December 5, 2024

Meadow Edge Park, LLC
c/o Route 49 Partners, LLC
Mr. Doug Lawler
92400 Highway 70
Winton, CA 96135

Addendum to the "Focused Transportation Impact Study for the Meadow Edge Park Manufactured Housing Community"

Dear Mr. Burgess;

Potential transportation impacts associated with the proposed housing project were analyzed in the "Focused Transportation Impact Study for the Meadow Edge Park Manufactured Housing Community" (FTIS), W-Trans, 2023. Since that time, the proposed expansion has been reduced from 151 to 50 housing units, as shown on the enclosed updated site plan. The purpose of this addendum letter is to assess how the changes to the project description may affect the findings in the original FTIS, which is also enclosed.

Project Description

The project's FTIS presented potential impacts associated with an additional 151 dwelling units to be accessed via two existing driveways on SR 70 and one potential driveway on SR 49. The project has since been reduced to 50 new dwelling units and the potential driveway on SR 49 has been abandoned. The updated site plan is enclosed for reference.

Trip Generation

As indicated on Page 2 of the FTIS, the project was previously expected to result in 1,075 new trips over existing conditions with 59 new trips during the weekday a.m. peak hour and 87 new trips during the p.m. peak hour. Using the same rates for "Mobile Home Park" (LU #240) published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 11th Edition, 2021, the 50-unit project would be expected to generate 356 new trips on a daily basis with 20 new trips during the a.m. peak hour and 29 new trips during the p.m. peak hour. This translates to 719 fewer daily trips than analyzed in the FTIS, including 39 fewer a.m. trips and 58 fewer p.m. trips.

When added to the existing trips, the site would be expected to generate a total of 733 daily trips on average, including 41 trips during the a.m. peak hour and 60 trips during the p.m. peak hour. These results are summarized in Table 1.

Table 1 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Existing											
Mobile Home Park	53 du	7.12	377	0.39	21	4	17	0.58	31	19	12
Proposed											
Mobile Home Park	50 du	7.12	356	0.39	20	4	16	0.58	29	18	11
Total	**103 du**		**733**		**41**	**8**	**33**		**60**	**37**	**23**

Note: du = dwelling unit

Site Access

As identified in the FTIS, sight lines were found to be adequate at both driveways on SR 70, which would continue to be the case with the modified unit count. No turn lane improvements were determined to be warranted at either driveway on SR 70, even conservatively assigning all project trips to a single access point. Therefore, elimination of the potential connection to SR 49 would not change the findings in the FTIS since all project trips were assigned to each access point for analysis purposes, effectively analyzing the project as if it had only one driveway. The project, as proposed, would be expected to result in roughly one-third of the trips previously expected and analyzed in the FTIS and since no improvements were previously warranted, none would be warranted with the reduced-intensity project.

Conclusions

- The 50-unit version of the project would be expected to result in 719 fewer daily trips on a typical weekday compared to what was analyzed in the FTIS, with 39 fewer trips during the weekday a.m. peak hour and 58 fewer trips during the p.m. peak hour.

- The elimination of access on SR 49 would not change the findings presented in the FTIS since all project trips were assigned to each access point for the purpose of determining the potential need for turn lane improvements.

- Because the modified project would result in fewer daily and peak hour trips compared to the previously analyzed levels, the analysis and resulting findings and recommendations identified in the FTIS remain valid.

Thank you for giving us the opportunity to provide these services. Please let us know if you have any questions.

Sincerely,

Cameron Nye, PE (Traffic)
Transportation Engineer

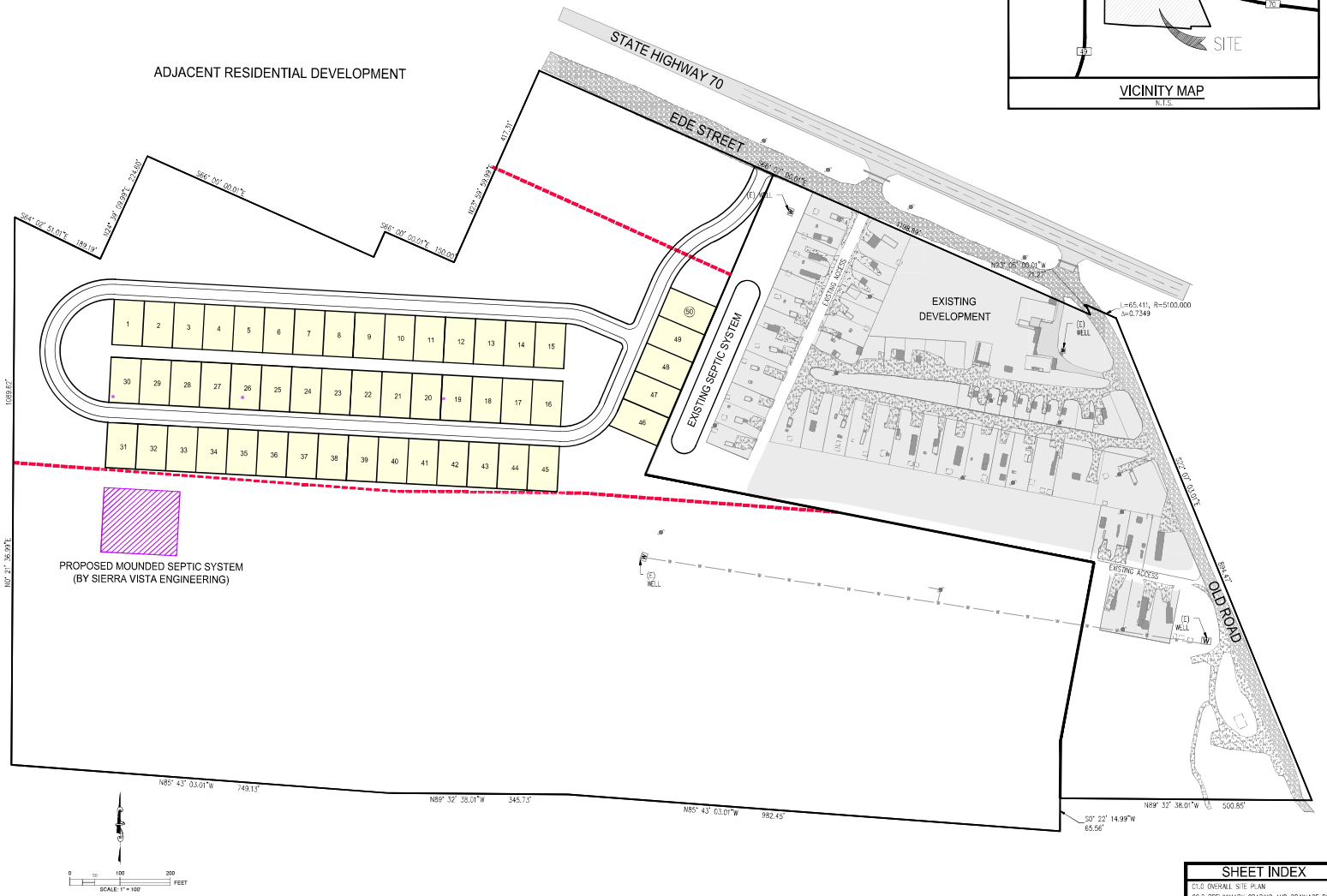
Dalene J. Whitlock, PE (Civil, Traffic), PTOE
Senior Principal

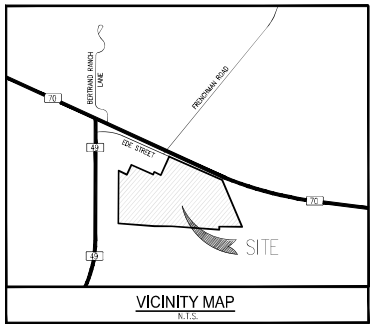
DJW/cjn/PUX002-1.L2

Enclosure: Updated Site Plan, FTIS for the Meadow Edge Park Manufactured Housing Community

OVERALL SITE PLAN
FOR
MEADOW EDGE PARK
NOVEMBER, 2024

LEGEND	
	PROPERTY LINE
	WATER STORAGE AREA
	OPEN SPACE/COMMON AREA
	GRAVEL ROAD
	PROPOSED BIORETENTION AREA
OH OH	EXISTING OVERHEAD UTILITIES & POLES
W W (W)	EXISTING WELL
	NOISE CONTOURS (APPROXIMATE)





VICINITY MAP
N.T.S.

NOTES:

1. WASTEWATER TREATMENT & WATER STORAGE AREAS SUBJECT TO CHANGE IN SIZE AND LOCATION (SEE WASTEWATER DESIGN CONSIDERATIONS).

OVERALL LOTS

EXISTING SPACES	= 53
PROPOSED SPACES	= 50
TOTAL SPACES	= 103

PROJECT INFORMATION

PROPERTY ADDRESS
92400 HIGHWAY 70
VINTON, CA 96135

OWNER/APPLICANT
ROUTE 49 PARTNERS
775-223-4891

PLANNING/ENGINEERING
MILLENNIUM PLANNING & ENGINEERING
471 SUTTON WAY, SUITE 210
GRASS VALLEY, CA 95945
530-446-6765
CONTACT PERSON: ROB WOOD, AICP

SURVEYING
TERRAGRAPHIC LAND SURVEYING
P.O. BOX 566
TAHOE CITY, CA 96145
530-318-1761
CONTACT PERSON: TRAVIS PACHACKI

ASSESSOR'S PARCEL NUMBERS
010-200-002
010-200-003

ZONING/GENERAL PLAN
ZONING: C-3 (COMMERCIAL), S-1 (SUBURBAN)
GENERAL PLAN: CONVENIENCE COMMERCIAL, SUBURBAN RESIDENTIAL

LOT AREA
62.85 ACRES (APN-002)
0.87 ACRES (APN-003)
63.72 ACRES (OVERALL)

WATER AND ELECTRICAL
WELL & PSREC

SEWAGE DISPOSAL
SEPTIC / PROPOSED ON-SITE TREATMENT FACILITY

FIRE PROTECTION
SIERRA VALLEY FIRE DEPARTMENT

SHEET INDEX

MILLENNIUM PLANNING & ENGINEERING
471 Sutton Way, Suite 210
Grass Valley, CA 95945
www.millenniumpge.com

MEADOW EDGE PARK
92400 HIGHWAY 70
SITE PLAN
PLUMAS COUNTY CALIFORNIA

REV.	DESCRIPTION	DATE

DESIGNED: REW
DRAWN: TOG
PROJ. NO: 26-104
DWG: SEE DATSTAMP
DATE: NOV 2024

SHEET NUMBER
C1.0

June 15, 2023

Meadow Edge Park, LLC
c/o Route 49 Partners, LLC
Mr. Doug Lawler
92400 Highway 70
Winton, CA 96135

Focused Transportation Impact Study for the Meadow Edge Park Manufactured Housing Community

Dear Mr. Lawler;

As requested, W-Trans has prepared a focused transportation analysis for the proposed Meadow Edge Park Manufactured Housing Community to be located at 92400 State Route (SR) 70 in Plumas County near the community of Vinton. The purpose of this letter is to present an analysis of the potential need for left-turn channelization on State Route (SR) 49 and SR 70 at the project access points and an evaluation of the project's transportation impact on Vehicle Miles Traveled (VMT), as required under the California Environmental Quality Act (CEQA). The analysis that follows was completed in accordance with criteria and methodologies typically accepted by the County of Plumas and Caltrans District 2 and is consistent with standard traffic engineering techniques.

Project Description

The project as proposed is an expansion of the existing mobile home park located on the south side of SR 70 and east of SR 49 from 53 sites to 204 sites. Access would continue to be provided by two existing road connections on SR 70 as well as a potential new driveway on SR 49. The site plan for the proposed expansion is attached for reference.

Transportation Setting

Study Roadways

The study area includes the sections of SR 49 between SR 70 and the railroad overpass and SR 70 between SR 49 and Patterson Street. SR 49 in the study area is a two-lane north-south highway with a posted speed limit of 65 miles per hour (mph), a 12-foot travel lane in each direction, and no paved shoulders. In the study area SR 70 is a two-lane east-west highway with a posted speed limit of 55 mph, 12-foot travel lanes, and eight-foot paved shoulders. Based on count data collected by Caltrans in 2019, SR 49 has a peak hour volume of 130 vehicles and an average daily traffic (ADT) volume of 1,150 vehicles. SR 70 has a peak hour volume of 530 vehicles and an ADT volume of 4,150 vehicles.

Collision History

The collision histories for the approximately 2.1-mile section of SR 70 between SR 49 and Patterson Street and the approximately half-mile section of SR 49 between SR 70 and the railroad overpass were reviewed to determine any trends or patterns that may indicate a safety issue in the vicinity of the project site. Collision rates were calculated based on records available from the California Highway Patrol (CHP) as published in their Statewide Integrated Traffic Records System (SWITRS) reports. During the most current complete five-year study period for which data is available, which is between January 1, 2017, and December 31, 2021, there were nine collisions reported on SR 70 and one collision reported on SR 49. No injury collisions were reported involving a motorist that was either turning into or out of the existing road connections on SR 70. This translates to calculated collision rates of 0.56 collisions per million vehicles miles (c/mvm) for SR 70 and 1.04 c/mvm for SR 49.

The calculated collision rates were compared to the average collision rates for similar facilities statewide, as indicated in *2019 Collision Data on California State Highways*, California Department of Transportation (Caltrans). The statewide average collision rate for a conventional two-lane highway in a rural environment with a posted speed limit less than or equal to 55 mph is 0.85 c/mvm, while facilities with speed limits above 55 mph have an average collision rate of 0.70 c/mvm. Since SR 70 has a calculated collision rate below the statewide average for similar facilities, it appears that the roadway is performing acceptably with regards to safety. While SR 49 has a calculated collision rate above the statewide average for similar facilities it only had a single collision within a five-year span and as such no pattern can be determined. Typically, a single collision within five years is not considered a safety concern.

Copies of the roadway segment collision rate calculations are enclosed.

Trip Generation

The anticipated trip generations for existing site uses as well as the proposed project were estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 11th Edition, 2021, for "Mobile Home Park" (LU #240). Based on application of these rates, existing development at the project site has a theoretical trip generation of 377 daily trips on average with 21 trips during the weekday a.m. peak hour and 31 trips during the p.m. peak hour. The proposed 151 new manufactured housing units would be expected to result in an average of 1,075 new daily trips, including 59 new a.m. peak hour trips and 87 new p.m. peak hour trips. These results along with the total trips upon buildout are summarized in Table 1.

Table 1 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Existing											
Mobile home Park	53 du	7.12	377	0.39	21	4	17	0.58	31	19	12
Proposed											
Mobile home Park	151 du	7.12	1,075	0.39	59	13	46	0.58	87	54	33
Total	**204 du**		**1,452**		**80**	**17**	**63**		**118**	**73**	**45**

Note: du = dwelling unit

Trip Distribution

The pattern used to allocate new project trips to the surrounding roadway network was determined based on familiarity with travel patterns in the area, likely origins and destinations for residents of the project, and input from Caltrans staff. It is anticipated that residents would primarily travel within Sierra Valley, including the community of Loyalton, with some travel also occurring to and from the suburban areas north of Reno, Nevada. For the purposes of the analysis, a balanced percentage was applied to the east on SR 70 and south on SR 49. The trip distribution assumptions are shown in Table 2.

Table 2 – Trip Distribution Assumptions	
Route	**Percent**
SR 70 – East of Project Site	40%
SR 70 – West of Project Site	20%
SR 49 – South of Project Site	40%
TOTAL	**100%**

Alternative Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. There are no pedestrian facilities in the project vicinity, and none are proposed to be built. Given the rural nature of the project site, the lack of proposed facilities is consistent with County policy and expected demand.

Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2019, classifies bikeways into four categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- **Class IV Bikeway** – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

There are currently no dedicated bicycle facilities in the immediate vicinity of the project site. According to the *2020 Plumas County Regional Transportation Plan,* Plumas County Transportation Commission, 2020, no bicycle facilities are planned in the project vicinity.

Transit Facilities

There are no transit facilities in the vicinity of the project site. Given the rural context of the project there is no expected transit demand.

Finding – The lack of facilities for pedestrian, bicycle, and transit access is considered adequate for the rural context of the project site. The project is consistent with applicable plans and policies for these modes.

Vehicle Miles Traveled

Senate Bill (SB) 743 established VMT as the metric to be applied for determining transportation impacts associated with development projects. As of the date of this analysis, the County of Plumas has not yet established thresholds of significance related to VMT, nor is there a regional travel demand model that contains VMT information. As a result, project-related VMT impacts were assessed qualitatively, with support from data contained in the statewide travel demand model. The *Technical Advisory on Evaluating Transportation Impacts in CEQA* (2018) developed by the state's Office of Planning and Research (OPR), referred to herein as the *Technical Advisory,* indicates that analysis of residential projects should generally use a "VMT per capita" performance metric. The *Technical Advisory*

also indicates that for rural projects outside of Metropolitan Planning Organization (MPO) boundaries, such as Plumas County, there are fewer options to reduce VMT, and significance thresholds may be best determined on a case-by-case basis. For the purposes of this assessment and in consideration of guidance from OPR, the project would be considered to have a less-than-significant VMT impact if it can reasonably be presumed to generate less VMT per capita than typical residential uses in the surrounding region.

In the *Technical Advisory*, OPR notes that clustered development in rural areas may have substantial VMT benefits compared to isolated rural development. This observation is relevant to the proposed project, which constitutes an expansion of existing clustered residential development within the community of Vinton. This type of development pattern promotes travel by non-auto modes (primarily that occurring between residences) and facilitates the ability for residents to carpool to school, work, and shopping. This type of clustered housing also improves the efficiency of providers such as Plumas County Senior Transportation Services to serve the site's current and future senior residents. Further, the site is located just over 1.5 miles from a small market, gas station, and post office in Chilcoot, resulting in very short lengths for trips associated with basic essential needs. Finally, the project by design provides an affordable housing option for those employed in surrounding Sierra Valley, including agriculture-based employment uses, and its central location within the valley should help to minimize commute travel distances.

While a regional travel demand model capable of estimating VMT is unavailable, the statewide travel demand model (STDM) overseen by Caltrans does include data for three traffic analysis zones (TAZs) within Plumas County, and may be useful to broadly consider how VMT in the project's area may quantitatively differ from the countywide average. The proposed project site is in TAZ 274, which has a daily VMT per capita of 19.2, and the countywide average VMT per capita is 20.0. While the STDM is relatively coarse, the data does affirm that the proposed project site can reasonably be expected to generate less VMT per capita than the broader region.

Based on consideration of the project type, context, and location, as well as supporting data from the statewide travel demand model, the proposed project can reasonably be expected to generate lower levels of VMT per capita than most residential uses in the surrounding region. The project may therefore be considered to have a less-than-significant impact on VMT.

Finding – The proposed project is anticipated to have a less-than-significant VMT impact.

Vehicle Access

The project site has two existing private roads, both on the south side of SR 70, that connect to Ede Street and then ultimately form road connections with SR 70. These roads are located approximately 2,400 and 2,800 feet east of the intersection of SR 49/SR 70. As part of the project, a potential connection to SR 49 is also being considered. The section of SR 70 in the study area is mostly flat with a sweeping horizontal curve to the east of the project site. The existing connections to SR 70 do not have left-turn lanes, though a third road connection further west of the project site does have a paved 16-foot shoulder that allows motorists to move out of the travel lane when completing right turns. Project residents would have the option of using this connection and Ede Street to reach the site from SR 70 in addition to the two connections immediately adjacent to the project site. SR 49 in the project vicinity is straight and generally flat with no left-turn lanes or paved shoulders.

Sight Distance

At private roads and intersections of public roads, a substantially clear line of sight should be maintained between the driver of a vehicle waiting at a crossroad and the driver of an approaching vehicle. Adequate time must be provided for the waiting vehicle to either cross the road, turn left, or turn right, without requiring the through traffic to radically alter their speed.

Sight distances along SR 49 at the location of the potential new driveway and along SR 70 at the existing road connections were evaluated using sight distance criteria contained in the *Highway Design Manual* (HDM) published by Caltrans. The recommended sight distances for minor public road approaches to intersections of are based on corner sight distances, with more sight distance needed for making a left turn versus a right turn. Additionally, the stopping sight distance needed for a following driver to stop if there is a vehicle waiting to turn into a side road is evaluated based on stopping sight distance criterion. Both corner sight distance and stopping sight distance are based on the approach speed of traffic on the major road. It should be noted that while the potential connection to SR 49 would be a private roadway indicating use of stopping sight distance, the more stringent corner sight distance criteria was applied to result in a more conversative analysis.

For speeds of 55 mph on SR 70, the minimum corner sight distance needed is 530 feet and 610 feet for right turns and left turns respectively. Travel speeds of 65 mph on SR 49 would require a minimum of 625 feet and 720 feet of corner sight distance for right turns and left turns respectively. Sight lines to and from the locations of the driveway and road connections were measured using Google Maps imagery and were determined to extend more than 610 feet in each direction on SR 70 and more than 775 feet in each direction along SR 49, which are more than adequate for the posted speed limits of both highways. While the design details for a potential connection to SR 49 have not yet been refined, for the purposes of this analysis it was assumed that the potential connection would be located approximately 1,200 feet south of the intersection with SR 70 based on the proposed layout of the project site and the orientation of the internal roads.

Additionally, given the relatively straight and flat alignments of SR 49 and SR 70 near the project site, adequate stopping sight distances are available for a following driver to notice and react to a preceding motorist slowing to turn right or stopped waiting to turn left into the side roads.

While sight lines are currently clear, care should be taken to maintain unobstructed sight lines during the design and construction of the potential SR 49 driveway and placement of signage, monuments, or other structures should be avoided within the sight triangles at all three driveways. Any landscaping in the vision triangle should be lower than three feet tall for ground cover and tree canopies trimmed to be seven feet above the pavement surface.

Finding – Existing sight lines are adequate to accommodate all turns into and out of the project roads.

Recommendation – To preserve existing sight lines, any new signage, monuments, or other structures should be positioned outside of the vision triangles of a driver waiting on the project road approaches. Landscaping planted in the vision triangles should be low-lying or above seven feet and maintained to remain outside the area needed for adequate sight lines.

Left-Turn Lane Warrants

The need for left-turn lanes on SR 49 and/or SR 70 at the existing road locations and proposed driveway location were evaluated using the methodology from the American Association of State Highway and Transportation Officials (AASHTO), which is typically used by Caltrans District 2. The expected trips to be generated by the project were added to the existing volumes to determine if a left-turn lane would be warranted. To present a conservative analysis of the potential need for left turn channelization, all project trips were routed to one of the existing road connections on SR 70.

During the critical p.m. peak hour, 29 left turns and 44 right turns into the project site would be anticipated with all project trips occurring at a single intersection. Using a standard regression analysis to interpolate between the various threshold values shown in the enclosed AASHTO warrant table, installation of a left-turn lane would not be warranted even under the conservative assumptions applied. If the trips were spread across multiple connections the potential need for a turn lane would be further reduced. While the assignment of all right turns to a single access point indicates need for a right turn taper, with the spreading of trips evenly across two road

connections, the warrants would not be satisfied. Further, motorists approaching from the west would be able to use the road connection about 1,600 feet east of SR 70/SR 49 which has an existing paved shoulder area for deceleration. Therefore, installation of a left-turn lane or right-turn taper would not be warranted even without a proposed connection to SR 49.

The need for a left turn lane or right-turn taper was also analyzed at the potential driveway connection on SR 49. While the posted speed limit on SR 49 is 65 mph, the left-turn warrant was analyzed based on a speed limit of 60 mph due to limitations in the AASHTO methodology and given the proximity of the driveway to the intersection with SR 70 it is unlikely that southbound motorists would be traveling more than 60 mph at the project driveway since they would still be accelerating after turning on to SR 49 from SR 70. During the p.m. peak hour at the SR 49 driveway, seven vehicles would be expected to make left turns into the site with 29 right turns. Based on these volumes, neither a right-turn taper nor a left-turn lane would be warranted on SR 49. Copies of the turn lane warrant evaluation worksheets are enclosed.

Finding – A left-turn lane is not warranted on SR 70 at the road connections or on SR 49 at the potential driveway location. A right-turn taper would be warranted on SR 70 if all traffic were routed to only one access point, but would not be warranted if traffic is spread across at least two connections as is expected; therefore, installation of a right-turn taper is not recommended. The presence of a driveway on SR 49 does not change the results of the warrant analyses for the SR 70 road connections.

Emergency Access

The proposed project would include roads that are 22 feet wide, which is adequate to meet the minimum roadway width of 20 feet needed for emergency vehicles according to section 9-4.501 of the County of Plumas' Development Standards. Site access and circulation are therefore expected to function acceptably for emergency response vehicles. Since all roadway users must yield the right-of-way to emergency vehicles when using their sirens and lights, the project-generated traffic that would be added to SR 49 and SR 70 is expected to have a less-than-significant impact on emergency response times.

Finding – The proposed project would have a less-than-significant impact on emergency response times. Site access and circulation for emergency vehicles would be adequate assuming the site is designed in accordance with applicable design and construction standards.

Conclusions and Recommendations

- The study segment of SR 70 between SR 49 and Patterson Street had a calculated collisions rate well below the statewide average for similar facilities for the five-year period reviewed. The study segment of SR 49 between SR 70 and the railroad overpass had only one collision over the five-year study period reviewed. This indicates that the roadways are performing acceptably with regards to safety. Further, there were no injury collisions reported involving a motorist turning into or out of the existing road connections on SR 70.

- The proposed project is expected to result in an average of 1,075 additional daily trips over existing conditions with 59 new trips during the a.m. peak hour and 87 new trips during the p.m. peak hour.

- The lack of existing and planned pedestrian, bicycle, and transit facilities is acceptable for the proposed project given the rural context and consistency with County policy.

- The project is expected to have a less-than-significant impact on VMT.

- Based on measurements derived using Google Maps aerial imagery, existing sight lines are adequate to accommodate all turns into and out of the existing project roads and at the potential location of a new access

on SR 49. To preserve existing sight lines, any new signage, monuments, or other structures installed as part of the project should be positioned outside of the vision triangles of a driver waiting on the project road approaches. Landscaping planted in the vision triangle should be low-lying or above seven feet and maintained to remain outside the area needed for adequate sight lines.

- A left-turn lane is not warranted on SR 70 at the road connections or on SR 49 at the potential driveway location. A right-turn taper would be warranted on SR 70 if all traffic were routed to only one access point but would not warranted if traffic is spread across all of the available connections as is expected; therefore, installation of a right-turn taper is not recommended.

- The proposed project would have a less-than-significant impact on emergency response times and access for emergency responders is anticipated to be acceptable assuming implementation of appropriate design standards.

Thank you for giving W-Trans the opportunity to provide these services. Please call if you have any questions.

Sincerely,

William Andrews, EIT
Assistant Engineer

Cameron Nye, EIT
Associate Engineer

Dalene J. Whitlock, PE, PTOE
Senior Principal

DJW/cn/PUX002.L1

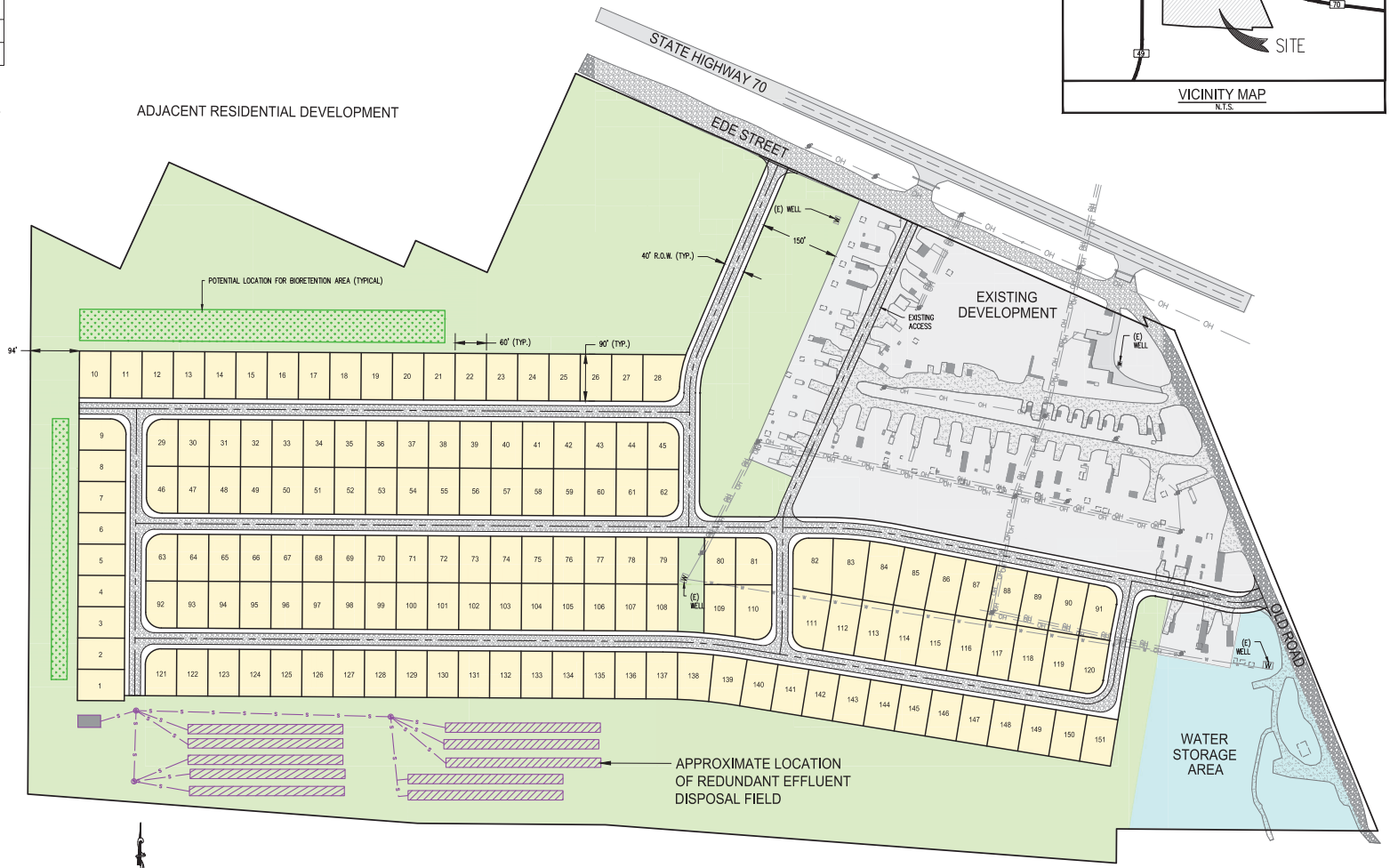
Enclosures: Site Plan
Collision Rate Calculations
AASHTO Turn Lane Warrant Thresholds Table
Turn Lane Warrants Worksheets

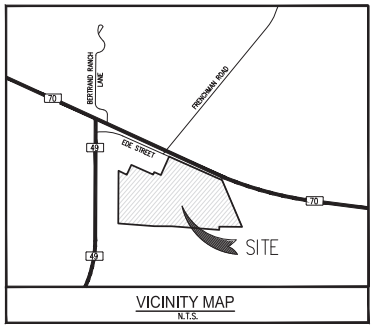
OVERALL SITE PLAN
FOR
MEADOW EDGE PARK
DECEMBER, 2022

LEGEND	
	PROPERTY LINE
	UNIT (~60'X90')
	WATER STORAGE AREA
	OPEN SPACE/COMMON AREA
	PROPOSED 22' WIDE GRAVEL ROAD
	EXISTING COMPACTED DIRT
	EXISTING ASPHALT
OH OH	EXISTING OVERHEAD UTILITIES & POLES
W W W	EXISTING WELL

NOTES:
1. WASTE WATER TREATMENT & WATER STORAGE AREAS SUBJECT TO CHANGE IN SIZE AND LOCATION (SEE WASTEWATER DESIGN CONSIDERATIONS).
2. OPEN SPACE TO POTENTIALLY SERVE AS ADDITIONAL WASTE WATER TREATMENT & WATER STORAGE AREA

OVERALL SPACES
EXISTING SPACES = 53
PROPOSED SPACES = 151
TOTAL SPACES = 204





VICINITY MAP
N.T.S.

PROJECT INFORMATION

PROPERTY ADDRESS
92400 HIGHWAY 70
VINTON, CA 96135

OWNER/APPLICANT
ROUTE 49 PARTNERS
775-223-4891

PLANNING/ENGINEERING
MILLENNIUM PLANNING & ENGINEERING
471 SUTTON WAY, SUITE 210
GRASS VALLEY, CA 95945
530-446-6765
CONTACT PERSON: ROB WOOD, AICP

SURVEYING
TERRAGRAPHIC LAND SURVEYING
P.O. BOX 266
TAHOE CITY, CA 96145
530-318-1761
CONTACT PERSON: TRAVIS PACHACKI

ASSESSOR'S PARCEL NUMBERS
010-200-002
010-200-003

ZONING/GENERAL PLAN
ZONING: C-3 (COMMERCIAL), S-1 (SUBURBAN)
GENERAL PLAN: CONVENIENCE COMMERCIAL, SUBURBAN RESIDENTIAL

LOT AREA
62.85 ACRES (APN-002)
0.87 ACRES (APN-003)
63.72 ACRES (OVERALL)

WATER AND ELECTRICAL
WELL & PSREC

SEWAGE DISPOSAL
SEPTIC / PROPOSED ON-SITE TREATMENT FACILITY

FIRE PROTECTION
SIERRA VALLEY FIRE DEPARTMENT

SHEET INDEX

MILLENNIUM PLANNING & ENGINEERING
471 Sutton Way, Suite 210
Grass Valley, CA 95945
www.millenniumpe.com

MEADOW EDGE PARK
92400 HIGHWAY 70
SITE PLAN
PLUMAS COUNTY CALIFORNIA

REV.	DESCRIPTION	DATE

DESIGNED: REW
DRAWN: LAS
PROJ. NO: 20-1104
DWG: SEE DATSTAMP
DATE: DECEMBER 15, 2022

SHEET NUMBER
C1.0

Roadway Segment Collision Rate Worksheet

FTIS for the Meadow Edge Park Manufactured Housing Community

Location: SR 70

Date of Count: Saturday, January 1, 2022
Average Daily Traffic (ADT): 4,200

Number of Collisions: 9
Number of Injuries: 6
Number of Fatalities: 0
Start Date: January 1, 2017
End Date: December 31, 2021
Number of Years: 5

Highway Type: Conventional 2 lanes or less
Area: Rural
Design Speed: ≤55
Terrain: Flat
Segment Length: 2.1 miles
Direction: East/West

$$\text{Collision Rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times \text{Days per Year} \times \text{Segment Length} \times \text{Number of Years}}$$

$$\text{Collision Rate} = \frac{9 \times 1{,}000{,}000}{4{,}200 \times 365 \times 2.1 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Segment	**0.56 c/mvm**	**0.0%**	**66.7%**
Statewide Average*	**0.85 c/mvm**	**2.5%**	**40.2%**

Notes
ADT = average daily traffic volume
c/mvm = collisions per million vehicle miles
* 2019 Collision Data on California State Highways, Caltrans

Location: SR 49

Date of Count: Saturday, January 1, 2022
Average Daily Traffic (ADT): 1,050

Number of Collisions: 1
Number of Injuries: 0
Number of Fatalities: 0
Start Date: January 1, 2017
End Date: December 31, 2021
Number of Years: 5

Highway Type: Conventional 2 lanes or less
Area: Rural
Design Speed: >55
Terrain: Flat
Segment Length: 0.5 miles
Direction: North/South

$$\text{Collision Rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times \text{Days per Year} \times \text{Segment Length} \times \text{Number of Years}}$$

$$\text{Collision Rate} = \frac{1 \times 1{,}000{,}000}{1{,}050 \times 365 \times 0.5 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
Study Segment	**1.04 c/mvm**	**0.0%**	**0.0%**
Statewide Average*	**0.70 c/mvm**	**3.2%**	**38.9%**

Notes
ADT = average daily traffic volume
c/mvm = collisions per million vehicle miles
* 2019 Collision Data on California State Highways, Caltrans

Opposing Volume, VPH	Advancing Volume, VPH			
	5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
40-mph Operating Speed				
800	330	240	180	160
600	410	305	225	200
400	510	380	275	245
200	640	470	350	305
100	720	575	390	340
50-mph Operating Speed				
800	280	210	165	135
600	350	260	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295
60-mph Operating Speed				
800	230	170	125	115
600	290	210	160	140
400	365	270	200	175
200	450	330	250	215
100	505	370	275	240

Table V-1 Warrants for left-turn lanes on two-lane highways. (Source: Ref. 2)

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: SR 70
Study Scenario: Existing PM Plus Project, Only SR 70, One Connection

Direction of Analysis Street: East/West
Cross Street Intersects: From the South

SR 70

Eastbound Volumes (veh/hr)

Through Volume = 265
Right Turn Volume = 44

Eastbound Speed Limit: 55 mph
Eastbound Configuration: 2 Lanes - Undivided

Exisiting Road

SR 70

Westbound Volumes (veh/hr)

265 = Through Volume
29 = Left Turn Volume

Westbound Speed Limit: 55 mph
Westbound Configuration: 2 Lanes - Undivided

Eastbound Right Turn Lane Warrants

1. Check for right turn volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	570
Advancing Volume	Va =	309
If AV<Va then warrant is met		No

Right Turn Lane Warranted: **NO**

Eastbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	260
Advancing Volume	Va =	309
If AV<Va then warrant is met		Yes

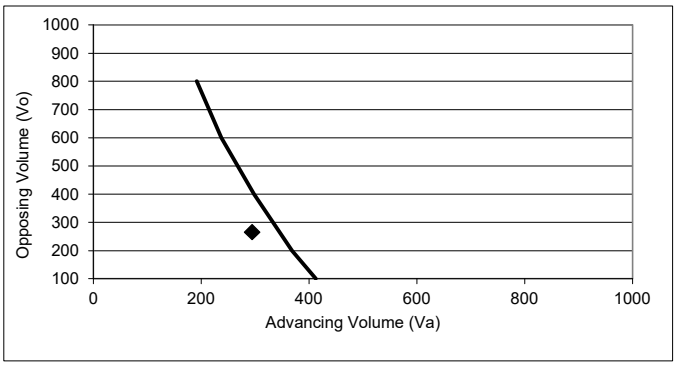
Right Turn Taper Warranted: **YES**

Westbound Left Turn Lane Warrants

Percentage Left Turns %lt 9.9 %

Advancing Volume Threshold AV 346 veh/hr

If AV<Va then warrant is met



◆ Study Intersection

——— Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: **NO**

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis uses a regression based on work conducted by M.D. Harmelink in 1967, as presented in the California Department of Transportation's Guide
Reconstruction of Intersections (1985) and AASHTO's Policy on Geometric Design of Highways and Streets (7th ed.).

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: SR 70
Study Scenario: Existing PM Plus Project, Only SR 70, Both Connections

Direction of Analysis Street: East/West
Cross Street Intersects: From the South

SR 70

Eastbound Volumes (veh/hr)

Through Volume = 265
Right Turn Volume = 22

Eastbound Speed Limit: 55 mph
Eastbound Configuration: 2 Lanes - Undivided

Exisiting Road

SR 70

Westbound Volumes (veh/hr)

265 = Through Volume
15 = Left Turn Volume

Westbound Speed Limit: 55 mph
Westbound Configuration: 2 Lanes - Undivided

Eastbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	287
If AV<Va then warrant is met		-

Right Turn Lane Warranted: **NO**

Eastbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	480
Advancing Volume	Va =	287
If AV<Va then warrant is met		No

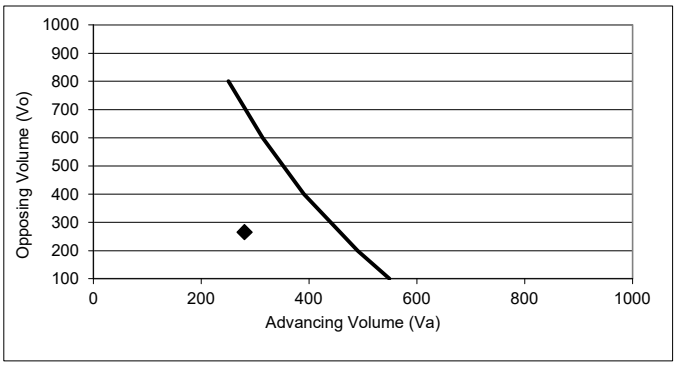
Right Turn Taper Warranted: **NO**

Westbound Left Turn Lane Warrants

Percentage Left Turns %lt 5.4 %

Advancing Volume Threshold AV 458 veh/hr

If AV<Va then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 55 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: **NO**

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis uses a regression based on work conducted by M.D. Harmelink in 1967, as presented in the California Department of Transportation's Guide
Reconstruction of Intersections (1985) and AASHTO's Policy on Geometric Design of Highways and Streets (7th ed.).

Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: SR 49
Study Scenario: Existing PM Plus Project

Direction of Analysis Street: North/South
Cross Street Intersects: From the East

SR 49

Northbound Volumes (veh/hr)

Through Volume = 65
Right Turn Volume = 29

Northbound Speed Limit: 60 mph
Northbound Configuration: 2 Lanes - Undivided

Proposed Road

SR 49

Southbound Volumes (veh/hr)

65 = Through Volume
7 = Left Turn Volume

Southbound Speed Limit: 60 mph
Southbound Configuration: 2 Lanes - Undivided

Northbound Right Turn Lane Warrants

1. Check for right turn volume criteria

NOT WARRANTED Less than 40 vehicles

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold	AV =	-
Advancing Volume	Va =	94
If AV<Va then warrant is met		-

Right Turn Lane Warranted: **NO**

Northbound Right Turn Taper Warrants
(evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

Thresholds not met, continue to next step

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold	AV =	410
Advancing Volume	Va =	94
If AV<Va then warrant is met		No

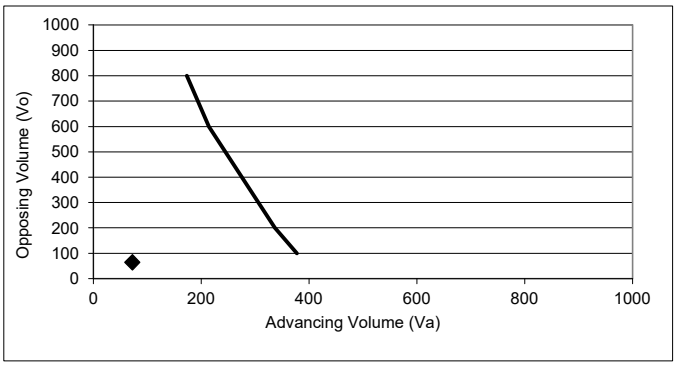
Right Turn Taper Warranted: **NO**

Southbound Left Turn Lane Warrants

Percentage Left Turns %lt 9.7 %

Advancing Volume Threshold AV 378 veh/hr

If AV<Va then warrant is met



◆ Study Intersection

——— Two lane roadway warrant threshold for: 60 mph

Turn lane warranted if point falls to right of warrant threshold line

Left Turn Lane Warranted: **NO**

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.
The left turn lane analysis uses a regression based on work conducted by M.D. Harmelink in 1967, as presented in the California Department of Transportation's Guide
Reconstruction of Intersections (1985) and AASHTO's Policy on Geometric Design of Highways and Streets (7th ed.).