Flow Rates

Freeway Data			
Number of Freeway Lanes	2		ln
Measured or Base FFS	Measured		
Base Free-Flow Speed, BFFS	-		mi/h
Lane Width	-		ft
Lane Width Adjustment, fLW	-		mi/h
Right-Side Lateral Clearance	-		ft
Right-Side Lateral Clearance Adj., fRLC	-		mi/h
Total Ramp Density, TRD	-		ramps/mi
TRD Adjustment	-		mi/h
Free-Flow Speed, FFS	60.0		mi/h
Speed Adjustments			
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Adjusted Free-Flow Speed, FFSadj	60.0		mi/h
Segment Length	1500		ft
C-D Roadway?	Freeway		
Demand Volume, V	1229		veh/h
Peak Hour Factor, PHF	0.97		
Ramp Data			
Number of Ramp Lanes	1		ln
Ramp Free-Flow Speed, SFR	35.0		mi/h
Ramp Side	Left		
Length of First Acceleration Lane, LA or LA1	800		ft
Length of Second Acceleration Lane, LA2	-		ft
Junction Components	Freeway	Ramp	
Demand Volume, V	1229	115	veh/h
Peak Hour Factor, PHF	0.97	0.97	
Percent Total Trucks	2.00	2.00	%
Percent SUTs	-	-	%
Percent TTs	-	-	%
Prop. Total Trucks, PT	0.0200	0.0200	
Heavy Vehicle PCE, ET	2.00	2.00	
Heavy Vehicle Adj., fHV	0.980	0.980	
Terrain Type	Level	Level	

Percent Grade	-	-	%
Grade Length	-	-	mi
Demand Adj. Factor, DAF	1.000	1.000	
Demand Flow Rate, v	1293	121	pc/h

Step 2: Estimate the Approaching Flow Rate in Lanes 1 and 2

Estimating Flow in Lanes 1 and 2 for On-Ramps			
Adjacent Upstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Adjacent Downstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Prop. Freeway Veh. in Lanes 1 and 2, PFM	1.000		
Flow Rate on Freeway, vF	1293	pc/h	
Flow Rate in Lanes 1 and 2, v12	1293	pc/h	

Step 3: Estimate Capacity of Ramp-Freeway Junction and Compare Flow Rates

Capacity Checks

	Actual	Maximum	Violation?
vFO	1414	4600	No
vR	121	2000	No
vR12	1414	4600	No

	Freeway	Ramp	
Unadjusted Capacity, cmd	4600	2000	pc/h
Driver Population	All Familiar	All Familiar	
Driver Population CAF	1.000	1.000	
Weather Type	Non-Severe Weather	Non-Severe Weather	
Weather Type CAF	1.000	1.000	
Incident Type	No Incident	-	
Incident Type CAF	1.000	-	
Proportion of CAVs in Traffic Stream	0	-	
Capacity Adjustment Factor for CAVs, CAFCAV	1.000	-	
Final Capacity Adj. Factor, CAF	1.000	1.000	
Final Adjusted Capacity, cmda	4600	2000	pc/h

Step 4: Estimate Density in Ramp Influence Area and Determine LOS

Demand Flow Rate on Ramp, vR	121	pc/h
Flow Rate in Lanes 1 and 2, v12	1293	pc/h
Length of Acceleration Lane, LA	800	ft
Density in On-Ramp Influence Area, DR	11.5	pc/mi/ln
Density in On-Ramp Influence Area, DR	11.3	veh/mi/ln
Level of Service, LOS	B	

Step 5: Estimate Speeds in the Vicinity of Ramp-Freeway Junctions

Freeway Free-Flow Speed, FFS	60.0	mi/h
Ramp Free-Flow Speed, SFR	35.0	mi/h
Length of Acceleration Lane, LA	800	ft
Driver Population	All Familiar	
Driver Population SAF	1.000	
Weather Type	Non-Severe Weather	
Weather Type SAF	1.000	
Final Speed Adjustment Factor, SAF	1.000	
Flow Rate on Freeway, vF	1293	pc/h
Flow Rate in Lanes 1 and 2, v12	1293	pc/h
Total Flow Entering On-Ramp Infl. Area, vR12	1414	pc/h
Number of Outer Lanes on Freeway, NO	0	ln
Speed Index for On-Ramp, MS	0.281	
Average Speed in Ramp Influence Area, SR	54.9	mi/h
Average Flow in Outer Lanes, vOA	-	pc/h/ln
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h
Average Speed for On-Ramp Junction, S	54.9	mi/h
Density Across All Lanes, D	12.9	pc/mi/ln

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	1315	11	1	737	12	3	0	5	11	0	20
Future Vol, veh/h	24	1315	11	1	737	12	3	0	5	11	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	Yield
Storage Length	580	-	-	560	-	465	-	-	-	0	-	225
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	26	1399	12	1	784	13	3	0	5	12	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	784	0	0	1411	0	0	1850	2242	705	1537	2248	392
Stage 1	-	-	-	-	-	-	1456	1456	-	786	786	-
Stage 2	-	-	-	-	-	-	394	786	-	751	1462	-
Critical Hdwy	4.18	-	-	4.18	-	-	7.58	6.58	6.98	7.58	6.58	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	6.58	5.58	-	6.58	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.58	5.58	-	6.58	5.58	-
Follow-up Hdwy	2.24	-	-	2.24	-	-	3.54	4.04	3.34	3.54	4.04	3.34
Pot Cap-1 Maneuver	817	-	-	469	-	0	45	41	374	78	40	601
Stage 1	-	-	-	-	-	0	134	189	-	347	397	-
Stage 2	-	-	-	-	-	0	597	397	-	365	188	-
Platoon blocked, %		-	-		-							
Mov Cap-1 Maneuver	817	-	-	469	-	-	42	39	374	74	39	601
Mov Cap-2 Maneuver	-	-	-	-	-	-	42	39	-	74	39	-
Stage 1	-	-	-	-	-	-	129	183	-	346	396	-
Stage 2	-	-	-	-	-	-	574	396	-	348	182	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.17	0.02	47.03	29.47
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	SBLn1	SBLn2	SBLn3
Capacity (veh/h)	94	817	-	-	469	-	74	-	601
HCM Lane V/C Ratio	0.09	0.031	-	-	0.002	-	0.158	-	0.035
HCM Control Delay (s/veh)	47	9.5	-	-	12.7	-	62.7	0	11.2
HCM Lane LOS	E	A	-	-	B	-	F	A	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	0.5	-	0.1

Appendix D
Growth Rate Calculations

GCW
ENGINEERS \ SURVEYORS

Opening Year & Opening Year Plus Project Volumes
AM Peak Hour

Existing - June 2025 Counts

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	50	8	1	1	11	3	1	2	90	5	4	1
US 50/Fortune	2				65		266	83	474			1193	55
US 50/Traditions	3	20	0	2	11	1	19	17	504	5	3	1207	11

Opening Year Growth 2029 0.5% 4

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	1	0	0	0	0	0	0	0	2	0	0	0
US 50/Fortune	2								9			24	
US 50/Traditions	3								10			24	

Project Trips - Traditions Town Center Phases 1-3

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1												
US 50/Fortune	2								136			79	
US 50/Traditions	3		4		177	2	176	177	-41			-97	329

Project Trips - Dayton Six Opening Year (Residential and Industrial)

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1												
US 50/Fortune	2								414			271	
US 50/Traditions	3								414			271	

Opening Year

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	51	8	1	1	11	3	1	2	92	5	4	1
US 50/Fortune	2	0	0	0	65	0	266	83	1033	0	0	1567	55
US 50/Traditions	3	20	4	2	188	3	195	194	887	5	3	1405	340

Project Trips - Traditions North

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	9								27			
US 50/Fortune	2						27	9	36			107	
US 50/Traditions	3				57		107	36					19

Opening Year Plus Project

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	60	8	1	1	11	3	1	2	119	5	4	1
US 50/Fortune	2	0	0	0	65	0	293	92	1069	0	0	1674	55
US 50/Traditions	3	20	4	2	245	3	302	230	887	5	3	1405	359

Opening Year & Opening Year Plus Project Volumes
PM Peak Hour

Existing - June 2025 Counts

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	64	21	2	1	11	1	1	1	39	2	1	1
US 50/Fortune	2				115		125	212	1229			678	74
US 50/Traditions	3	3	0	5	11	0	20	24	1315	11	1	737	12

Opening Year Growth 2029 0.5% 4

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	1	0	0	0	0	0	0	0	1	0	0	0
US 50/Fortune	2								25			14	
US 50/Traditions	3								26			15	

Project Trips - Traditions Town Center Phases 1-3

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1												
US 50/Fortune	2								95			116	
US 50/Traditions	3		3		325	2	185	222	-127			-69	231

Project Trips - Dayton Six Opening Year (Residential and Industrial)

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1												
US 50/Fortune	2								323			463	
US 50/Traditions	3								323			463	

Opening Year

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	65	21	2	1	11	1	1	1	40	2	1	1
US 50/Fortune	2	0	0	0	115	0	125	212	1672	0	0	1271	74
US 50/Traditions	3	3	3	5	336	2	205	246	1537	11	1	1146	243

Project Trips - Traditions North

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	30								18			
US 50/Fortune	2						18	30	121			71	
US 50/Traditions	3				38		71	121					65

Opening Year Plus Project

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	95	21	2	1	11	1	1	1	58	2	1	1
US 50/Fortune	2	0	0	0	115	0	143	242	1793	0	0	1342	74
US 50/Traditions	3	3	3	5	374	2	276	367	1537	11	1	1146	308

Future Year & Future Year Plus Project Volumes
AM Peak Hour

Existing - June 2025 Counts

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	50	8	1	1	11	3	1	2	90	5	4	1
US 50/Fortune	2				65		266	83	474			1193	55
US 50/Traditions	3	20	0	2	11	1	19	17	504	5	3	1207	11

Future Volumes from US 50 Corridor Study (Arterial Alternative) & Traditions Town Center Phases 1-3 TIS (includes Traditions Village 2 and Estates at Sutro)

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1												
US 50/Fortune	2				149		542	213	900			2500	130
US 50/Traditions	3	34	5	11	109	5	144	48	970	15	28	2456	38

Future Year Growth (2040 to 2049) 2049 0.5% 9

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	56	9	1	1	12	3	1	2	101	6	5	1
US 50/Fortune	2								21			54	
US 50/Traditions	3								23			54	

Project Trips - Traditions Town Center Phases 1-3

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1												
US 50/Fortune	2								136			79	
US 50/Traditions	3	0	4	0	177	2	176	177	-41	0	0	-97	329

Project Trips - Dayton Six

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1												
US 50/Fortune	2								466			348	
US 50/Traditions	3								466			348	

Future Year

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	56	9	1	1	12	3	1	2	101	6	5	1
US 50/Fortune	2	0	0	0	149	0	542	213	1523	0	0	2981	130
US 50/Traditions	3	34	9	11	286	7	320	225	1418	15	28	2761	367

Project Trips - Traditions North

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	7								22			
US 50/Fortune	2						22	7	30			88	
US 50/Traditions	3				47		88	30					16

Future Year Plus Project

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	63	9	1	1	12	3	1	2	123	6	5	1
US 50/Fortune	2	0	0	0	149	0	564	220	1553	0	0	3069	130
US 50/Traditions	3	34	9	11	333	7	408	255	1418	15	28	2761	383

Future Year & Future Year Plus Project Volumes
PM Peak Hour

Existing - June 2025 Counts

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	64	21	2	1	11	1	1	1	39	2	1	1
US 50/Fortune	2				115		125	212	1229			678	74
US 50/Traditions	3	3	0	5	11	0	20	24	1315	11	1	737	12

Future Volumes from US 50 Corridor Study (Arterial Alternative) & Traditions Town Center Phases 1-3 TIS (includes Traditions Village 2 and Estates at Sutro)

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1												
US 50/Fortune	2				219		283	546	2616			1488	135
US 50/Traditions	3	14	5	11	70	5	95	161	2645	22	35	1480	128

Future Year Growth (2040 to 2049) 2049 0.5% 9

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	72	24	2	1	12	1	1	1	44	2	1	1
US 50/Fortune	2								55			31	
US 50/Traditions	3								59			33	

Project Trips - Traditions Town Center Phases 1-3

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1												
US 50/Fortune	2								95			116	
US 50/Traditions	3		3		325	2	185	222	-127			-69	231

Project Trips - Dayton Six

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1												
US 50/Fortune	2								476			601	
US 50/Traditions	3								476			601	

Future Year

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	72	24	2	1	12	1	1	1	44	2	1	1
US 50/Fortune	2	0	0	0	219	0	283	546	3242	0	0	2236	135
US 50/Traditions	3	14	8	11	395	7	280	383	3053	22	35	2045	359

Project Trips - Traditions North

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	25								15			
US 50/Fortune	2						15	25	99			58	
US 50/Traditions	3				31		58	99					53

Future Year Plus Project

INTERSECTION	INTID	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fortune/Sugarloaf	1	97	24	2	1	12	1	1	1	59	2	1	1
US 50/Fortune	2	0	0	0	219	0	298	571	3341	0	0	2294	135
US 50/Traditions	3	14	8	11	426	7	338	482	3053	22	35	2045	412

Appendix 3
2040 Traffic Forecasting and Assumptions

US 50 (Name TBD) Study
Pine Cone Road to Neigh Road

Summary of Traffic Forecasting Assumptions and
Potential Developments along US 50 Corridor

This report documents the traffic forecasting assumptions and review of potential future developments along the US 50, including:

A. Proposed Growth Rate
B. 2040 Forecast Traffic
C. Minimum Forecast Year 2040 Turning Movement Volumes
D. Speed Limits
E. Truck Percentages
F. Approved/Proposed Projects

A. Proposed Growth Rate: Ten-year count data was reviewed at three count stations in the study area from 2009 to 2018. This data revealed the following growth rates for 5-year 2018-2013, and 10-year 2018-2009:

   a. Five-year Growth Rate 2018-2013: Yearly growth rates of 4.65% (S/O Pinecone Rd), 4.86% (W/O Cardelli Rd), and 7.14% (E/O Bryce Rd). Average: 5.55%, weighted average 5.13%

   b. Ten-year Growth Rate 2018-2009: Yearly growth rates of 1.4% (S/O Pinecone Rd), 2.43% (W/O Cardelli Rd), and 2.04% (E/O Bryce Rd). Average: 1.96%, weighted average 1.86%

Recommendation: Use a linear growth rate of **2 percent per year** for 20 years, representing be a 40 percent increase in traffic from 2020 to 2040. This growth rate would be applied to the existing traffic at each intersection.

B. The 2040 forecast traffic will be the sum of:

   a. 2020 Existing Traffic

   b. Growth of Existing Traffic using the recommended growth rate

   c. Traffic generated by Approved/Proposed Projects

C. Minimum Forecast Year 2020 Turning Movement Volumes: Some of the existing intersections had zero or minimal turning traffic. Applying a growth rate to these specific low volumes turning movements will result in a 2040 forecast of zero or minimal traffic. The following volumes are recommended to be used for minimum 2040 forecast volumes at the study area intersections for the AM and PM peak hours:

   a. 10 vph for right and left turns from a side street onto US 50

   b. 10 vph for right and left turns from US 50 onto a side street

   c. 5 vph for side street thru traffic across US 50

D. Speed Limits: The existing speed limit on US 50 is 45 mph from Pinecone Rd to Fortune Dr, east of Fortune Dr the speed limit increases to 60 mph. Existing speed limits on US 50 and side streets

will be used for the analysis of 2020 existing and 2040 traffic conditions with the following exceptions:

a. Due to future development and new site access points along US 50, the speed limit on US 50 from Fortune Dr to Neigh Rd will be assumed to 45 mph for the 2040 analysis.

E. Truck Percentages: CA Group reviewed the Department's 2018 Vehicle Classification Distribution Report by Route and determined that in 2017 a count of 318 trucks travelled on US 50 from Dayton Valley Road to US 95 Alt, this segment of US 50 includes the study area. This truck volume was divided by the 2017 AADT to determine the truck percentage on US 50. These truck percentages will be used for the analysis of 2020 existing and 2040 forecast traffic volumes.

a. US 50, Pinecone Rd to 6-Mile Canyon Road, 2017 = 16,00 vpd, 1.99% Trucks. Use 2.0%

b. US 50, 6-Mile Canyon Road to Neigh Rd, 2017 ADT = 7,700 vpd, 4.13% Trucks. Use 4.1%

F. Approved/Proposed Projects

A number of developments are proposed along the US 50 corridor within the limits of the project study area. NDOT provided background information on these proposed developments, CA Group conducted a review of this information to determine the impact these developments may have on the corridor, specifically on the potential traffic these developments may add to the corridor and the design year traffic forecasts. The developments are grouped based on the year the development was submitted for review.

The traffic studies for the Approved Projects generally show the traffic at one or two intersections on US 50. The site traffic generated by the Approved Projects needs to be added to the adjacent intersections in one of two methods:

a. Add the traffic as EB and WB thru traffic to the adjacent study area intersections, continuing the thru traffic to the study area east and west boundaries.

b. Add the traffic as EB and WB thru traffic to the adjacent intersections, but diminish the volume the further away from the Approved Project by decreasing the thru EB and WB thru volumes and adding turning traffic to the side street, based on the existing turn percentages at each intersection.

Recommendation: Option b, to diminish the site traffic generated by the Approved Projects as the distance from the Approved Project increases by assigning the traffic to right and left turn movements at the study intersections based on the existing percentage of traffic turning at each intersection.

The developments reviewed based on data provided by NDOT and Lyon County are:

2020 Developments

1. Sage Vista Master Plan (PLZ-19-0081)
   - Development: 894 single-family DUs, 600 multi-family DUs
   - US 50 Access: Chaves Rd/Bryce St
   - Trip Generation: 20,110 ADT, 1,469 AM, 1,747 PM
   - Traffic Study: Provided
   - **Recommendation**: Add site traffic as shown in figure 3B of the traffic study

2. Gold Country Estates, Phase 1 (APN 016-405-20)
   - Development: 33 single-family DUs
   - US 50 Access: Retail Rd, Pinecone Rd
   - Trip Generation: 316 ADT, 25 AM, 33 PM
   - Traffic Study: Provided
   - **Recommendation**: Add site traffic as shown in figure 4 of the traffic study

3. NNIC, Northern Nevada Industrial Center PUD Update (PLZ-19-0079, PLZ-19-0075(PUD)), also called Tahoe Regional Industrial Center (TRIC)
   - Development: 12,127 Ac in Lyon County, plus 8,123 Ac in City of Fenerly Planning Area. 23.5M square feet of industrial in Lyon County.
   - US 50 Access: USA Parkway (Primary), 12 miles east of Neigh Rd
   - Trip Generation: 32,106 ADT, 3,296 AM, 3,296 PM (Not including portion in Fenerly PA)
   - Traffic Study: Provided
   - 20-30 year build-out
   - **Recommendation**: Use site traffic as shown in figure 5 of the traffic study. This project at buildout will add 7,527 vpd, AM volume of 773 vph (528 EB, 245 WB) and PM volume of 773 vph (216 EB, 557 WB) to US 50 west of USA Parkway, which is 12 miles east of Neigh Rd. It is expected that not all of this project traffic will reach the study area, the project may not develop to the intensity analyzed in the NNIC traffic study or reach buildout by 2040. Based on the potential for future development on US 50 between USA Parkway and Neigh Rd, it will be assumed that only **50 percent** of the NNIC site traffic will reach the study area. This equates to an impact of 3,760 vpd, AM volume of 380 vph (260 EB, 120 WB) and PM volume of 390 vph (110 EB, 280 WB) reaching the study area.

2019 Developments

4. Best Properties US 50 Fortune Dr (APN 16-403-40)
   - Development: hospital, medical office, commercial
   - US 50 Access: Fortune Dr
   - Trip Generation: 5,239 ADT, 243 AM, 202 PM
   - Traffic Study: Provided
   - The site is under construction and partially open
   - **Recommendation**: Add site traffic per figure 3 of the traffic study. The site was approximately 10 percent complete when the traffic counts were conducted, site traffic will be reduced by **10 percent**.

5. Dayton Pioneer MPA (PLZ-19-0005, PLZ-19-0006)
   - Development: 104 single-family DUs
   - US 50 Access: Pinecone Rd
   - Trip Generation: 692 ADT, no peak hour estimate provided
   - Traffic Study: Not Provided
   - **Recommendation**: Traffic study not provided. Traffic generated by this project will be considered as part of the background traffic growth resulting from a growth factor applied to existing traffic volumes.

6. Desert Wells (PLZ-18-0020-MPA, PLZ-18-0021 SPEC PLAN)
   - Development: 989 single-family DUs, 200 apartments, 300 condos, 60,000 sq ft office, 140,000 sq ft commercial
   - US 50 Access: Caroline Way, 1.3 miles east of Neigh Rd
   - Trip Generation: 25,959 ADT, 1,766 AM, 2,138 PM
   - Traffic Study: Provided
   - **Recommendation**: Add site traffic per figure 3 of the traffic study

7. Gold Country Estates Unit 3 (APN 16-403-15)
   - Development: 192 DUs, various types
   - US 50 Access: Retail Rd, Fortune Rd
   - Trip Generation: 1,400 ADT, 94 AM, 119 PM
   - Traffic Study: Provided
   - **Recommendation**: Add site traffic as shown in figure 5 of the traffic study

2018 Developments

8. Heritage Ranch (PLZ-18-0056)
   - Development: Change in project phasing, SEE 2017 Project #10
   - US 50 Access: Dayton Valley Pkwy, Fortune Dr, Retail Rd
   - Trip Generation: Not updated from 2017
   - Traffic Study: Not updated from 2017
   - **Recommendation**: Add site traffic as shown in figure 3 of 2017 traffic study

9. Traditions Village 1 (Phase 1) (No PLZ or APN provided)
   - Development: 312 single-family DUs, 348 multi-family DUs
   - US 50 Access: Pinecone Rd, Retail Rd, Fortune Dr, Seagle Rd (Primary)
   - Trip Generation: 5,284 ADT, 411 AM, 528 PM
   - Traffic Study: Provided
   - **Recommendation**: Add site traffic as shown in figure 3 of the traffic study

2017 Developments

10. Heritage Ranch (PLZ-17-0017)
    - Development: 287 single-family DUs
    - US 50 Access: Fortune Dr, New DWY
    - Trip Generation: 2,32 ADT, 215 AM, 287 PM
    - Traffic Study: Provided
    - **Recommendation**: Add site traffic as shown in figure 3 of the traffic study

11. Copper Canyon Estates (PLZ-17-0029)
    - Development: 687 single-family DUs (102 constructed, 585 approved but not previously constructed)
    - US 50 Access: Chaves Rd, Pinenut Dr, Rainbow Ave
    - Trip Generation (Not Built): 5,569 ADT, 439 AM, 585 PM
    - Traffic Study: Provided
    - **Recommendation**: Add site traffic as shown in Figure 3 of the traffic study

12. Q&D Construction, Chase Property Group (PLZ-17-0001)
    - Development: Request to re-establish sand and gravel operation.
    - US 50 Access: Site DWY MP 10.2
    - Trip Generation: Not provided
    - Traffic Study: Not provided
    - **Recommendation**: Need to obtain traffic study. Need to verify if the sand and gravel operation was operating when the traffic counts were conducted.

13. Northern Nevada Industrial Center (PLZ-17-0055)
    - Updated in 2020, SEE 2020 Project #3

14. Woodbridge (PLZ-16-0038)
    - Development: 216 single-family DUs, 45,000 square feet shopping center, 197 multi-family DUs
    - US 50 Access: Lafond Ave, Mark Twain Ave, Rainbow Dr, Pinenut Dr
    - Trip Generation: 5,857 ADT, 348 AM, 556 PM
    - Traffic Study: provided
    - **Recommendation**: Add site traffic as shown in Figure 5 in the traffic study

2016 Developments

15. Traditions Phase 1 (PLZ-15-0049)
    - Updated in 2020, SEE 2020 Project #9

16. Blackstone (PLZ-15-0048, PLZ-15-0049)
    - Development: Application expired, part of Traditions development plan, SEE Project #9
    - US 50 Access: Traditions Pkwy, Nevada Station Pkwy, Prairie Gate Rd
    - Trip Generation: Not included
    - Traffic Study: Not included
    - **Recommendation**: No further action

17. Riverpark Dunes (PLZ-16-0027)
    - Development: 58 single-family DUs
    - US 50 Access: Fort Churchill Rd
    - Trip Generation: Not provided
    - Traffic Study: Not provided
    - **Recommendation**: This project is under construction. Traffic generated by this project will be considered as part of the background traffic growth resulting from a growth factor applied to existing traffic volumes.

18. Canyon Estates (PLZ-16-0029)
    - Development: 402 Single-Family DUs
    - US 50 Access: River Boat Rd/Cardelli Rd, Ft Churchill Rd/Six Mile Canyon Rd, LaFond Ave
    - Trip Generation: 6,224 ADT, 507 AM, 626 PM
    - Traffic Study: Provided
    - **Recommendation**: Add site traffic per figure 3 in the traffic study

19. Copper Canyon Estates (PLZ-16-0031)
    - Updated in 2017, SEE 2017 Project #11

2015 Developments

20. Traditions Phase 1 (APN 16-401-06)
    - Updated in 2020, SEE 2020 Project #9

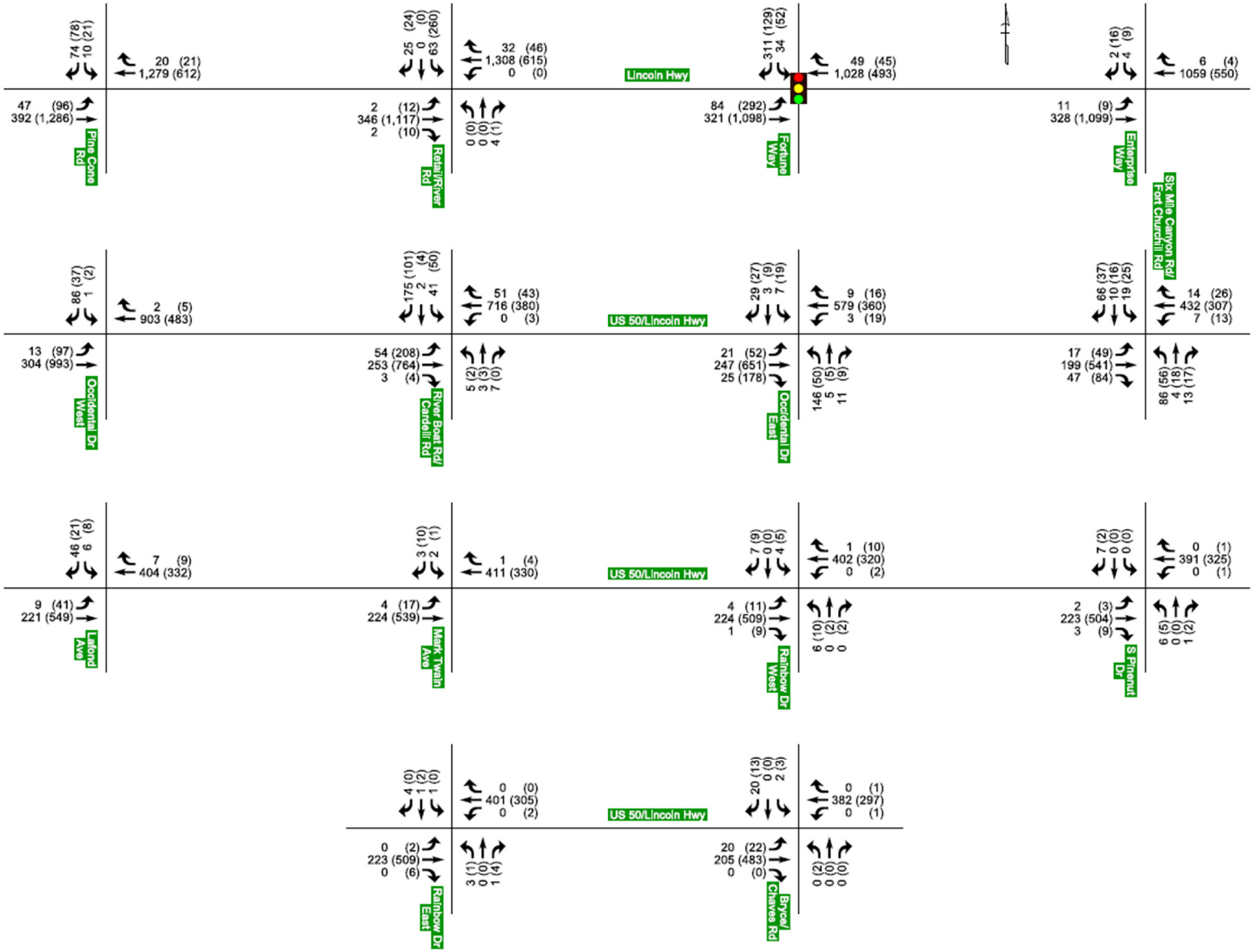


Figure 1. 2020 AM (PM) Peak-Hour Turning Movement Counts

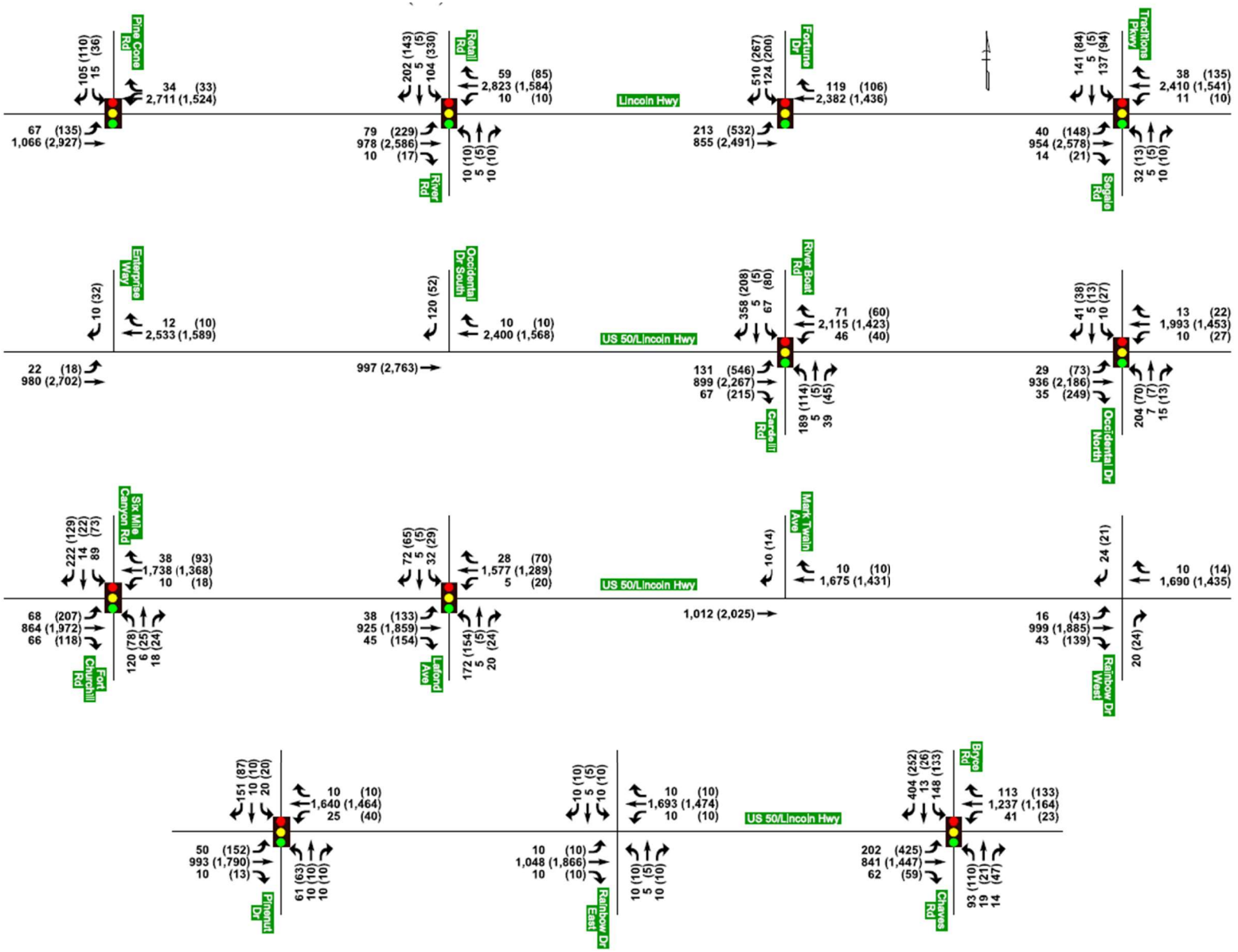
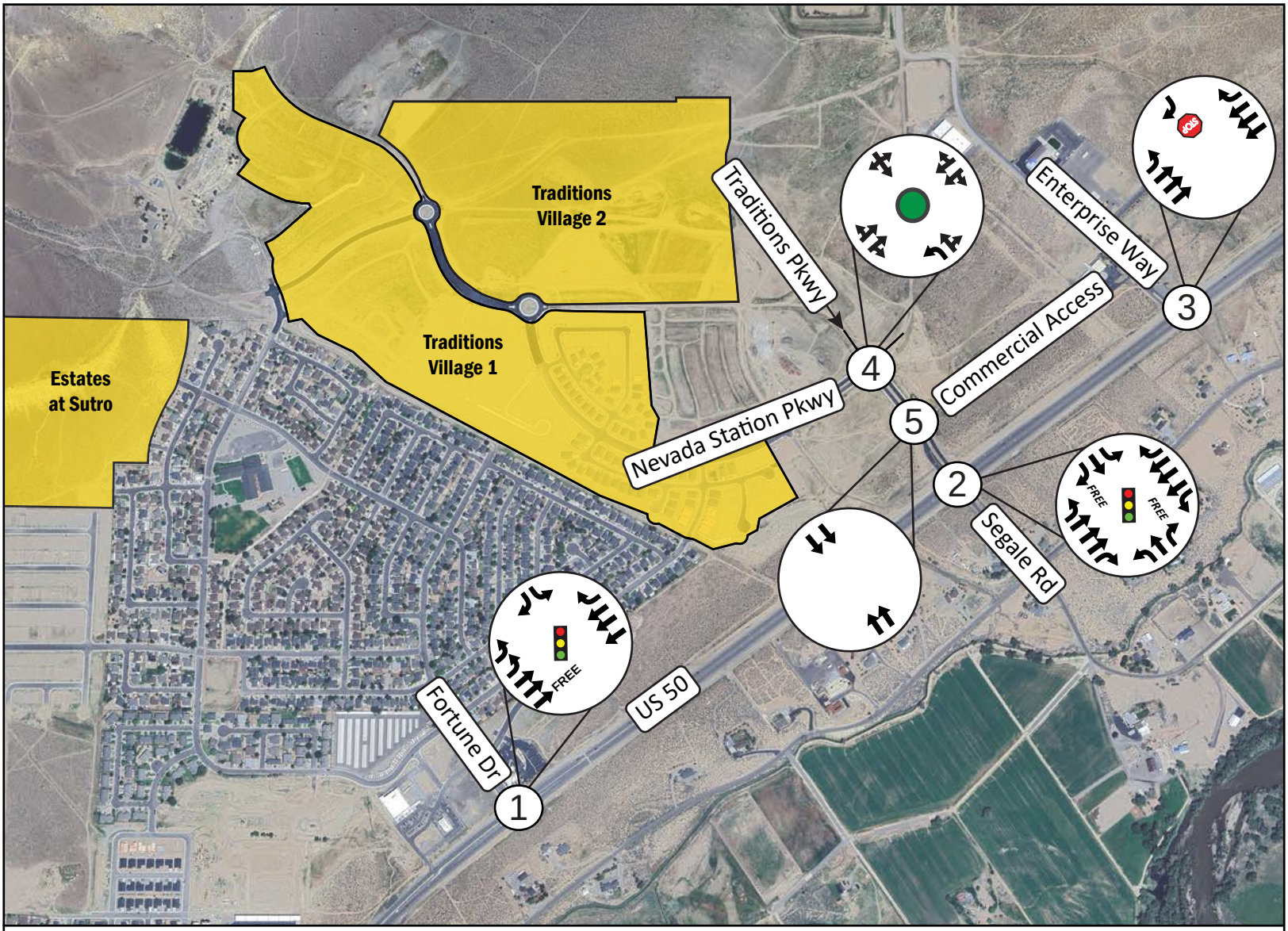
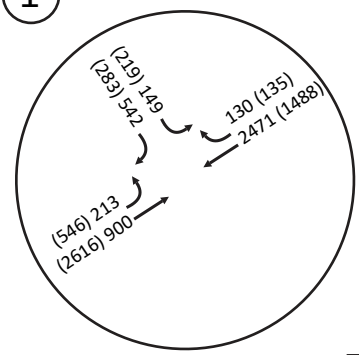


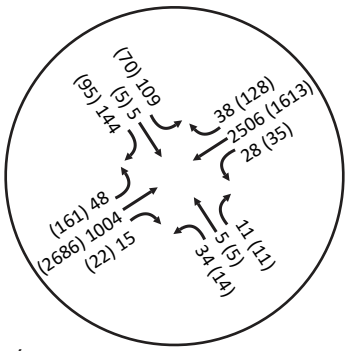
Figure 3: 2040 AM (PM) Arterial Alternative Peak-Hour Traffic Volumes



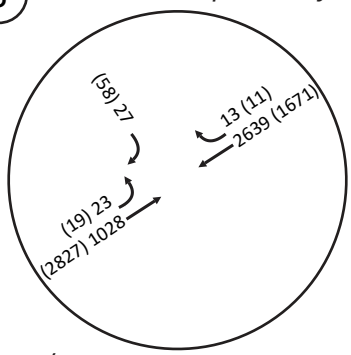
1 *US 50 / Fortune Dr*



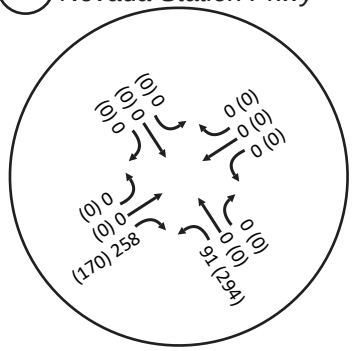
2 *US 50 / Traditions Pkwy / Segale Rd*



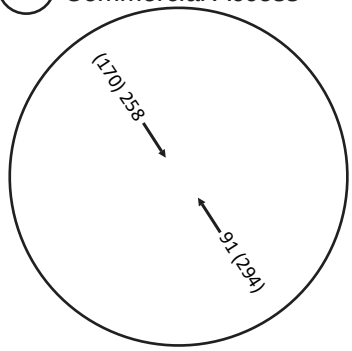
3 *US 50 / Enterprise Way*



4 *Traditions Pkwy / Nevada Station Pkwy*



5 *Traditions Pkwy / Commercial Access*



HEADWAY TRANSPORTATION

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

(#) - Study Intersection - Signal STOP - Stop - Roundabout

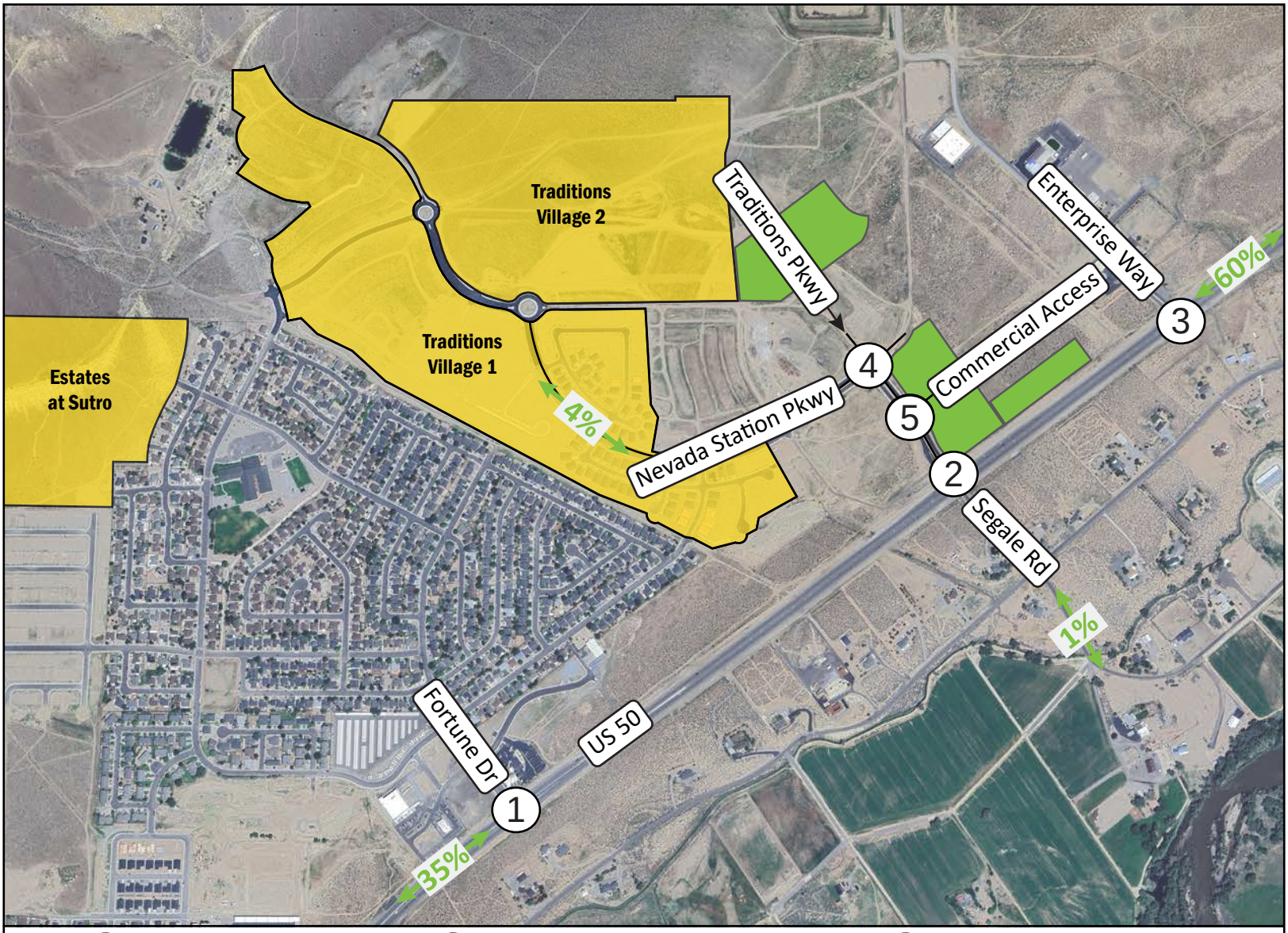
- Other Approved/Planned Projects

Figure 7

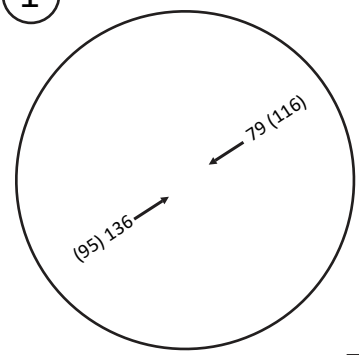
Traditions Town Center P 1052 -3

Traffic Impact Study

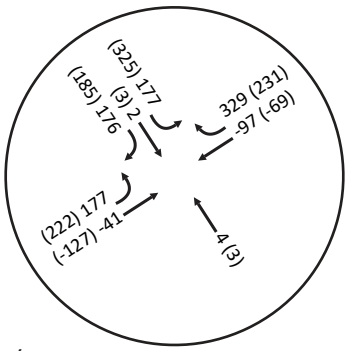
Future Year Traffic Volumes, Lane Configurations, and Controls



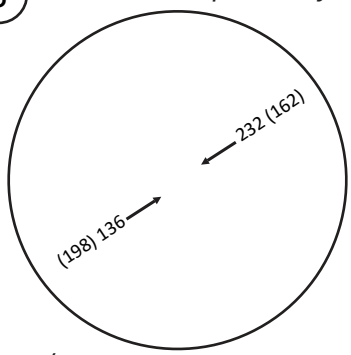
1 *US 50 / Fortune Dr*



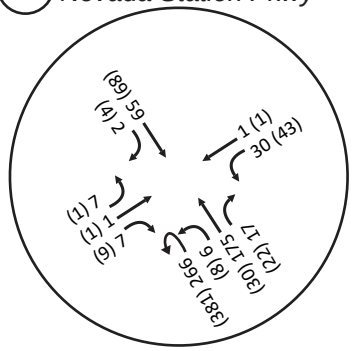
2 *US 50 / Traditions Pkwy / Segale Rd*



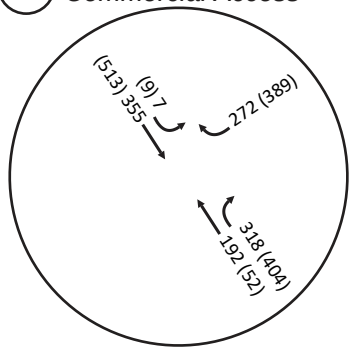
3 *US 50 / Enterprise Way*



4 *Traditions Pkwy / Nevada Station Pkwy*



5 *Traditions Pkwy / Commercial Access*



HEADWAY TRANSPORTATION

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)
- Project Site
(#) - Study Intersection
XX% - Trip Distribution
- Other Approved/Planned Projects

Figure 5
Traditions Town Center P 1053 -3
Traffic Impact Study
Project Trip Distribution and Assignment

Appendix E
Opening Year LOS Calculations

GCW
ENGINEERS \ SURVEYORS

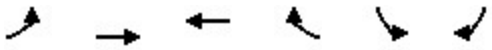
Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	2	92	5	4	1	51	8	1	1	11	3
Future Vol, veh/h	1	2	92	5	4	1	51	8	1	1	11	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	3	123	7	5	1	68	11	1	1	15	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	169	167	17	166	169	11	19	0	0	12	0	0
Stage 1	19	19	-	147	147	-	-	-	-	-	-	-
Stage 2	149	148	-	19	21	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	791	722	1057	794	721	1064	1585	-	-	1594	-	-
Stage 1	994	875	-	851	771	-	-	-	-	-	-	-
Stage 2	848	771	-	995	874	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	749	690	1057	668	689	1064	1585	-	-	1594	-	-
Mov Cap-2 Maneuver	749	690	-	668	689	-	-	-	-	-	-	-
Stage 1	994	875	-	814	738	-	-	-	-	-	-	-
Stage 2	805	738	-	876	873	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.94	10.22	6.27	0.48
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1497	-	-	1040	703	115	-	-
HCM Lane V/C Ratio	0.043	-	-	0.122	0.019	0.001	-	-
HCM Control Delay (s/veh)	7.4	0	-	8.9	10.2	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.1	0	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	83	0	1567	55	65	266
Future Volume (veh/h)	83	0	1567	55	65	266
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	90	0	1703	60	71	202
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	118	2487	1923	858	275	245
Arrive On Green	0.07	0.00	0.55	0.55	0.16	0.16
Sat Flow, veh/h	1753	3589	3589	1560	1753	1560
Grp Volume(v), veh/h	90	0	1703	60	71	202
Grp Sat Flow(s),veh/h/ln	1753	1749	1749	1560	1753	1560
Q Serve(g_s), s	4.3	0.0	36.3	1.5	3.0	10.7
Cycle Q Clear(g_c), s	4.3	0.0	36.3	1.5	3.0	10.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	118	2487	1923	858	275	245
V/C Ratio(X)	0.76	0.00	0.89	0.07	0.26	0.82
Avail Cap(c_a), veh/h	619	3737	2058	918	516	459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.0	0.0	16.8	9.0	31.5	34.7
Incr Delay (d2), s/veh	9.8	0.0	4.8	0.0	0.5	6.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	13.0	0.4	1.3	9.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	48.8	0.0	21.6	9.0	32.0	41.6
LnGrp LOS	D		C	A	C	D
Approach Vol, veh/h		90	1763		273	
Approach Delay, s/veh		48.8	21.2		39.1	
Approach LOS		D	C		D	

Timer - Assigned Phs		4		6	7	8
Phs Duration (G+Y+Rc), s		66.2		18.7	13.7	52.5
Change Period (Y+Rc), s		* 5.8		5.4	8.0	5.8
Max Green Setting (Gmax), s		* 91		25.0	30.0	50.0
Max Q Clear Time (g_c+I1), s		0.0		12.7	6.3	38.3
Green Ext Time (p_c), s		0.0		0.7	0.2	8.4

Intersection Summary	
HCM 7th Control Delay, s/veh	24.6
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

FREEWAY MERGE ANALYSIS

File Name:	Merge-OY-AM.xuf
Analyst:	GCW
Agency:	NDOT
Jurisdiction:	NDOT
Date:	
Analysis Year:	Opening Year (2029)
Time Analyzed:	AM Peak Hour
Project Description:	Traditions North
Units:	U.S. Customary

LOS and Performance Measures

Ramp Type	Left-Sided One-Lane	
Density in On-Ramp (Merge) Influence Area, DR	10.5	pc/mi/ln
Level of Service, LOS	B	
Average Flow in Outer Lanes, vOA	-	pc/h/ln
Average Speed in Ramp Influence Area, SR	55.0	mi/h
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h
Average Speed for On-Ramp (Merge) Junction, S	55.0	mi/h
Density Across All Lanes, D	11.7	pc/mi/ln

Step 1: Specify Inputs and Convert Demand Volumes to Demand Flow Rates

Freeway Data			
Number of Freeway Lanes	2		ln
Measured or Base FFS	Measured		
Base Free-Flow Speed, BFFS	-		mi/h
Lane Width	-		ft
Lane Width Adjustment, fLW	-		mi/h
Right-Side Lateral Clearance	-		ft
Right-Side Lateral Clearance Adj., fRLC	-		mi/h
Total Ramp Density, TRD	-		ramps/mi
TRD Adjustment	-		mi/h
Free-Flow Speed, FFS	60.0		mi/h
Speed Adjustments			
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Adjusted Free-Flow Speed, FFSadj	60.0		mi/h
Segment Length	1500		ft
C-D Roadway?	Freeway		
Demand Volume, V	1033		veh/h
Peak Hour Factor, PHF	0.92		
Ramp Data			
Number of Ramp Lanes	1		ln
Ramp Free-Flow Speed, SFR	35.0		mi/h
Ramp Side	Left		
Length of First Acceleration Lane, LA or LA1	800		ft
Length of Second Acceleration Lane, LA2	-		ft
Junction Components	Freeway	Ramp	
Demand Volume, V	1033	65	veh/h
Peak Hour Factor, PHF	0.92	0.92	
Percent Total Trucks	8.00	2.00	%
Percent SUTs	-	-	%
Percent TTs	-	-	%
Prop. Total Trucks, PT	0.0800	0.0200	
Heavy Vehicle PCE, ET	2.00	2.00	
Heavy Vehicle Adj., fHV	0.926	0.980	
Terrain Type	Level	Level	

Percent Grade	-	-	%
Grade Length	-	-	mi
Demand Adj. Factor, DAF	1.000	1.000	
Demand Flow Rate, v	1213	72	pc/h

Step 2: Estimate the Approaching Flow Rate in Lanes 1 and 2

Estimating Flow in Lanes 1 and 2 for On-Ramps			
Adjacent Upstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Adjacent Downstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Prop. Freeway Veh. in Lanes 1 and 2, PFM	1.000		
Flow Rate on Freeway, vF	1213	pc/h	
Flow Rate in Lanes 1 and 2, v12	1213	pc/h	

Step 3: Estimate Capacity of Ramp-Freeway Junction and Compare Flow Rates

Capacity Checks

	Actual	Maximum	Violation?
vFO	1285	4600	No
vR	72	2000	No
vR12	1285	4600	No

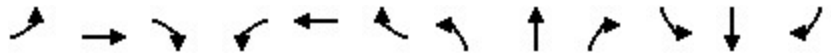
	Freeway	Ramp	
Unadjusted Capacity, cmd	4600	2000	pc/h
Driver Population	All Familiar	All Familiar	
Driver Population CAF	1.000	1.000	
Weather Type	Non-Severe Weather	Non-Severe Weather	
Weather Type CAF	1.000	1.000	
Incident Type	No Incident	-	
Incident Type CAF	1.000	-	
Proportion of CAVs in Traffic Stream	0	-	
Capacity Adjustment Factor for CAVs, CAFCAV	1.000	-	
Final Capacity Adj. Factor, CAF	1.000	1.000	
Final Adjusted Capacity, cmda	4600	2000	pc/h

Step 4: Estimate Density in Ramp Influence Area and Determine LOS

Demand Flow Rate on Ramp, vR	72	pc/h	
Flow Rate in Lanes 1 and 2, v12	1213	pc/h	
Length of Acceleration Lane, LA	800	ft	
Density in On-Ramp Influence Area, DR	10.5	pc/mi/ln	
Density in On-Ramp Influence Area, DR	10.3	veh/mi/ln	
Level of Service, LOS	B		

Step 5: Estimate Speeds in the Vicinity of Ramp-Freeway Junctions

Freeway Free-Flow Speed, FFS	60.0	mi/h	
Ramp Free-Flow Speed, SFR	35.0	mi/h	
Length of Acceleration Lane, LA	800	ft	
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Flow Rate on Freeway, vF	1213	pc/h	
Flow Rate in Lanes 1 and 2, v12	1213	pc/h	
Total Flow Entering On-Ramp Infl. Area, vR12	1285	pc/h	
Number of Outer Lanes on Freeway, NO	0	ln	
Speed Index for On-Ramp, MS	0.279		
Average Speed in Ramp Influence Area, SR	55.0	mi/h	
Average Flow in Outer Lanes, vOA	-	pc/h/ln	
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h	
Average Speed for On-Ramp Junction, S	55.0	mi/h	
Density Across All Lanes, D	11.7	pc/mi/ln	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	887	5	3	1405	340	20	4	2	188	3	195
Future Volume (veh/h)	194	887	5	3	1405	340	20	4	2	188	3	195
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	206	944	5	3	1495	0	21	4	2	202	0	47
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	248	2237	12	7	1713		40	8	4	296	0	132
Arrive On Green	0.14	0.63	0.63	0.00	0.49	0.00	0.03	0.03	0.03	0.08	0.00	0.08
Sat Flow, veh/h	1753	3567	19	1753	3497	1560	1361	259	130	3506	0	1560
Grp Volume(v), veh/h	206	463	486	3	1495	0	27	0	0	202	0	47
Grp Sat Flow(s),veh/h/ln	1753	1749	1837	1753	1749	1560	1749	0	0	1753	0	1560
Q Serve(g_s), s	8.1	9.5	9.5	0.1	26.9	0.0	1.1	0.0	0.0	3.9	0.0	2.0
Cycle Q Clear(g_c), s	8.1	9.5	9.5	0.1	26.9	0.0	1.1	0.0	0.0	3.9	0.0	2.0
Prop In Lane	1.00		0.01	1.00		1.00	0.78		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	248	1097	1152	7	1713		51	0	0	296	0	132
V/C Ratio(X)	0.83	0.42	0.42	0.42	0.87		0.53	0.00	0.00	0.68	0.00	0.36
Avail Cap(c_a), veh/h	286	1097	1152	124	1860		161	0	0	323	0	144
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.5	6.7	6.7	35.0	16.0	0.0	33.7	0.0	0.0	31.4	0.0	30.5
Incr Delay (d2), s/veh	16.6	0.3	0.2	35.4	4.6	0.0	8.3	0.0	0.0	5.2	0.0	1.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.1	2.3	0.1	8.9	0.0	0.6	0.0	0.0	1.8	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	46.0	6.9	6.9	70.4	20.6	0.0	42.0	0.0	0.0	36.5	0.0	32.1
LnGrp LOS	D	A	A	E	C		D			D		C
Approach Vol, veh/h		1155			1498			27			249	
Approach Delay, s/veh		13.9			20.7			42.0			35.7	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	6.6	4.8	48.7		10.5	14.5	39.0
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	5.0	44.0		6.5	11.5	37.5
Max Q Clear Time (g_c+I1), s	3.1	2.1	11.5		5.9	10.1	28.9
Green Ext Time (p_c), s	0.0	0.0	5.7		0.1	0.1	5.7

Intersection Summary	
HCM 7th Control Delay, s/veh	19.5
HCM 7th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Traditions North

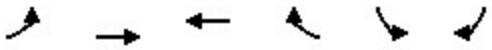
Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	40	2	1	1	65	21	2	1	11	1
Future Vol, veh/h	1	1	40	2	1	1	65	21	2	1	11	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	47	2	1	1	76	25	2	1	13	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	194	196	14	195	195	26	14	0	0	27	0	0
Stage 1	16	16	-	179	179	-	-	-	-	-	-	-
Stage 2	178	180	-	16	16	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	765	700	1067	765	700	1050	1604	-	-	1587	-	-
Stage 1	1004	882	-	823	751	-	-	-	-	-	-	-
Stage 2	824	750	-	1004	882	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	726	665	1067	694	666	1050	1604	-	-	1587	-	-
Mov Cap-2 Maneuver	726	665	-	694	666	-	-	-	-	-	-	-
Stage 1	1003	882	-	783	715	-	-	-	-	-	-	-
Stage 2	782	714	-	958	881	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.63	9.83	5.43	0.56
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1307	-	-	1040	749	136	-	-
HCM Lane V/C Ratio	0.048	-	-	0.048	0.006	0.001	-	-
HCM Control Delay (s/veh)	7.4	0	-	8.6	9.8	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	0	0	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	212	0	1271	74	115	125
Future Volume (veh/h)	212	0	1271	74	115	125
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	219	0	1310	76	119	26
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	272	2660	1713	764	165	147
Arrive On Green	0.15	0.00	0.48	0.48	0.09	0.09
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	219	0	1310	76	119	26
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	8.4	0.0	21.3	1.8	4.6	1.1
Cycle Q Clear(g_c), s	8.4	0.0	21.3	1.8	4.6	1.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	272	2660	1713	764	165	147
V/C Ratio(X)	0.80	0.00	0.76	0.10	0.72	0.18
Avail Cap(c_a), veh/h	759	4580	2522	1125	632	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.8	0.0	15.0	9.9	31.1	29.5
Incr Delay (d2), s/veh	5.5	0.0	0.8	0.1	5.8	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	7.0	0.5	2.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	34.4	0.0	15.8	10.0	36.9	30.1
LnGrp LOS	C		B	A	D	C
Approach Vol, veh/h		219	1386		145	
Approach Delay, s/veh		34.4	15.5		35.7	
Approach LOS		C	B		D	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	58.5	11.9	18.8	39.8
Change Period (Y+Rc), s	* 5.8	5.4	8.0	5.8
Max Green Setting (Gmax), s	* 91	25.0	30.0	50.0
Max Q Clear Time (g_c+I1), s	0.0	6.6	10.4	23.3
Green Ext Time (p_c), s	0.0	0.4	0.5	10.7

Intersection Summary	
HCM 7th Control Delay, s/veh	19.5
HCM 7th LOS	B

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

FREEWAY MERGE ANALYSIS

File Name:	Merge-OY-PM.xuf
Analyst:	GCW
Agency:	NDOT
Jurisdiction:	NDOT
Date:	
Analysis Year:	Opening Year (2029)
Time Analyzed:	PM Peak Hour
Project Description:	Traditions North
Units:	U.S. Customary

LOS and Performance Measures

Ramp Type	Left-Sided One-Lane	
Density in On-Ramp (Merge) Influence Area, DR	15.1	pc/mi/ln
Level of Service, LOS	B	
Average Flow in Outer Lanes, vOA	-	pc/h/ln
Average Speed in Ramp Influence Area, SR	54.8	mi/h
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h
Average Speed for On-Ramp (Merge) Junction, S	54.8	mi/h
Density Across All Lanes, D	17.2	pc/mi/ln

Step 1: Specify Inputs and Convert Demand Volumes to Demand Flow Rates

Freeway Data		
Number of Freeway Lanes	2	ln
Measured or Base FFS	Measured	
Base Free-Flow Speed, BFFS	-	mi/h
Lane Width	-	ft
Lane Width Adjustment, fLW	-	mi/h
Right-Side Lateral Clearance	-	ft
Right-Side Lateral Clearance Adj., fRLC	-	mi/h
Total Ramp Density, TRD	-	ramps/mi
TRD Adjustment	-	mi/h
Free-Flow Speed, FFS	60.0	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Driver Population SAF	1.000	
Weather Type	Non-Severe Weather	
Weather Type SAF	1.000	
Final Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	60.0	mi/h
Segment Length	1500	ft
C-D Roadway?	Freeway	
Demand Volume, V	1672	veh/h
Peak Hour Factor, PHF	0.97	
Ramp Data		
Number of Ramp Lanes	1	ln
Ramp Free-Flow Speed, SFR	35.0	mi/h
Ramp Side	Left	
Length of First Acceleration Lane, LA or LA1	800	ft
Length of Second Acceleration Lane, LA2	-	ft

Junction Components	Freeway	Ramp	
Demand Volume, V	1672	115	veh/h
Peak Hour Factor, PHF	0.97	0.97	
Percent Total Trucks	2.00	2.00	%
Percent SUTs	-	-	%
Percent TTs	-	-	%
Prop. Total Trucks, PT	0.0200	0.0200	
Heavy Vehicle PCE, ET	2.00	2.00	
Heavy Vehicle Adj., fHV	0.980	0.980	
Terrain Type	Level	Level	

Percent Grade	-	-	%
Grade Length	-	-	mi
Demand Adj. Factor, DAF	1.000	1.000	
Demand Flow Rate, v	1759	121	pc/h

Step 2: Estimate the Approaching Flow Rate in Lanes 1 and 2

Estimating Flow in Lanes 1 and 2 for On-Ramps			
Adjacent Upstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Adjacent Downstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Prop. Freeway Veh. in Lanes 1 and 2, PFM	1.000		
Flow Rate on Freeway, vF	1759	pc/h	
Flow Rate in Lanes 1 and 2, v12	1759	pc/h	

Step 3: Estimate Capacity of Ramp-Freeway Junction and Compare Flow Rates

Capacity Checks

	Actual	Maximum	Violation?
vFO	1880	4600	No
vR	121	2000	No
vR12	1880	4600	No

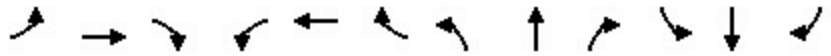
	Freeway	Ramp	
Unadjusted Capacity, cmd	4600	2000	pc/h
Driver Population	All Familiar	All Familiar	
Driver Population CAF	1.000	1.000	
Weather Type	Non-Severe Weather	Non-Severe Weather	
Weather Type CAF	1.000	1.000	
Incident Type	No Incident	-	
Incident Type CAF	1.000	-	
Proportion of CAVs in Traffic Stream	0	-	
Capacity Adjustment Factor for CAVs, CAFCAV	1.000	-	
Final Capacity Adj. Factor, CAF	1.000	1.000	
Final Adjusted Capacity, cmda	4600	2000	pc/h

Step 4: Estimate Density in Ramp Influence Area and Determine LOS

Demand Flow Rate on Ramp, vR	121	pc/h
Flow Rate in Lanes 1 and 2, v12	1759	pc/h
Length of Acceleration Lane, LA	800	ft
Density in On-Ramp Influence Area, DR	15.1	pc/mi/ln
Density in On-Ramp Influence Area, DR	14.8	veh/mi/ln
Level of Service, LOS	B	

Step 5: Estimate Speeds in the Vicinity of Ramp-Freeway Junctions

Freeway Free-Flow Speed, FFS	60.0	mi/h
Ramp Free-Flow Speed, SFR	35.0	mi/h
Length of Acceleration Lane, LA	800	ft
Driver Population	All Familiar	
Driver Population SAF	1.000	
Weather Type	Non-Severe Weather	
Weather Type SAF	1.000	
Final Speed Adjustment Factor, SAF	1.000	
Flow Rate on Freeway, vF	1759	pc/h
Flow Rate in Lanes 1 and 2, v12	1759	pc/h
Total Flow Entering On-Ramp Infl. Area, vR12	1880	pc/h
Number of Outer Lanes on Freeway, NO	0	ln
Speed Index for On-Ramp, MS	0.291	
Average Speed in Ramp Influence Area, SR	54.8	mi/h
Average Flow in Outer Lanes, vOA	-	pc/h/ln
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h
Average Speed for On-Ramp Junction, S	54.8	mi/h
Density Across All Lanes, D	17.2	pc/mi/ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	1537	11	1	1146	243	3	3	5	336	2	205
Future Volume (veh/h)	246	1537	11	1	1146	243	3	3	5	336	2	205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	262	1635	12	1	1219	0	3	3	5	358	0	27
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	310	2120	16	2	1471		6	6	10	469	0	209
Arrive On Green	0.18	0.60	0.60	0.00	0.42	0.00	0.01	0.01	0.01	0.13	0.00	0.13
Sat Flow, veh/h	1753	3559	26	1753	3497	1560	458	458	764	3506	0	1560
Grp Volume(v), veh/h	262	803	844	1	1219	0	11	0	0	358	0	27
Grp Sat Flow(s),veh/h/ln	1753	1749	1836	1753	1749	1560	1680	0	0	1753	0	1560
Q Serve(g_s), s	10.2	24.2	24.3	0.0	21.9	0.0	0.5	0.0	0.0	6.9	0.0	1.1
Cycle Q Clear(g_c), s	10.2	24.2	24.3	0.0	21.9	0.0	0.5	0.0	0.0	6.9	0.0	1.1
Prop In Lane	1.00		0.01	1.00		1.00	0.27		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	310	1042	1094	2	1471		23	0	0	469	0	209
V/C Ratio(X)	0.85	0.77	0.77	0.40	0.83		0.48	0.00	0.00	0.76	0.00	0.13
Avail Cap(c_a), veh/h	435	1190	1249	124	1760		155	0	0	621	0	276
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.1	10.7	10.7	35.2	18.2	0.0	34.5	0.0	0.0	29.5	0.0	26.9
Incr Delay (d2), s/veh	10.4	2.8	2.7	81.0	3.0	0.0	14.4	0.0	0.0	4.0	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	6.6	6.9	0.1	7.5	0.0	0.3	0.0	0.0	3.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.5	13.4	13.3	116.2	21.1	0.0	49.0	0.0	0.0	33.5	0.0	27.2
LnGrp LOS	D	B	B	F	C		D			C		C
Approach Vol, veh/h		1909			1220			11			385	
Approach Delay, s/veh		16.8			21.2			49.0			33.0	
Approach LOS		B			C			D			C	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	5.5	4.6	46.5		13.9	17.0	34.2
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	5.0	48.0		12.5	17.5	35.5
Max Q Clear Time (g_c+I1), s	2.5	2.0	26.3		8.9	12.2	23.9
Green Ext Time (p_c), s	0.0	0.0	11.1		0.5	0.3	5.8

Intersection Summary	
HCM 7th Control Delay, s/veh	20.2
HCM 7th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Traditions North

Appendix F
Future Year LOS Calculations

GCW
ENGINEERS \ SURVEYORS

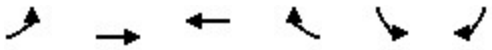
Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	2	105	6	5	1	58	9	1	1	12	3
Future Vol, veh/h	1	2	105	6	5	1	58	9	1	1	12	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	3	140	8	7	1	77	12	1	1	16	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	191	189	18	187	190	13	20	0	0	13	0	0
Stage 1	21	21	-	167	167	-	-	-	-	-	-	-
Stage 2	170	168	-	20	23	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	765	702	1055	769	701	1062	1583	-	-	1592	-	-
Stage 1	993	874	-	830	756	-	-	-	-	-	-	-
Stage 2	827	756	-	994	872	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	719	667	1055	631	666	1062	1583	-	-	1592	-	-
Mov Cap-2 Maneuver	719	667	-	631	666	-	-	-	-	-	-	-
Stage 1	992	873	-	789	719	-	-	-	-	-	-	-
Stage 2	778	718	-	858	872	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.02	10.52	6.3	0.45
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1505	-	-	1039	668	108	-	-
HCM Lane V/C Ratio	0.049	-	-	0.139	0.024	0.001	-	-
HCM Control Delay (s/veh)	7.4	0	-	9	10.5	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.1	0	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	213	0	2981	130	149	542
Future Volume (veh/h)	213	0	2981	130	149	542
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	232	0	3240	32	162	372
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	279	3819	3170	984	305	272
Arrive On Green	0.08	0.00	0.63	0.63	0.17	0.17
Sat Flow, veh/h	3401	5191	5191	1560	1753	1560
Grp Volume(v), veh/h	232	0	3240	32	162	372
Grp Sat Flow(s),veh/h/ln	1700	1675	1675	1560	1753	1560
Q Serve(g_s), s	11.4	0.0	107.2	1.3	14.3	29.6
Cycle Q Clear(g_c), s	11.4	0.0	107.2	1.3	14.3	29.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	279	3819	3170	984	305	272
V/C Ratio(X)	0.83	0.00	1.02	0.03	0.53	1.37
Avail Cap(c_a), veh/h	480	4199	3170	984	305	272
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.8	0.0	31.4	11.8	63.9	70.2
Incr Delay (d2), s/veh	6.3	0.0	21.9	0.0	1.7	187.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	46.1	0.5	6.6	14.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	83.2	0.0	53.3	11.8	65.6	258.0
LnGrp LOS	F		F	B	E	F
Approach Vol, veh/h		232	3272		534	
Approach Delay, s/veh		83.2	52.9		199.7	
Approach LOS		F	D		F	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	134.9	35.0	21.9	113.0
Change Period (Y+Rc), s	* 5.8	5.4	8.0	5.8
Max Green Setting (Gmax), s	* 1.4E+02	29.6	24.0	107.2
Max Q Clear Time (g_c+I1), s	0.0	31.6	13.4	109.2
Green Ext Time (p_c), s	0.0	0.0	0.5	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	74.0
HCM 7th LOS	E

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

FREEWAY MERGE ANALYSIS

File Name:	Merge-Future-AM.xuf
Analyst:	GCW
Agency:	NDOT
Jurisdiction:	NDOT
Date:	
Analysis Year:	Future Year (2049)
Time Analyzed:	AM Peak Hour
Project Description:	Traditions North
Units:	U.S. Customary

LOS and Performance Measures

Ramp Type	Left-Sided One-Lane		
Density in On-Ramp (Merge) Influence Area, DR	15.7	pc/mi/ln	
Level of Service, LOS	B		
Average Flow in Outer Lanes, vOA	-	pc/h/ln	
Average Speed in Ramp Influence Area, SR	54.7	mi/h	
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h	
Average Speed for On-Ramp (Merge) Junction, S	54.7	mi/h	
Density Across All Lanes, D	17.9	pc/mi/ln	

Step 1: Specify Inputs and Convert Demand Volumes to Demand Flow Rates

Freeway Data			
Number of Freeway Lanes	2		ln
Measured or Base FFS	Measured		
Base Free-Flow Speed, BFFS	-		mi/h
Lane Width	-		ft
Lane Width Adjustment, fLW	-		mi/h
Right-Side Lateral Clearance	-		ft
Right-Side Lateral Clearance Adj., fRLC	-		mi/h
Total Ramp Density, TRD	-		ramps/mi
TRD Adjustment	-		mi/h
Free-Flow Speed, FFS	60.0		mi/h
Speed Adjustments			
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Adjusted Free-Flow Speed, FFSadj	60.0		mi/h
Segment Length	1500		ft
C-D Roadway?	Freeway		
Demand Volume, V	1523		veh/h
Peak Hour Factor, PHF	0.92		
Ramp Data			
Number of Ramp Lanes	1		ln
Ramp Free-Flow Speed, SFR	35.0		mi/h
Ramp Side	Left		
Length of First Acceleration Lane, LA or LA1	800		ft
Length of Second Acceleration Lane, LA2	-		ft
Junction Components	Freeway	Ramp	
Demand Volume, V	1523	149	veh/h
Peak Hour Factor, PHF	0.92	0.92	
Percent Total Trucks	8.00	2.00	%
Percent SUTs	-	-	%
Percent TTs	-	-	%
Prop. Total Trucks, PT	0.0800	0.0200	
Heavy Vehicle PCE, ET	2.00	2.00	
Heavy Vehicle Adj., fHV	0.926	0.980	
Terrain Type	Level	Level	

Percent Grade	-	-	%
Grade Length	-	-	mi
Demand Adj. Factor, DAF	1.000	1.000	
Demand Flow Rate, v	1788	165	pc/h

Step 2: Estimate the Approaching Flow Rate in Lanes 1 and 2

Estimating Flow in Lanes 1 and 2 for On-Ramps			
Adjacent Upstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Adjacent Downstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Prop. Freeway Veh. in Lanes 1 and 2, PFM	1.000		
Flow Rate on Freeway, vF	1788	pc/h	
Flow Rate in Lanes 1 and 2, v12	1788	pc/h	

Step 3: Estimate Capacity of Ramp-Freeway Junction and Compare Flow Rates

Capacity Checks			
	Actual	Maximum	Violation?
vFO	1953	4600	No
vR	165	2000	No
vR12	1953	4600	No

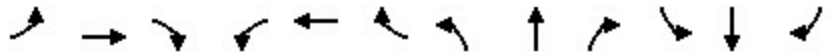
	Freeway	Ramp	
Unadjusted Capacity, cmd	4600	2000	pc/h
Driver Population	All Familiar	All Familiar	
Driver Population CAF	1.000	1.000	
Weather Type	Non-Severe Weather	Non-Severe Weather	
Weather Type CAF	1.000	1.000	
Incident Type	No Incident	-	
Incident Type CAF	1.000	-	
Proportion of CAVs in Traffic Stream	0	-	
Capacity Adjustment Factor for CAVs, CAFCAV	1.000	-	
Final Capacity Adj. Factor, CAF	1.000	1.000	
Final Adjusted Capacity, cmda	4600	2000	pc/h

Step 4: Estimate Density in Ramp Influence Area and Determine LOS

Demand Flow Rate on Ramp, vR	165	pc/h	
Flow Rate in Lanes 1 and 2, v12	1788	pc/h	
Length of Acceleration Lane, LA	800	ft	
Density in On-Ramp Influence Area, DR	15.7	pc/mi/ln	
Density in On-Ramp Influence Area, DR	15.4	veh/mi/ln	
Level of Service, LOS	B		

Step 5: Estimate Speeds in the Vicinity of Ramp-Freeway Junctions

Freeway Free-Flow Speed, FFS	60.0	mi/h	
Ramp Free-Flow Speed, SFR	35.0	mi/h	
Length of Acceleration Lane, LA	800	ft	
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Flow Rate on Freeway, vF	1788	pc/h	
Flow Rate in Lanes 1 and 2, v12	1788	pc/h	
Total Flow Entering On-Ramp Infl. Area, vR12	1953	pc/h	
Number of Outer Lanes on Freeway, NO	0	ln	
Speed Index for On-Ramp, MS	0.292		
Average Speed in Ramp Influence Area, SR	54.7	mi/h	
Average Flow in Outer Lanes, vOA	-	pc/h/ln	
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h	
Average Speed for On-Ramp Junction, S	54.7	mi/h	
Density Across All Lanes, D	17.9	pc/mi/ln	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	1418	15	28	2761	367	34	9	11	286	7	320
Future Volume (veh/h)	225	1418	15	28	2761	367	34	9	11	286	7	320
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	239	1509	16	30	2937	0	36	10	0	309	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	258	3739	1161	39	3111		50	52		353	0	
Arrive On Green	0.15	0.74	0.74	0.02	0.62	0.00	0.03	0.03	0.00	0.10	0.00	0.00
Sat Flow, veh/h	1753	5025	1560	1753	5025	1560	1753	1841	1560	3506	0	1560
Grp Volume(v), veh/h	239	1509	16	30	2937	0	36	10	0	309	0	0
Grp Sat Flow(s),veh/h/ln	1753	1675	1560	1753	1675	1560	1753	1841	1560	1753	0	1560
Q Serve(g_s), s	23.2	18.9	0.5	2.9	92.2	0.0	3.5	0.9	0.0	15.0	0.0	0.0
Cycle Q Clear(g_c), s	23.2	18.9	0.5	2.9	92.2	0.0	3.5	0.9	0.0	15.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	3739	1161	39	3111		50	52		353	0	
V/C Ratio(X)	0.93	0.40	0.01	0.77	0.94		0.72	0.19		0.87	0.00	
Avail Cap(c_a), veh/h	280	3739	1161	90	3139		66	70		418	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	72.5	8.1	5.7	83.7	30.0	0.0	82.9	81.7	0.0	76.3	0.0	0.0
Incr Delay (d2), s/veh	33.6	0.1	0.0	27.0	6.9	0.0	22.5	1.7	0.0	16.4	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	5.9	0.1	1.6	35.5	0.0	1.9	0.5	0.0	7.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	106.1	8.1	5.7	110.8	36.9	0.0	105.4	83.4	0.0	92.7	0.0	0.0
LnGrp LOS	F	A	A	F	D		F	F		F		
Approach Vol, veh/h		1764			2967			46			309	
Approach Delay, s/veh		21.4			37.7			100.7			92.7	
Approach LOS		C			D			F			F	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	9.4	8.3	132.6		21.8	29.8	111.1
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	8.8	126.2		20.5	27.5	107.5
Max Q Clear Time (g_c+I1), s	5.5	4.9	20.9		17.0	25.2	94.2
Green Ext Time (p_c), s	0.0	0.0	14.5		0.4	0.2	12.3

Intersection Summary	
HCM 7th Control Delay, s/veh	35.9
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Traditions North

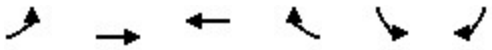
Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	46	2	1	1	75	25	2	1	12	1
Future Vol, veh/h	1	1	46	2	1	1	75	25	2	1	12	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	54	2	1	1	88	29	2	1	14	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	224	225	15	224	225	31	15	0	0	32	0	0
Stage 1	17	17	-	207	207	-	-	-	-	-	-	-
Stage 2	206	208	-	17	18	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	732	674	1065	731	674	1044	1602	-	-	1581	-	-
Stage 1	1002	881	-	795	731	-	-	-	-	-	-	-
Stage 2	796	730	-	1002	881	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	689	636	1065	654	636	1044	1602	-	-	1581	-	-
Mov Cap-2 Maneuver	689	636	-	654	636	-	-	-	-	-	-	-
Stage 1	1002	881	-	750	690	-	-	-	-	-	-	-
Stage 2	749	689	-	949	880	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.67	10.06	5.42	0.52
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1304	-	-	1039	716	127	-	-
HCM Lane V/C Ratio	0.055	-	-	0.054	0.007	0.001	-	-
HCM Control Delay (s/veh)	7.4	0	-	8.7	10.1	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0	0	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	546	0	2237	135	219	283
Future Volume (veh/h)	546	0	2237	135	219	283
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	563	0	2306	36	226	34
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	580	3718	2405	747	261	232
Arrive On Green	0.17	0.00	0.47	0.47	0.15	0.15
Sat Flow, veh/h	3456	5274	5274	1585	1781	1585
Grp Volume(v), veh/h	563	0	2306	36	226	34
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1585	1781	1585
Q Serve(g_s), s	14.5	0.0	39.0	1.1	11.1	1.7
Cycle Q Clear(g_c), s	14.5	0.0	39.0	1.1	11.1	1.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	580	3718	2405	747	261	232
V/C Ratio(X)	0.97	0.00	0.96	0.05	0.87	0.15
Avail Cap(c_a), veh/h	580	3882	2409	748	271	241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	0.0	22.8	12.8	37.3	33.3
Incr Delay (d2), s/veh	30.2	0.0	10.4	0.0	23.6	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	15.7	0.4	6.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	67.2	0.0	33.2	12.8	60.9	33.6
LnGrp LOS	E		C	B	E	C
Approach Vol, veh/h		563	2342		260	
Approach Delay, s/veh		67.2	32.9		57.3	
Approach LOS		E	C		E	

Timer - Assigned Phs		4		6	7	8
Phs Duration (G+Y+Rc), s		70.9		18.5	23.0	47.9
Change Period (Y+Rc), s		* 5.8		5.4	8.0	5.8
Max Green Setting (Gmax), s		* 68		13.6	15.0	42.2
Max Q Clear Time (g_c+I1), s		0.0		13.1	16.5	41.0
Green Ext Time (p_c), s		0.0		0.0	0.0	1.2

Intersection Summary	
HCM 7th Control Delay, s/veh	41.0
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

FREEWAY MERGE ANALYSIS

File Name:	Merge-Future-PM.xuf
Analyst:	GCW
Agency:	NDOT
Jurisdiction:	NDOT
Date:	
Analysis Year:	Future Year (2049)
Time Analyzed:	PM Peak Hour
Project Description:	Traditions North
Units:	U.S. Customary

LOS and Performance Measures

Ramp Type	Left-Sided One-Lane		
Density in On-Ramp (Merge) Influence Area, DR	28.8	pc/mi/ln	
Level of Service, LOS	D		
Average Flow in Outer Lanes, vOA	-	pc/h/ln	
Average Speed in Ramp Influence Area, SR	52.5	mi/h	
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h	
Average Speed for On-Ramp (Merge) Junction, S	52.5	mi/h	
Density Across All Lanes, D	34.7	pc/mi/ln	

Step 1: Specify Inputs and Convert Demand Volumes to Demand Flow Rates

Freeway Data			
Number of Freeway Lanes	2		ln
Measured or Base FFS	Measured		
Base Free-Flow Speed, BFFS	-		mi/h
Lane Width	-		ft
Lane Width Adjustment, fLW	-		mi/h
Right-Side Lateral Clearance	-		ft
Right-Side Lateral Clearance Adj., fRLC	-		mi/h
Total Ramp Density, TRD	-		ramps/mi
TRD Adjustment	-		mi/h
Free-Flow Speed, FFS	60.0		mi/h
Speed Adjustments			
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Adjusted Free-Flow Speed, FFSadj	60.0		mi/h
Segment Length	1500		ft
C-D Roadway?	Freeway		
Demand Volume, V	3242		veh/h
Peak Hour Factor, PHF	0.97		
Ramp Data			
Number of Ramp Lanes	1		ln
Ramp Free-Flow Speed, SFR	35.0		mi/h
Ramp Side	Left		
Length of First Acceleration Lane, LA or LA1	800		ft
Length of Second Acceleration Lane, LA2	-		ft
Junction Components	Freeway	Ramp	
Demand Volume, V	3242	219	veh/h
Peak Hour Factor, PHF	0.97	0.97	
Percent Total Trucks	2.00	2.00	%
Percent SUTs	-	-	%
Percent TTs	-	-	%
Prop. Total Trucks, PT	0.0200	0.0200	
Heavy Vehicle PCE, ET	2.00	2.00	
Heavy Vehicle Adj., fHV	0.980	0.980	
Terrain Type	Level	Level	

Percent Grade	-	-	%
Grade Length	-	-	mi
Demand Adj. Factor, DAF	1.000	1.000	
Demand Flow Rate, v	3410	230	pc/h

Step 2: Estimate the Approaching Flow Rate in Lanes 1 and 2

Estimating Flow in Lanes 1 and 2 for On-Ramps			
Adjacent Upstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Adjacent Downstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Prop. Freeway Veh. in Lanes 1 and 2, PFM	1.000		
Flow Rate on Freeway, vF	3410	pc/h	
Flow Rate in Lanes 1 and 2, v12	3410	pc/h	

Step 3: Estimate Capacity of Ramp-Freeway Junction and Compare Flow Rates

Capacity Checks			
	Actual	Maximum	Violation?
vFO	3640	4600	No
vR	230	2000	No
vR12	3640	4600	No

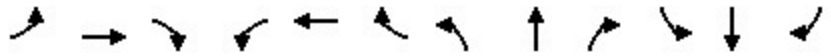
	Freeway	Ramp	
Unadjusted Capacity, cmd	4600	2000	pc/h
Driver Population	All Familiar	All Familiar	
Driver Population CAF	1.000	1.000	
Weather Type	Non-Severe Weather	Non-Severe Weather	
Weather Type CAF	1.000	1.000	
Incident Type	No Incident	-	
Incident Type CAF	1.000	-	
Proportion of CAVs in Traffic Stream	0	-	
Capacity Adjustment Factor for CAVs, CAFCAV	1.000	-	
Final Capacity Adj. Factor, CAF	1.000	1.000	
Final Adjusted Capacity, cmda	4600	2000	pc/h

Step 4: Estimate Density in Ramp Influence Area and Determine LOS

Demand Flow Rate on Ramp, vR	230	pc/h	
Flow Rate in Lanes 1 and 2, v12	3410	pc/h	
Length of Acceleration Lane, LA	800	ft	
Density in On-Ramp Influence Area, DR	28.8	pc/mi/ln	
Density in On-Ramp Influence Area, DR	28.2	veh/mi/ln	
Level of Service, LOS	D		

Step 5: Estimate Speeds in the Vicinity of Ramp-Freeway Junctions

Freeway Free-Flow Speed, FFS	60.0	mi/h	
Ramp Free-Flow Speed, SFR	35.0	mi/h	
Length of Acceleration Lane, LA	800	ft	
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Flow Rate on Freeway, vF	3410	pc/h	
Flow Rate in Lanes 1 and 2, v12	3410	pc/h	
Total Flow Entering On-Ramp Infl. Area, vR12	3640	pc/h	
Number of Outer Lanes on Freeway, NO	0	ln	
Speed Index for On-Ramp, MS	0.414		
Average Speed in Ramp Influence Area, SR	52.5	mi/h	
Average Flow in Outer Lanes, vOA	-	pc/h/ln	
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h	
Average Speed for On-Ramp Junction, S	52.5	mi/h	
Density Across All Lanes, D	34.7	pc/mi/ln	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	383	3053	22	35	2046	359	14	8	11	395	8	280
Future Volume (veh/h)	383	3053	22	35	2046	359	14	8	11	395	8	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	407	3248	23	37	2177	0	15	9	0	426	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	432	3472	1078	47	2368		38	39		474	0	
Arrive On Green	0.25	0.69	0.69	0.03	0.47	0.00	0.02	0.02	0.00	0.14	0.00	0.00
Sat Flow, veh/h	1753	5025	1560	1753	5025	1560	1753	1841	1560	3506	0	1560
Grp Volume(v), veh/h	407	3248	23	37	2177	0	15	9	0	426	0	0
Grp Sat Flow(s),veh/h/ln	1753	1675	1560	1753	1675	1560	1753	1841	1560	1753	0	1560
Q Serve(g_s), s	32.7	81.1	0.7	3.0	58.0	0.0	1.2	0.7	0.0	17.2	0.0	0.0
Cycle Q Clear(g_c), s	32.7	81.1	0.7	3.0	58.0	0.0	1.2	0.7	0.0	17.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	432	3472	1078	47	2368		38	39		474	0	
V/C Ratio(X)	0.94	0.94	0.02	0.78	0.92		0.40	0.23		0.90	0.00	
Avail Cap(c_a), veh/h	507	3501	1087	61	2368		79	83		501	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	53.0	19.4	7.0	69.4	35.4	0.0	69.3	69.1	0.0	61.1	0.0	0.0
Incr Delay (d2), s/veh	24.1	5.6	0.0	38.0	6.4	0.0	6.7	2.9	0.0	18.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.7	27.3	0.2	1.8	23.3	0.0	0.6	0.4	0.0	8.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	77.1	25.0	7.0	107.4	41.8	0.0	76.0	72.0	0.0	79.4	0.0	0.0
LnGrp LOS	E	C	A	F	D		E	E		E		
Approach Vol, veh/h		3678			2214			24			426	
Approach Delay, s/veh		30.6			42.9			74.5			79.4	
Approach LOS		C			D			E			E	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	7.6	8.4	103.7		23.9	39.9	72.1
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	5.0	100.0		20.5	41.5	63.5
Max Q Clear Time (g_c+I1), s	3.2	5.0	83.1		19.2	34.7	60.0
Green Ext Time (p_c), s	0.0	0.0	16.1		0.2	0.7	3.1

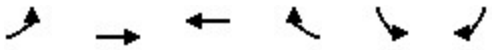
Intersection Summary	
HCM 7th Control Delay, s/veh	38.4
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Traditions North



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	213	0	2980	130	149	542
Future Volume (veh/h)	213	0	2980	130	149	542
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	232	0	3239	32	162	588
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	273	4002	3370	1046	245	605
Arrive On Green	0.08	0.00	0.67	0.67	0.14	0.14
Sat Flow, veh/h	3401	5191	5191	1560	1753	2745
Grp Volume(v), veh/h	232	0	3239	32	162	588
Grp Sat Flow(s),veh/h/ln	1700	1675	1675	1560	1753	1373
Q Serve(g_s), s	11.8	0.0	105.0	1.2	15.4	24.6
Cycle Q Clear(g_c), s	11.8	0.0	105.0	1.2	15.4	24.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	273	4002	3370	1046	245	605
V/C Ratio(X)	0.85	0.00	0.96	0.03	0.66	0.97
Avail Cap(c_a), veh/h	348	4202	3379	1049	245	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	79.8	0.0	26.8	9.7	71.6	68.0
Incr Delay (d2), s/veh	14.6	0.0	8.4	0.0	6.4	29.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	40.7	0.4	7.5	28.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	94.4	0.0	35.2	9.8	78.0	97.7
LnGrp LOS	F		D	A	E	F
Approach Vol, veh/h		232	3271		750	
Approach Delay, s/veh		94.4	35.0		93.4	
Approach LOS		F	C		F	

Timer - Assigned Phs		4		6	7	8
Phs Duration (G+Y+Rc), s		145.8		30.0	22.1	123.7
Change Period (Y+Rc), s		* 5.8		5.4	8.0	5.8
Max Green Setting (Gmax), s		* 1.5E+02		24.6	18.0	118.2
Max Q Clear Time (g_c+I1), s		0.0		26.6	13.8	107.0
Green Ext Time (p_c), s		0.0		0.0	0.3	10.9

Intersection Summary	
HCM 7th Control Delay, s/veh	48.5
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Traditions North
With dual right-turn lanes

FREEWAY MERGE ANALYSIS

File Name:	Merge-Future-AM.xuf
Analyst:	GCW
Agency:	NDOT
Jurisdiction:	NDOT
Date:	
Analysis Year:	Future Year (2049)
Time Analyzed:	AM Peak Hour
Project Description:	Traditions North
Units:	U.S. Customary

LOS and Performance Measures

Ramp Type	Left-Sided One-Lane		
Density in On-Ramp (Merge) Influence Area, DR	15.7	pc/mi/ln	
Level of Service, LOS	B		
Average Flow in Outer Lanes, vOA	-	pc/h/ln	
Average Speed in Ramp Influence Area, SR	54.7	mi/h	
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h	
Average Speed for On-Ramp (Merge) Junction, S	54.7	mi/h	
Density Across All Lanes, D	17.9	pc/mi/ln	

Step 1: Specify Inputs and Convert Demand Volumes to Demand Flow Rates

Freeway Data			
Number of Freeway Lanes	2		ln
Measured or Base FFS	Measured		
Base Free-Flow Speed, BFFS	-		mi/h
Lane Width	-		ft
Lane Width Adjustment, fLW	-		mi/h
Right-Side Lateral Clearance	-		ft
Right-Side Lateral Clearance Adj., fRLC	-		mi/h
Total Ramp Density, TRD	-		ramps/mi
TRD Adjustment	-		mi/h
Free-Flow Speed, FFS	60.0		mi/h
Speed Adjustments			
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Adjusted Free-Flow Speed, FFSadj	60.0		mi/h
Segment Length	1500		ft
C-D Roadway?	Freeway		
Demand Volume, V	1523		veh/h
Peak Hour Factor, PHF	0.92		
Ramp Data			
Number of Ramp Lanes	1		ln
Ramp Free-Flow Speed, SFR	35.0		mi/h
Ramp Side	Left		
Length of First Acceleration Lane, LA or LA1	800		ft
Length of Second Acceleration Lane, LA2	-		ft
Junction Components	Freeway	Ramp	
Demand Volume, V	1523	149	veh/h
Peak Hour Factor, PHF	0.92	0.92	
Percent Total Trucks	8.00	2.00	%
Percent SUTs	-	-	%
Percent TTs	-	-	%
Prop. Total Trucks, PT	0.0800	0.0200	
Heavy Vehicle PCE, ET	2.00	2.00	
Heavy Vehicle Adj., fHV	0.926	0.980	
Terrain Type	Level	Level	

Percent Grade	-	-	%
Grade Length	-	-	mi
Demand Adj. Factor, DAF	1.000	1.000	
Demand Flow Rate, v	1788	165	pc/h

Step 2: Estimate the Approaching Flow Rate in Lanes 1 and 2

Estimating Flow in Lanes 1 and 2 for On-Ramps			
Adjacent Upstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Adjacent Downstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Prop. Freeway Veh. in Lanes 1 and 2, PFM	1.000		
Flow Rate on Freeway, vF	1788	pc/h	
Flow Rate in Lanes 1 and 2, v12	1788	pc/h	

Step 3: Estimate Capacity of Ramp-Freeway Junction and Compare Flow Rates

Capacity Checks

	Actual	Maximum	Violation?
vFO	1953	4600	No
vR	165	2000	No
vR12	1953	4600	No

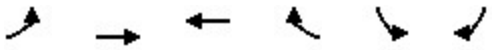
	Freeway	Ramp	
Unadjusted Capacity, cmd	4600	2000	pc/h
Driver Population	All Familiar	All Familiar	
Driver Population CAF	1.000	1.000	
Weather Type	Non-Severe Weather	Non-Severe Weather	
Weather Type CAF	1.000	1.000	
Incident Type	No Incident	-	
Incident Type CAF	1.000	-	
Proportion of CAVs in Traffic Stream	0	-	
Capacity Adjustment Factor for CAVs, CAFCAV	1.000	-	
Final Capacity Adj. Factor, CAF	1.000	1.000	
Final Adjusted Capacity, cmda	4600	2000	pc/h

Step 4: Estimate Density in Ramp Influence Area and Determine LOS

Demand Flow Rate on Ramp, vR	165	pc/h
Flow Rate in Lanes 1 and 2, v12	1788	pc/h
Length of Acceleration Lane, LA	800	ft
Density in On-Ramp Influence Area, DR	15.7	pc/mi/ln
Density in On-Ramp Influence Area, DR	15.4	veh/mi/ln
Level of Service, LOS	B	

Step 5: Estimate Speeds in the Vicinity of Ramp-Freeway Junctions

Freeway Free-Flow Speed, FFS	60.0	mi/h
Ramp Free-Flow Speed, SFR	35.0	mi/h
Length of Acceleration Lane, LA	800	ft
Driver Population	All Familiar	
Driver Population SAF	1.000	
Weather Type	Non-Severe Weather	
Weather Type SAF	1.000	
Final Speed Adjustment Factor, SAF	1.000	
Flow Rate on Freeway, vF	1788	pc/h
Flow Rate in Lanes 1 and 2, v12	1788	pc/h
Total Flow Entering On-Ramp Infl. Area, vR12	1953	pc/h
Number of Outer Lanes on Freeway, NO	0	ln
Speed Index for On-Ramp, MS	0.292	
Average Speed in Ramp Influence Area, SR	54.7	mi/h
Average Flow in Outer Lanes, vOA	-	pc/h/ln
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h
Average Speed for On-Ramp Junction, S	54.7	mi/h
Density Across All Lanes, D	17.9	pc/mi/ln



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	546	0	2206	135	219	283
Future Volume (veh/h)	546	0	2206	135	219	283
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	563	0	2274	36	226	291
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	631	3846	2553	792	263	922
Arrive On Green	0.18	0.00	0.50	0.50	0.15	0.15
Sat Flow, veh/h	3456	5274	5274	1585	1781	2790
Grp Volume(v), veh/h	563	0	2274	36	226	291
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1585	1781	1395
Q Serve(g_s), s	18.0	0.0	45.5	1.3	14.0	8.8
Cycle Q Clear(g_c), s	18.0	0.0	45.5	1.3	14.0	8.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	631	3846	2553	792	263	922
V/C Ratio(X)	0.89	0.00	0.89	0.05	0.86	0.32
Avail Cap(c_a), veh/h	702	4147	2623	814	308	992
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.2	0.0	25.5	14.5	47.1	28.3
Incr Delay (d2), s/veh	12.8	0.0	4.2	0.0	18.6	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	0.0	17.6	0.5	7.6	7.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	58.0	0.0	29.7	14.5	65.7	28.5
LnGrp LOS	E		C	B	E	C
Approach Vol, veh/h		563	2310		517	
Approach Delay, s/veh		58.0	29.5		44.8	
Approach LOS		E	C		D	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	91.1	22.2	28.7	62.4
Change Period (Y+Rc), s	* 5.8	5.4	8.0	5.8
Max Green Setting (Gmax), s	* 92	19.6	23.0	58.2
Max Q Clear Time (g_c+I1), s	0.0	16.0	20.0	47.5
Green Ext Time (p_c), s	0.0	0.7	0.7	9.1

Intersection Summary	
HCM 7th Control Delay, s/veh	36.6
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Traditions North
With dual right-turn lanes

FREEWAY MERGE ANALYSIS

File Name:	Merge-Future-PM.xuf
Analyst:	GCW
Agency:	NDOT
Jurisdiction:	NDOT
Date:	
Analysis Year:	Future Year (2049)
Time Analyzed:	PM Peak Hour
Project Description:	Traditions North
Units:	U.S. Customary

LOS and Performance Measures

Ramp Type	Left-Sided One-Lane		
Density in On-Ramp (Merge) Influence Area, DR	28.8	pc/mi/ln	
Level of Service, LOS	D		
Average Flow in Outer Lanes, vOA	-	pc/h/ln	
Average Speed in Ramp Influence Area, SR	52.5	mi/h	
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h	
Average Speed for On-Ramp (Merge) Junction, S	52.5	mi/h	
Density Across All Lanes, D	34.7	pc/mi/ln	

Step 1: Specify Inputs and Convert Demand Volumes to Demand Flow Rates

Freeway Data			
Number of Freeway Lanes	2		ln
Measured or Base FFS	Measured		
Base Free-Flow Speed, BFFS	-		mi/h
Lane Width	-		ft
Lane Width Adjustment, fLW	-		mi/h
Right-Side Lateral Clearance	-		ft
Right-Side Lateral Clearance Adj., fRLC	-		mi/h
Total Ramp Density, TRD	-		ramps/mi
TRD Adjustment	-		mi/h
Free-Flow Speed, FFS	60.0		mi/h
Speed Adjustments			
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Adjusted Free-Flow Speed, FFSadj	60.0		mi/h
Segment Length	1500		ft
C-D Roadway?	Freeway		
Demand Volume, V	3242		veh/h
Peak Hour Factor, PHF	0.97		
Ramp Data			
Number of Ramp Lanes	1		ln
Ramp Free-Flow Speed, SFR	35.0		mi/h
Ramp Side	Left		
Length of First Acceleration Lane, LA or LA1	800		ft
Length of Second Acceleration Lane, LA2	-		ft
Junction Components	Freeway	Ramp	
Demand Volume, V	3242	219	veh/h
Peak Hour Factor, PHF	0.97	0.97	
Percent Total Trucks	2.00	2.00	%
Percent SUTs	-	-	%
Percent TTs	-	-	%
Prop. Total Trucks, PT	0.0200	0.0200	
Heavy Vehicle PCE, ET	2.00	2.00	
Heavy Vehicle Adj., fHV	0.980	0.980	
Terrain Type	Level	Level	

Percent Grade	-	-	%
Grade Length	-	-	mi
Demand Adj. Factor, DAF	1.000	1.000	
Demand Flow Rate, v	3410	230	pc/h

Step 2: Estimate the Approaching Flow Rate in Lanes 1 and 2

Estimating Flow in Lanes 1 and 2 for On-Ramps			
Adjacent Upstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Adjacent Downstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Prop. Freeway Veh. in Lanes 1 and 2, PFM	1.000		
Flow Rate on Freeway, vF	3410	pc/h	
Flow Rate in Lanes 1 and 2, v12	3410	pc/h	

Step 3: Estimate Capacity of Ramp-Freeway Junction and Compare Flow Rates

Capacity Checks

	Actual	Maximum	Violation?
vFO	3640	4600	No
vR	230	2000	No
vR12	3640	4600	No

	Freeway	Ramp	
Unadjusted Capacity, cmd	4600	2000	pc/h
Driver Population	All Familiar	All Familiar	
Driver Population CAF	1.000	1.000	
Weather Type	Non-Severe Weather	Non-Severe Weather	
Weather Type CAF	1.000	1.000	
Incident Type	No Incident	-	
Incident Type CAF	1.000	-	
Proportion of CAVs in Traffic Stream	0	-	
Capacity Adjustment Factor for CAVs, CAFCAV	1.000	-	
Final Capacity Adj. Factor, CAF	1.000	1.000	
Final Adjusted Capacity, cmda	4600	2000	pc/h

Step 4: Estimate Density in Ramp Influence Area and Determine LOS

Demand Flow Rate on Ramp, vR	230	pc/h	
Flow Rate in Lanes 1 and 2, v12	3410	pc/h	
Length of Acceleration Lane, LA	800	ft	
Density in On-Ramp Influence Area, DR	28.8	pc/mi/ln	
Density in On-Ramp Influence Area, DR	28.2	veh/mi/ln	
Level of Service, LOS	D		

Step 5: Estimate Speeds in the Vicinity of Ramp-Freeway Junctions

Freeway Free-Flow Speed, FFS	60.0	mi/h	
Ramp Free-Flow Speed, SFR	35.0	mi/h	
Length of Acceleration Lane, LA	800	ft	
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Flow Rate on Freeway, vF	3410	pc/h	
Flow Rate in Lanes 1 and 2, v12	3410	pc/h	
Total Flow Entering On-Ramp Infl. Area, vR12	3640	pc/h	
Number of Outer Lanes on Freeway, NO	0	ln	
Speed Index for On-Ramp, MS	0.414		
Average Speed in Ramp Influence Area, SR	52.5	mi/h	
Average Flow in Outer Lanes, vOA	-	pc/h/ln	
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h	
Average Speed for On-Ramp Junction, S	52.5	mi/h	
Density Across All Lanes, D	34.7	pc/mi/ln	

Appendix G

Opening Year Plus Project LOS Calculations

GCW

ENGINEERS \ SURVEYORS

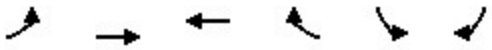
Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	2	105	5	4	1	55	8	1	1	11	3
Future Vol, veh/h	1	2	105	5	4	1	55	8	1	1	11	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	3	140	7	5	1	73	11	1	1	15	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	179	178	17	177	179	11	19	0	0	12	0	0
Stage 1	19	19	-	158	158	-	-	-	-	-	-	-
Stage 2	160	159	-	19	21	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	778	712	1057	781	711	1064	1585	-	-	1594	-	-
Stage 1	994	875	-	840	763	-	-	-	-	-	-	-
Stage 2	837	763	-	995	874	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	735	678	1057	643	677	1064	1585	-	-	1594	-	-
Mov Cap-2 Maneuver	735	678	-	643	677	-	-	-	-	-	-	-
Stage 1	994	875	-	800	728	-	-	-	-	-	-	-
Stage 2	792	727	-	860	873	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.01	10.37	6.34	0.48
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1513	-	-	1042	684	115	-	-
HCM Lane V/C Ratio	0.046	-	-	0.138	0.019	0.001	-	-
HCM Control Delay (s/veh)	7.4	0	-	9	10.4	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.1	0	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	87	0	1688	55	65	279
Future Volume (veh/h)	87	0	1688	55	65	279
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	95	0	1835	60	71	211
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	123	2507	1955	872	282	251
Arrive On Green	0.07	0.00	0.56	0.56	0.16	0.16
Sat Flow, veh/h	1753	3589	3589	1560	1753	1560
Grp Volume(v), veh/h	95	0	1835	60	71	211
Grp Sat Flow(s),veh/h/ln	1753	1749	1749	1560	1753	1560
Q Serve(g_s), s	4.9	0.0	44.5	1.6	3.2	12.0
Cycle Q Clear(g_c), s	4.9	0.0	44.5	1.6	3.2	12.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	123	2507	1955	872	282	251
V/C Ratio(X)	0.77	0.00	0.94	0.07	0.25	0.84
Avail Cap(c_a), veh/h	537	3473	1989	887	479	427
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.8	0.0	18.7	9.2	33.6	37.2
Incr Delay (d2), s/veh	9.7	0.0	9.3	0.0	0.5	7.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	17.3	0.5	1.4	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	51.4	0.0	28.0	9.3	34.0	44.7
LnGrp LOS	D		C	A	C	D
Approach Vol, veh/h		95	1895		282	
Approach Delay, s/veh		51.4	27.4		42.0	
Approach LOS		D	C		D	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			71.3		20.1	14.4	56.9
Change Period (Y+Rc), s			* 5.8		5.4	8.0	5.8
Max Green Setting (Gmax), s			* 91		25.0	28.0	52.0
Max Q Clear Time (g_c+I1), s			0.0		14.0	6.9	46.5
Green Ext Time (p_c), s			0.0		0.7	0.2	4.6

Intersection Summary	
HCM 7th Control Delay, s/veh	30.2
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

FREEWAY MERGE ANALYSIS

File Name:	Merge-OYPP-AM.xuf
Analyst:	GCW
Agency:	NDOT
Jurisdiction:	NDOT
Date:	
Analysis Year:	Opening Year Plus Project (2029)
Time Analyzed:	AM Peak Hour
Project Description:	Traditions North
Units:	U.S. Customary

LOS and Performance Measures

Ramp Type	Left-Sided One-Lane	
Density in On-Ramp (Merge) Influence Area, DR	10.8	pc/mi/ln
Level of Service, LOS	B	
Average Flow in Outer Lanes, vOA	-	pc/h/ln
Average Speed in Ramp Influence Area, SR	55.0	mi/h
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h
Average Speed for On-Ramp (Merge) Junction, S	55.0	mi/h
Density Across All Lanes, D	12.1	pc/mi/ln

Step 1: Specify Inputs and Convert Demand Volumes to Demand Flow Rates

Freeway Data			
Number of Freeway Lanes	2		ln
Measured or Base FFS	Measured		
Base Free-Flow Speed, BFFS	-		mi/h
Lane Width	-		ft
Lane Width Adjustment, fLW	-		mi/h
Right-Side Lateral Clearance	-		ft
Right-Side Lateral Clearance Adj., fRLC	-		mi/h
Total Ramp Density, TRD	-		ramps/mi
TRD Adjustment	-		mi/h
Free-Flow Speed, FFS	60.0		mi/h
Speed Adjustments			
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Adjusted Free-Flow Speed, FFSadj	60.0		mi/h
Segment Length	1500		ft
C-D Roadway?	Freeway		
Demand Volume, V	1069		veh/h
Peak Hour Factor, PHF	0.92		
Ramp Data			
Number of Ramp Lanes	1		ln
Ramp Free-Flow Speed, SFR	35.0		mi/h
Ramp Side	Left		
Length of First Acceleration Lane, LA or LA1	800		ft
Length of Second Acceleration Lane, LA2	-		ft
Junction Components	Freeway	Ramp	
Demand Volume, V	1069	65	veh/h
Peak Hour Factor, PHF	0.92	0.92	
Percent Total Trucks	8.00	2.00	%
Percent SUTs	-	-	%
Percent TTs	-	-	%
Prop. Total Trucks, PT	0.0800	0.0200	
Heavy Vehicle PCE, ET	2.00	2.00	
Heavy Vehicle Adj., fHV	0.926	0.980	
Terrain Type	Level	Level	

Percent Grade	-	-	%
Grade Length	-	-	mi
Demand Adj. Factor, DAF	1.000	1.000	
Demand Flow Rate, v	1255	72	pc/h

Step 2: Estimate the Approaching Flow Rate in Lanes 1 and 2

Estimating Flow in Lanes 1 and 2 for On-Ramps			
Adjacent Upstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Adjacent Downstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Prop. Freeway Veh. in Lanes 1 and 2, PFM	1.000		
Flow Rate on Freeway, vF	1255	pc/h	
Flow Rate in Lanes 1 and 2, v12	1255	pc/h	

Step 3: Estimate Capacity of Ramp-Freeway Junction and Compare Flow Rates

Capacity Checks			
	Actual	Maximum	Violation?
vFO	1327	4600	No
vR	72	2000	No
vR12	1327	4600	No

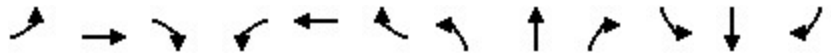
	Freeway	Ramp	
Unadjusted Capacity, cmd	4600	2000	pc/h
Driver Population	All Familiar	All Familiar	
Driver Population CAF	1.000	1.000	
Weather Type	Non-Severe Weather	Non-Severe Weather	
Weather Type CAF	1.000	1.000	
Incident Type	No Incident	-	
Incident Type CAF	1.000	-	
Proportion of CAVs in Traffic Stream	0	-	
Capacity Adjustment Factor for CAVs, CAFCAV	1.000	-	
Final Capacity Adj. Factor, CAF	1.000	1.000	
Final Adjusted Capacity, cmda	4600	2000	pc/h

Step 4: Estimate Density in Ramp Influence Area and Determine LOS

Demand Flow Rate on Ramp, vR	72	pc/h	
Flow Rate in Lanes 1 and 2, v12	1255	pc/h	
Length of Acceleration Lane, LA	800	ft	
Density in On-Ramp Influence Area, DR	10.8	pc/mi/ln	
Density in On-Ramp Influence Area, DR	10.6	veh/mi/ln	
Level of Service, LOS	B		

Step 5: Estimate Speeds in the Vicinity of Ramp-Freeway Junctions

Freeway Free-Flow Speed, FFS	60.0	mi/h	
Ramp Free-Flow Speed, SFR	35.0	mi/h	
Length of Acceleration Lane, LA	800	ft	
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Flow Rate on Freeway, vF	1255	pc/h	
Flow Rate in Lanes 1 and 2, v12	1255	pc/h	
Total Flow Entering On-Ramp Infl. Area, vR12	1327	pc/h	
Number of Outer Lanes on Freeway, NO	0	ln	
Speed Index for On-Ramp, MS	0.280		
Average Speed in Ramp Influence Area, SR	55.0	mi/h	
Average Flow in Outer Lanes, vOA	-	pc/h/ln	
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h	
Average Speed for On-Ramp Junction, S	55.0	mi/h	
Density Across All Lanes, D	12.1	pc/mi/ln	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	903	5	3	1452	352	20	4	2	245	3	269
Future Volume (veh/h)	219	903	5	3	1452	352	20	4	2	245	3	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	233	961	5	3	1545	0	21	4	2	263	0	95
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	272	2239	12	7	1667		39	7	4	349	0	155
Arrive On Green	0.15	0.63	0.63	0.00	0.48	0.00	0.03	0.03	0.03	0.10	0.00	0.10
Sat Flow, veh/h	1753	3568	19	1753	3497	1560	1361	259	130	3506	0	1560
Grp Volume(v), veh/h	233	471	495	3	1545	0	27	0	0	263	0	95
Grp Sat Flow(s),veh/h/ln	1753	1749	1837	1753	1749	1560	1749	0	0	1753	0	1560
Q Serve(g_s), s	9.7	10.3	10.3	0.1	31.1	0.0	1.1	0.0	0.0	5.5	0.0	4.4
Cycle Q Clear(g_c), s	9.7	10.3	10.3	0.1	31.1	0.0	1.1	0.0	0.0	5.5	0.0	4.4
Prop In Lane	1.00		0.01	1.00		1.00	0.78		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	272	1098	1153	7	1667		50	0	0	349	0	155
V/C Ratio(X)	0.86	0.43	0.43	0.42	0.93		0.54	0.00	0.00	0.75	0.00	0.61
Avail Cap(c_a), veh/h	273	1098	1153	117	1706		145	0	0	351	0	156
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.9	7.1	7.1	37.3	18.4	0.0	35.9	0.0	0.0	32.9	0.0	32.4
Incr Delay (d2), s/veh	22.7	0.3	0.3	35.5	9.1	0.0	8.7	0.0	0.0	8.8	0.0	6.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	2.5	2.6	0.1	11.7	0.0	0.6	0.0	0.0	2.7	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	53.5	7.4	7.4	72.8	27.5	0.0	44.6	0.0	0.0	41.7	0.0	39.2
LnGrp LOS	D	A	A	E	C		D			D		D
Approach Vol, veh/h		1199			1548			27			358	
Approach Delay, s/veh		16.3			27.6			44.6			41.0	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	6.7	4.8	51.6		12.0	16.1	40.3
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	6.2	5.0	43.3		7.5	11.7	36.6
Max Q Clear Time (g_c+I1), s	3.1	2.1	12.3		7.5	11.7	33.1
Green Ext Time (p_c), s	0.0	0.0	5.8		0.0	0.0	2.7

Intersection Summary	
HCM 7th Control Delay, s/veh	25.0
HCM 7th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Traditions North

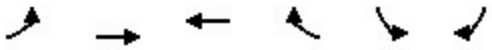
Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	49	2	1	1	80	21	2	1	11	1
Future Vol, veh/h	1	1	49	2	1	1	80	21	2	1	11	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	58	2	1	1	94	25	2	1	13	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	229	231	14	230	231	26	14	0	0	27	0	0
Stage 1	16	16	-	214	214	-	-	-	-	-	-	-
Stage 2	214	215	-	16	16	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	726	669	1067	725	669	1050	1604	-	-	1587	-	-
Stage 1	1004	882	-	788	725	-	-	-	-	-	-	-
Stage 2	789	725	-	1004	882	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	680	628	1067	643	629	1050	1604	-	-	1587	-	-
Mov Cap-2 Maneuver	680	628	-	643	629	-	-	-	-	-	-	-
Stage 1	1003	882	-	741	682	-	-	-	-	-	-	-
Stage 2	740	681	-	948	881	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.67	10.12	5.74	0.56
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1374	-	-	1041	708	136	-	-
HCM Lane V/C Ratio	0.059	-	-	0.058	0.007	0.001	-	-
HCM Control Delay (s/veh)	7.4	0	-	8.7	10.1	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0	0	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	227	0	1351	74	115	134
Future Volume (veh/h)	227	0	1351	74	115	134
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	234	0	1393	76	119	138
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	282	2641	1725	769	209	186
Arrive On Green	0.16	0.00	0.49	0.49	0.12	0.12
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	234	0	1393	76	119	138
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	10.2	0.0	26.7	2.1	5.1	6.8
Cycle Q Clear(g_c), s	10.2	0.0	26.7	2.1	5.1	6.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	282	2641	1725	769	209	186
V/C Ratio(X)	0.83	0.00	0.81	0.10	0.57	0.74
Avail Cap(c_a), veh/h	665	4012	2210	986	554	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	0.0	17.5	11.2	33.6	34.3
Incr Delay (d2), s/veh	6.2	0.0	1.8	0.1	2.4	5.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	9.5	0.6	2.3	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	39.0	0.0	19.3	11.2	36.0	40.0
LnGrp LOS	D		B	B	D	D
Approach Vol, veh/h		234	1469		257	
Approach Delay, s/veh		39.0	18.9		38.2	
Approach LOS		D	B		D	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	65.6	14.8	20.7	44.8
Change Period (Y+Rc), s	* 5.8	5.4	8.0	5.8
Max Green Setting (Gmax), s	* 91	25.0	30.0	50.0
Max Q Clear Time (g_c+I1), s	0.0	8.8	12.2	28.7
Green Ext Time (p_c), s	0.0	0.7	0.6	10.4

Intersection Summary	
HCM 7th Control Delay, s/veh	23.8
HCM 7th LOS	C

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

FREEWAY MERGE ANALYSIS

File Name:	Merge-OYPP-PM.xuf
Analyst:	GCW
Agency:	NDOT
Jurisdiction:	NDOT
Date:	
Analysis Year:	Opening Year Plus Project (2029)
Time Analyzed:	PM Peak Hour
Project Description:	Traditions North
Units:	U.S. Customary

LOS and Performance Measures

Ramp Type	Left-Sided One-Lane	
Density in On-Ramp (Merge) Influence Area, DR	16.1	pc/mi/ln
Level of Service, LOS	B	
Average Flow in Outer Lanes, vOA	-	pc/h/ln
Average Speed in Ramp Influence Area, SR	54.7	mi/h
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h
Average Speed for On-Ramp (Merge) Junction, S	54.7	mi/h
Density Across All Lanes, D	18.3	pc/mi/ln

Step 1: Specify Inputs and Convert Demand Volumes to Demand Flow Rates

Freeway Data		
Number of Freeway Lanes	2	ln
Measured or Base FFS	Measured	
Base Free-Flow Speed, BFFS	-	mi/h
Lane Width	-	ft
Lane Width Adjustment, fLW	-	mi/h
Right-Side Lateral Clearance	-	ft
Right-Side Lateral Clearance Adj., fRLC	-	mi/h
Total Ramp Density, TRD	-	ramps/mi
TRD Adjustment	-	mi/h
Free-Flow Speed, FFS	60.0	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Driver Population SAF	1.000	
Weather Type	Non-Severe Weather	
Weather Type SAF	1.000	
Final Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	60.0	mi/h
Segment Length	1500	ft
C-D Roadway?	Freeway	
Demand Volume, V	1793	veh/h
Peak Hour Factor, PHF	0.97	
Ramp Data		
Number of Ramp Lanes	1	ln
Ramp Free-Flow Speed, SFR	35.0	mi/h
Ramp Side	Left	
Length of First Acceleration Lane, LA or LA1	800	ft
Length of Second Acceleration Lane, LA2	-	ft

Junction Components	Freeway	Ramp	
Demand Volume, V	1793	115	veh/h
Peak Hour Factor, PHF	0.97	0.97	
Percent Total Trucks	2.00	2.00	%
Percent SUTs	-	-	%
Percent TTs	-	-	%
Prop. Total Trucks, PT	0.0200	0.0200	
Heavy Vehicle PCE, ET	2.00	2.00	
Heavy Vehicle Adj., fHV	0.980	0.980	
Terrain Type	Level	Level	

Percent Grade	-	-	%
Grade Length	-	-	mi
Demand Adj. Factor, DAF	1.000	1.000	
Demand Flow Rate, v	1886	121	pc/h

Step 2: Estimate the Approaching Flow Rate in Lanes 1 and 2

Estimating Flow in Lanes 1 and 2 for On-Ramps			
Adjacent Upstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Adjacent Downstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Prop. Freeway Veh. in Lanes 1 and 2, PFM	1.000		
Flow Rate on Freeway, vF	1886	pc/h	
Flow Rate in Lanes 1 and 2, v12	1886	pc/h	

Step 3: Estimate Capacity of Ramp-Freeway Junction and Compare Flow Rates

Capacity Checks

	Actual	Maximum	Violation?
vFO	2007	4600	No
vR	121	2000	No
vR12	2007	4600	No

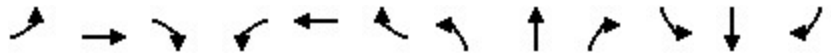
	Freeway	Ramp	
Unadjusted Capacity, cmd	4600	2000	pc/h
Driver Population	All Familiar	All Familiar	
Driver Population CAF	1.000	1.000	
Weather Type	Non-Severe Weather	Non-Severe Weather	
Weather Type CAF	1.000	1.000	
Incident Type	No Incident	-	
Incident Type CAF	1.000	-	
Proportion of CAVs in Traffic Stream	0	-	
Capacity Adjustment Factor for CAVs, CAFCAV	1.000	-	
Final Capacity Adj. Factor, CAF	1.000	1.000	
Final Adjusted Capacity, cmda	4600	2000	pc/h

Step 4: Estimate Density in Ramp Influence Area and Determine LOS

Demand Flow Rate on Ramp, vR	121	pc/h
Flow Rate in Lanes 1 and 2, v12	1886	pc/h
Length of Acceleration Lane, LA	800	ft
Density in On-Ramp Influence Area, DR	16.1	pc/mi/ln
Density in On-Ramp Influence Area, DR	15.8	veh/mi/ln
Level of Service, LOS	B	

Step 5: Estimate Speeds in the Vicinity of Ramp-Freeway Junctions

Freeway Free-Flow Speed, FFS	60.0	mi/h
Ramp Free-Flow Speed, SFR	35.0	mi/h
Length of Acceleration Lane, LA	800	ft
Driver Population	All Familiar	
Driver Population SAF	1.000	
Weather Type	Non-Severe Weather	
Weather Type SAF	1.000	
Final Speed Adjustment Factor, SAF	1.000	
Flow Rate on Freeway, vF	1886	pc/h
Flow Rate in Lanes 1 and 2, v12	1886	pc/h
Total Flow Entering On-Ramp Infl. Area, vR12	2007	pc/h
Number of Outer Lanes on Freeway, NO	0	ln
Speed Index for On-Ramp, MS	0.294	
Average Speed in Ramp Influence Area, SR	54.7	mi/h
Average Flow in Outer Lanes, vOA	-	pc/h/ln
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h
Average Speed for On-Ramp Junction, S	54.7	mi/h
Density Across All Lanes, D	18.3	pc/mi/ln



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	329	1590	11	1	1177	283	3	3	5	374	2	254
Future Volume (veh/h)	329	1590	11	1	1177	283	3	3	5	374	2	254
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	350	1691	12	1	1252	0	3	3	5	399	0	57
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	389	2157	15	2	1348		6	6	10	515	0	229
Arrive On Green	0.22	0.61	0.61	0.00	0.39	0.00	0.01	0.01	0.01	0.15	0.00	0.15
Sat Flow, veh/h	1753	3560	25	1753	3497	1560	458	458	764	3506	0	1560
Grp Volume(v), veh/h	350	830	873	1	1252	0	11	0	0	399	0	57
Grp Sat Flow(s),veh/h/ln	1753	1749	1836	1753	1749	1560	1680	0	0	1753	0	1560
Q Serve(g_s), s	15.1	27.6	27.7	0.0	26.6	0.0	0.5	0.0	0.0	8.5	0.0	2.5
Cycle Q Clear(g_c), s	15.1	27.6	27.7	0.0	26.6	0.0	0.5	0.0	0.0	8.5	0.0	2.5
Prop In Lane	1.00		0.01	1.00		1.00	0.27		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	389	1060	1113	2	1348		23	0	0	515	0	229
V/C Ratio(X)	0.90	0.78	0.78	0.42	0.93		0.48	0.00	0.00	0.77	0.00	0.25
Avail Cap(c_a), veh/h	418	1060	1113	124	1374		141	0	0	745	0	332
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	11.5	11.5	38.7	22.8	0.0	38.0	0.0	0.0	31.9	0.0	29.3
Incr Delay (d2), s/veh	21.1	3.9	3.7	86.3	11.1	0.0	14.8	0.0	0.0	3.2	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	8.2	8.6	0.1	11.1	0.0	0.3	0.0	0.0	3.7	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	50.4	15.4	15.2	125.0	33.9	0.0	52.8	0.0	0.0	35.0	0.0	29.9
LnGrp LOS	D	B	B	F	C		D			D		C
Approach Vol, veh/h		2053			1253			11			456	
Approach Delay, s/veh		21.3			34.0			52.8			34.4	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	5.6	4.6	51.5		15.9	21.7	34.4
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	5.5	43.5		16.5	18.5	30.5
Max Q Clear Time (g_c+I1), s	2.5	2.0	29.7		10.5	17.1	28.6
Green Ext Time (p_c), s	0.0	0.0	8.7		0.9	0.2	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	27.2
HCM 7th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Traditions North

Appendix H

Future Year Plus Project LOS Calculations

GCW ENGINEERS \ SURVEYORS

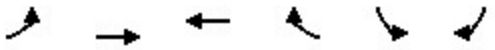
Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	2	116	6	5	1	62	9	1	1	12	3
Future Vol, veh/h	1	2	116	6	5	1	62	9	1	1	12	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	1	3	155	8	7	1	83	12	1	1	16	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	201	199	18	198	201	13	20	0	0	13	0	0
Stage 1	21	21	-	178	178	-	-	-	-	-	-	-
Stage 2	181	179	-	20	23	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.14	6.54	6.24	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.14	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.536	4.036	3.336	2.236	-	-	2.236	-	-
Pot Cap-1 Maneuver	753	693	1055	756	692	1062	1583	-	-	1592	-	-
Stage 1	993	874	-	819	748	-	-	-	-	-	-	-
Stage 2	816	748	-	994	872	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	705	656	1055	609	655	1062	1583	-	-	1592	-	-
Mov Cap-2 Maneuver	705	656	-	609	655	-	-	-	-	-	-	-
Stage 1	992	873	-	776	709	-	-	-	-	-	-	-
Stage 2	765	708	-	845	872	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.08	10.67	6.37	0.45
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1520	-	-	1040	651	108	-	-
HCM Lane V/C Ratio	0.052	-	-	0.153	0.025	0.001	-	-
HCM Control Delay (s/veh)	7.4	0	-	9.1	10.7	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.1	0	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	217	0	3080	130	149	553
Future Volume (veh/h)	217	0	3080	130	149	553
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	236	0	3348	32	162	600
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4
Cap, veh/h	277	4005	3368	1046	245	606
Arrive On Green	0.08	0.00	0.67	0.67	0.14	0.14
Sat Flow, veh/h	3401	5191	5191	1560	1753	2745
Grp Volume(v), veh/h	236	0	3348	32	162	600
Grp Sat Flow(s),veh/h/ln	1700	1675	1675	1560	1753	1373
Q Serve(g_s), s	12.1	0.0	116.1	1.2	15.5	24.6
Cycle Q Clear(g_c), s	12.1	0.0	116.1	1.2	15.5	24.6
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	277	4005	3368	1046	245	606
V/C Ratio(X)	0.85	0.00	0.99	0.03	0.66	0.99
Avail Cap(c_a), veh/h	347	4160	3368	1046	245	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.0	0.0	28.7	9.8	71.9	68.5
Incr Delay (d2), s/veh	15.2	0.0	14.1	0.0	6.5	33.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	0.0	46.5	0.4	7.5	29.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	95.2	0.0	42.8	9.8	78.5	102.3
LnGrp LOS	F		D	A	E	F
Approach Vol, veh/h		236	3380		762	
Approach Delay, s/veh		95.2	42.5		97.2	
Approach LOS		F	D		F	

Timer - Assigned Phs			4		6	7	8
Phs Duration (G+Y+Rc), s			146.4		30.0	22.4	124.0
Change Period (Y+Rc), s			* 5.8		5.4	8.0	5.8
Max Green Setting (Gmax), s			* 1.5E+02		24.6	18.0	118.2
Max Q Clear Time (g_c+I1), s			0.0		26.6	14.1	118.1
Green Ext Time (p_c), s			0.0		0.0	0.3	0.1

Intersection Summary	
HCM 7th Control Delay, s/veh	54.9
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

FREEWAY MERGE ANALYSIS

File Name:	Merge-FuturePP-AM.xuf
Analyst:	GCW
Agency:	NDOT
Jurisdiction:	NDOT
Date:	
Analysis Year:	Future Year Plus Project (2049)
Time Analyzed:	AM Peak Hour
Project Description:	Traditions North
Units:	U.S. Customary

LOS and Performance Measures

Ramp Type	Left-Sided One-Lane	
Density in On-Ramp (Merge) Influence Area, DR	16.0	pc/mi/ln
Level of Service, LOS	B	
Average Flow in Outer Lanes, vOA	-	pc/h/ln
Average Speed in Ramp Influence Area, SR	54.7	mi/h
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h
Average Speed for On-Ramp (Merge) Junction, S	54.7	mi/h
Density Across All Lanes, D	18.2	pc/mi/ln

Step 1: Specify Inputs and Convert Demand Volumes to Demand Flow Rates

Freeway Data			
Number of Freeway Lanes	2		ln
Measured or Base FFS	Measured		
Base Free-Flow Speed, BFFS	-		mi/h
Lane Width	-		ft
Lane Width Adjustment, fLW	-		mi/h
Right-Side Lateral Clearance	-		ft
Right-Side Lateral Clearance Adj., fRLC	-		mi/h
Total Ramp Density, TRD	-		ramps/mi
TRD Adjustment	-		mi/h
Free-Flow Speed, FFS	60.0		mi/h
Speed Adjustments			
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Adjusted Free-Flow Speed, FFSadj	60.0		mi/h
Segment Length	1500		ft
C-D Roadway?	Freeway		
Demand Volume, V	1553		veh/h
Peak Hour Factor, PHF	0.92		
Ramp Data			
Number of Ramp Lanes	1		ln
Ramp Free-Flow Speed, SFR	35.0		mi/h
Ramp Side	Left		
Length of First Acceleration Lane, LA or LA1	800		ft
Length of Second Acceleration Lane, LA2	-		ft
Junction Components	Freeway	Ramp	
Demand Volume, V	1553	149	veh/h
Peak Hour Factor, PHF	0.92	0.92	
Percent Total Trucks	8.00	2.00	%
Percent SUTs	-	-	%
Percent TTs	-	-	%
Prop. Total Trucks, PT	0.0800	0.0200	
Heavy Vehicle PCE, ET	2.00	2.00	
Heavy Vehicle Adj., fHV	0.926	0.980	
Terrain Type	Level	Level	

Percent Grade	-	-	%
Grade Length	-	-	mi
Demand Adj. Factor, DAF	1.000	1.000	
Demand Flow Rate, v	1823	165	pc/h

Step 2: Estimate the Approaching Flow Rate in Lanes 1 and 2

Estimating Flow in Lanes 1 and 2 for On-Ramps			
Adjacent Upstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Adjacent Downstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Prop. Freeway Veh. in Lanes 1 and 2, PFM	1.000		
Flow Rate on Freeway, vF	1823	pc/h	
Flow Rate in Lanes 1 and 2, v12	1823	pc/h	

Step 3: Estimate Capacity of Ramp-Freeway Junction and Compare Flow Rates

Capacity Checks			
	Actual	Maximum	Violation?
vFO	1988	4600	No
vR	165	2000	No
vR12	1988	4600	No

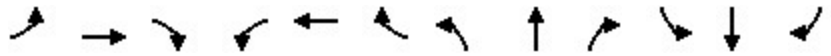
	Freeway	Ramp	
Unadjusted Capacity, cmd	4600	2000	pc/h
Driver Population	All Familiar	All Familiar	
Driver Population CAF	1.000	1.000	
Weather Type	Non-Severe Weather	Non-Severe Weather	
Weather Type CAF	1.000	1.000	
Incident Type	No Incident	-	
Incident Type CAF	1.000	-	
Proportion of CAVs in Traffic Stream	0	-	
Capacity Adjustment Factor for CAVs, CAFCAV	1.000	-	
Final Capacity Adj. Factor, CAF	1.000	1.000	
Final Adjusted Capacity, cmda	4600	2000	pc/h

Step 4: Estimate Density in Ramp Influence Area and Determine LOS

Demand Flow Rate on Ramp, vR	165	pc/h	
Flow Rate in Lanes 1 and 2, v12	1823	pc/h	
Length of Acceleration Lane, LA	800	ft	
Density in On-Ramp Influence Area, DR	16.0	pc/mi/ln	
Density in On-Ramp Influence Area, DR	15.7	veh/mi/ln	
Level of Service, LOS	B		

Step 5: Estimate Speeds in the Vicinity of Ramp-Freeway Junctions

Freeway Free-Flow Speed, FFS	60.0	mi/h	
Ramp Free-Flow Speed, SFR	35.0	mi/h	
Length of Acceleration Lane, LA	800	ft	
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Flow Rate on Freeway, vF	1823	pc/h	
Flow Rate in Lanes 1 and 2, v12	1823	pc/h	
Total Flow Entering On-Ramp Infl. Area, vR12	1988	pc/h	
Number of Outer Lanes on Freeway, NO	0	ln	
Speed Index for On-Ramp, MS	0.293		
Average Speed in Ramp Influence Area, SR	54.7	mi/h	
Average Flow in Outer Lanes, vOA	-	pc/h/ln	
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h	
Average Speed for On-Ramp Junction, S	54.7	mi/h	
Density Across All Lanes, D	18.2	pc/mi/ln	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	245	1431	15	28	2799	377	34	9	11	333	7	380
Future Volume (veh/h)	245	1431	15	28	2799	377	34	9	11	333	7	380
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	261	1522	16	30	2978	0	36	10	0	359	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	271	3698	1148	38	3032		50	52		396	0	
Arrive On Green	0.15	0.74	0.74	0.02	0.60	0.00	0.03	0.03	0.00	0.11	0.00	0.00
Sat Flow, veh/h	1753	5025	1560	1753	5025	1560	1753	1841	1560	3506	0	1560
Grp Volume(v), veh/h	261	1522	16	30	2978	0	36	10	0	359	0	0
Grp Sat Flow(s),veh/h/ln	1753	1675	1560	1753	1675	1560	1753	1841	1560	1753	0	1560
Q Serve(g_s), s	26.3	20.4	0.5	3.0	102.8	0.0	3.6	0.9	0.0	18.0	0.0	0.0
Cycle Q Clear(g_c), s	26.3	20.4	0.5	3.0	102.8	0.0	3.6	0.9	0.0	18.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	3698	1148	38	3032		50	52		396	0	
V/C Ratio(X)	0.96	0.41	0.01	0.78	0.98		0.72	0.19		0.91	0.00	
Avail Cap(c_a), veh/h	271	3698	1148	87	3033		64	67		404	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	74.8	8.9	6.3	86.7	34.4	0.0	85.8	84.5	0.0	78.1	0.0	0.0
Incr Delay (d2), s/veh	44.7	0.1	0.0	28.2	12.5	0.0	24.8	1.8	0.0	23.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.0	6.6	0.1	1.7	41.6	0.0	2.0	0.5	0.0	9.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	119.5	9.0	6.3	114.9	46.9	0.0	110.6	86.3	0.0	101.6	0.0	0.0
LnGrp LOS	F	A	A	F	D		F	F		F		
Approach Vol, veh/h		1799			3008			46			359	
Approach Delay, s/veh		25.0			47.6			105.3			101.6	
Approach LOS		C			D			F			F	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	9.6	8.4	135.5		24.6	32.0	111.9
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	8.8	126.2		20.5	27.5	107.5
Max Q Clear Time (g_c+I1), s	5.6	5.0	22.4		20.0	28.3	104.8
Green Ext Time (p_c), s	0.0	0.0	14.7		0.1	0.0	2.7

Intersection Summary	
HCM 7th Control Delay, s/veh	44.0
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Traditions North

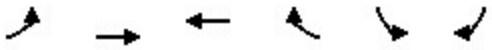
Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	61	2	1	1	100	25	2	1	12	1
Future Vol, veh/h	1	1	61	2	1	1	100	25	2	1	12	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	72	2	1	1	118	29	2	1	14	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	282	284	15	283	284	31	15	0	0	32	0	0
Stage 1	17	17	-	266	266	-	-	-	-	-	-	-
Stage 2	265	267	-	17	18	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	670	625	1065	669	625	1044	1602	-	-	1581	-	-
Stage 1	1002	881	-	739	689	-	-	-	-	-	-	-
Stage 2	740	688	-	1002	881	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	618	578	1065	576	578	1044	1602	-	-	1581	-	-
Mov Cap-2 Maneuver	618	578	-	576	578	-	-	-	-	-	-	-
Stage 1	1002	881	-	684	637	-	-	-	-	-	-	-
Stage 2	683	637	-	933	880	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	8.73	10.58	5.85	0.52
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1397	-	-	1039	649	127	-	-
HCM Lane V/C Ratio	0.073	-	-	0.071	0.007	0.001	-	-
HCM Control Delay (s/veh)	7.4	0	-	8.7	10.6	7.3	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0	0	-	-



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	571	0	2294	135	219	298
Future Volume (veh/h)	571	0	2294	135	219	298
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	589	0	2365	36	226	306
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	650	3859	2546	790	262	935
Arrive On Green	0.19	0.00	0.50	0.50	0.15	0.15
Sat Flow, veh/h	3456	5274	5274	1585	1781	2790
Grp Volume(v), veh/h	589	0	2365	36	226	306
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1585	1781	1395
Q Serve(g_s), s	19.3	0.0	50.0	1.3	14.3	9.5
Cycle Q Clear(g_c), s	19.3	0.0	50.0	1.3	14.3	9.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	650	3859	2546	790	262	935
V/C Ratio(X)	0.91	0.00	0.93	0.05	0.86	0.33
Avail Cap(c_a), veh/h	688	4064	2571	798	302	997
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.9	0.0	27.1	14.9	48.1	28.7
Incr Delay (d2), s/veh	15.3	0.0	6.7	0.0	19.6	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	0.0	20.0	0.5	7.8	8.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	61.2	0.0	33.8	14.9	67.7	28.9
LnGrp LOS	E		C	B	E	C
Approach Vol, veh/h		589	2401		532	
Approach Delay, s/veh		61.2	33.5		45.4	
Approach LOS		E	C		D	

Timer - Assigned Phs	4	6	7	8
Phs Duration (G+Y+Rc), s	93.2	22.4	29.7	63.4
Change Period (Y+Rc), s	* 5.8	5.4	8.0	5.8
Max Green Setting (Gmax), s	* 92	19.6	23.0	58.2
Max Q Clear Time (g_c+I1), s	0.0	16.3	21.3	52.0
Green Ext Time (p_c), s	0.0	0.7	0.4	5.6

Intersection Summary	
HCM 7th Control Delay, s/veh	39.9
HCM 7th LOS	D

Notes

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

FREEWAY MERGE ANALYSIS

File Name:	Merge-FuturePP-PM.xuf
Analyst:	GCW
Agency:	NDOT
Jurisdiction:	NDOT
Date:	
Analysis Year:	Future Year Plus Project (2049)
Time Analyzed:	PM Peak Hour
Project Description:	Traditions North
Units:	U.S. Customary

LOS and Performance Measures

Ramp Type	Left-Sided One-Lane	
Density in On-Ramp (Merge) Influence Area, DR	29.6	pc/mi/ln
Level of Service, LOS	D	
Average Flow in Outer Lanes, vOA	-	pc/h/ln
Average Speed in Ramp Influence Area, SR	52.3	mi/h
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h
Average Speed for On-Ramp (Merge) Junction, S	52.3	mi/h
Density Across All Lanes, D	35.8	pc/mi/ln

Step 1: Specify Inputs and Convert Demand Volumes to Demand Flow Rates

Freeway Data		
Number of Freeway Lanes	2	ln
Measured or Base FFS	Measured	
Base Free-Flow Speed, BFFS	-	mi/h
Lane Width	-	ft
Lane Width Adjustment, fLW	-	mi/h
Right-Side Lateral Clearance	-	ft
Right-Side Lateral Clearance Adj., fRLC	-	mi/h
Total Ramp Density, TRD	-	ramps/mi
TRD Adjustment	-	mi/h
Free-Flow Speed, FFS	60.0	mi/h
Speed Adjustments		
Driver Population	All Familiar	
Driver Population SAF	1.000	
Weather Type	Non-Severe Weather	
Weather Type SAF	1.000	
Final Speed Adjustment Factor, SAF	1.000	
Adjusted Free-Flow Speed, FFSadj	60.0	mi/h
Segment Length	1500	ft
C-D Roadway?	Freeway	
Demand Volume, V	3341	veh/h
Peak Hour Factor, PHF	0.97	
Ramp Data		
Number of Ramp Lanes	1	ln
Ramp Free-Flow Speed, SFR	35.0	mi/h
Ramp Side	Left	
Length of First Acceleration Lane, LA or LA1	800	ft
Length of Second Acceleration Lane, LA2	-	ft

Junction Components	Freeway	Ramp	
Demand Volume, V	3341	219	veh/h
Peak Hour Factor, PHF	0.97	0.97	
Percent Total Trucks	2.00	2.00	%
Percent SUTs	-	-	%
Percent TTs	-	-	%
Prop. Total Trucks, PT	0.0200	0.0200	
Heavy Vehicle PCE, ET	2.00	2.00	
Heavy Vehicle Adj., fHV	0.980	0.980	
Terrain Type	Level	Level	

Percent Grade	-	-	%
Grade Length	-	-	mi
Demand Adj. Factor, DAF	1.000	1.000	
Demand Flow Rate, v	3515	230	pc/h

Step 2: Estimate the Approaching Flow Rate in Lanes 1 and 2

Estimating Flow in Lanes 1 and 2 for On-Ramps			
Adjacent Upstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Adjacent Downstream Off-Ramp Equilibrium Distance, LEQ	-	ft	
Prop. Freeway Veh. in Lanes 1 and 2, PFM	1.000		
Flow Rate on Freeway, vF	3515	pc/h	
Flow Rate in Lanes 1 and 2, v12	3515	pc/h	

Step 3: Estimate Capacity of Ramp-Freeway Junction and Compare Flow Rates

Capacity Checks

	Actual	Maximum	Violation?
vFO	3745	4600	No
vR	230	2000	No
vR12	3745	4600	No

	Freeway	Ramp	
Unadjusted Capacity, cmd	4600	2000	pc/h
Driver Population	All Familiar	All Familiar	
Driver Population CAF	1.000	1.000	
Weather Type	Non-Severe Weather	Non-Severe Weather	
Weather Type CAF	1.000	1.000	
Incident Type	No Incident	-	
Incident Type CAF	1.000	-	
Proportion of CAVs in Traffic Stream	0	-	
Capacity Adjustment Factor for CAVs, CAFCAV	1.000	-	
Final Capacity Adj. Factor, CAF	1.000	1.000	
Final Adjusted Capacity, cmda	4600	2000	pc/h

Step 4: Estimate Density in Ramp Influence Area and Determine LOS

Demand Flow Rate on Ramp, vR	230	pc/h	
Flow Rate in Lanes 1 and 2, v12	3515	pc/h	
Length of Acceleration Lane, LA	800	ft	
Density in On-Ramp Influence Area, DR	29.6	pc/mi/ln	
Density in On-Ramp Influence Area, DR	29.0	veh/mi/ln	
Level of Service, LOS	D		

Step 5: Estimate Speeds in the Vicinity of Ramp-Freeway Junctions

Freeway Free-Flow Speed, FFS	60.0	mi/h	
Ramp Free-Flow Speed, SFR	35.0	mi/h	
Length of Acceleration Lane, LA	800	ft	
Driver Population	All Familiar		
Driver Population SAF	1.000		
Weather Type	Non-Severe Weather		
Weather Type SAF	1.000		
Final Speed Adjustment Factor, SAF	1.000		
Flow Rate on Freeway, vF	3515	pc/h	
Flow Rate in Lanes 1 and 2, v12	3515	pc/h	
Total Flow Entering On-Ramp Infl. Area, vR12	3745	pc/h	
Number of Outer Lanes on Freeway, NO	0	ln	
Speed Index for On-Ramp, MS	0.430		
Average Speed in Ramp Influence Area, SR	52.3	mi/h	
Average Flow in Outer Lanes, vOA	-	pc/h/ln	
Average Speed in Outer Lanes of Freeway, SO	60.0	mi/h	
Average Speed for On-Ramp Junction, S	52.3	mi/h	
Density Across All Lanes, D	35.8	pc/mi/ln	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	482	3053	22	35	2045	412	14	8	11	426	8	338
Future Volume (veh/h)	482	3053	22	35	2045	412	14	8	11	426	8	338
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	513	3248	23	37	2176	0	15	9	0	459	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	520	3536	1098	47	2182		35	37		496	0	
Arrive On Green	0.30	0.70	0.70	0.03	0.43	0.00	0.02	0.02	0.00	0.14	0.00	0.00
Sat Flow, veh/h	1753	5025	1560	1753	5025	1560	1753	1841	1560	3506	0	1560
Grp Volume(v), veh/h	513	3248	23	37	2176	0	15	9	0	459	0	0
Grp Sat Flow(s),veh/h/ln	1753	1675	1560	1753	1675	1560	1753	1841	1560	1753	0	1560
Q Serve(g_s), s	48.6	90.4	0.7	3.5	72.1	0.0	1.4	0.8	0.0	21.6	0.0	0.0
Cycle Q Clear(g_c), s	48.6	90.4	0.7	3.5	72.1	0.0	1.4	0.8	0.0	21.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	520	3536	1098	47	2182		35	37		496	0	
V/C Ratio(X)	0.99	0.92	0.02	0.78	1.00		0.43	0.24		0.93	0.00	
Avail Cap(c_a), veh/h	520	3536	1098	53	2182		67	71		496	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	58.4	20.7	7.4	80.7	47.1	0.0	80.8	80.5	0.0	70.8	0.0	0.0
Incr Delay (d2), s/veh	36.0	4.5	0.0	48.7	18.6	0.0	7.9	3.3	0.0	23.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	25.9	31.3	0.2	2.2	32.2	0.0	0.7	0.4	0.0	11.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	94.4	25.2	7.4	129.4	65.7	0.0	88.8	83.9	0.0	94.4	0.0	0.0
LnGrp LOS	F	C	A	F	E		F	F		F		
Approach Vol, veh/h		3784			2213			24			459	
Approach Delay, s/veh		34.5			66.8			86.9			94.4	
Approach LOS		C			E			F			F	

Timer - Assigned Phs	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	7.9	9.0	122.0		28.1	54.0	77.0
Change Period (Y+Rc), s	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	6.4	5.0	117.0		23.6	49.5	72.5
Max Q Clear Time (g_c+I1), s	3.4	5.5	92.4		23.6	50.6	74.1
Green Ext Time (p_c), s	0.0	0.0	23.0		0.0	0.0	0.0

Intersection Summary	
HCM 7th Control Delay, s/veh	49.9
HCM 7th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Traditions North

Request to Reserve/Change Street Name(s)

Project Information

Project Name: TRADITIONS NORTH

Project Street Address: 0 TRADITIONS PKWY

Community: Section(s)/Township/Range: 01/16N/21E

Assessor's Parcel number(s)	Assessor's Parcel number(s)	Assessor's Parcel number(s)
016-406-07		

Street Name Requests

☒ Request to Reserve New Street Name(s) ☐ Request to Change a Street Name(s)

Present Street/Road Name(s):

Requested Street/Road Name(s) *(List in alphabetical order and attach additional sheets if needed)*

Desert Bloom Drive	
Dry Creek Drive	Dry Creek Court
Echo Ridge Loop	
Francis Drive	
Goldspan Drive	Goldspan Court
Ore Trail Drive	
Pioneer Drive	
Portal Road	Portal Court
Quicksilver Road	Quicksilver Court
Railstone Way	
Red Bluff Way	
Ryder Drive	
Sagepoint Way	
Trail Dust Drive	
Tunnel Drive	

If final recordation has not occurred within two (2) years, it is necessary to submit a written request for extension of the street name reservation(s) prior to the expiration date of the original approval request.

Applicant Information

Applicant/Developer	**Professional Consultant/Representative**
Name: Traditions North, LLC	Name: Piñon Design Group
Address: 3527 S Federal Way, Suite 103 #1020	Address: 2850 Tobiano Drive
City: Boise State:ID Zip:83705	City: Reno State:NV Zip:89521
Phone: Fax:	Phone: 775-843-0466 Fax:
Cell: Contact:	Cell: Contact:
Email:	Email: Dan@pinondg.com

For Official Use Only

County Agency Review

				Initials	Date
☐ Approved	☐ Approved except where noted	☐ Denied	Lyon County Building Dept.		
☐ Approved	☐ Approved except where noted	☐ Denied	Lyon County Planning Dept.		
☐ Approved	☐ Approved except where noted	☐ Denied	Lyon County Road Department		
☐ Approved	☐ Approved except where noted	☐ Denied	Lyon County Sheriff's Dispatch		
☐ Approved	☐ Approved except where noted	☐ Denied	Central Lyon County Fire Dist.		
☐ Approved	☐ Approved except where noted	☐ Denied	Mason Valley Fire Dist.		
☐ Approved	☐ Approved except where noted	☐ Denied	North Lyon County Fire Dist.		
☐ Approved	☐ Approved except where noted	☐ Denied	Smith Valley Fire Dist.		

Please refer to Street Naming Criteria pursuant to 11.07.14(A)(11) of the Lyon County Code (See next page).

Street Name Requirements

11.07.14(A)(11) of the Lyon County Code

Street names and suffixes shall be designated by the developer, subject to the approval of the Planning Commission and, in accordance with the following general policy and shall:

a. Be short (under 12 letters, if possible) and preferably in one word.

b. Have a simple spelling and easy pronunciation.

c. Avoid prefixes such as north and south, east and west and upper and lower, etc.

d. Be related to the type and importance of the street. (The suffix boulevard should not be attached to the name of a minor residential street.)

e. Avoid the use of numbers or letters as street names.

f. Not be incongruous, offensive or geographically misleading.

g. Not be repetitive or similar in sound and character to streets already in existence in Lyon County.

h. Have a single name for a street having a continuous alignment.

i. When to be connected in the future into a continuous alignment or extended, bear the same name as the existing street.

j. Have a metal street sign to be erected as specified in the "Standard Details For Public Works Construction" on at least one corner of every intersection and shall identify each street name.

February 3, 2026

Mr. Gavin Henderson, Director
Lyon County Community Development Department
27 S. Main St.
Yerington, NV 89447

RE: Letter of Support for Traditions North Development and Sutro Tunnel Land Donation

Dear Mr. Henderson:

On behalf of the Board of Directors of the Friends of Sutro Tunnel Charity, we are writing to express our strong support for the Traditions North development and the associated land donation benefiting the historic Sutro Tunnel in Dayton, Nevada.

The Traditions North project reflects a thoughtful and balanced approach to growth—one that addresses housing needs while making an extraordinary commitment to open space preservation, historic stewardship, and long-term community benefit. Of the approximately 230 acres comprising the project site, more than 80 acres are proposed to be permanently preserved as open space, including a 10-acre land donation to our organization.

This generous donation builds upon the Friends of Sutro Tunnel's existing 27.94 acres, expanding the Sutro Tunnel Portal Park to 38 acres. This expansion significantly strengthens our ability to preserve one of Nevada's most important engineering and cultural landmarks while enhancing opportunities for public access, education, and regional tourism.

Importantly, this land donation comes on the heels of substantial recent investment in the Sutro Tunnel site, including a $493,000 Travel Nevada grant and more than $700,000 in additional private and community donations. Together, these contributions are helping move the Sutro Tunnel closer to being safely opened to the public, transforming it into a meaningful tourism destination and a historic park for residents and visitors of Dayton, Lyon County, and the surrounding region to enjoy. These efforts are expected to generate positive economic impacts through increased visitation, heritage tourism, and local business activity.

The donated acreage includes some of the most visually prominent areas associated with the Sutro Tunnel and its historic portal. Preserving these lands in perpetuity will help maintain the tunnel's strong visual and cultural presence throughout Dayton and ensure that future generations can appreciate the site's historic significance. The expanded footprint also allows

for long-term planning that supports historic interpretation, restoration efforts, and responsible public use.

In addition to the Sutro Tunnel land donation, we commend Traditions North for designating an additional 74 acres as permanent open space and for thoughtfully clustering development to protect scenic views, historic resources, and community character. This approach aligns well with Lyon County's long-term planning goals and demonstrates how responsible development and historic preservation can move forward together.

The Friends of Sutro Tunnel Charity sincerely appreciates the partnership and generosity demonstrated through this project. We believe Traditions North represents a positive and lasting investment in Dayton's future and respectfully encourage Lyon County to view this project favorably as it proceeds through the review process.

Thank you for your time, consideration, and continued commitment to thoughtful planning and preservation within Lyon County.

Sincerely,

Board of Directors | Friends of Sutro Tunnel Charity
Phil Cowee
Bill Miles
Mark Turner
Sam Landis
Rob McFadden

February 27, 2026

Lyon County Board of Commissioners
27 S Main St
Yerington, NV 89477

Dear Chair,

On behalf of Traditions North LLC (Applicant), RVi Planning respectfully requests a date-certain continuance of the public hearing for the Traditions North Tentative Subdivision Map currently scheduled before the Lyon County Board of County Commissioners on March 5, 2026.

Pursuant to Lyon County Code (LCC) 15.10.05, an applicant is entitled to one continuance as a matter of right. The code also provides that when a hearing is rescheduled to a date within 35 days of the original hearing, no additional public notice is required.

We are requesting this continuance to further productive discussions with Lyon County staff regarding a proposed drainage condition associated with the project. Additional collaboration will allow us to reach a mutually acceptable resolution that aligns with regional drainage policies, improves public safety, and remains fair and proportional to the impacts of this request.

We wish to emphasize our appreciation for the ongoing dialogue with staff and our commitment to working cooperatively toward consensus. Accordingly, we request that the hearing be continued to the April 2, 2026 Board of County Commissioners meeting.

Sincerely,

Carter Williams, AICP
Senior Planner Reno, NV

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
14.j

Subject:
For Possible Action: To approve the request from Traditions North LLC to Reserve Street Names for the Traditions North Residential Development for the proposed roadways to be generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 230.76-acre parcel (APN 016-406-07), PLZ-2025-098. (Senior Planner Lisa Nash)

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Staff Report
- Backup
- Public Comment

LYON COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING * DEVELOPMENT ENGINEERING * PLANNING
CODE ENFORCEMENT * ECONOMIC DEVELOPMENT
27 SOUTH MAIN STREET, YERINGTON, NV 89447
PHONE: 775-463-6592 FAX: 775-463-5305
WEBSITE: www.lyon-couny.org

BOARD OF COUNTY COMMISSIONERS

PLZ-2025-098

Proposed Action	Request to Reserve Street Names
Meeting Date	March 5, 2026
Property Owners	Sutro Residential Group LLC
Applicant	Traditions North LLC
Representative	Manhard Consulting LLC
Community	Dayton
Location	North of the intersection of Nevada Station and Rock Creek Parkways
Parcel Number	016-406-07
Parcel Size	220.75 acres of a 230.76-acre parcel
Case Planner	Lisa Nash

REQUEST

This street name request is to provide street names for the proposed Traditions North Residential Subdivision. The applicants would like to reserve the following street names:

Desert Bloom Drive
Dry Creek Drive
Dry Creek Court
Echo Ridge Loop
Francis Drive
Gold Bar Drive ~~Goldspan Drive~~
Gold Bar Court ~~Goldspan Court~~
Ore Trail Drive
Pioneer Drive
Portal Road
Portal Court
Quicksilver Road
Quicksilver Court
Railstone Way
Red Bluff Way
Ryder Drive
Sagepoint Way
Trail Dust Drive
Tunnel Drive

It was requested by Central Lyon Fire Protection District to consider a different name for Goldspan Drive and Court as they are too close in sound to the existing Gold Pan Way in Dayton. The applicant has agreed to suggest Bold Bar Drive and Court instead.

PLANNING COMMISSION

The Planning Commission heard the item on February 10, 2026. The Commission forwarded a recommendation of approval, voting 7-0 (7 Ayes; 0 Nays; 0 Abstentions). The recommendation was based on the findings listed in the staff report.

RECOMMENDED MOTION

If the Board of County Commissioners determines that they will approve the Request to Reserve Street Names application, then the Board should make a motion similar to the following.

The Board of County Commissioners finds that:

A. The proposed street names are consistent with the general purpose and intent of the street name policy in Title 15 Chapter 280.03 of the Lyon County Code.

Based on the aforementioned finding, I move that the Board of County Commissioners approve the request from Traditions North LLC to Reserve Street Names for the Traditions North Residential Development generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 220.75-acre portion of a 230.76-acre parcel (APN 016-406-07), PLZ-2025-098, subject to the following one (1) condition.

1. The requested street names are approved unless it is determined that there are duplicate street names or that a name that would create a public safety hazard due to another similar existing street name(s). Should the requested street name be denied, the Planning Director is authorized to administratively process a request for a replacement street name, obtain review and comment from the Sheriff's Office, Central Lyon Fire Protection District, Road Department and any other appropriate agency, and approve a revised street name without the requirement of a public hearing before the Planning Commission and Board of County Commissioners.

ALTERNATIVES TO RECOMMENDATION OF APPROVAL

Alternative Motion for Continuance

If the Board of County Commissioners determines that additional information, discussion and public review are necessary for a more thorough review of the proposed Reservation of Street Names; the Board should make appropriate findings and move to **continue** the Public Hearing with a specific time period for the applicant to provide additional specific information necessary for the analysis of the request. The Board may wish to consider a motion similar to the following:

The Board of County Commissioners finds that:

A. Additional information, discussion and public review are necessary for a more thorough review of the proposed Reservation of Street Names.

Based on the finding listed above and with the applicant's concurrence, I move that the Board of County Commissioners continues the request from Traditions North LLC to Reserve Street Names for the Traditions North Residential Development generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 220.75-acre portion of a 230.76-acre parcel (APN 016-406-07), PLZ-2025-098 for ___ days.

Alternative Motion for Denial

If after review and public comment the Board of County Commissioners determines that they should deny the request for the reservation of the street names application, then the Board may wish to consider a motion similar to the following:

The Board of County Commissioners finds that:

A. The proposed street names are not consistent with the general purpose and intent of the street name policy in Title 15 Chapter 280.03 of the Lyon County Code.

After consideration of the above-listed finding, I move that the Board of County Commissioners denies the request from Traditions North LLC to Reserve Street Names for the Traditions North Residential Development generally located north of the intersection of Nevada Station and Rock Creek Parkways in Dayton on an approximately 220.75-acre portion of a 230.76-acre parcel (APN 016-406-07), PLZ-2025-098.

STAFF REVIEW AND COMMENTS

The applicants are requesting road name reservations for the proposed Traditions North Residential Subdivision. The applicant is also submitting concurrent applications for a zone change to a Planned Unit Development (PLZ-2025-093), the Planned Unit Development application and handbook (PLZ-2025-094), and a Tentative Subdivision Map (PLZ-2025-095) for the first phases of development.

The project site is currently undeveloped and will be directly adjacent to the Traditions Residential development to the south. Planning Department staff sent out review documents to the Lyon County Building Department, Road Department, Sheriff Department's Dispatch and the Central Lyon Fire Protection District for verification that duplicate names do not exist or that they have no objection.

Responses from Lyon County Roads, Mason Valley Fire Protection District, Lyon County Sheriff's Dispatch and the Building Department indicate that the proposed street names are acceptable, with the exception of Goldspan Drive/Court as there is an existing Gold Pan Way in Dayton. The applicant has changed Goldspan to Gold Bar to meet the street name requirements.

LYON COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT
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CODE ENFORCEMENT * ECONOMIC DEVELOPMENT
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TRADITIONS NORTH STREET NAME REQUEST

PLZ-2025-098

Backup information is included in the Board of County Commissioners Agenda, under Item 14.i. Traditions North Tentative Subdivision Map.

The attachments are as follows:

Attachment 1: Project Narrative

Attachment 2: Plan Set

Attachment 3: Traffic, Drainage, and Hydrology & Hydraulics Studies

Attachment 4: Geotechnical Report

Attachment 5: Preliminary Sewer Report

Attachment 6: Typical Lot Landscape Plans and Street Cross-Sections

Attachment 7: Neighborhood and Pocket Parks and North Drainage Trail Section

Attachment 8: Draft PUD Handbook - Updated

Attachment 9: Street Name Request Form

February 3, 2026

Mr. Gavin Henderson, Director
Lyon County Community Development Department
27 S. Main St.
Yerington, NV 89447

RE: Letter of Support for Traditions North Development and Sutro Tunnel Land Donation

Dear Mr. Henderson:

On behalf of the Board of Directors of the Friends of Sutro Tunnel Charity, we are writing to express our strong support for the Traditions North development and the associated land donation benefiting the historic Sutro Tunnel in Dayton, Nevada.

The Traditions North project reflects a thoughtful and balanced approach to growth—one that addresses housing needs while making an extraordinary commitment to open space preservation, historic stewardship, and long-term community benefit. Of the approximately 230 acres comprising the project site, more than 80 acres are proposed to be permanently preserved as open space, including a 10-acre land donation to our organization.

This generous donation builds upon the Friends of Sutro Tunnel's existing 27.94 acres, expanding the Sutro Tunnel Portal Park to 38 acres. This expansion significantly strengthens our ability to preserve one of Nevada's most important engineering and cultural landmarks while enhancing opportunities for public access, education, and regional tourism.

Importantly, this land donation comes on the heels of substantial recent investment in the Sutro Tunnel site, including a $493,000 Travel Nevada grant and more than $700,000 in additional private and community donations. Together, these contributions are helping move the Sutro Tunnel closer to being safely opened to the public, transforming it into a meaningful tourism destination and a historic park for residents and visitors of Dayton, Lyon County, and the surrounding region to enjoy. These efforts are expected to generate positive economic impacts through increased visitation, heritage tourism, and local business activity.

The donated acreage includes some of the most visually prominent areas associated with the Sutro Tunnel and its historic portal. Preserving these lands in perpetuity will help maintain the tunnel's strong visual and cultural presence throughout Dayton and ensure that future generations can appreciate the site's historic significance. The expanded footprint also allows

for long-term planning that supports historic interpretation, restoration efforts, and responsible public use.

In addition to the Sutro Tunnel land donation, we commend Traditions North for designating an additional 74 acres as permanent open space and for thoughtfully clustering development to protect scenic views, historic resources, and community character. This approach aligns well with Lyon County's long-term planning goals and demonstrates how responsible development and historic preservation can move forward together.

The Friends of Sutro Tunnel Charity sincerely appreciates the partnership and generosity demonstrated through this project. We believe Traditions North represents a positive and lasting investment in Dayton's future and respectfully encourage Lyon County to view this project favorably as it proceeds through the review process.

Thank you for your time, consideration, and continued commitment to thoughtful planning and preservation within Lyon County.

Sincerely,

Board of Directors | Friends of Sutro Tunnel Charity
Phil Cowee
Bill Miles
Mark Turner
Sam Landis
Rob McFadden

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
15.a

Subject:
For Possible Action: Approve letters of support on behalf of the Board of Commissioners for Community Project Funding Requests.

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

ATTACHMENTS
- Lift Station 4 Rehabilitation Project Letter
- Rolling A to South Plant Effluent Pumping Improvements Letter
- Water Main Addition - Eldorado Zone Loop Project Letter

BOARD OF COUNTY COMMISSIONERS
LYON COUNTY NEVADA
27 South Main Street
Yerington, Nevada 89447
Phone: (775)463-6531 **Fax**: (775)463-6533

John Cassinelli, District 1
Scott Keller, District 2
Tammy Hendrix, District 3
Rob Jacobson, District 4
Dave Hockaday, District 5

Andrew Haskin
County Manager

March 5, 2026

The Honorable Mark Amodei
U.S House of Representatives
104 Cannon House Office Building
Washington, DC 20515

Re: Lyon County - Lift Station 4 Rehabilitation Project - Letter of Support

Dear Congressman Amodei:

On behalf of the Lyon County Board of Commissioners, I am pleased to submit this letter of support for the Lyon County Utilities Department's request for Community Project Funding for the Lift Station 4 Rehabilitation Project.

Sewer Lift Station 4, located at 490 Dayton Valley Road, Dayton, NV has reached its end of life and needs rehabilitation to extend the life of the lift station and ensure continued operation in the sewer collection system. The Lift Station also needs to be equipped and upgraded with proper instrumentation and control facilities to function efficiently.

Thank you for considering this project. If you have any further questions, please don't hesitate to contact me at skeller@lyon-county.org.

Sincerely,

Scott Keller
Chair – Lyon County Board of County Commissioners

BOARD OF COUNTY COMMISSIONERS
LYON COUNTY NEVADA
27 South Main Street
Yerington, Nevada 89447
Phone: (775)463-6531 **Fax**: (775)463-6533

John Cassinelli, District 1
Scott Keller, District 2
Tammy Hendrix, District 3
Rob Jacobson, District 4
Dave Hockaday, District 5

Andrew Haskin
County Manager

March 5, 2026

The Honorable Jacky Rosen
U.S Senator for Nevada
713 Hart Senate Office Building
Washington, DC 20515

Re: Lyon County - Lift Station 4 Rehabilitation Project - Letter of Support

Dear Senator Rosen:

On behalf of the Lyon County Board of Commissioners, I am pleased to submit this letter of support for the Lyon County Utilities Department's request for Community Project Funding for the Lift Station 4 Rehabilitation Project.

Sewer Lift Station 4, located at 490 Dayton Valley Road, Dayton, NV has reached its end of life and needs rehabilitation to extend the life of the lift station and ensure continued operation in the sewer collection system. The Lift Station also needs to be equipped and upgraded with proper instrumentation and control facilities to function efficiently.

Thank you for considering this project. If you have any further questions, please don't hesitate to contact me at skeller@lyon-county.org.

Sincerely,

Scott Keller
Chair – Lyon County Board of County Commissioners

BOARD OF COUNTY COMMISSIONERS
LYON COUNTY NEVADA
27 South Main Street
Yerington, Nevada 89447
Phone: (775)463-6531 **Fax**: (775)463-6533

John Cassinelli, District 1
Scott Keller, District 2
Tammy Hendrix, District 3
Rob Jacobson, District 4
Dave Hockaday, District 5

Andrew Haskin
County Manager

March 5, 2026

The Honorable Catherine Cortez Masto
U.S Senator for Nevada
520 Hart Senate Office Building
Washington, DC 20515

Re: Lyon County - Lift Station 4 Rehabilitation Project - Letter of Support

Dear Senator Cortez Masto:

On behalf of the Lyon County Board of Commissioners, I am pleased to submit this letter of support for the Lyon County Utilities Department's request for Community Project Funding for the Lift Station 4 Rehabilitation Project.

Sewer Lift Station 4, located at 490 Dayton Valley Road, Dayton, NV has reached its end of life and needs rehabilitation to extend the life of the lift station and ensure continued operation in the sewer collection system. The Lift Station also needs to be equipped and upgraded with proper instrumentation and control facilities to function efficiently.

Thank you for considering this project. If you have any further questions, please don't hesitate to contact me at skeller@lyon-county.org.

Sincerely,

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Chair – Lyon County Board of County Commissioners

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Andrew Haskin
County Manager

March 5, 2026

The Honorable Catherine Cortez Masto
U.S Senator for Nevada
520 Hart Senate Office Building
Washington, DC 20515

Re: Lyon County - Rolling A to South Plant Effluent Pumping Improvements - Letter of Support

Dear Senator Cortez Masto:

On behalf of the Lyon County Board of Commissioners, I am pleased to submit this letter of support for the Lyon County Utilities Department's request for Community Project Funding for the Rolling A to South Plant Effluent Pumping Improvements Project.

The existing effluent pumping to the Golf Course and other disposal sites near the South Plant needs a standby effluent pump and upsizing the force main under the Carson River in order to maximize the effluent delivery to the reuse sites. The current system deficiencies limit the effluent disposal capacity of the utility impacting the overall wastewater management in the utility's service area.

Thank you for considering this project. If you have any further questions, please don't hesitate to contact me at skeller@lyon-county.org.

Sincerely,

Scott Keller
Chair – Lyon County Board of County Commissioners

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March 5, 2026

The Honorable Jacky Rosen
U.S Senator for Nevada
713 Hart Senate Office Building
Washington, DC 20515

Re: Lyon County - Rolling A to South Plant Effluent Pumping Improvements - Letter of Support

Dear Senator Rosen:

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Andrew Haskin
County Manager

March 5, 2026

The Honorable Mark Amodei
U.S House of Representatives
104 Cannon House Office Building
Washington, DC 20515

Re: Lyon County - Rolling A to South Plant Effluent Pumping Improvements - Letter of Support

Dear Congressman Amodei:

On behalf of the Lyon County Board of Commissioners, I am pleased to submit this letter of support for the Lyon County Utilities Department's request for Community Project Funding for the Rolling A to South Plant Effluent Pumping Improvements Project.

The existing effluent pumping to the Golf Course and other disposal sites near the South Plant needs a standby effluent pump and upsizing the force main under the Carson River in order to maximize the effluent delivery to the reuse sites. The current system deficiencies limit the effluent disposal capacity of the utility impacting the overall wastewater management in the utility's service area.

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County Manager

March 5, 2026

The Honorable Mark Amodei
U.S House of Representatives
104 Cannon House Office Building
Washington, DC 20515

Re: Lyon County - Water Main Addition - Eldorado Zone Loop Project - Letter of Support

Dear Congressman Amodei:

On behalf of the Lyon County Board of Commissioners, I am pleased to submit this letter of support for the Lyon County Utilities Department's request for Community Project Funding for the Water Main Addition - Eldorado Zone Loop Project.

Construction of a new 12" water main between Lakes Blvd and Lakeview Dr. will serve as an emergency backup line to maintain water supply to the Eldorado Zone (which includes the airport and the airport/Lakes Blvd industrial park) in the event of a well failure, tank failure, break in the Lake Blvd main, or any other shut downs in Lakes Blvd, Dayton, NV.

Thank you for considering this project. If you have any further questions, please don't hesitate to contact me at skeller@lyon-county.org.

Sincerely,

Scott Keller
Chair – Lyon County Board of County Commissioners

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March 5, 2026

The Honorable Jacky Rosen
U.S Senator for Nevada
713 Hart Senate Office Building
Washington, DC 20515

Re: Lyon County - Water Main Addition - Eldorado Zone Loop Project - Letter of Support

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Sincerely,

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March 5, 2026

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520 Hart Senate Office Building
Washington, DC 20515

Re: Lyon County - Water Main Addition - Eldorado Zone Loop Project - Letter of Support

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Thank you for considering this project. If you have any further questions, please don't hesitate to contact me at skeller@lyon-county.org.

Sincerely,

Scott Keller
Chair – Lyon County Board of County Commissioners

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
18.a

Subject:
For Presentation Only: Presentation on University of Nevada, Reno's Rural Outreach Clinic efforts in Lyon County (Lea Pope, Rural Health Education Coordinator, University of Nevada, Reno).

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
18.b

Subject:
For Presentation Only: Presentation on Empowered Go, a mobile Opioid Misuse treatment option for child-bearing aged women (Shannon Lepe, Director of Clinical Operations, Empowered Northern Nevada).

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
18.c

Subject:
For Possible Action: Information on the Rural Health Transformation Program and discussion on possible County projects and collaborations (Shayla Holmes, Director Lyon County Human Services).

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation:

Lyon County Board of County Commissioners Agenda Summary

Meeting Date: March 5, 2026

Agenda Item Number:
18.d

Subject:
For Discussion and Possible Action: Future agenda items and Board of Health meeting date, June 4th or June 18th. (Shayla Holmes, Director, Lyon County Human Services).

Summary:

Financial Department Comments:

Approved As To Legal Form:

County Manager Comments:

Recommendation: