STAFF REPORT FOR THE PLANNING COMMISSION MEETING OF APRIL 26, 2023

FILE NO: **SUB-2022-0374** **AGENDA ITEM: 6.C**

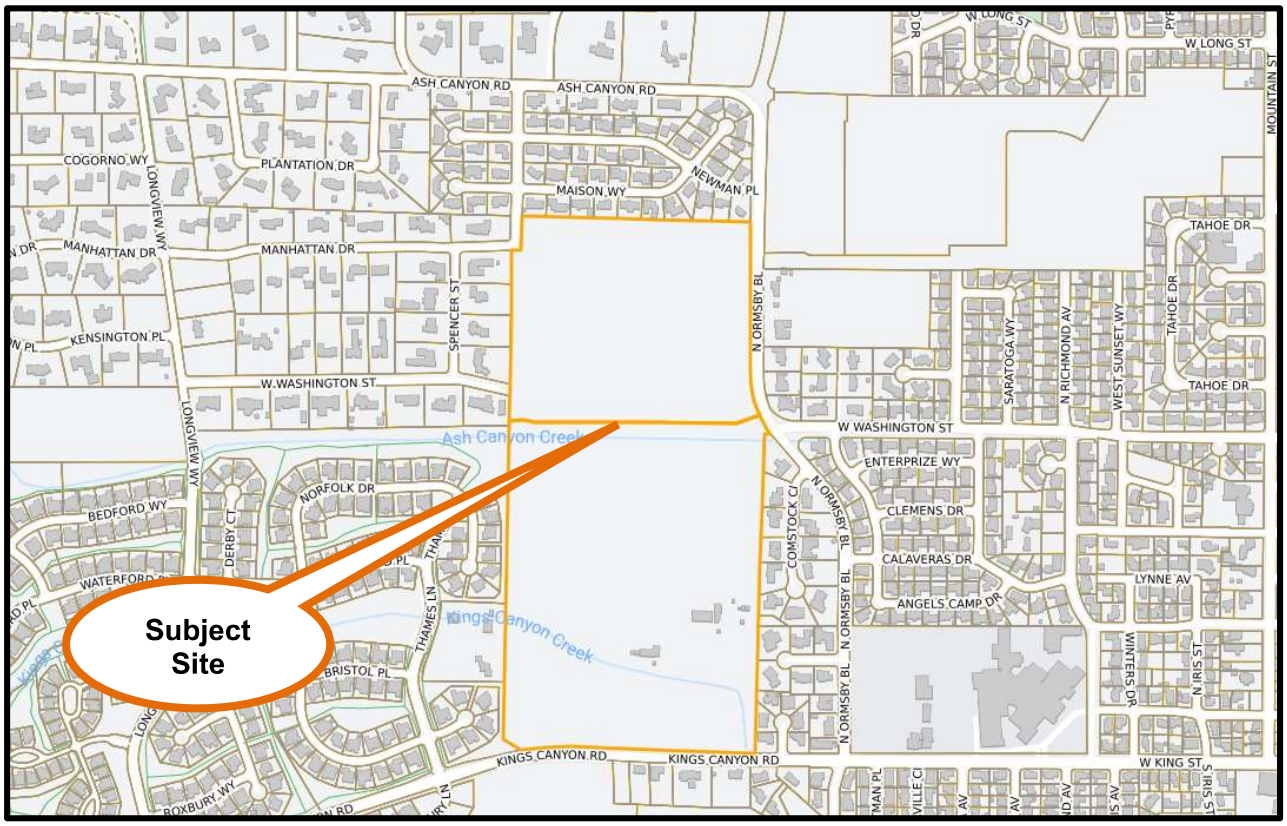
STAFF CONTACT: Heather Manzo, Associate Planner

AGENDA TITLE: For Possible Action: Discussion and possible action regarding a request from Andersen-Colard Ranch Enterprises, LLC ("Applicant") for a recommendation to the Board of Supervisors ("Board") concerning a tentative subdivision map (SUB-2022-0374) known as Andersen Ranch West, to create 61 single family residential lots and a 50.33-acre remainder parcel with an existing residence on an ±80.53 acre site zoned Single Family 1 Acre ("SF1A") and Single Family 12,000 Square Feet ("SF12"), located west of Ormsby Boulevard and north of Kings Canyon Road, Assessor's Parcel Numbers ("APNs") 009-012-20 and -21. (Heather Manzo, hmanzo@carson.org)

Summary: The Applicant is requesting to subdivide an ±80.53-acre site consisting of 2 parcels into 61 single family residential lots with a minimum lot size of ±14,380 square feet, 3.89 acres of common open space, and a 50.33-acre remainder parcel with an existing residence, using the provisions of Carson City Municipal Code ("CCMC") Chapter 17.10 - Common Open Space Development. The Board is authorized to approve a tentative subdivision map. The Planning Commission makes a recommendation to the Board.

RECOMMENDED MOTIONS:
"I move to recommend approval of tentative subdivision map SUB-2022-0374 to the Board of Supervisors based on the ability to make the required findings and subject to the conditions of approval included in the staff report."

VICINITY MAP:



RECOMMENDED CONDITIONS OF APPROVAL:
(The following conditions of approval have been modified where appropriate based on the updated proposed application submitted on March 29, 2023)

The following are Tentative Map conditions of approval required per CCMC 18.02.105(5):

1. All final maps shall be in substantial accord with the approved tentative map.

2. Prior to submittal of any final map, the Carson City Public Works, Development Engineering Division ("Development Engineering") shall approve all on-site and off-site improvements. The applicant shall provide construction plans to Development Engineering for all required on-site and off-site improvements, prior to any submittals for approval of a final map. The plan must adhere to the recommendations contained in the project soils and geotechnical report.

3. Lots not planned for immediate development shall be left undisturbed and mass grading and clearing of natural vegetation shall not be allowed. Any and all grading shall comply with city standards. A grading permit from the Nevada Division of Environmental Protection shall be obtained prior to any grading. Noncompliance with this provision shall cause a cease-and-desist order to halt all grading work.

4. All lot areas and lot widths shall meet the zoning requirements approved as part of this tentative map with the submittal of any parcel map or preferably final map.

5. With the submittal of any parcel map or preferably final maps, the applicant shall provide evidence to the Carson City Community Development Department, Planning Division ("Planning Division") from the Carson City Health and Human Services Department and the Carson City Fire Department ("Fire Department") indicating the agencies' concerns or requirements have been satisfied. Said correspondence shall be included in the submittal package for any final maps and shall include approval by the fire department of all hydrant locations.

6. The following note shall be placed on all final maps stating:

"These parcels are subject to Carson City's growth management ordinance and all property owners shall comply with provisions of said ordinance."

7. Placement of all utilities, including AT&T Cablevision, shall be underground within the subdivision. Any existing overhead facilities shall be relocated prior to the submittal of final maps.

8. The Applicant must sign and return the notice of decision for conditions for approval within 10 days of receipt of notification after the Board of Supervisors meeting. If the notice of decision is not signed and returned within 10 days, then the item will be rescheduled for the next planning commission meeting for further consideration.

9. Hours of construction will be limited to 7:00 a.m. to 7:00 p.m., Monday through Friday, and 7:00 a.m. to 5:00 p.m. on Saturday and Sunday. If the hours of construction are not adhered to, the Carson City Community Development Department, Building Division ("Building Division") will issue a warning for the first violation, and upon a second violation, will have the ability to cause work at the site to cease immediately.

10. The Applicant shall adhere to all city standards and requirements for water and sewer systems, grading and drainage, and street improvements.

11. The applicant shall obtain a dust control permit from the Nevada Division of Environmental Protection. The site grading must incorporate proper dust control and erosion control measures.

12. A detailed storm drainage analysis, water system analysis, and sewer system analysis shall be submitted to Development Engineering prior to approval of a final map.

13. Prior to the recordation of the final map for any phase of the project, the improvements associated with the project must either be constructed and approved by Carson City, or the specific performance of said work secured, by providing the city with a proper surety in the amount of 150 percent of the engineer's estimate. In either case, upon acceptance of the improvements by the city, the developer shall provide the city with a proper surety in the amount of 10% of the engineer's estimate to secure the developer's obligation to repair defects in workmanship and materials which appear in the work within 1 year of acceptance by the city.

14. A "will serve" letter from the water and wastewater utilities shall be provided to the Nevada Health Division prior to approval of a final map.

15. The district attorney shall approve any Covenants, Conditions and Restrictions (“CC&R's”) prior to recordation of the first final map.

The following conditions are required per CCMC 17.10.050

16. Three-Year Maintenance Plan. Provisions shall be made to monitor and maintain, for a period of three (3) years regardless of ownership, a maintenance plan for the common open space area. The maintenance plan for the common open space area shall, at a minimum, address the following:
    - Vegetation management;
    - Watershed management;
    - Debris and litter removal;
    - Fire access and suppression;
    - Maintenance of public access and/or maintenance of limitations to public access; and
    - Other factors deemed necessary by the commission or the board: vector control and noxious weed control.

The maintenance plan shall be submitted prior to final map recordation, recorded at the time of final map recordation, and referenced on the final map.

17. Permanent Preservation and Maintenance. Provisions shall be made for the permanent preservation and ongoing maintenance of the common open space and other common areas using a legal instrument acceptable to the city. This shall be addressed prior to final map recordation. A homeowner’s association (“HOA”) or similar entity must be formed for maintenance of common open space and other common areas.

18. Screening and Buffering of Adjoining Development. Provisions shall be made to assure adequate screening and buffering of existing and potential developments adjoining the proposed common open space development. Prior to the approval of the first site

improvement plan, the applicant shall have plans approved demonstrating that screening is provided through a mix of evergreen and deciduous trees within the common open space area and solid rear-yard fences for all lots which abut common open space.

19. Common Open Space Restrictions. Designated common open space shall not include areas devoted to public or private vehicular streets or any land which has been, or is to be, conveyed to a public agency via a purchase agreement for such uses as parks, schools or other public facilities. This shall be demonstrated at the time of final map.

Other Conditions of Approval:

20. Prior to the approval of any site improvement permit or final subdivision map, the applicant shall demonstrate that a deed restriction has been recorded limiting the density of the remainder parcel. Based on the current allowable density of the overall subject site, as determined by the zoning districts, the maximum allowable remaining density for the ±50.33-acre remainder parcel shall be limited to 71 residential units. This limitation and associated deed restriction shall be noted on the final map.

21. The minimum lot size shall be 14,380 square feet and the minimum setbacks shall be noted on the final map and shall be as follows:

Front	20 feet
Side	10 feet
Street Side	15 feet
Rear	20 feet

22. With the site improvement permit application, the applicant shall provide the following:
    a. A landscape and irrigation plan demonstrating compliance with the applicable sections of the Carson City Development Standards ("CCDS") in Division 3 for the common area parcels and any other common area landscaping.
    b. An open space exhibit demonstrating both quantitatively and qualitatively, compliance with the requirements of CCMC 17.10.046.

23. Prior to the issuance of a site improvement permit, the traffic impact study shall be updated to adjust the trip distribution analysis to the approval of the City Engineer. Based on the updated trip distribution, a pro-rata share contribution shall be calculated for the future North Ormsby Boulevard extension. Prior to the recordation of a final map, the applicant shall submit the pro-rata contribution, not to exceed $118,895.13.

24. Prior to the issuance of a site improvement permit, the developer shall update the water, sewer and traffic impact study analyses to include the Ash Canyon Subdivision (SUB-2022-0375) If updated studies recommend additional project mitigations, the developer shall incorporate the recommended mitigations, to the approval of the City Engineer.

25. Prior to the issuance of the site improvement permit and prior to the recordation of the final map, the applicant shall demonstrate that all internal streets will be constructed to meet the roadway section urban standard detail (C-5.1.8), including 5-foot-wide sidewalks on both sides of the street.

26. Prior to the issuance of a site improvement permit, the applicant shall demonstrate that plans include the construction of a multi-use path, sidewalks, and bike lanes that comply with the Unified Pathways Master Plan ("UPMP"). The plans shall include the installation of a crosswalk, pedestrian ramp and a rectangular rapid flashing beacon ("RRFB") across Ormsby Blvd that connects the project's multiuse pathway located to the east of lot 13 to

the multiuse pathway at Andersen Ranch on the east side of Ormsby Boulevard. Prior to the recordation of the final map, the applicant shall demonstrate that these improvements have been constructed or bonded for and public access easements have been granted.

27. Prior to the issuance of a site improvement permit, the applicant shall have plans approved which include a water sampling tap is located within a common area parcel near one of the project entrances. The sampling tap must be a Kupferle Eclipse #88 or approved equivalent. Prior to the final inspection for the site improvement permit, the water sampling tap must be installed.

28. The City will not be responsible for any landscape or irrigation system maintenance within the subdivision. All landscaping and landscape maintenance in the right of way will be the sole responsibility of the developer, HOA, or similar entity. The developer is required to maintain all common landscape and open space areas within the development including any landscaping in the rights of way in perpetuity.

29. Carson City is a Bee City, USA. As a result, the developer shall use approximately 50% pollinator friendly plant material for any required landscaping on the project site. Landscape plant material selection needs to be consistent with the City's approved tree species list or other tree species, as approved by the City. The Carson City pollinator plant list and other plant selection resources can be found at www.carson.org/beecityusa.

30. The developer shall incorporate "best management practices" into their construction documents and specifications to reduce the spread of noxious weeds.

31. Where possible, deciduous trees must be planted a minimum of 5 feet from any city/public street, sidewalk or pathway and evergreen trees must be planted a minimum of 10 feet from any city/public street, sidewalk or pathway. Fruit bearing, "non-fruiting" flowering or any other trees that drop debris such as seed pods shall be prohibited near or placed where they will eventually hang over public sidewalks or pathways.

32. Prior to the issuance of a site improvement permit, the Applicant shall have plans approved to construct a multi-use path for public use. The Applicant shall provide a 30 foot wide (minimum) easement for the path where the path does not abut the public right of way. The easement shall be for non-motorized public access. The easement document shall indicate that maintenance of the easement shall be the responsibility of the HOA, or similar entity in perpetuity. The multi-use path (off street/paved/shared) shall be at least 10 feet wide and designed to meet AASHTO standards for a concrete path with an adjacent 3 foot wide decomposed granite path, including interpretive/wayfinding signage, pet waste receptacles, trash receptacles, benches and related amenities. The path will be constructed from the City's Long Ranch Pathway system on the northeast corner of APN 007-392-39 to North Ormsby Boulevard.

LEGAL REQUIREMENTS: CCMC 17.05 (Tentative Maps); CCMC 17.07 (Findings); CCMC 17.10 (Common Open Space Development); and NRS 278.330

SITE DEVELOPMENT INFORMATION:
SUBJECT SITE AREA: 80.53 acres
EXISTING LAND USE: Single family with ranch and pasture

MASTER PLAN DESIGNATION: Medium Density Residential and Low Density Residential

ZONING: SF6 and SF12

KEY ISSUES: Is the Tentative Map consistent with the required findings? Does the proposal meet the Tentative Map requirements and other applicable requirements? Can the proposed project be supported by the required findings?

SURROUNDING ZONING AND LAND USE INFORMATION

NORTH: SF12 / Single family residences
SOUTH: SF12 & Public Community ("PC") / residential and public open space
EAST: Single Family 12,000 / Single family residences & vacant land
WEST: Single Family 1 Acre and PC / single family residential and Carson City trails

ENVIRONMENTAL INFORMATION:

FLOOD ZONE: Zone X (shaded) and Zone AE
SEISMIC ZONE: Zone I (Greatest Severity) and II (Moderate Severity)
FAULT: Beyond 500 feet

BACKGROUND:

At its meeting on September 28, 2022, the Planning Commission recommended denial of the request noting their inability to make tentative map findings 6, 8, and 11. The following summarizes the Planning Commission's discussion as it relates to these findings:

6. Conformity with the zoning ordinance and land use element of the City's Master Plan.

The Commission found the proposal did not adhere to the purpose of CCMC Chapter 17.10 (Common Open Space Development) as stated in CCMC 17.10.005 as the development was not a cluster subdivision that preserved or provided open space, the project did not offer any protections of natural, cultural or scenic resources, the project did not minimize road building and did not offer a mix of housing types. The Commission noted that the development should include large usable open space. The Commission stated the multi-use pathways and detention basins were not sufficient usable common open space areas and that an opportunity was missed by utilizing Ash Canyon Creek as a project boundary rather than incorporating the creek into their common open space and recreation amenities.

8. The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision.

Commissioners found the addition of four new streets between the Ash Canyon subdivision and the subject project, onto North Ormsby Boulevard appeared to create conflicts and did not seem to have enough spacing between existing and proposed intersections. The Commission suggested that the northern project roadway be shifted south to align with the Ash Canyon project and the southern roadway be shifted further south to make a through connection of West Washington Street from the western project boundary to the North Ormsby Boulevard and West Washington Street intersection.

The Commission stated the proposed subdivision did not include an opportunity for a roadway connection from the proposed development to the 50-acre remainder parcel to the south. Because the remainder parcel abuts existing developments to the east and west, approval of the proposed project would result in Kings Canyon Road as the only access point, eliminating the possibility of secondary access with future development. The Planning Commission noted that since the subject site encompassed the full 80 acres of land, considerations for access to the remainder parcel should be made with this project to make the required finding.

11. The availability and accessibility of fire protection 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.

As discussed under Finding 8 above, the Commission was unable to make Finding 11 as the proposal takes into consideration emergency access for only the portion of the site currently proposed for development. By not providing alternative access for the remainder parcel accessibility of fire protection will be limited to only Kings Canyon Road. The Commission suggested that secondary access should be provided by a means other than Kings Canyon Road either by providing a connection through the proposed subdivision or some other alternative access.

The Planning Commission's recommendation to deny the request was presented to the Board on November 3, 2022. In advance of the Board meeting, the Applicant provided an updated tentative subdivision map along with a summary of changes the Applicant's team incorporated into the plan to address the concerns the Planning Commission had noted during the September 28, 2022 public hearing. The revisions removed one of the two access roads on Ormsby Boulevard and aligns the roadway with the proposed roadway for the Ash Canyon development located on the east side of Ormsby Boulevard. The Applicant had also stated that there is sufficient remainder parcel frontage on Ormsby Boulevard to accommodate secondary access at the time the remainder parcel is proposed for development. The Applicant noted in their response letter that the proposed common open space development adhered to all of the established standards contained in CCMC Chapter 17.10.

The Board was presented with the revised plan and discussed the proposal. The Board discussed the changes, noting that the changes appeared to address some of the concerns that were discussed by the Planning Commission, but didn't know if the changes were sufficient to address the noted concerns. In addition to concurrence with some of the points the Planning Commission had raised in their discussion to recommend denial, especially in missed opportunities to make the east/west connection of Washington Street and by not including designing Ash Canyon Creek into the project as a part of the common open space area. The Board felt that if density is being transferred from the remainder parcel that the remainder parcel should include common open space as well since it is part of the subject site and should not be treated entirely separate from the tentative map area.

Following discussion, the Board remanded the application back to the Planning Commission in order for the Planning Commission to evaluate whether the changes made to the application are sufficient that all findings can be made.

The Applicant provided updated application materials on March 29, 2023 to address previously stated Planning Commission and Board concerns at their respective meetings held on September 28, 2022 and November 3, 2022.

DISCUSSION:

The project site is located on the west side of North Ormsby Boulevard ±660 feet south of its intersection with Ash Canyon Road. The site consists of two parcels totaling ±80.53 acres in size and is zoned SF1A and SF12. The site is currently developed with a single-family home, barns, and pasture.

The Applicant is seeking approval of a tentative subdivision map to subdivide the northern portion of the project site into 61 single family residential units as a common open space development utilizing the standards that were in place at the time of application as set forth in CCMC Chapter 17.10. A remainder parcel will encompass the existing ranch house and remaining agricultural land not proposed for further subdivision at this time.

The application has been revised to reduce the number of project entries on North Ormsby Boulevard from two to one. The proposed entrance from Ormsby Boulevard is in alignment with the approved Ash Canyon Subdivision located to the east of the site. The right of way width of the proposed roadway connections to Manhattan Drive and West Washington Street have been widened to 50 feet wide to comply with the minimum right of way width requirements. The Applicant has identified a 9.46 acre area labeled "Private Open Space" within the remainder parcel.

PUBLIC COMMENTS: Public notices were mailed on April 13, 2023 to 299 property owners within 900 feet of the subject site pursuant to the provisions of NRS and CCMC for the Tentative Subdivision Map application. As of the completion of this staff report no public comments have been received. Any written comments that are received after this report is completed will be submitted prior to or at the Planning Commission meeting on April 26, 2023 depending upon their submittal date to the Planning Division.

OTHER CITY DEPARTMENT OR OUTSIDE AGENCY COMMENTS: The following comments were received from City departments as they relate to the revised application submitted on March 29, 2023.

Development Engineering

Development Engineering has reviewed the updated application within our areas of purview relative to adopted standards and practices and to the provisions of CCMC 17.07.005. We agree with the discussed Tentative Map findings that were provided with the September 28, 2022 Planning Commission staff report. Following public hearings of the Planning Commission and Board, and in review of revised materials provided by the Applicant, the following discussion relates to the revisions since the last Planning Commission's meeting as they pertain to Findings 6, 8, and 11.

6. Conformity with the zoning ordinance and land use element of the city's master plan.

Development engineering has no comment on this finding.

8. The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision.

The project is anticipated to generate with approximately 576 Daily trips with 43 peak AM trips and 58 peak PM trips to the external roadway network. The project is required to contribute to the North Ormsby Blvd Pro Rata share (total cost estimate of the Pro Rata share is $1,380,000). With the revised roadway plans, the development's single eastern access to North Ormsby Boulevard will coincide with the southern intersection of the entitled Ash Canyon development. The City evaluated the proposal of requiring West Washington Street to have a direct connection from the existing western portion to the existing eastern portion. While it appears the original intent may have been to connect West Washington Street from east to west, the City now believes that this

connection would result in increased traffic through an established neighborhood, resulting in a detrimental impact on the existing neighborhoods on Washington Street as a whole.

11. The availability and accessibility of fire protection 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 subdivision has sufficient secondary access, and sufficient fire water flows. The southern portion of the parcel has sufficient secondary access, as there is roughly 95 feet of access to North Ormsby Boulevard, which is sufficient for a 60ft roadway, and the southern boundary runs along Kings Canyon Road.

The project must meet all Carson City Development Standards and Standard Details including but not limited to the following:

- Half-street improvements must be installed on North Ormsby Boulevard along the project frontage. This will include striping, sidewalk, curb, gutter, and paving to meet the city standard detail for a two-lane urban collector with bike lanes. Bike lane striping must be installed along the frontage.

- Half-street improvements must be installed on Kings Canyon Road along the project frontage. This will include striping, sidewalk, curb, gutter, and paving to meet the city standard detail for a two-lane urban collector with bike lanes.

- A multi-use path separated from the public right of way shall be installed along the north side of Kings Canyon Road per the Safe Routes to School ("SRTS") Master Plan and the Carson Area Metropolitan Planning Organization ("CAMPO") 2050 Regional Transportation Plan.

- All internal streets must meet the roadway section urban standard detail (C-5.1.8) including 5-foot-wide sidewalks on both sides of the street.

- The interior streets must have a minimum asphalt thickness of 4 inches, or per the geotechnical engineer's recommendations, whichever is thicker.

- ROW limits that connect to Washington Street and Manhattan Drive show a 43 foot width. The minimum acceptable ROW width is 50 feet for local streets per Division 12.6 Table 12.1 or to the City Engineers satisfaction.

- All intersections must meet MUTCD standards.

Please refer to the September 28, 2022 Planning Commission staff report for other comments pertaining to the project as these comments are still relevant to the request, unless otherwise updated above.

Fire Department

The proposed three access points do meet the International Fire Code ("IFC") requirements for access. With the current design, given the frontage for the remainder parcel on Ormsby Blvd, it could accommodate access for future development.

Updated Findings Discussion Following Revisions:

Changes to the project were made by the Applicant to specifically address Findings 6, 8 and 11 and the changes proposed do not negatively affect the other required tentative map findings that the Planning Commission was able to make on September 28, 2022. The findings summary provided below includes updated narratives for Findings 6, 8, and 11, only and is otherwise unchanged from the staff report for the September 28, 2022 Planning Commission meeting (attached).

1. 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 development is required to comply with all applicable environmental and health laws concerning water and air pollution and disposal of solid waste. A copy of the proposed tentative map was submitted to the Nevada Division of Water Resources and the Nevada Division of Environmental Protection. The Carson City Public Works Department has advised of adequate capacity to meet water and sewer demand, subject to the recommended conditions of approval. The utility design will need to meet all applicable development standards related to water and sewer design.

2. The availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision.

Water supplied to the development will meet applicable health standards. The City has sufficient system capacity and water rights to meet the required water allocation for the subdivision.

3. The availability and accessibility of utilities.

All utilities are available in the area to serve this development.

4. The availability and accessibility of public services such as schools, police protection, transportation, recreation and parks.

The project is located adjacent to existing single-family developments which are served by the existing public services including schools, sheriff, transportation facilities, and parks. As noted in the June 29, 2022 annual report to the Growth Management Commission, the Carson City School District has indicated that they do not have any concerns with the number of children resulting from the new construction. Development Engineering has reviewed the development for impacts to water, sewer, storm drainage, and roadway systems. As conditioned, the existing infrastructure has been found to be sufficient to supply water and sanitary sewer and the City has capacity to meet the demand. Based on the findings of the traffic study, the road network will be adequate to serve the project. The project will tie into existing public multi-use trails providing for recreational opportunities. Additionally, parks and public lands are within proximity to the proposed development. The Fire Department has also reviewed the development. As proposed, sufficient access is provided. As noted in the Fire Department comments, the project must comply with the currently adopted edition of the International Fire Code and the Northern Nevada Fire Code Amendments as adopted by Carson City.

5. Access to public lands. Any proposed subdivision that is adjacent to public lands shall incorporate public access to those lands or provide an acceptable alternative.

The project will provide for a connection between planned multi-use pathways to the east and existing pathways and public lands to the west of the project site. Frontage improvements will be completed along North Ormsby Boulevard and Kings Canyon Road frontages which include sidewalks. A condition of approval is recommended to install a rapid flashing beacon across North Ormsby Boulevard to ensure safe pedestrian and bicycle access to the broader public trail system in the area.

6. Conformity with the zoning ordinance and land use element of the City's Master Plan.

The Board of Supervisors repealed the provisions for CCMC Chapter 17.10 on April 6, 2023, however this application was submitted prior to the Board action that removed the common open space development provisions from CCMC. This request will be considered utilizing CCMC that was in place at the time the application was submitted.

The subject site consists of ±60.74 acres zoned SF1A and ±19.79 acres zoned SF12. Based on the zoning for the gross site area of the project, the site can be developed with a maximum of 132 single family dwelling units. CCMC Chapter 17.10 allows for modification to lot and yard standards through a common open space development, however the residential density shall not exceed the total number of dwelling units allowed by the underlying zoning districts. This proposal includes the development of 61 residential units and a remainder parcel that could be developed in the future with a total of 71 dwelling units. Staff has recommended a condition to require the applicant to place a note on the map and to record a deed restriction limiting the number of units that could be developed on the remainder parcel based on the current zoning.

CCMC Chapter 17.10 requires common open space development lots within the SF1A to meet a minimum lot size of 14,374.8 square feet and have minimum setbacks of: Front and Rear = 20 feet, Side = 10 feet, Street Side = 15 feet. CCMC Chapter 17.10 allows for modifications to lot dimensions and setbacks as described in Section 17.10.030. The overall design concept is single family detached with a minimum lot size of 14,380 square feet in compliance with the minimum lot standards.

The project proposes setbacks as follows:

Front Yard-	20 feet
Street Side Yard-	10 feet
Side Yard	15 feet
Rear Yard-	20 feet

The proposal includes approximately 3.89 acres of common open space throughout the project site. The project proposes landscaping and multi-use pathways along the project periphery that is a minimum 30 feet wide where the project abuts residences or areas that may be developed with residences. A minimum 20-foot project buffer is proposed along the North Ormsby Boulevard frontage. The common open space areas will include landscaping and trail connections that will be open to the public. Per the standard conditions for a Common Open Space Development, the project must provide for adequate screening and buffering of existing and potential development adjoining the proposed development. The proposal does not address proposed screening; therefore, staff has included a condition of approval requiring a privacy fence or wall to be installed along the rear yards of the project which abut the common open space areas.

The common open space provided exceeds CCMC requirements as illustrated by Table 1. It should be noted that the detention basins are excluded from the common open space acreage.

TABLE 1

Andersen Ranch West Open Space Table - Required v. Provided

Common Open Space

	Required (sq. ft.)	Acres	Provided (sq. ft.)	Acres
Common Open Space*	15,500	0.36	156,856	3.6
Park**	6,200	0.14	12,842	0.29
Detention Areas	N/A	N/A	40,500	0.93
Total (excluding 0.93 acres of detention areas)	15,500	0.36	169,698	3.89

* Per 17.10 required common open space area is 250 SF per lot
** Recreation area requirement is 100 SF per lot and part of the OS requirement

7. General conformity with the City's Master plan for streets and highways.

The project will provide east to west street grid and multi-use pathway connectivity. As proposed and with recommended conditions of approval, the proposed subdivision is in conformance with the City's master plan for streets and highways.

8. The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision.

The project is anticipated to generate approximately 576 Daily trips with 43 peak AM trips and 58 peak PM trips to the external roadway network. The project is required to contribute a pro rata share to the North Ormsby Blvd extension. With the revised roadway plans, the development's single eastern access to North Ormsby Boulevard will coincide with the southern intersection of the entitled Ash Canyon development. The City evaluated the proposal of requiring West Washington Street to have a direct connection from the existing western portion to the existing eastern portion. While it appears the original intent may have been to connect West Washington Street from east to west, the City now believes that this connection would result in increased traffic through an established neighborhood, resulting in a detrimental impact on the existing neighborhoods on Washington Street as a whole.

The project will provide for an essential connection of the multi-use and pedestrian trail network. Connections will be made to existing pathways to the west and future connections to the east. Additionally, pedestrian improvements are proposed on Kings Canyon Road which will provide for safe pedestrian movement along the project frontage. To ensure pedestrian safety with the project, a condition is recommended to require the applicant to install a crosswalk with a rapid flashing beacon that will help to ensure safe movement of pedestrians across North Ormsby Boulevard.

9. The physical characteristics of the land such as flood plains, earthquake faults, slope and soil.

Earthquake faults: The closest earthquake fault is over 500 feet away with a slip rate of less than 0.2 mm/yr.

FEMA flood zones: The current FEMA flood zone is Zone X (shaded) and Zone AE. House Moran has been in coordination with the Carson City Floodplain Manager on the Conditional Letter of Map Revision ("CLOMR") and the City agrees with the preliminary flood design. A condition is recommended to ensure the CLOMR and Letter of Map Revision ("LOMR") are completed at the appropriate time in the development process.

Site slope: The existing site slope is between 0 to 2 percent.

Soils: The soil is primarily coarse sandy loam with the depth to the water table between 10 to 12 inches. In the event that groundwater is encountered, construction must meet standard practices for mitigating groundwater. The geotechnical report did identify the liquefaction possibility but did not provide specific recommendations. The geotechnical report provided did not identify corrosive soils, however other projects near the subject site have identified corrosive soils within proximity to the project. If corrosive soils are identified, this condition is easily mitigated through geotechnical engineer recommendations. It is recommended that an updated geotechnical report be provided at the time of site improvement to ensure any necessary mitigations are in place with this development.

10. The recommendations and comments of those entities reviewing the subdivision request pursuant to NRS 278.330 thru 278.348, inclusive.

The proposed tentative map has been routed to the Nevada Department of Environmental Protection ("NDEP") and the Nevada Division of Water Resources. The Carson City Public Works Department has indicated sufficient water and sewer capacity to meet the demands of this project, subject to the condition of approval requiring the developer to enter into a pro-rata share agreement for the future extension of Ormsby Boulevard.

11. The availability and accessibility of fire protection 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 subdivision has sufficient secondary access, and sufficient fire water flows. The southern portion of the parcel has sufficient secondary access, as there is roughly 95 feet of access to North Ormsby Boulevard, which is sufficient for a 60 foot roadway, and the southern boundary runs along Kings Canyon Road. The Fire Department has reviewed the updated information and has noted the proposed three access points within the subdivision meet the IFC requirements for access. With the current design, the frontage for the remainder parcel on North Ormsby Boulevard is wide enough to accommodate access for future development.

12. Recreation and trail easements.

Recreational trails are proposed with the project which include connections to existing and planned multi-use pathways. A condition is recommended to ensure the proposed multi-use pathways within the project will include public easements.

Attachments

Updated Application – SUB-2022-0374 submitted March 29, 2023
Board of Supervisors Minutes – November 3, 2022
Board of Supervisors Staff Report – November 3, 2022
Planning Commission Minutes – September 28, 2022
Planning Commission Staff Report – September 28, 2022

LUMOS
& ASSOCIATES

ANDERSON RANCH WEST COMMON OPEN SPACE

TENTATIVE SUBDIVISION MAP AMENDED APPLICATION

February 7, 2023

950 Sandhill Rd, Suite 100
Reno, Nevada 89521
T 775.827.6111
F 775.827.6122
www.LumosInc.com

LAND SURVEYORS
CIVIL ENGINEERS
LAND USE PLANNERS

February 7, 2023
Amended March 29, 2023
HAND DELIVERED

Heather Manzo
Carson City Planning
108 E. Proctor Street
Carson City, NV 89701

RE: SUB2022-0374 (ANDERSEN RANCH WEST COMMON OPEN SPACE TENTATIVE MAP APPLICATION) – AMENDED APPLICATION PACKAGE INTRODUCTION LETTER

Dear Heather,

Working with Lumos & Associates on the reference application, I have provided this amended application package. for the Andersen Ranch West project. At the hearing on September 28, 2022, the Carson City Planning Commission identified that there were three findings that they could not make. Those findings were identified by the Planning Commissioners through the comments and documented in the hearing minutes. The specific findings were 6, 8 and 11. Subsequently, at the November 3, 2022, Carson City Board of Supervisors hearing, the project development team provided amended plan information to help address the legal findings that the Planning Commission had stated they could not make during the September 2022 hearing. With the agreement from the project applicant, the Board of Supervisors remanded the application back to the Planning Commission as the modifications to the plans had not been seen by the Planning Commission members. The applicant agreed to go back to the Planning Commission to identify the changes that had been made in the plans to address the three findings of concern that were expressed originally by the Planning Commission. Each of the findings that were identified by the Planning Commission is identified below and a summary of how each has been addressed is provided. The amended application package, including revised maps and exhibits, will help to illustrate the summarized modifications that have been provided.

Finding 6 - Conformity with the zoning ordinance and land use element of the city's master plan.

The project is designed to exceed the requirements for private and common open space that are identified within Carson City Municipal Code 17.10. The code requires that 250 SF of open space per dwelling unit be provided and that this may include private open space (this can include private yard areas) and/or common open space with no dimension of less than 25 feet in width. The required open space based on the 61 proposed dwelling units, plus one lot for the existing ranch house is 15,500 SF. Not including private yard areas, the total amount of common area that is provided is 3.90+/- acres or 170,799 SF. Without adding the private yard areas of each lot, the total amount of provided open space is approximately 11 times the required amount of open space. This common area includes a 12,842+ SF recreation area at the northeastern corner of the site on Lot D of the common area. The recreational

component is required to be 6,200 SF (100 SF per residential unit). The provided recreational component is over 2 times the required size and creates a tangible linkage between two existing trails in the area. We did not add any private open space amount in for the rear yard areas of each new residential lot, but the code does allow for this. Using an extremely conservative estimate of only 20-foot rear yards, this would add well over 100,000 additional square feet to the open space provided which would bring the total amount of open space to nearly 21 times the code requirement.

It had been discussed with staff that there was a desire not to include the detention basins within the common area calculation. There is approximately 40,500 SF of area associated with the detention basins in the project. If that area is excluded, we would still be well over the requirement for open space per the Code. The total percentage of the site provided as open space in this case would be approximately 17.7%.

Within the common open space of the subdivision, a trail connection will be provided linking the trail that begins at the Mountain Street Trailhead with the Quill Ranch public land parcel (APN 007-061-82) to the west. This linkage is a significant addition to the overall community.

In addition to the common open space area that is provided on the 29.7 AC Andersen Ranch West development site, the property owner has identified a 9.46+/- AC area around the Ranch House that would be private open space. This area is located on the southern portion of the property that is currently not proposed for development.

Finding 8 - The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision.

Two primary areas of concern appeared to exist with planning commission members at the September 28th hearing. These concern areas included: (1) the proposed points of access on N. Ormsby Blvd. not aligning with the access points at the Ash Canyon Subdivision, which was on the same hearing for review; and (2) identification of a secondary point of access into the southern 50+ acres of the 80.03+/- acre property, south of Ash Canyon Creek, rather than serving the future development only off Kings Canyon Road. The applicant and development team believe that both concerns have been addressed in the amended plans that are provided with this application.

The eastern access to the norther 61 lots in the Andersen Ranch West project area has been redesigned to include only one access on N. Ormsby Blvd, which aligns with the southern access to the Ash Canyon Subdivision. There are still two points of access on the western side of the project site, exceeding fire access requirements. The project plans have been amended to show a conceptual roadway pattern that could be used in the future development of the southern 50+ acres of the 80.03+/- acre property. The conceptual roadway pattern shows a secondary access connecting to the intersection of N. Ormsby Blvd and W. Washington Street. This connection is shown conceptually to be a secondary access, but it could be a publicly open access if deemed necessary with tentative map plans for future development on the southern parcel. There is over 100 feet of frontage along N. Ormsby Blvd to provide a public or gated access to the southern 50+ acres.

Finding 11 - The availability and accessibility of fire protection 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.

Brian Moon, PE of Lumos & Associates has met Carson City Public Works and there has been no concern issued relative to water availability to meet the requirements of the proposed subdivision for domestic service nor fire protection. Infrastructure, inclusive of fire hydrants meeting fire department spacing will be required and provided within the proposed subdivision. Similar to the concern addressed in finding #8, a conceptual roadway plan has been identified on the southern portion of the 80.03+/- acre parcel showing a future connection at the N. Ormsby Blvd/Washington Street intersection. This connection is shown conceptually to be a secondary access, but it could be a publicly open access if deemed necessary with tentative map plans for future development on the southern parcel. There is over 100 feet of frontage along N. Ormsby Blvd to provide a public or gated access to the southern 50+ acres. The southern 50+ acres of the 80.03+/- acre parcel will remain as irrigated pastureland until such a time as the Andersen/Colard family decide to no longer ranch.

We believe that the plan amendments and additional considerations that have been included in this application package meet the concerns of the Planning Commissioners at the September 28 2022 Planning Commission hearing. Should you have any questions regarding this summary or the attached amended Andersen Ranch West Common Open Space Tentative Subdivision Map application package, please feel free to contact me at 775-856-7073.

Respectfully submitted,

R. David Snelgrove, AICP
Planning & Right-of-Way Manager

Table of Contents

Carson City Planning Division
108 E. Proctor Street· Carson City NV 89701
Phone: (775) 887-2180 • E-mail: planning@carson.org

FOR OFFICE USE ONLY:

CCMC 17.06 and 17.07

TENTATIVE SUBDIVISION MAP

FEE*: $3,500.00 + noticing fee
*Due after application is deemed complete by staff

- ☐ **SUBMITTAL PACKET – 5 Complete Packets (1 Unbound Original and 4 Copies) including:**
  - ☐ Application Form including Applicant's Acknowledgment
  - ☐ Property Owner Affidavit
  - ☐ Copy of Conceptual Subdivision Map Letter
  - ☐ Detailed Written Project Description
  - ☐ Proposed Street Names
  - ☐ Master Plan Policy Checklist
  - ☐ Wet Stamped Tentative Map (24" x 36")
  - ☐ Reduced Tentative Map (11" x 17")
  - ☐ Conceptual Drainage Study
  - ☐ Geotechnical Report
  - ☐ Traffic Study (if applicable)
  - ☐ Documentation of Taxes Paid to Date
- ☐ **CD or USB DRIVE with complete application in PDF**
- ☐ **STATE AGENCY SUBMITTAL including:**
  - ☐ 2 Wet-stamped copies of Tentative Map (24" x 36")
  - ☐ Check made out to NDEP for $400.00 + $3/lot
  - ☐ Check made out to Division of Water Resources for $180.00 + $1/lot

Application Reviewed and Received By:

_____

Submittal Deadline: Planning Commission application submittal schedule.

Note: Submittals must be of sufficient clarify and detail for all departments to adequately review the request. Additional information may be required.

FILE

APPLICANT	**PHONE #**
Andersen-Colard Ranch Enterprises, LLC	
MAILING ADDRESS, CITY, STATE, ZIP	
P.O. Box 1746, Carson City, NV 89702	
EMAIL	
dennis@colard.com	
PROPERTY OWNER	**PHONE #**
Andersen Family Associates & Andersen-Colard Ranch Enterprises, LLC	
MAILING ADDRESS, CITY, STATE, ZIP	
Same as Applicant	
EMAIL	
APPLICANT AGENT/REPRESENTATIVE	**PHONE #**
Lumos & Associates	775-883-7077
MAILING ADDRESS, CITY, STATE, ZIP	
308 N. Curry St., Suite 200, Carson City, NV 89703	
EMAIL	
bmoon@lumosinc.com	
Project's Assessor Parcel Number(s)	
009-012-20 & 21	
Project's Street Address	
1800 Kings Canyon Road and 0 N. Ormsby Blvd.	
Nearest Major Cross Street(s)	
Kings Canyon Road and Ormsby Blvd.	
Project's Master Plan Designation	
Low Density Residential	
Project's Current Zoning	
SF1A and SF12	

Project Name

Andersen Ranch West Common Open Space Tentative Subdivision Map

Total Project Area	Number of Lots	Smallest Parcel Size
80.03+/- AC	61 Lots	14,360+/- SF

Please provide a brief description of your proposed project below. Provide additional pages to describe your request in more detail.

The Andersen Ranch West Common Open Space Tentative Subdivision Map proposes 61 single family residential lots on the subject parcels with common open space around the subdivision per CCMC 17.10. Please see the Project Description for additional information

NOTE: If your project is located within the Historic District or airport area, it may need to be scheduled before the Historic Resources Commission or the Airport Authority in addition to being scheduled for review by the Planning Commission. Planning staff can help you make this determination.

ACKNOWLEDGMENT OF APPLICANT: (a) I certify that the foregoing statements are true and correct to the best of my knowledge and belief; (b) I agree to fulfill all conditions established by the Board of Supervisors.

_____ 8/15/2022

Applicant's Signature — Date

Meagen Colard-Kalley

PROPERTY OWNER'S AFFIDAVIT

Meagen Colard-Kalley

I, _____ (Print Name) _____, being duly deposed, do hereby affirm that I am the record owner of the subject property located at 1800 Kings Canyon Road and 0 N. Ormsby Blvd. APN 009-012-20 & 21 (Property Address and APN), and that I have knowledge of, and I agree to, the filing of this Tentative Subdivision Map application.

Signature _____ Address 208 Winters CC 89703 Date 8/15/2022

Use additional page(s) if necessary for other names.

STATE OF NEVADA)
~~COUNTY~~ Carson City)

On August 15, 2022, personally appeared before me, a notary public, Meagen Colard-Kalley, personally known (or proved) to me to be the person whose name is subscribed to the foregoing document and who acknowledged to me that ~~he/~~she executed the foregoing document.

Linda Gilbertson
Notary Public

LINDA GILBERTSON
NOTARY PUBLIC
STATE OF NEVADA
APPT. No. 08-6390-3
MY APPT. EXPIRES MARCH 2, 2024

ANDERSEN-COLARD RANCH ENTERPRISES LLC

MEMBERS' RESOLUTION ADOPTED BY UNANIMOUS WRITTEN CONSENT

The undersigned, being all of the Members and Managers of Andersen-Colard Ranch Enterprises LLC, a Nevada limited liability company ("ACRE") hereby consent to take the following actions and adopt the following resolution.

RESOLVED that Meagen Kalley is appointed General Manager of the Company, with the power to take all necessary or reasonably convenient actions and to execute, acknowledge, and deliver any and all documents necessary or reasonably convenient to cause ACRE to enter into and consummate any sale of real property owned by ACRE. Such documents shall include, but not be limited to contracts, reports, deeds, escrow instructions and agreements with brokers; and

RESOLVED that Meagen Kalley is authorized and directed to receive any notice allowed or required to be given to ACRE under any purchase and sale agreement for the sale of ACRE real property.

This resolution shall be filed with the minutes of the Members' meetings and is executed pursuant to Section 5.03 of Article V of the Company's Operating Agreement.

IN WITNESS WHEREOF, the undersigned hereby certifies the adoption of this Resolution this 21 day of January, 2022.

ANDERSEN-COLARD RANCH ENTERPRISES LLC

By _____
DENNIS C. COLARD, Member

By _____
KIM L. COLARD, Member

ENTITY INFORMATION

ENTITY INFORMATION

Entity Name:

ANDERSEN FAMILY ASSOCIATES, A NEVADA LIMITED PARTNERSHIP

Entity Number:

LP805-1994

Entity Type:

Domestic Limited Partnership (88)

Entity Status:

Active

Formation Date:

06/22/1994

NV Business ID:

NV19941019775

Termination Date:

6/22/2028

Annual Report Due Date:

6/30/2023

REGISTERED AGENT INFORMATION

Name of Individual or Legal Entity:

CORPORATE SERVICE CENTER, INC.

Status:

Active

CRA Agent Entity Type:

Registered Agent Type:

Commercial Registered Agent

NV Business ID:

Office or Position:

Jurisdiction:

NEVADA

Street Address:

1450 Vassar Street, Reno, NV, 89502, USA

Mailing Address:

Individual with Authority to Act:

Trevor C. Rowley

Fictitious Website or Domain Name:

OFFICER INFORMATION

☐ **VIEW HISTORICAL DATA**

Title	Name	Address	Last Updated	Status
General Partner	Dennis Colard	PO Box 1746, Carson City, NV, 89702, USA	04/01/2020	Active
General Partner	ANDERSEN-COLARD RANCH ENTERPRISES	PO BOX 1746, CARSON CITY, NV, 89703, USA	04/01/2019	Active

Page 1 of 1, records 1 to 2 of 2

CURRENT SHARES

Class/Series	Type	Share Number	Value
No records to view.			

Number of No Par Value Shares:

0

Total Authorized Capital:

Filing History Name History Mergers/Conversions

Return to Search Return to Results

Carson City Planning Division

108 E. Proctor St.
Carson City, Nevada 89701
(775) 887-2180
Planning@carson.org
www.carson.org

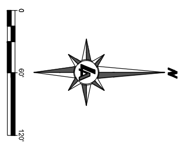
Carson City Road Name Reservation/Approval Application

Request Date: August 17, 2022	**Requested By:** Brian Moon, PE
Phone Number: (775) 827-6111	**Email:** bmoon@LumosInc.com
Total Number of Roads: 5	**Subdivision Name:** Andersen Ranch West

Road #	Proposed Road Name	Public or Private	Accepted or Denied	Reason for Denial	Comments
1	Ama (Way)	Public			
2	Mulberry (St)	Public			
3	Chianti (Ave)	Public			
4	Zinfandel (Lane)	Public			
5	Honeysuckle (Lane)	Public			
6	Bardolino (Drive)	Public			

This application is not complete without the road layout map with the proposed street names shown.

\\la.lumosengineering.net\Shared\LAProj\8947.004 - Andersen Ranch Development Tentative Map\DWG\Exhibits\8947004 tm street names.dwg,C2.1,
03/28/2023 01:35 pm jlator



DRAWN BY:	JRL
DESIGNED BY:	JRL
CHECKED BY:	TS
JOB NO.:	8947.004

EXH

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

BAR IS 1 INCH ON ORIGINAL DRAWING
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PRELIMINARY
NOT FOR CONSTRUCTION
MARCH 2023

REV	DATE	DESCRIPTION	BY

ANDERSEN-COLARD RANCH ENTERPRISES., LLC

ANDERSEN RANCH WEST
COMMON OPEN SPACE SUBDIVISION
ROAD NAME RESERVATION EXHIBIT

CARSON CITY NV

9222 PROTOTYPE DRIVE
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM
INFO@LUMOSINC.COM
LUMOS & ASSOCIATES

TAB A

108 E. Proctor
Street Carson City,
Nevada 89701
(775) 887-2180
Hearing Impaired: 711

February 18, 2022

Lumos & Associates Attn:
Tim Russell
308 North Curry Street, Ste 200
Carson City, NV 89702

Conceptual Map: SUB-2022-0005

Project Description: Request to develop a +30 acre portion of an overall +80.03 acre site with a 61 unit single family residential common open space subdivision. The development is proposed primarily on the north parcel, however there are improvements proposed on a portion of the southern parcel to facilitate drainage and other required improvements. Based on materials provided, the scope of review is solely based on APN 009-012-21. If the subject site is expanded to include additional parcels, a subsequent review may result in additional comments.

Review Date: February 1, 2022

Conceptual Map Comments

The Conceptual Map Committee has reviewed the proposed plans for the subdivision of a +30 acre portion of an overall site that is 80 acres in size. The following requirements and comments are provided for your use in preparing final plans and submittals for the project. Please be advised that the comments presented in this letter are based on the plans submitted with the Conceptual Map application and may not include all the requirements or conditions which may be placed on the project at the time of submittal of tentative map. It is hoped, however, that this review will expedite the completion of your project.

Some of the requirements noted below may have already been shown or otherwise indicated in the plans and need only be submitted in the final improvement plan form. Final on- and off-site improvement plans shall be submitted to the Permit Center, (108 E. Proctor Street). These plans must contain all appropriate requirements of Development Engineering, Health, Utilities, Fire, and Planning Divisions/Departments.

SITE INFORMATION:

Address: northwest of the intersection of Kings Canyon Road and Ormsby Boulevard APN: 009-012-20 & 009-012-21
Parcel Size: +30 acres
Master Plan Designation: Low Density Residential & Medium Density Residential Zoning: Single Family 1 Acre (SF1A) & Single Family 12,000 (SF12)

PLANNING DIVISION
Heather Manzo, Associate Planner

1. The proposed development is located within the SF1A zoning district. As such, the request does not appear to conform to the density limitations for the zone. To achieve the requested density, a zoning map amendment or other acceptable process will be required.

   Response: The project is proposing to deed restrict an area of 31.3-acres in order to achieve the 1 DU/Acre density the development is currently zoned for. Civil sheet C2.0 provides clarification for the deed restricted areas proposed.

2. The application states this subdivision would be a common open space development and lot sizes would be adjusted as allowed per CCMC 17.10. As such, map sheets and application documents should note that the project is a "Common Open Space Subdivision" and the standards contained in CCMC 17.10 apply. Application materials for a subdivision map should include a summary as to how the project complies with the requirements of CCMC 17.10. Additionally, a color open space and common area map should be provided as a sheet with the application for staff reference and to determine requirements are met by the proposal.

   Response: Per CCMC 17.10, the minimum required open space is 250 sq. ft. per dwelling unit. The project proposes a total of 61-units and a total of 166, 239 sq. ft. of open space no narrower than 30-ft. The proposed open space areas have been colored green on Civil sheets C2.0 and C2.1.

3. The common open space development application should establish the proposed minimum lot size, setbacks, and any other development characteristics allowed by CCMC 17.10.

   Response: The minimum lot width for Lot Size less than 1-acre, per CCMC 17.10.030, of 80-ft has been provided on the proposed 61 lots. Minimum setbacks per CMCC 17.10.030 are shown on the detail provided on Civil sheet C2.1.

4. A Tentative Map requires recommendation by the Planning Commission and approval of the Board of Supervisors.

   Response: Comment noted.

5. The project proposes improvements to the drainage channel to the south of the subject site. This area will need to be included as part of the subject site, total acreage, and improvements will need to have appropriate easements for access etc.

   Response: The proposed channel improvement areas are included in the total area and all proposed improvements and easements will be incorporated into the final engineering plans.

Development Engineering
Stephen Pottey, Senior Project Manager

Transportation:
1. A sealed traffic impact study must be provided with the tentative map application, meeting the requirements of CCDS 12.13. Please contact Chris Martinovich for traffic impact study scoping at 775-283-7367.

Response: A Traffic Impact Study will be included within the projects initial Tentative Map application.

2. The City's transportation master plan includes extending North Ormsby Boulevard north to West Winnie Lane. This subdivision will be required to contribute its pro rata share to the extension of North Ormsby Boulevard.

Response: Comment noted.

3. Half-street improvements must be installed on North Ormsby Boulevard along the project frontage. This will include striping, curb, gutter, and paving to meet the City standard detail for a two-lane urban collector with bike lanes. Bike lane striping must be installed on both sides of the street. Right-of-way must be dedicated as necessary to contain the required improvements with the final map. The proposed path will not replace the need for a sidewalk.

Response: Half street improvements have been shown on Civil sheet C2.1. Due to minimum street width and the pedestrian shared use path width requirements, there will be no path along the project frontage and only the proposed sidewalk along North Ormsby.

4. The sidewalk on North Ormsby must be extended south of the property frontage to where the sidewalk currently ends.

Response: The proposed sidewalk for the half street improvements have been extended to where the sidewalk currently ends to the south of the project.

5. The streets must be connected to both Manhattan Drive and West Washington Street on the west side of the development for proper circulation and connectivity.

Response: The Conceptual Parcel Map site plan has been revised to include connections to Manhattan Drive and West Washington Street.

6. If APN 009-012-20 is part of the application, frontage improvements will be required along Kings Canyon Road.

Response: APN 009-012-20 will be included within this application as it will be part of the deed restricted area that is being proposed. A note has been added to the left plan view on sheet C2.0 for the proposed half street improvements along Kings Canyon Road.

Water:

7. Water mains must be connected to the existing mains west of the project in Manhattan Drive and West Washington Street. These mains are in a separate pressure zone, so pressure reducing valve vaults and/or check valve vaults may need to be installed at these connection points.

Response: The water main connection has been proposed to existing 6" water main within Manhattan Drive, a PRV has been shown within the Manhattan Drive street connection due to the separate pressure zones.

8. A wet stamped water main analysis must be submitted in accordance with CCDS 15.3.1(a) to show that adequate pressure will be delivered to the meter and fire flows meet the minimum requirements of the Carson City Fire Department. Please contact the Michael Friend at (775) 283-7713 or mfriend@carson.org to schedule a fire hydrant flow test.

   a. For the tentative map application please provide at least a preliminary analysis showing the existing available pressure and flow compared to the fire flow demand.

Response: Comment noted, a preliminary analysis will be provided with the initial TM submittal package.

Sewer:

9. A wet stamped sewer main analysis must be submitted with the tentative map application. The analysis must address the effect of flows on the existing City system. See section 15.3.2 of CCDS. Please reach out to Darren Anderson for current sewer main capacities at775-283-7584.

Response: Comment noted, a preliminary analysis will be provided with the initial TM submittal package.

Storm Drainage and Flooding:

10. The storm drain system has a capacity of roughly 100 cfs downstream of the site. Any flow above that amount will need to be handled.

Response: Comment noted, we are coordinating with House Moran for initial drainage and flood zones, any proposed retention or detention will be included with the final engineering plans.

11. The site contains AE and AO flood zones. A FEMA CLOMR must be obtained prior to any site improvement permits being issued.

Response: Comment noted, a FEMA CLOMR initial draft will be included with the TM submittal package for the City's review prior to FEMA submittal.

12. The detention basin must be privately owned and maintained. Access must be provided to the detention basin other than North Ormsby Boulevard.

Response: The proposed basin will be privately owned and maintained. Access will be provided from within the project site and not off of N. Ormsby Boulevard.

13. A conceptual design for flood water mitigation must be included with the Recently, Carson City has adopted changes to the detention design storm requirements from a 5-

year, 24-hour event to a 10-year 24-hour event and includes Low Impact Development (LID) design requirements. The drainage manual is available here:

https://www.carson.ors/home/showpublisheddocument/76280/63762469190320000 0

Response: Comment noted, a conceptual design for flood water mitigation will be provided with the initial TM submittal package.

Citv Lands:

14. Connections to existing City trails must be provided. Public access easements must be provided over the project trails that connect to City trails.

Response: A looping mixed use trail has been incorporated to the project site connecting to the existing City trails.

General Comments:

15. A wetland delineation report must be provided with the tentative map application.

Response: A wetland delineation map, based off Sheet C2.0, has been included with this submittal package.

16. Water and sewer connection fees must be paid. If these fees were paid in the past, then the difference between the old and new amounts of water/sewer usages must be paid for. Please see CCMC 12.01.030 for the water connection fee schedule and 12.03.020 for the sewer connection fee schedule.

Response: Comment noted, fees will be paid prior to issuance of final engineering permits.

17. Any engineering work done on this project must be wet stamped and signed by an engineer licensed in Nevada. This will include site, grading, utility and erosion control plans as well as standard details.

Response: Comment noted, the final engineering plans are to be stamped and signed by a licensed engineer in the state of Nevada.

18. All construction work must be to Carson City Development Standards (CCDS) and meet the requirements of the Carson City Standard Details.

Response: Comment noted, final engineering plans are to incorporate CCDS requirements.

19. Fresh water must be used for Dust control. Contact the Water Operations Supervisor Public Works at 283-7382 for more information.

Response: Comment noted.

20. A private testing agreement will be necessary for the compaction and material testing in the street right of way. The form can be obtained through Carson City Permit Engineering.

Response: Comment noted, the private testing agreement will be included with the final engineering plans submittal.

21. An erosion control plan meeting section 13 of CCDS will be required in the plan set.

Response: Comment noted, the erosion control plan (per Sec. 13 of CCDS) will be incorporated into the final engineering plan set.

22. New electrical service must be underground.

Response: Comment noted, final electrical plans to underground any and all electrical services.

23. Any work performed in the street right of way will require a traffic control plan and a timeline type schedule to be submitted before the work can begin. A minimum of one week notice must be given before any work can begin in the street right of way.

Response: Comment noted, traffic control plans will be included for the N. Ormsby and Kings Canyon Road improvements.

24. Please show any easements on the construction drawings.

Response: All easements are to be included on the final engineering documents.

25. A Construction Stormwater Permit from the Nevada Division of Environmental Protection (NDEP) will be required for the construction of projects 1 acre or greater.

Response: An NDEP CSP will be obtained with the final engineering plans.

26. A Dust Control Permit from NDEP will be required for any project 5 acres or greater.

Response: An NDEP DCP will be obtained with the final engineering plans.

27. A FEMA elevation certificate must be included with the construction plan submittal for any house that is submitted prior to finalization of the LOMR.

Response: Comment noted, an elevation certificate to be included for any house that is submitted prior to the finalization for the LOMR.

Fire Department
Jenny Williamson, Fire Inspector

1. Project shall comply with the currently adopted fire code and Northern Nevada Fire amendments.

   Response: Comment noted, project to comply with current fire code and NNF amendments.

2. The project as presented doesn't meet the remoteness requirement in IFC Appendix D D107.2. If additional roads are opened on the west side of the project as discussed at the MPR, the remoteness requirement should be met.

   Response: By adding two points of connection on the west side of the project, to Manhattan Drive and West Washington Street, the project satisfies the remoteness requirement in IFC.

Parks, Recreation and Open Space
Nick Wentworth, Project Manager

1. The City will not be responsible for any landscape or irrigation system maintenance on the project. All landscaping and landscape maintenance in the right of way will be the sole responsibility of the owner. The developer is required to maintain all common landscape and open space areas within the development including any landscaping in the street(s) right of ways in perpetuity.

   Response: Comment noted, all future landscape and irrigation to be privately owned and maintained.

2. Carson City is a Bee City, USA. As a result, the developer shall use approximately 50% pollinator friendly plant material for any required landscaping on the project site. Also, any remaining landscape plant material selection needs to be consistent with the City's approved tree species list or other tree species, as approved by the City. The Carson City Pollinator Plant list and other plant selection resources can be found at www.carson.ors/beecitvusa

   Response: Comment noted, final landscape plants to incorporate at least 50% pollinator friendly and the rest per the City's approved plant and tree species list.

3. The developer is required to incorporate "best management practices" into their construction documents and specifications to reduce the spread of noxious weeds. The spread of invasive and noxious weeds is a significant issue in construction projects that involve land disturbance. Earth moving activities contribute to the spread of weeds, as does the use of contaminated construction fill, seed, or erosion-control products. Experience has demonstrated that prevention is the least expensive and most effective way to halt the spread of noxious and invasive weeds. Preventing the establishment or spread of weeds relies upon:

   • Educating workers about the importance of managing weeds on an ongoing basis;
   • Properly identifying weed species to determine most appropriate treatment strategies;
   • Avoiding or treating existing weed populations; and

• Incorporating measures into projects that prevent weed seeds or other plant parts from establishing new or bigger populations such as certification of weed-free products.

Response: Comment noted, final engineering plans to incorporate site BMPs and erosion control details to help eliminate the spread of weeds.

4. Where possible, deciduous trees must be planted a minimum of 5' from any city/public street, sidewalk or pathway. Evergreen trees must be planted a minimum of 10' from any city/public street, sidewalk or pathway. Fruit bearing, "non-fruiting" flowering or any other trees that drop debris such as seed pods will not be permitted near or placed where they will eventually hang over city/public sidewalks or pathways.

   Response: Minimum tree separation from city/public streets, sidewalk and pathways to be incorporated into final landscape design.

5. Carson City Municipal Code: Title 18, Division 3 should be reviewed by any/all parties involved in the proposed landscape design prior to landscape plans being submitted to the city for final approval of a building or site improvement permit. Note: Special care and consideration should be taken in the protection of existing trees on-site. https://library.municode.com/nv/carson_city/codes/code_of_ordinances?nodeId=TIT_18_APPENDIXCADEST_DIV3LA

   Response: Comment noted, final landscape design to be reviewed by any/all parties prior to plans being submitted for final approval.

6. The project is subject to the collection of Residential Construction Tax (RCT), compliant with NRS Chapter 278 and Carson City Municipal Code (CCMC 15.60).

   Response: Comment noted.

7. The project will need to include a multi-use path for public use. This shall be coordinated through and agreed upon by the Parks, Recreation & Open Space Department. The path will require a 30 foot wide (minimum) easement for the path. Easement shall be a non-motorized public access trail easement. The easement document should indicate that maintenance of the easement shall be the responsibility of the HOA in perpetuity. The applicant will design and construct a multi-use path (off street/paved/shared) at a 10 foot minimum width using the AASHTO standard concrete path with an adjacent 3 foot wide decomposed granite path, including interpretive/wayfinding signage,—pet waste receptacles, trash receptacles, benches and related amenities. The path will be should provide connectivity from the City's Long Ranch Pathway system on the southwest corner of APN 009-012-21 to Ormsby Blvd, and have an at grade pedestrian crossing with flashing lights on North Ormsby Boulevard. All other street crossings associated with the multi-use path must be reviewed and approved by Carson City Public Works and Parks, Recreation & Open Space Departments to ensure pedestrian safety. This trail must be constructed or bonded for prior to Board consideration of the first final map for the development.

   Response: The proposed site plan has been revised to incorporate a 30-lf wide easement for the proposed multi-use path. The path provides connectivity to the existing City pathway system.

8. Paths, sidewalks and on-street bike lanes along the street frontage shall conform to the standards as outlined in the Carson City Unified Pathways Master Plan. The Unified Pathways Master Plan (UPMP) identifies on-street bike lanes along the street frontage of the proposed development on North Ormsby Boulevard. This UPMP requirement needs to be coordinated with Development Engineering's requirements for the development's street frontage design and improvements.

Response: The proposed pathway and half street improvements along N. Ormsby meet the City's UPMP requirements.

9. A multi-use path shall be constructed in the buffer area on all sides of the property to create a looped trail system. All trails will be owned and maintained by the HOA. All street crossings associated with these paths must be reviewed and approved by Carson City Public Works and PROS to ensure pedestrian safety.

Response: Due to the minimum street width requirements and the proposed 30-lf easement for the mixed use path, the trail has been proposed on the north, south and west sides of the project with the N. Ormsby sidewalk closing the loops on the east side.

10. The applicant shall demonstrate connectivity between the trailhead/multi-use path and the development's sidewalk/path system. Sidewalk connections to the trailhead and multi-use path will provide convenient and logical access to these facilities and the overall sidewalk network within the development

Response: The proposed mixed-use trail will intercept and connect to the projects proposed streets for the connection to Manhattan Drive and West Washington Street as well as the two points of connection to North Ormsby Boulevard.

Conclusion:
Based on questions related to project boundaries and process, a new conceptual subdivision map application will be necessary prior to the submittal of a tentative subdivision map application.

These comments are based on a very general site plan and do not indicate a complete review. All pertinent requirements of Nevada State Law, Carson City Code, and Carson City Development Standards will still apply whether mentioned in this letter or not.

Sincerely,
Community Development Department, Planning Division

Heather Manzo, Associate Planner

cc: CSM-2022-0005

108 E. Proctor Street
Carson City, Nevada
89701
(775) 887-2180
Hearing Impaired: 711

July 26, 2022

Lumos & Associates Attn:
Tim Russell
308 North Curry Street, Ste 200
Carson City, NV 89702

Conceptual Map: SUB-2022-0009
(REVISED)

Project Description: Request to develop a portion of an overall +80.53 acre site with a 61 unit single family residential common open space subdivision. The development is proposed primarily on the north parcel, however there are improvements proposed on a portion of the southern parcel to facilitate drainage and other required improvements. Based on materials provided, the scope of review includes APN Nos. 009-012-20 and 21. A conceptual subdivision map was previously submitted and comments provided on February 18, 2022, CSM-2022-0005, where recommendations were made and changes would necessitate an updated conceptual subdivision map.

Review Date: June 7, 2022

Conceptual Map Comments

The Conceptual Map Committee has reviewed the proposed plans for the subdivision of a portion of an overall site that is 80.53 acres in size. The following requirements and comments are provided for your use in preparing final plans and submittals for the project. Please be advised that the comments presented in this letter are based on the plans submitted with the Conceptual Map application and may not include all the requirements or conditions which may be placed on the project at the time of submittal of tentative map. It is hoped, however, that this review will expedite the completion of your project.

Some of the requirements noted below may have already been shown or otherwise indicated in the plans and need only be submitted in the final improvement plan form. Final on- and off-site improvement plans shall be submitted to the Permit Center, (108 E. Proctor Street). These plans must contain all appropriate requirements of Development Engineering, Health, Utilities, Fire, and Planning Divisions/Departments.

SITE INFORMATION:

Address: northwest of the intersection of Kings Canyon Road and Ormsby Boulevard APN: 009-012-20 & 009-012-21
Parcel Size: +80.53 acres
Master Plan Designation: Low Density Residential & Medium Density Residential Zoning: Single Family 1 Acre (SF1A) & Single Family 12,000 (SF12)

PLANNING DIVISION
Heather Manzo, Associate Planner

1. The proposed development is located within the SF1A and SF12 zoning district. A table will need to be provided that includes the acreage and density breakdown to demonstrate that there is sufficient density available to develop the 61-acre project while retaining the ranch residence located on the southeast side of the site, which as presented will equal 62 residences.

   Response: The table on sheet C2.0 has been revised to show the total unit count for the whole project, APN 009-012-20 & -21, and total units remaining after the Andersen Ranch West subdivision.

2. Parcels need to be drawn so as not to create a non-conforming use situation. The barn structures must remain accessory to a single-family residence.

   Response: The southern parcel will remain unchanged, any future development will propose lots as to not create a non-conforming use situation.

3. Proposed lot configurations will need to demonstrate that all existing structures will meet the required setback from all proposed lot lines.

   Response: No proposed lot lines for the southern parcel are proposed within this submittal, any future development will show the required setbacks from proposed lot lines.

4. It is recommended that a zoning map amendment or other acceptable mapping process be pursued that would not result in an increase of the overall number of allowable units on the 80-acre site. If you wish to pursue the plan as presented, staff will need additional information as to the concept and how the project will conform with CCMC as there is not a mechanism in code for density transfers. Prior to the submittal of any entitlement for this project, please coordinate with staff.

   Response: No zoning map amendment will be proposed as part of this Open Space TM package. Based on our conversations with CC Planning on 8/10, the table shown on Sheet C2.0 will reflect overall project unit counts and remaining units available for any future development.

5. The application states this subdivision would be a common open space development and lot sizes would be adjusted as allowed per CCMC 17.10. As such, map sheets and application documents should note that the project is a “Common Open Space Subdivision” and the standards contained in CCMC 17.10 apply. Application materials for a subdivision map should include a summary as to how the project complies with the requirements of CCMC 17.10. Additionally, a colored open space and common area map should be provided as a sheet within the application for staff reference and to determine requirements are met by the proposal.

   Response: The title for the project has been revised to “Common Open Space Subdivision”. A colored open space/common area map has been included on sheet C2.0

6. The common open space development application should establish the proposed minimum lot size, setbacks, and any other development characteristics allowed by CCMC 17.10.

Response: Minimum lot size, setbacks, etc per CCMC 17.10 are shown on the projects Tentative Map.

7. If the project is intended to be constructed in multiple phases, please provide a colored phasing plan that demonstrates improvements will be constructed for each phase so the phase can stand alone and not depend on future phases to meet requirements and standards.

   Response: Project phasing is not anticipated at this time; however, if the project is proposed to be phased at final map due to market conditions, each phase will be designed to be standalone and not reliant on future phases to meet requirements and standards.

8. A Tentative Map requires recommendation by the Planning Commission and approval of the Board of Supervisors.

   Response: Comment noted.

Development Engineering
Chris Gonzales

Transportation:

1. A sealed traffic impact study must be provided with the tentative map application, meeting the requirements of CCDS 12.13. Please contact Chris Martinovich for traffic impact study scoping at 775-283-7367.

   Response: A Traffic Impact Study prepared by Headway has been included within the projects initial Tentative Map application.

2. The City's transportation master plan includes extending North Ormsby Boulevard north to West Winnie Lane. This subdivision will be required to contribute its pro rata share to the extension of North Ormsby Boulevard.

   Response: Comment noted.

3. Half-street improvements must be installed on North Ormsby Boulevard along the project frontage. This will include striping, curb, gutter, and paving to meet the City standard detail for a two-lane urban collector with bike lanes. Bike lane striping must be installed on both sides of the street. Right-of-way must be dedicated as necessary to contain the required improvements with the final map. The proposed path will not replace the need for a sidewalk.

   Response: Half street improvements have been shown on Civil sheet C2.1 and C2.2. Due to minimum street width and the pedestrian shared use path width requirements, there will be no path along the project frontage and only the proposed sidewalk along North Ormsby.

4. Sidewalks to meet ADA standards with curb ramps at all proposed intersections.

   Response: Curb ramps to be designed and details on final engineering plans.

5. There is a proposed rectangular rapid flashing beacon (RRFB) system and crosswalk that has been provided by the Andersen Ranch project to the east that will continue the Carson

City multiuse pathway and will need to be tied into at the most northern intersection on Ormsby Boulevard.

Response: The multiuse path has been revised to be in line with the Andersen Ranch East path.

Water:

6. A water main analysis signed by a professional engineer must be submitted in accordance with CCDS 15.3.1(a) to show that adequate pressure will be delivered to the meter and fire flows meet the minimum requirements of the Carson City Fire Department. Please contact the Michael Friend at (775) 283-7713 or mfriend@carson.org to schedule a fire hydrant flow test.

Response: A water main analysis has been provided and a recent CCFD fire hydrant flow test has been included in the utility letter.

7. The PRV must be provided and cannot be installed within the roadway or sidewalk.

Response: The PRV has been shown out of the roadway and sidewalk within Lot A.

8. Please contact and work with Carson City Public Works for the design of the PRV Vault.

Response: The design of the vault will be coordinated with CCPW for the improvement plans.

9. All water services shall be perpendicular to water mains.

Response: Comment noted, water services will be shown perpendicular to water mains.

10. The system will need to be looped and valved so that no more than 15 customers can be taken out of service at any one time. See CCMC Development Standards Division 15.3

Response: The water main has been looped throughout the site, connecting to the 8" main in Ormsby and the 6" main in Manhattan drive. Preliminary valves are shown on the Utility Plan.

11. Due to minimal water information proved in the MPR application, additional requirements may apply. Project shall comply with all City and State codes and standards.

Response: Comment noted.

Sewer:

12. There is an 8" PCV line that splits between the properties. The main is approximately 25% fill (d/D). There is an 8" AC line in Ormsby Blvd to the east of 009-012-21. This main is approximately 45% full (d/D). There is an existing 8" PVC line in Kings Canyon to the

south of 009-012-20. This main is approximately 5% full (d/D).

Response: Thank you for the existing sewer information, these d/D values have been included within our preliminary utility letter to show the proposed development will not have any adverse effects on the City's main.

13. A sewer main analysis signed by a professional engineer must be submitted that includes addressing the effect of flows on the existing City system. See section 15.3.2 of CCDS.

Response: A sewer main analysis has been included within the project's submittal package.

Storm Drainage and Flooding:

14. In July 2021 the Carson City Drainage Manual became effective and is required for all news and redeveloped parcels. The detention design storm requirements changed from a 5-year, 24-hour to a 10-year 24-hour event. The Drainage Manual includes Low Impact Development (LID) design requirements.

Response: Comment noted, future detention basins will be developed to the 10-year, 24-hour event (minimum).

15. Confirm Army Corps sign-off for work related to Ash Canyon Creek.

Response: Ash Canyon Creek is not being disturbed from construction activities of this development and therefore, in conjunction with meetings with Robb Fellows, Army Corps permitting is not required.

16. A FEMA CLOMR will be required for this project.

Response: Comment noted. A FEMA CLOMR will shortly follow this submittal package.

17. Other comments included in previous CSM submittals shall be incorporated.

Response: Comment noted, other comments have been incorporated in this submittal plan package.

18. The conceptual drainage memo provided includes limited modeling figures and description for impact to the existing floodplain and infrastructure. The intended concept is understood, but consultant shall discuss details with the City Floodplain Manager further.

Response: Existing and proposed drainage exhibits have been included within the Conceptual Drainage Report, the FEMA CLOMR letter will be included at a later date to help provide details on the impact to the existing floodplain and infrastructure.

19. The downstream storm drain system has a total capacity of about 100 cfs. This shall be

reflected in the design of the channel upstream

Response: Comment noted, the project will incorporate detention basins to ensure that the downstream capacity is not exceeded.

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Citv Lands:

20. The parcels adjoin property to the west and across Kings Canyon Road to the south managed and maintained by the Carson Parks, Recreation & Open Space.

Response: Comment noted.

21. Need a big picture exhibit showing how the Carson City Unified Pathways Master Plan is being addressed, especially the connectivity along Kings Canyon Road.

Response: A Trails Connectivity Exhibit has been included within the submittal package to help show the bigger picture of the CC Unified Pathways Master Plan.

General Comments:

22. Erosion control. Permanent erosion control efforts will need to be provided once the property has been graded.

Response: Comment noted, BMP plan has been included in the TM submittal plan set for reference.

23. Easements: Parcel Map #2913 recorded on May 25, 2017 as document #475227, granted a 20-foot wide Public Utility Easement, including a waterline, along the south property line of APN 009-012-21. A 20-foot wide sewer easement setback from the north property line of APN 009-012-20 was recorded on January 7, 1994 as document #155099. A 10-foot wide storm drain easement was also granted per Parcel Map #2913 along the east property line of APN 009-012-20. Additional easements for water and stormwater may need to be granted through APN 009-012-20.

Response: Easements listed above have been shown on the TM plans.

24. A Wetland delineation report must be provided.

Response: A Wetland delineation report has been included in the Tentative Map Application.

25. A Technical Drainage Study meeting the requirements of section 14 of the Carson City Development Standards must be submitted with the permit and plans.

Response: A Conceptual Drainage Study has been included with the Tentative Map Application, a Technical Drainage Study will be included with the construction documents.

26. A reduced pressure principle assembly backflow preventer will be required for the domestic water line. The fire line must have a double check valve backflow preventer if it is Class 1-3, or a reduced pressure principle assembly if it is Class 4-6. These backflow preventers must be above ground in a hot box, and must be located as close to the property line as possible. The irrigation service will need a reduced pressure backflow preventer if a vacuum breaker system cannot be designed to operate properly. If a backflow preventer is not required, it is advisable to provide space and an electrical conduit in the event that a backflow preventer is needed in the future.

Response: Comment noted, RPPA's will be provided on the domestic water line on the construction documents.

27. Water and sewer connection fees must be paid. If these fees were paid in the past, then the difference between the old and new amounts of water/sewer usages must be paid for. Please see CCMC 12.01.030 for the water connection fee schedule and 12.03.020 for the sewer connection fee schedule.

Response: Comment noted, water and sewer connection fees to be paid at time of permit.

28. Any engineering work done on this project must be wet stamped and signed by an engineer licensed in Nevada. This will include site, grading, utility and erosion control plans as well as standard details.

Response: Comment noted, all engineering plans will be wet stamped and signed by a licensed engineer.

29. All construction work must be to Carson City Development Standards (CCDS) and meet the requirements of the Carson City Standard Details.

Response: Comment noted, all construction work to be per CCDS and CC Standard details.

30. Addresses for units will be provided during the building permit review process.

Response: Comment noted, addresses to be provided with the initial grading and improvement plans.

31. Fresh water must be used for Dust control. Contact the Water Operations Supervisor Public Works at 283-7382 for more information.

Response: Comment noted, fresh water to be used for Dust Control.

32. A private testing agreement will be necessary for the compaction and material testing in the street right of way. The form can be obtained through Carson City Permit Engineering.

Response: Comment noted, a form will be obtain from CC Permit Engineering for all compaction and material testing within the ROW.

33. An erosion control plan meeting section 13 of CCDS will be required in the plan set.

Response: Comment noted, an erosion control plan has been included with the TM plans.

34. If an existing water service is to be re-used, it must be checked for condition. It may need to be replaced. Any existing water and sewer services not being used must be abandoned at the main.

Response: Comment noted, no existing water services are to be re-used for these 61-units or for irrigation.

35. New electrical service must be underground.

Response: Comment noted, all electrical services will be underground.

36. Please show sufficient utility information to ensure that minimum spacing is met between water meters and dry utilities.

Response: Comment noted, water and sewer lateral separation to be shown on the improvement plans.

37. Any work performed in the street right of way will require a traffic control plan and a time line type schedule to be submitted before the work can begin. A minimum of one week notice must be given before any work can begin in the street right of way.

Response: Comment noted, one week notice will be given before any ROW work will be performed.

38. Please show any easements on the construction drawings.

Response: All easements are shown on the TM plans and will be included on the construction drawings.

39. A Construction Stormwater Permit from the Nevada Division of Environmental Protection (NDEP) will be required for the construction of projects 1 acre or greater.

Response: Comment noted, a CSP from NDEP will be obtained.

40. A Dust Control Permit from NDEP will be required for any project 5 acres or greater.

Response: Comment noted, a DCP from NDEP will be obtained.

41. A FEMA elevation certificate must be included with the construction plan submittal. All FEMA requirements for this flood zone must be met.

Response: Comment noted, a CLOMR will be submitted to the City after this TM submittal package.

42. These comments are based on a very general site plan and do not indicate a complete review. All pertinent requirements of Nevada State Law, Carson City Code, and Carson City Development Standards will still apply whether mentioned in this letter or not.

Response: Comment noted,

Fire Department
Michael Wilkinson, Fire Marshal

1. The project shall meet or exceed the 2018 International Fire Code and 2018 Northern Nevada Amendments.

Response: Comment noted, project to meet or exceed the 2018 IFC and 2018 NNA.

2. The project shall meet the minimum road widths and two points of access per the 2018 international Fire Code.

Response: Comment noted, the project has 4 project access points and road widths exceed the minimum per 2018 IFC.

3. The project shall meet the minimum fire flow requirements and hydrant spacing per the 2018 International Fire Code.

Response: Comment noted, fire hydrant flow and spacing will meet the 2018 IFC on the construction drawings. Preliminary fire hydrant locations shown on the TM plans and a FH Flow Test has been included in the Utility Letter.

4. You are welcome to contact Fire at 283-7153 or by email at mwilkinson@carson.org should you wish to speak with Fire about specific elements of this project.

Response: Comment noted, we will coordinate the final construction drawings prior to initial submittal to ensure plans meet the CCFD standards.

Building Division
Corey Coleman, Building Official

1. Designs to the 2018 Code Series and Northern Nevada Amendments (Building and Fire), Please verify plans follow the Nevada Blue Book guidelines

Response: Comment noted, project to meet 2018 IBC, IFC and the 2018 NNA.

2. Following the entitlement process, permit applications shall be submitted through the Carson City permit center at permitcenter.carson.org.

Response: Comment noted, construction drawings to be submitted through the online permit center.

3. Provide design criteria on cover pages along with complete set of plans.

Response: Comment noted, design criteria to be included on the cover page of the construction drawings.

4. Permits will require a Nevada Licensed contractor.

Response: Comment noted, permits will have the contact information for the projects Contractor.

5. Please note that building code requires drainage 6" in 10' an exception allows for swales, in that case please note no mechanical and/or utilization equipment may be installed in that area (ie: AC units shall be placed in back yard) R401.3 2018 IRC

Response: Comment noted, proper drainage will be identified on the construction drawings.

Parks, Recreation and Open Space
Nick Wentworth, Project Manager

1. The City will not be responsible for any landscape or irrigation system maintenance on the project. All landscaping and landscape maintenance in the right of way will be the sole responsibility of the owner. The developer is required to maintain all common landscape and open space areas within the development including any landscaping in the street(s) right of ways in perpetuity.

Response: Comment noted, all irrigation systems to be owned and maintained by the projects HOA.

2. Carson City is a Bee City, USA. As a result, the developer shall use approximately 50% pollinator friendly plant material for any required landscaping on the project site. Also, any remaining landscape plant material selection needs to be consistent with the City's approved tree species list or other tree species, as approved by the City. The Carson City Pollinator Plant list and other plant selection resources can be found at www.carson.oro/beecityusa

Response: Comment noted, landscaping to meet pollinator requirements.

3. The developer is required to incorporate "best management practices" into their construction documents and specifications to reduce the spread of noxious weeds. The spread of invasive and noxious weeds is a significant issue in construction projects that involve land disturbance. Earth moving activities contribute to the spread of weeds, as does the use of contaminated construction fill, seed, or erosion-control products. Experience has demonstrated that prevention is the least expensive and most effective way to halt the spread of noxious and invasive weeds. Preventing the establishment or spread of weeds relies upon:

- Educating workers about the importance of managing weeds on an ongoing basis;

- Properly identifying weed species to determine most appropriate treatment strategies;
- Avoiding or treating existing weed populations; and
- Incorporating measures into projects that prevent weed seeds or other plant parts from establishing new or bigger populations such as certification of weed-free products.

Response: Comment noted

4. Where possible, deciduous trees must be planted a minimum of 5' from any city/public street, sidewalk or pathway. Evergreen trees must be planted a minimum of 10' from any city/public street, sidewalk or pathway. Fruit bearing, "non-fruiting" flowering or any other trees that drop debris such as seed pods will not be permitted near or placed where they will eventually hang over city/public sidewalks or pathways.

Response: Comment noted, landscape construction drawings will incorporate minimum street tree setbacks.

5. Carson City Municipal Code: Title 18, Division 3 should be reviewed by any/all parties involved in the proposed landscape design prior to landscape plans being submitted to the city for final approval of a building or site improvement permit. Note: Special care and consideration should be taken in the protection of existing trees on-site. https://library.municode.com/nv/carsoncity/codes/codeofordinances?nodeId=TIT18 APPENDIXCADEST DIV3LA

Response: Comment noted.

6. The project is subject to the collection of Residential Construction Tax (RCT), compliant with NRS Chapter 278 and Carson City Municipal Code (CCMC 15.60).

Response: Comment noted.

7. The applicant will construct a multi-use path for public use. This shall be coordinated through and agreed upon by the Parks, Recreation & Open Space Department. The applicant shall provide a 30' wide (minimum) easement for the path. Easement shall be a non-motorized public access trail easement. The easement document shall indicate that maintenance of the easement shall be the responsibility of the HOA in perpetuity. The applicant will design and construct a multi-use path (off street/paved/shared) at a 10' wide (minimum) AASHTO standard concrete path with an adjacent 3' wide decomposed granite path, including interpretive/wayfinding signage, pet waste receptacles, trash receptacles, benches and related amenities. The path will be constructed from the City's Long Ranch Pathway system on the northwest corner of APN 00739239 to Ormsby Blvd, and have an at grade pedestrian crossing with flashing lights on North Ormsby Boulevard. All other street crossings associated with the multi-use path must be reviewed and approved by Carson City Public Works and Parks, Recreation & Open Space Departments to ensure pedestrian safety. This trail must be constructed or bonded for prior to Board consideration of the first final map.

Response: Comment noted, a preliminary multi-use path has been shown on the TM submittal plan. Construction documents will provide details for the path,

interpretive/wayfinding signage, pet waste receptacles, trash receptacles, benches and related amenities.

8. Paths, sidewalks and on-street bike lanes along the street frontage shall conform to the standards as outlined in the Carson City Unified Pathways Master Plan. The Unified Pathways Master Plan (UPMP) identifies on-street bike lanes along the street frontage of the proposed development on North Ormsby Boulevard. This UPMP requirement needs to be coordinated with Development Engineering's requirements for the development's street frontage design and improvements.

Response: Comment noted, bike lanes have been added to N. Ormsby Blvd and Kings Canyon Road along the project frontage.

9. A multi-use path shall be constructed in the buffer area on all sides of the property to create a looped trail system. All trails will be owned and maintained by the HOA. All street crossings associated with these paths must be reviewed and approved by Carson City Public Works and PROS to ensure pedestrian safety.

Response: Comment noted, CCPW and PROS will review the proposed multi-use path street crossings to ensure pedestrian safety.

10. The applicant shall demonstrate connectivity between the trailhead/multi-use path and the development's sidewalk/path system. Sidewalk connections to the trailhead and multi-use path will provide convenient and logical access to these facilities and the overall sidewalk network within the development.

Response: Comment noted, a trails connectivity map has been included in the planset.

Conclusion:

Based on questions related to project boundaries and process, a new conceptual subdivision map application will be necessary prior to the submittal of a tentative subdivision map application.

These comments are based on a very general site plan and do not indicate a complete review. All pertinent requirements of Nevada State Law, Carson City Code, and Carson City Development Standards will still apply whether mentioned in this letter or not.

Sincerely,
Community Development Department, Planning Division

Heather Manzo, Associate Planner

cc: CSM-2022-0005

TAB B

Andersen Ranch West Project Narrative

Property Location

The "Subject Property" is located in Carson City on two parcels totaling 80.03+/- acre (APN's 009-012-20 & 21). The Andersen Ranch West subdivision is proposed for development on the northern 29.7+/- acres of the subject parcels, north of Ash Canyon Creek.

The property gently slopes upward from east to west. There are two creeks that run from west to east through the property (Ash Canyon Creek and Kings Canyon Creek). The currently proposed tentative map development on the northern 29.7+/- acres of the subject property, north of Ash Canyon Creek.

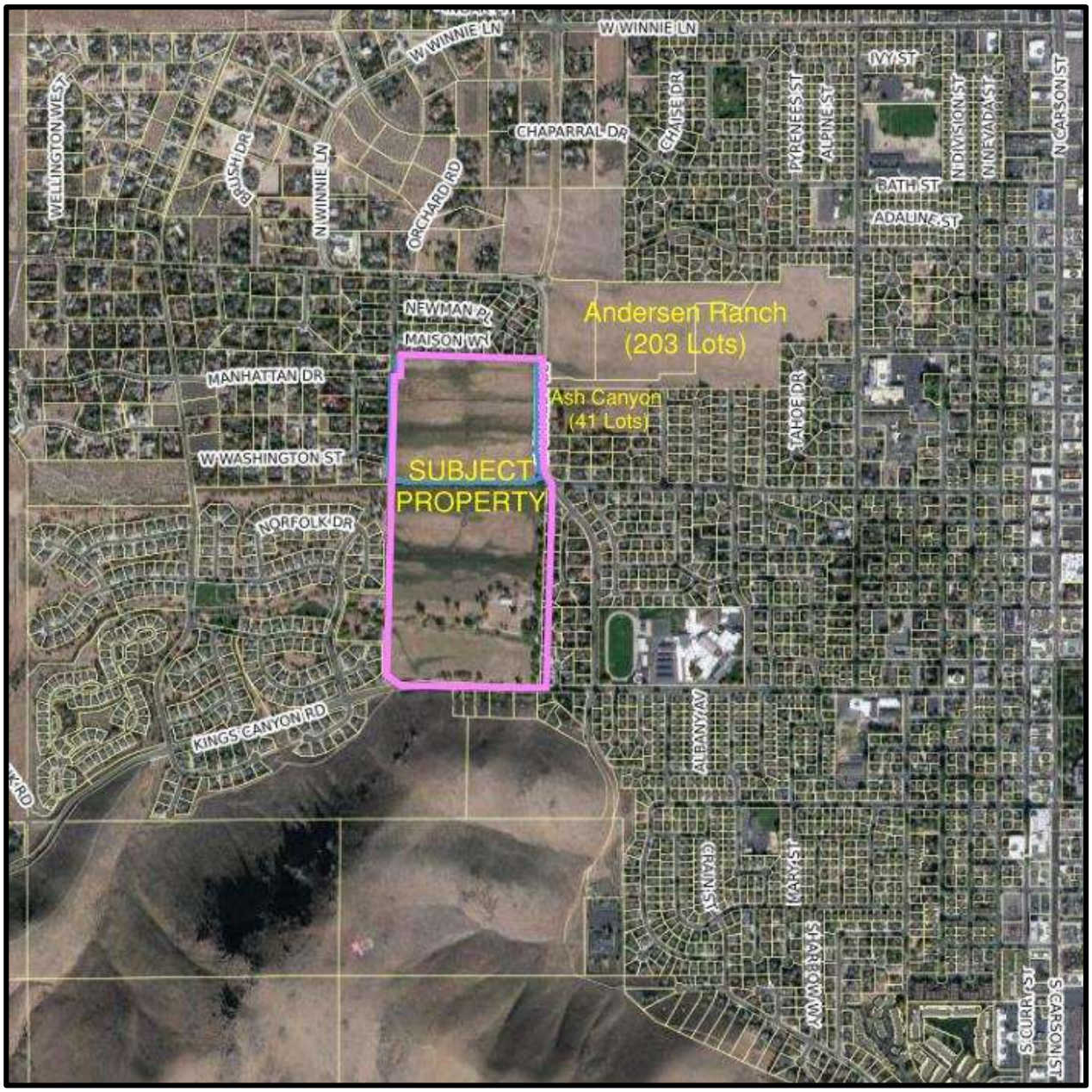
An aerial based vicinity map is provided on page 2 of this project narrative showing the project location along with the existing development surrounding the subject property. Also highlighted on this exhibit are the new construction of Andersen Ranch and the recently approved project of Ash Canyon. The existing land pattern, along with these two new projects, completely encircles the Andersen Ranch West property with development, making this truly an infill site.

Project Request

Requested is a Common Open Space Tentative Subdivision Map to create a total of 61 single-family lots on the northern 29.7+/- acres of the 80.03+/- acre subject property. The currently proposed development area is located north of Ash Canyon Creek. The southern 50.33+/- acres (south of Ash Canyon Creek) will remain as an operating ranch until the time when the Andersen/Colard family decides to discontinue ranching on this property. The southern portion of the property contains a ranch house that dates to the latter part of the 1800's. The area around the ranch house is presented for protection through a 9.46+/- acre private open space area as part of this Common Open Space Development Tentative Map request. This private open space area will be maintained as such, in perpetuity. It is requested that one additional residence be allowed within this area in the future, if so requested, and by the property owner. A deed restriction will be placed on this private open space portion of the property.

The total number of developable lots on the 80.03+/- acre subject property, per the existing property zoning (SF-1A and SF-12), is 132 lots. There are 61 proposed lots within the Andersen Ranch West tentative map area, north of Ash Canyon Creek. The existing ranch house counts as one (1) existing unit/lot. If this common open space development tentative map request were to be approved, there would be 70 additional lots that could be built south of Ash Canyon Creek (based solely on the existing property zoning) that could be constructed in the future.

Vicinity Map



Existing Site Condition Photos

Following are photos of the project site that show the existing site conditions of the project development site. The site presents gentle grades and developable land, similar to the lands surrounding the site, which are all developed or approved future development.

View of the subject property (80.03 acres) near the southeastern property corner along Kings Canyon Road.

View of the subject property (80.03 acres) near the southwestern property corner along Kings Canyon Road.

View to the west of the development area (29.7+/- acres) from N. Ormsby Blvd.

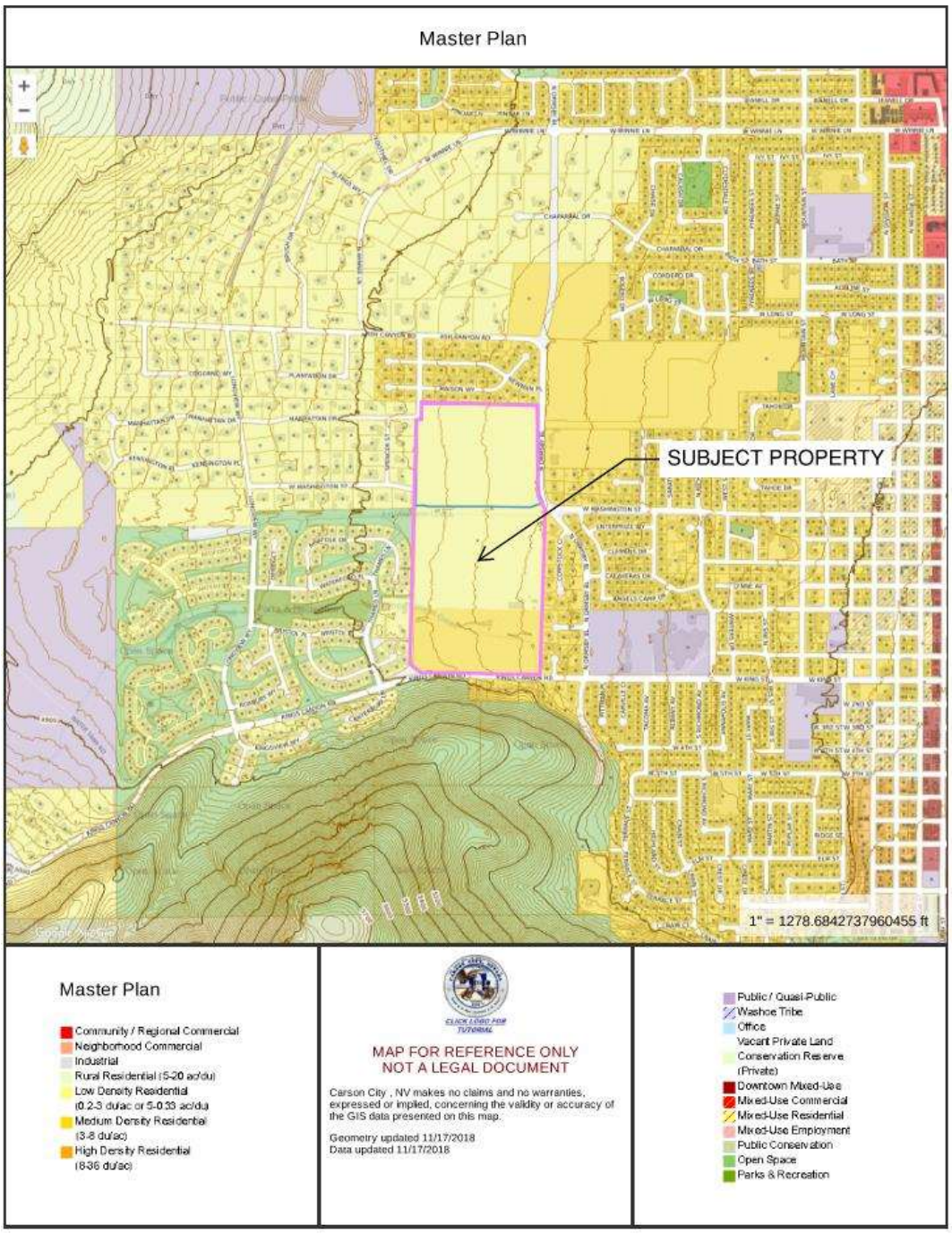
View toward the northwest of the northeastern corner of the 29.7+/- acre development site. Existing homes north of the development side and existing vegetation along property line can be seen in photo.

View toward the southwest of the southeastern corner of the 29.7+/- acre development site. The row of vegetation in the field is the existing alignment of the Ash Canyon Creek drainage, which parallels the southern property line of the proposed development site.

Master Plan and Zoning Conformance

The subject property is split master planned with all of 009-012-21 and a portion 009-012-20 master planned Low Density Residential (LDR). The southern remainder area of 009-012-20 is master planned Medium Density Residential (MDR).

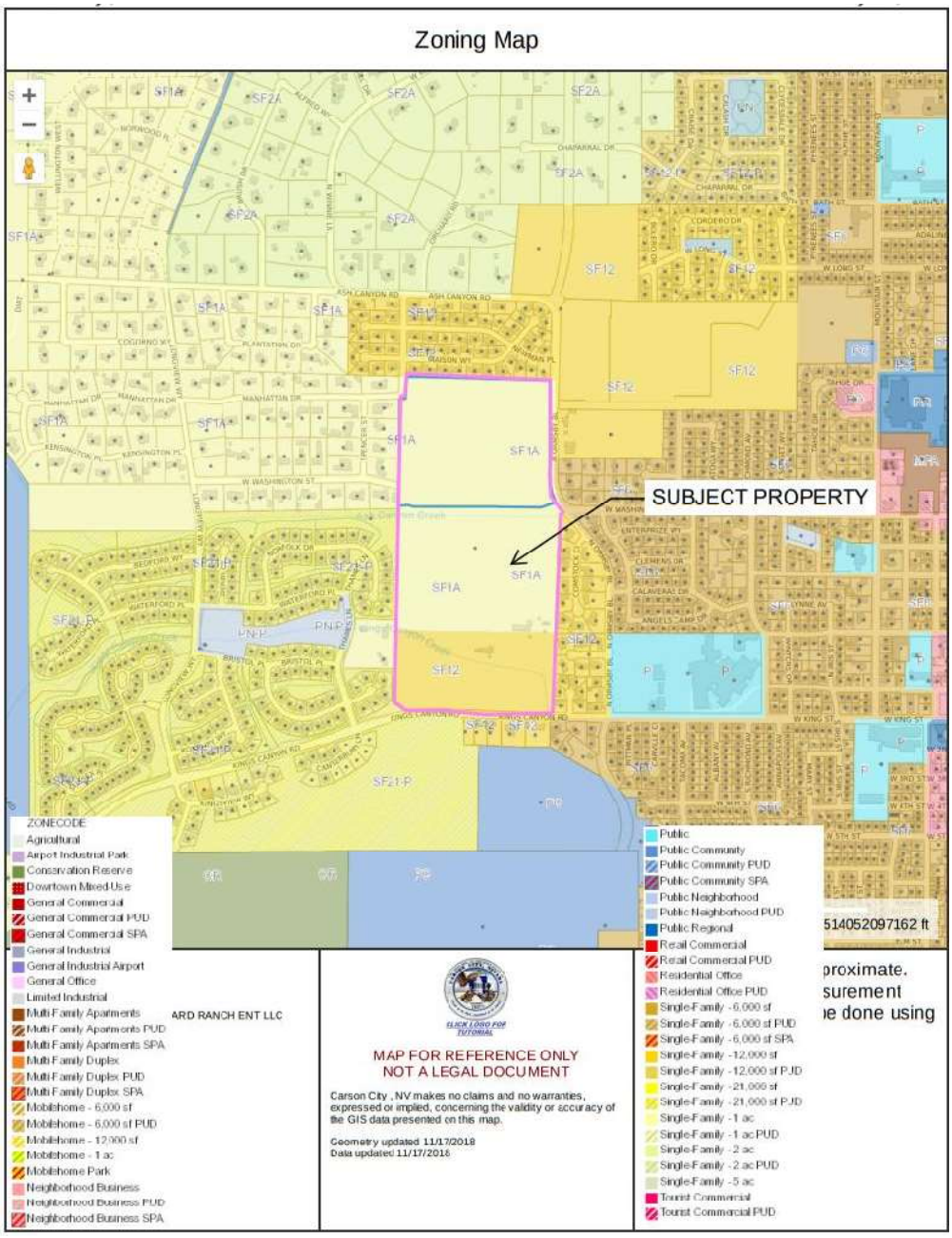
Existing Master Plan Exhibit



The subject properties have different zoning classifications. 009-012-21 is entirely zoned SF1A while 009-012-20 is split zoned SF1A and SF12. Per Carson City's GIS department, 009-012-20 is broken up into SF1A (30.54 +/- AC) and SF12 (19.79+/- AC).

The proposed single-family use is allowed within the zoning designations on the subject property and through the use of the common open space development standards, the proposed lot sizes are allowed within the proposed development area.

Existing Zoning Exhibit



Project Summary

Requested is a common open space development tentative map to develop 61 single family lots common open space on the northern 29.7+/- acres of a 80.03+/- acre property. The 80.03+/- acre property is currently used as an operating ranch. Development of the northern 29.7+/- acres of the property (north of Ash Canyon Creek) will take that portion of the property out of active ranching, leaving the property south of Ash Canyon Creek (50.33+/- acres) remaining in active ranching until the Andersen/Colard family decides to stop ranching.

The project will utilize the common open space development standards from CCMC 17.10 to create lot sizes that are appropriate on the 29.7+/- acres at the northern end of the subject property, north of Ash Canyon Creek. The project will provide common open space as part of the northern development that is in excess of what the code requirements form Chapter 17.10 requires. Additionally, the project proposal sets forth limitations for total allowed development on the remainder portion of 50.33+/- acres, south of Ash Canyon Creek to no more than 70 additional lots, along with 1 lot assumed to be associated with the existing ranch house that will remain on the southern property. It is proposed that the property around the ranch house (approximately 9.46+/- acres) be designated as private open space to save this long time Carson City structure and the nearby surrounding grounds.

The subdivision lot patterning and lot layout can be viewed in the project plan sheets provided in Tab C with this application. The property master plan designation (LDR) allows for up to 3 dwelling units per acre. The proposed 61 lots on the northern 29.7+/- acres equates to 2.05+/- DU/AC, which is conformant with the allowed density under the master plan designation of LDR on the northern portion of the 80.03+/- acre subject property.

Project Benefits

The proposed Andersen Ranch West project will present multiple benefits to the area with the proposed new development. Such benefits include Improvements to vehicular and pedestrian access and improvements to stormwater management. Each is described, below.

Improved Vehicular Access - The project is designed on an infill site that is surrounded by existing development and will not expand the urban footprint of Carson City. Being an infill site, the property is already within the Carson City Sheriff and fire department service areas. The improved vehicular connectivity through the site will improve Sheriff and fire response time by utilizing the direct connections that will be provided between N. Ormsby Blvd. and properties west of the proposed development.

Improved Pedestrian Access - In addition to the improved vehicular connectivity, pedestrian access will also be improved within the area through the sidewalk and trail system that will be provided within the proposed subdivision. The trail system connecting the east and west sides of the tentative map areas site will provide a linkage from the Mountain Street Trailhead trails to the east (currently under construction in the Andersen Ranch development) to the existing trail system in the Long Ranch Estates development to the west, which provides connection to the Quill Ranch Public Lands and trails further west. This linkage

will provide significant benefit to existing and future residents in the region through a longer, continued linkage to public lands. The proposed trail network within the Andersen Ranch West project (seen on Sheet 6.0 with the Tentative Map Set in Tab C) will provide connection to the Ash Canyon Trail System.

Improved Stormwater Management - The project will also provide improvements to stormwater management and decrease the chance of downstream flooding in association with the Ash Canyon drainage. Improvements in collection and detention of existing stormwaters that currently cross the property in an uncontrolled fashion will benefit the downstream properties.

1800's Ranch House Area Preserved in Private Open Space – The ranch house that was constructed in the latter part of the 1800's is proposed to be within a 9.46+/- acre private open space area. This area will be preserved in perpetuity. One additional residence would be allowed to be constructed within this area.

Project Density

Per the zoning designations on the subject property (80.03 acres), the total number of units that would be allowed is 132 for a overall density of 1.65+/- DU/AC. On the development area of the Andersen Ranch West (29.7+/- acres) the 61 lots equates to a density of 2.05+/- DU/AC. This is within the allowed range of density under the Carson City Master Plan for LDR, which allows for 0.2-3 DU/AC.

The proposed lot sizes within the Andersen Ranch West project range in size from 14,380.4 SF to 16,068.5 SF. Using the Common Open Space Development Standards from Chapter 17.10 of the Carson City Development Code, the minimum lot size that would be allowed on SF-1A zoned property (which the development area is) would be 14,374.8 SF. The 61 residential lots within the Andersen Ranch West project all exceed this development standard. The proposed lot sizes within the Andersen Ranch West development area conform to the SF-12 zoning designation and is very similar in size to the existing lots in the Winters Meadow Subdivision to the north which typically range between 12,300+/- SF and 13,940+/- SF on standard lots The proposed lot sizes within Andersen Ranch West is over double the site of the lot that were recently approved in the Ash Canyon Subdivision through a zone change from SF-12 to SF-6 (ZA-2022-0376) and a tentative map (SUB-2022-0375). The lots within the Ash Canyon range between 6,004+/- SF and 8,058+/- SF.

Setbacks for the proposed Andersen Ranch West subdivision will be 20' for front yards, 10' for side yards and 15' for exterior or street side yards and 20' rear yards, per 17.10.030 of the Carson City Development Code.

As noted previously in this project narrative, the remaining 50.33 acres of the site (south of Ash Canyon Creek) would have an allowed number of additional/future dwelling units of 70. This is due to a proposed capping of the total number of units allowed on the property per the current zoning limitations. This is proposed to be accomplished either through condition on the current project or through a deed restriction on the remainder property. Limiting the total number of units on the subject property follows the regulations contained in the Common Open Space Development standards section 17.10.025 that states for residential

developments "the total number of dwelling units in the proposed common open space development shall not exceed the total number of dwelling units allowed by the underlying zoning district(s)."

Future Property Development

The 50.33+/- acre "remainder area," of this subject property will be limited to 70 lots, per the remaining density allowance under the common open space standards of the Carson City Municipal Code (17.10.025). As previously noted, the property south of Ash Canyon Creek is proposed to remain as an active ranch until such a time as the Andersen/Colard family decides to discontinue ranching/agricultural use of that portion of the property. The Ranch House will remain and the 50.33+/- acres will remain as a visual open element of the community. Any future development on the southern portion of the property will require an appropriate public process to proceed.

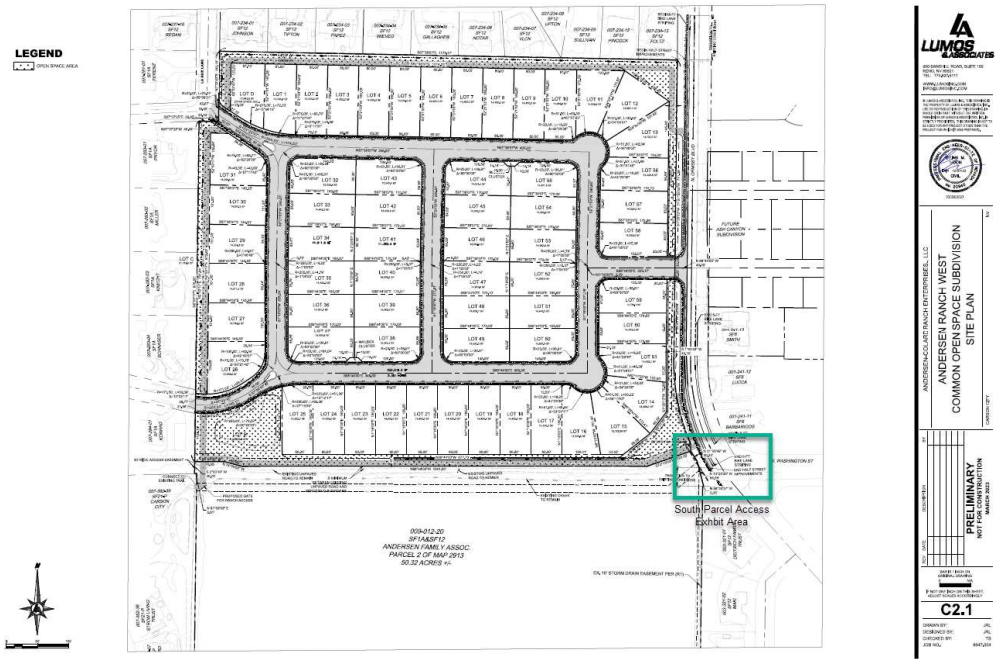
Access, Traffic and Circulation

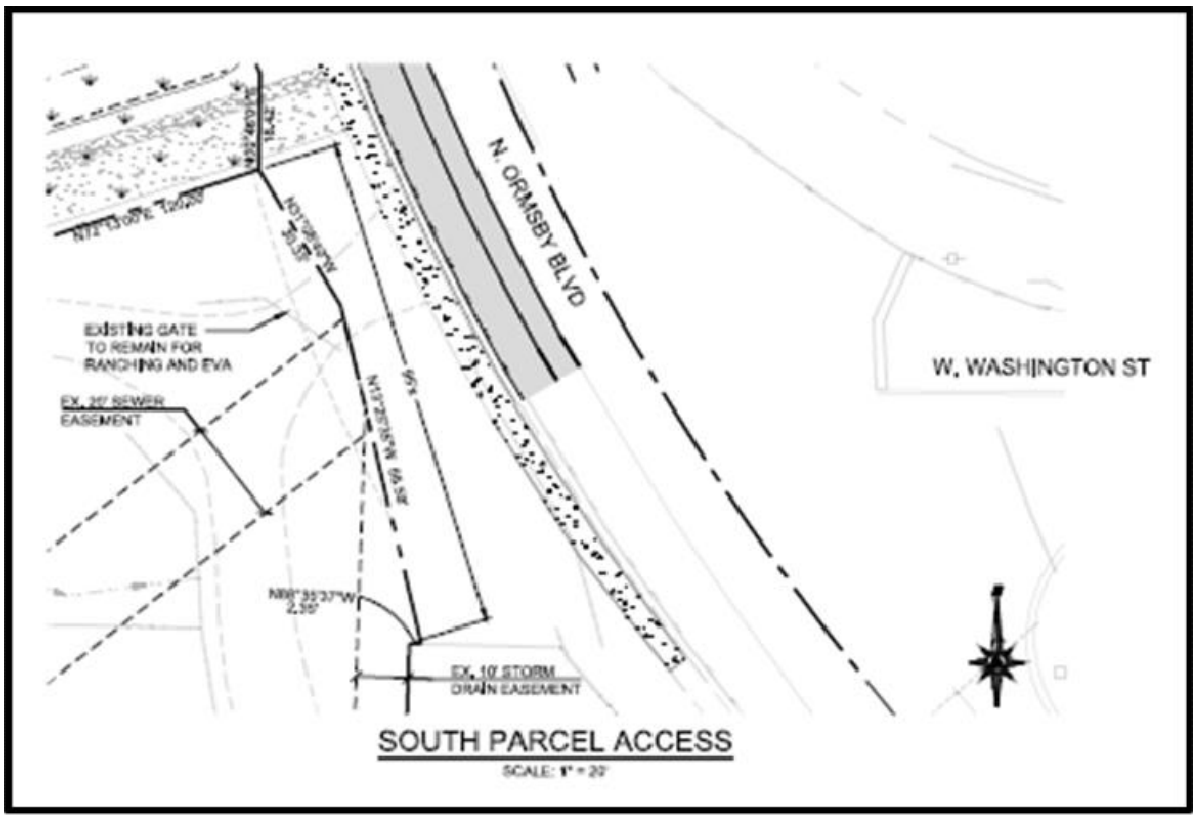
Three (3) points of access will be provided to serve the proposed Andersen Ranch West subdivision. One (1) access point will be provided on N. Ormsby Blvd to the east while two (2) access connections are proposed to the west, connecting with W. Washington Street and Manhattan Drive. A Traffic Impact Study was prepared for the project and estimates the total average daily trips (ADT) to be 576 trips and the AM and PM peak hour trips are estimated to be 43 and 58, respectively.

Two supplemental traffic impact studies were requested by staff and have been provided by Headway Transportation. These additional studies looked at the cumulative impacts of the Ash Canyon Subdivision along with the Andersen Ranch West project. It was also requested by staff that the trip distribution, multi-modal connections and consideration of a crosswalk and a rectangular rapid flashing beacon and crosswalk be reviewed and considered at the project entry on N. Ormsby Blvd. The updated Traffic Impact Studies are included in Tab D with this application.

The conclusions of the initial and each of the supplemental traffic impact studies came to was that the project, with all existing and future considerations is expected to operate within policy level of service thresholds. The complete studies, analysis and conclusions can be found in Tab D with this application package.

South Parcel Access - No development is currently proposed south of Ash Canyon Creek. It was asked by planning commission during the September 28, 2022 hearing if an access point to the southern parcel area (south of Ash Canyon Creek) could be served off N. Ormsby Blvd. The property can easily be served at that location as there is approximately 95 feet of lineal frontage along the subject property where a future roadway or emergency access could be established. An exhibit showing where this future access can be provided to N. Ormsby Blvd. is provided below and on Sheet C2.3 in the plans provided with this application (See Tab C).


LEGEND
OPEN SPACE AREA
LUMOS & ASSOCIATES
ANDERSEN RANCH WEST
COMMON OPEN SPACE SUBDIVISION
SITE PLAN
PRELIMINARY
NOT FOR CONSTRUCTION
C2.1
South Parcel Access
Exhibit Area
009-012-20
SF1ASF17
ANDERSEN FAMILY ASSOC.
PARCEL 2 OF MAP 2913
50.32 ACRES +/-


N. ORMSBY BLVD
W. WASHINGTON ST
EXISTING GATE
TO REMAIN FOR
RANCHING AND EVA
EX. 20' SEWER
EASEMENT
EX. 10' STORM
DRAIN EASEMENT
SOUTH PARCEL ACCESS
SCALE: 1" = 20'

Open Space

Required Open Space - A preliminary landscape plan is provided in Tab C with this application showing an illustrative view of the proposed plan. Highlighted on this plan is the common area that surrounds the proposed Andersen Ranch West Subdivision, providing pedestrian trail access that will connect the Mountain Street Trailhead to the east with the trails through the Long Ranch Estates subdivision to the Quill Ranch public land parcel (APN 007-061-82). Per CCMC 17.10.046, the proposed development of 61 lots as a common open space development requires a minimum of 250 SF per lot be provided as open space and that at least 100 SF of that required open space be provided for recreation. This code section is provided below.

17.10.046 - Open Space.

A minimum of 250 square feet of open space per dwelling unit shall be provided, which may include private open space and/or common open space subject to the following provisions.

1. Private Open Space. Private open space may include private yard areas with no dimension less than 15 feet.
2. Common Open Space. Common open space may include common areas with no dimension less than 25 feet and:
   a. Shall serve those lots developed with less than the minimum per lot open space requirement; and
   b. At least 100 square feet of common open space per residential unit shall be designed for recreation, which may include but not be limited to picnic areas, sports courts, a softscape surface covered with turf, sand or similar materials acceptable for use by young children, including play equipment and trees, with a slope of 5 percent or less.

(Ord. 2007-14 § 2 (part), 2007).

The overall property (80.03+/- AC) contains 61 proposed lots in the Andersen Ranch Subdivision and 1 existing lot/home with the ranch house on the southern portion of the property. As such, we have calculated the open space requirement for the 62 total existing and proposed lots. Using CCMC 17.10.046, the minimum open space requirement for the 62 lots is 15,550 SF with 6,200 SF of that required area being provided for recreation. The proposed plans far exceed the minimums that are identified in CCMC 17.10.046 as is shown, below.

Provided Open Space – Following is the identification of the

CODE REQUIREMENT (17.10.046 - OPEN SPACE)	TOTAL UNITS	REQUIRED OPEN SPACE AREA (SF)	PROVIDED OPEN SPACE AREA (SF)
COMMON OPEN SPACE 250 SQ. FT. PER DWELLING UNIT	62	15,500	**156,856**
RECREATIONAL OPEN SPACE 100 SQ. FT. PER DWELLING UNIT	62	6,200	**12,842**

The cumulative totals of the Common Open Space and the Recreational Open Space that is provided is 169,698 SF, which is 10.9 times more than is required per CCMC 17.10. This open space calculation does not include any rear yard landscape area, which is allowed for inclusion in our calculations by code. We very conservatively estimate that well over 100,000 of private rear yard area will be provided, which would bring the total open space area to over 270,000 SF (17.4 times the required amount of open space per CCMC 17.10). Inclusion of rear yard areas would equate to at least 21% of the 29.7+/- AC site being

provided as open space (at a minimum). Of the provided common open space, approximately 40,500 SF is contained in the detention areas. The code does not require that this be removed from the open space calculation, but if it was, the 29.7 AC development area would still provide at least 17.7% of the site in open space, per the common open space development code requirements.

In addition to the common open space area that is provided on the 29.7 AC Andersen Ranch West development site, the property owner has identified a 9.46+/- AC area around the Ranch House that would be private open space. This area is located on the southern portion of the property that is currently not proposed for development. With approval of the project by Carson City, the formalization of this private open space area will be memorialized through a deed restriction. The property owner would like to retain the allowance to construct one additional homesite on this 9.46+/- acre area. Adding this 9.46+/- AC private open space area to the overall open space provision calculations, an equivalent acreage to over 52% of the 29.7+/- acre development area associated with the Andersen Ranch West project would be provided. This far exceeds the Common Open Space requirements and other subdivision mapping provisions and requirements of code.

Common Open Space Maintenance

The common areas within the Andersen Ranch West project will be maintained via an HOA, LMA or other appropriate and acceptable mechanism to ensure long-run maintenance of the common portions of the development.

Water & Sewer Demand and Service

The water demand for the proposed project will be analyzed based off two components, on being the single family (SF) residences and the other being the open space irrigation. The SF average daily demand per NAC 445A.66325 is 700 gallons per day or ~0.78 ac-ft/yr per unit. That translates into an average demand of 0.487 gpm per SF unit or 29.71 gpm for all 61 SF units. This flow is in accordance with historical demand for similar facility types in the area. Lastly, the landscaping demand can be estimated at 4 ac-ft/yr per acre. Current estimates for the landscaped areas that will be irrigated are approximately 3.8 acres. This results in a demand of 13,570 gallons per day or 9.42 gpm. The combined average daily flow for the 61 units and the 3.8 acres of landscaped irrigation will be 56,270 gpd or 39.11 gpm.

Based on discussions with Tom Grundy at Carson City Public Works, the existing water system has the capacity to serve this development. Looping the water will be required per the conceptual map review letter prepared by Carson City Staff

Sewer – The proposed project will connect to the City's sewer system for collection and treatment. The developer is proposing a gravity system that will include expanded use of the existing connections to the existing gravity mains located in N. Ormsby Boulevard.

The proposed 61 SF residences will connect to the existing main in N. Ormsby Boulevard, which is an 8" ACP, which runs south and then turns east into Washington Street. The City has provided existing sewer capacity for the existing sewer system:

The northernmost pipe adjacent to the property along N. Ormsby Boulevard has a d/D of 25% at a slope of 1.8%, approximately 0.26 cfs.

The southernmost pipe adjacent to the property along N. Ormsby Boulevard before turning down Washington Street has a d/D of 45% at a slope of 2.8%, approximately 1.0 cfs.

The average daily residential Equivalent Dwelling Unit (EDU) rate is 250 gallons per day, which equates to 0.004 cfs average. Using a peaking factor of 3.0, the peak flow per household would be 0.0012 cfs. With 61 homes planned, the increase in flow is 0.07 cfs, putting the 8" main in N. Ormsby Boulevard at a d/D of 0.49, approximately 1.07 cfs.

The proposed project's overall usage is in accordance with the master plan for which the sewer main was analyzed. Since the proposed project is within these tolerances, it is assumed that the existing sewer system has the available capacity to convey the sewage for proposed project.

Solid Waste

Residents within the Andersen Ranch West Subdivision will be required to have solid waste collection to the meet the requirements of the Carson City Code. Pickup of solid waste will be per the requirements of the solid waste management purveyor.

Development Statistics

Following are development statistics for the proposed Andersen Ranch West Common Open Space Subdivision.

Total Subject Property (APN's 009-012-20 & 21):	80.03+/- AC
Total Development Area (Andersen Ranch West – N. of Ash Canyon Creek)	29.7+/- AC
Total Residential Lot Area	20.4+/- AC
Common Area (Includes Common Area/Rec Parcel)	3.90+/- AC
Right-of-Way Area/Dedication Area	5.36+/- AC
Remainder Property (S. of Ash Canyon Creek)	50.33+/- AC
– Includes Private Open Space (9.46+/- AC)	
(1 existing lot assumed (Ranch House) and	
70 additional units allowed)	

Maximum Lots on Subject Parcels (80.03+/- AC, per Zoning SF-1A and SF-12)	132 Lots
Andersen Ranch West Proposed Lots (N. of Ash Canyon Creek)	61 Lots
Remainder Lots (to be limited via Deed Restriction – S. of Ash Canyon Creek)	71 lots
Gross Density Proposed (Andersen Ranch West Development Area Only)	2.05+/- DU/AC

Remainder Property Existing Assumed Lots (Existing Ranch House)	1 Lot
Remainder Property Lots (S. of Ash Canyon Creek, not including Ranch House)	70 Lots

Lot Sizes

Minimum Lot Size Required, Per 17.10.030(1)(a)	14,374.8 SF
Minimum Lot Size Provided:	14,380.4 +/- SF
Maximum Lot Size Provided:	16,086.5 +/- SF
Average Lot Size Provided:	14,598.7+/- SF
Minimum Lot Width Provided:	80 feet

Proposed Setbacks – Following the standards containing in CCMC 17.10.030 (Lot and Yard Standards)

Front Yard	20 feet
Side Yard	10 feet
Street Side Yard	15 feet
Rear Yard	20 feet

Legal Findings Review

NRS 278.349(3) Findings

The NRS requires certain findings be considered when approving a tentative map.

Action on tentative map by governing body; considerations in determining action on tentative map; final disposition.

3. The governing body, or planning commission if it is authorized to take final action on a tentative map, shall consider:

(a) 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;

Environmental and health laws and regulations concerning water and air pollution will be satisfied by connecting to existing municipal services adjacent to the site. Air Pollution will be addressed by a dust control permit that minimizes impacts until the development is completed.

(b) The availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision;

The project will connect to the City water system, which has sufficient quantity for the foreseeable needs of the proposed development and its lots based on discussions with the Carson City Public Works Department. Sufficient water quality is the responsibility of the municipal provider, and resources meeting the quality requirements are available to accommodate the needs of this development.

(c) The availability and accessibility of utilities;

The proposed project is an infill site and all public utilities are adjacent to the site and available for connection. Any upgrades necessary that are solely associated with added project demands will be the responsibility of the developer.

(d) The availability and accessibility of public services such as schools, police protection, transportation, recreation and parks;

The proposed lots are within an infill area with existing service from police, transportation, recreation and parks. Schools are provided by the Carson City School District and the students will attend Fritsch and Bordewich Bray elementary schools, Carson Middle School, and Carson High School. The proposed plan includes a park at the northwestern corner of the site and will provide trail connections through the open space that will provide linkages to trail systems that are either existing or under construction that will ultimately provide a linkage from the Mountain Street Trailhead to public lands at the Quill Ranch parcel to the west of the project site.

(e) Conformity with the zoning ordinances and master plan, except that if any existing zoning ordinance is inconsistent with the master plan, the zoning ordinance takes precedence;

The proposed development is in conformity with the zoning ordinance and the land use element of the City's Master Plan. No conflicts with existing standards contained in approved codes and/or plans are proposed with this development.

Guiding Principle 1: A Compact and Efficient Pattern of Growth Carson City will have a compact pattern that makes efficient use of the limited land area and water resources it has available for urban growth, that fosters the provision of infrastructure and services in a cost-effective manner, and that balances development with conservation of the natural environment—particularly where public lands abut the urban interface.

The proposed development is in conformance with the principle's stated goal of a compact and efficient pattern of growth. The two parcels of land are surrounded by existing residential development on all sides and the necessary infrastructure -sewer, water, electricity, and gas - to service the site. Public services exist to service the proposed project and the surrounding area.

Guiding Principle 6: Quality Design and Development Carson City will project a positive image for the community by promoting a high standard of design and the use of durable long-lasting materials for all development, and by ensuring that infill and redevelopment is of a scale and character that is compatible with and enhances surrounding development context.

1.1b—Urban Service Area Discourage growth in locations not currently served by urban services or not planned to be served by the city's water and wastewater infrastructure by prohibiting the rezoning of lands for urban development intensities in locations not served or planned to be served by urban services, as identified in the City's Water and Wastewater Master Plan.

The proposed development is in conformance with the principle's stated goal of an urban service area that is intended to promote compact and efficient patterns of growth. The two parcels of land are surrounded by existing residential development on all sides and the necessary infrastructure - sewer, water, electricity, and gas - to service the site. Urban services exist to service the surrounding area.

1.4b—Cluster Development Encourage the use of cluster development techniques at the Urban Interface to maintain views, preserve steep slopes, and maximize the preservation of open space. Update current cluster practices to ensure that the resulting density of the clustered development is consistent with the parcel's land use designation, the surrounding development pattern, and the level of roadway improvements that currently exist or will be required to be provided to the site. Cluster developments that result in urban levels of density in an area with an otherwise rural character and that do not represent progressive expansion of existing urban densities should be prohibited.

The proposed development is not at a point of an urban interface as defined in code. The lands surrounding the project are developed with single family residences. The proposed development is

consistent with the zoning designation, the corresponding density allowed, the surrounding pattern development, and the traffic report has shown that the level of roadway improvements in the area are adequate to service the proposed development.

1.4c—Protection of Existing Site Features Ensure that development at the Urban Interface is designed to minimize disturbances to existing stands of mature trees, distinctive topographic features (hillsides/ridgelines), and other character defining features, particularly those that are visible from other locations in the community. Require a detailed site analysis for any development at the Urban Interface to identify unique features to be protected.

There are existing mature trees along the perimeter of the development area. Any trees that can be saved will be saved. The existing Ash Canyon Creek drainage will be modified to assist in overall detention and stormwater control. There are no hillsides or ridgelines on this property. A site analysis map is provided as sheet C7.0 in Tab C with this application.

1.5d—Coordination of Services The City shall coordinate with internal service departments as well as other governmental organizations, such as the School District, that provide services to residents, to ensure that existing and new neighborhoods have adequate services and school sites.

The proposed development is surrounded by approved existing developments that are currently served by existing city services. Adequate sheriff and fire services exist to adequately serve the proposed development. Additional fire infrastructure – hydrants – will be constructed as required by fire flow testing. In addition, the proposed development's street network will provide more efficient connectivity with the streets to the west, particularly Manhattan Drive and Washington Street. Conversation with the Carson City school district, we were informed that the school zones the project is zoned for - Fritsch Elementary School, Bordewich Bray Elementary School, Carson Middle School, and Carson High School - have adequate capacity to service the potential increase in school children.

3.1b—Environmentally Sensitive Areas Environmentally Sensitive Areas within the community should be protected using available tools, such as development setbacks, dedication, or other mechanisms.

Ash Canyon Creek will be enhanced for stormwater flow and protection from flooding and incorporated into the project open space. A wetlands delineation was prepared as part of the development project site review and the design team is awaiting review of the delineation from the ACOE.

(f) General conformity with the governing body's master plan of streets and highways;

The proposed development meets the City's Master plan for streets and highways as described in Chapter 7 of the Master Plan by creating a development that supports an integrated transportation system that does not unduly burden the existing infrastructure. A traffic impact study was prepared

by Headway Transportation as part of the development planning effort and is provided in Tab D with this application.

(g) The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision;

The proposed development is an infill project, this Common Open Space subdivision is adding internal streets to the development area only. The existing public streets surrounding this infill site are adequate to accommodate the traffic generated by the proposed subdivision, and service levels on existing streets will be minimally impacted. This is based on the traffic study submitted and general street capacity standards. The study has determined that the additional trips can be accommodated with minimal impacts to the level of service at nearby intersections. A copy of the traffic study is provided in Tab D with this application.

(h) Physical characteristics of the land such as floodplain, slope and soil;

The project site present only a gentle slope and does not contain, nor is near, an earthquake fault. Soils condition on the site were seen be comprised of clayey sands, clays and silts, which is typical in development in this region. The subdivision will be required to make drainage improvements to minimize onsite flood hazard zones. A CLOMR will be filed with FEMA to document changes.

(i) The recommendations and comments of those entities and persons reviewing the tentative map pursuant to NRS 278.330 to 278.3485, inclusive;

The recommendations of reviewing departments and other entities will be fulfilled through conditions of approval or other appropriate methods acceptable to the City and the applicant

(j) The availability and accessibility of fire protection, 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 located in an area with adequate water services and capacity available, adjacent to the development area. Fire hydrants will be required to be located within the subdivision to meet Carson City Fire Department standards. The site is an infill side and not adjacent to wild areas for consideration or requirements relative to the wildland/urban interface standards.

(k) The potential impacts to wildlife and wildlife habitat; and

The subject property is within an infill development area that is surrounded by existing development on all four sides. Open space corridors are provided as part of the Common Open Space Development. Homes have been centered in the development area of the property with trail and open space corridors along the perimeter.

(l) The submission by the subdivider of an affidavit stating that the subdivider will make provision for payment of the tax imposed by chapter 375 of NRS and for compliance with the disclosure and recording requirements of paragraph (f) of subsection 1 of NRS 598.0923, if applicable, by the subdivider or any successor in interest.

This is understood and will be completed at the appropriate time. The submission by the subdivider of an affidavit stating that the subdivider will make provision for payment of the tax imposed by Chapter 375 of NRS, and for compliance with the disclosure and recording requirements of NRS 598 by the subdivider or any successor in interest.

17.07.005 - Findings.

In considering parcel maps, planned unit developments and tentative subdivision maps the director shall consider the following:

1. 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 environmental health laws and regulations are being addressed through ongoing and temporary measures. Development proposed with this subdivision will be required to obtain a dust control and stormwater pollution prevention permit from the Nevada Division of Environmental Protection (NDEP), and the site grading must incorporate proper dust control and erosion control measures. The new lots will also be required to connect to the City water and sewer system.

2. The availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision.

The project will connect to the City water system, which has sufficient quantity for the foreseeable needs of the additional lots. Based on conversation with the Carson City Public Works Department, sufficient water quality and resources are available to accommodate the needs of this development.

3. The availability and accessibility of utilities.

The proposed lots are designed within an infill development area and all public utilities available adjacent to the property.

4. The availability and accessibility of public services such as schools, police protection, transportation, recreation and parks.

The proposed lots are within an infill development area that has existing service from schools, police, transportation, recreation and parks. Open space areas have been designed within this project as part of the Common Open Space Development requirements.

5. Access to public lands. Any proposed subdivision that is adjacent to public lands shall incorporate public access to those lands or provide an acceptable alternative.

The proposed trail system within the Andersen Ranch West project connects to the Ash Canyon Creek trail system at the southwest corner of the development area.

6. Conformity with the zoning ordinance and land use element of the city's master plan.

The proposed development is consistent with the zoning ordinance and the land use element of the City's Master Plan.

7. General conformity with the city's master plan for streets and highways.

The proposed development meets the City's Master plan for streets and highways as described in Chapter 7 of the Master Plan by creating a development that supports an integrated transportation system that does not unduly burden the existing infrastructure. A traffic impact study was prepared by Headway Transportation as part of the development planning effort and is provided in Tab D with this application.

8. The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision.

The proposed development meets the City's Master plan for streets and highways. As an infill project, this Common Open Space subdivision is adding internal streets to the development area only. The existing public streets surrounding this infill site are adequate to accommodate the traffic generated by the proposed subdivision, and service levels on existing streets will be minimally impacted. This is based on the traffic study submitted and general street capacity standards. The study has determined that the additional trips can be accommodated with minimal impacts to the level of service at nearby intersections.

9. The physical characteristics of the land such as flood plains, earthquake faults, slope and soil.

The project site presents only a gentle slope and does not contain, nor is near, an earthquake fault. Soils condition on the site were seen be comprised of clayey sands, clays and silts, which is typical of sites in this region. The subdivision will be required to make drainage improvements to minimize onsite flood hazard zones. A CLOMR will be filed with FEMA to document changes.

10. The recommendations and comments of those entities reviewing the subdivision request pursuant to NRS 278.330 thru 278.348, inclusive.

The recommendations of reviewing departments and other entities will be fulfilled through conditions of approval or other appropriate methods acceptable to the City and the applicant

11. The availability and accessibility of fire protection 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 located in an area with adequate water services and capacity available, adjacent to the development area. Fire hydrants will be required to be located within the subdivision to meet

Carson City Fire Department standards. The site is an infill side and not adjacent to wild lands for consideration or requirements relative to the wildland/urban interface standards.

12. Recreation and trail easements.

The Andersen Ranch West Subdivision provides open space corridors to appropriately accommodate drainage and trail connections. Connection to the Ash Canyon Creek trail system located at the SW corner of the development area is proposed as part of the overall connectivity for pedestrians.

Master Plan Policy Checklist

Conceptual & Tentative Subdivisions, PUD's & Parcel Maps

PURPOSE

The purpose of a development checklist is to provide a list of questions that address whether a development proposal is in conformance with the goals and objectives of the 2006 Carson City Master Plan that are related to subdivisions of property. This checklist is designed for developers, staff, and decision-makers and is intended to be used as a guide only.

Development Name: Andersen Ranch West - Common Open Space Tentative Subdivsion Map

Reviewed By: _____

Date of Review: _____

DEVELOPMENT CHECKLIST

The following five themes are those themes that appear in the Carson City Master Plan and which reflect the community's vision at a broad policy level. Each theme looks at how a proposed development can help achieve the goals of the Carson City Master Plan. A check mark indicates that the proposed development meets the applicable Master Plan policy. The Policy Number is indicated at the end of each policy statement summary. Refer to the Comprehensive Master Plan for complete policy language.

CHAPTER 3: A BALANCED LAND USE PATTERN

The Carson City Master Plan seeks to establish a balance of land uses within the community by providing employment opportunities, a diverse choice of housing, recreational opportunities, and retail services.

Is or does the proposed development:

☑ Consistent with the Master Plan Land Use Map in location and density?

Response: The proposed development is consistent with the existing Master Plan Land Use plan as we are not requesting any amendments with this submittal. The proposed development is surrounded by existing single family home subdivisions with adequate existing services and infrastructure to serve the proposed 61 lots. The requested density is consistent with the surrounding areas.

☑ Meet the provisions of the Growth Management Ordinance (1.1d,

Municipal Code 18.12)?

Response: The proposed development meets the provisions and ultimate purpose of the Growth Management Ordinance to ensure that adequate water and wastewater facilities exist to service this project. Adequate water resources will be dedicated with this project, and existing sanitary sewer capacity exists to serve the proposed development. Please see the Utility Impact letter included in Tab D for specific details.

☑ Encourage the use of sustainable building materials and construction techniques to promote water and energy conservation (1.1e, f)?

Response: The proposed development will make use of appropriate building materials and construction techniques to promote water and energy conservation, including, but limited to, low impact development BMP's as contained in Carson City's design manual.

☐ Located in a priority infill development area (1.2a)?

Response: The proposed development is not located in a Carson City Master Plan priority infill development area as defined in Goal 1.2 of the Master Plan. The site is neither in a high priority area such as the downtown area nor a moderate priority area such as the gateway corridors. It is by definition, an infill site, as the proposed development is surrounded by existing development.

☑ Provide pathway connections and easements consistent with the adopted Unified Pathways Master Plan and maintain access to adjacent public lands (1.4a)?

Response: The proposed development does not have an "urban interface" with surrounding open space. Existing trailways and pathways will be maintained and access to areas surrounding the site, primarily to the west, will not be impacted by the proposed development. Additional trail paths are incorporated into the site, with an additional connection to existing trails in the area located in the southwest corner. See civil drawings sheet C2.1 in Tab C for details.

☑ Encourage cluster development techniques, particularly at the urban interface with surrounding public lands, as appropriate, and protect distinctive site features (1.4b, c, 3.2a)?

Response: The proposed development is proposed to limit the buildable number of units on both parcels to a specific number tied to the current allowed density of the existing zoning designations (132). The project is proposing 61 units, there is an existing structure on site that will remain in place, which allows for 70 additional units on the site in a future proposed development.

☐ At adjacent county boundaries, coordinated with adjacent existing or planned development with regards to compatibility, access and amenities (1.5a)?

Response: The proposed development is not adjacent to county boundaries to necessitate coordination with adjacent projects. However, the proposed development was designed to be compatible in size, density, and product type. Access points and amenities are maintained and enhance to complement existing surrounding development.

☑ Located to be adequately served by city services including fire and sheriff services and coordinated with the School District to ensure the adequate provision of schools (1.5d)?

Response: The proposed development is surrounded by approved existing developments that are currently served by existing city services. Adequate sheriff and fire services exist to adequately serve the proposed development. Additional fire infrastructure – hydrants – will be constructed as required by fire flow testing. In addition, the proposed development's street network will provide more efficient connectivity with the streets to the west, particularly Manhattan Drive and Washington Street. In conversation with the Carson City school district, we were informed that the school zones the project is zoned for - Fritsch Elementary School, Bordewich Bray Elementary School, Carson Middle School, and Carson High School have adequate capacity to service the potential increase in school children.

☐ In identified Mixed-Use areas, promote mixed-use development patterns as appropriate for the surrounding context consistent with the land use descriptions of the applicable Mixed-Use designation, and meet the intent of the Mixed-Use Evaluation Criteria (2.1b, 2.2b, 2.3b, Land Use Districts, Appendix C)?

Response: The proposed development is not within a mixed-use zoning designation, and as such this policy is not applicable.

☑ Provide a variety of housing models and densities within the urbanized

area appropriate to the development size, location and surrounding neighborhood context (2.2a, 9.1a)?

Response: As noted in previous policy questions, the proposed project (Andersen Ranch West) is not in a mixed use area. However, the proposed lot sizes of 14,300+ SF provide similar and compatible lot sizes to those existing in the Winters Meadow Subdivision directly north of the tentative map site and provide a good transition from the smaller lot products that exist to the east (Ash Canyon (6,000 SF – recently approved) and the Andersen Ranch (5,000 SF lots at the smallest – under construction). When viewed cumulatively, a mix of housing models and densities is provided within the area through the existing, under construction, recently approved and proposed products.

☑ Protect environmentally sensitive areas through proper setbacks, dedication, or other mechanisms (3.1b)?

Response: The proposed development is protecting the environmentally sensitive areas associated the flood areas located primarily in the middle of the two parcels. Storm water flows will be contained through use of appropriate water control techniques. The "limited" development concept that has been proposed for the project will allow a certain amount of flexibility in locating lots to allow for more meaningful development opportunities that protect the sensitive areas and protect downstream lots from any flooding effects that have occurred in the past.

☐ If at the urban interface, provide multiple access points, maintain defensible space (for fires) and are constructed of fire resistant materials (3.3b)?

Response: The proposed development area is an "infill site" and does not have an "urban interface" with surrounding open space. However, it does provide a necessary trail linkage between the Mountain Street Trailhead and the publicly owned open space of the Quill Ranch to the west.

☑ Sited outside the primary floodplain and away from geologic hazard areas or follow the required setbacks or other mitigation measures (3.3d, e)?

Response: Drainage improvements will be made with the development of the subject property and a CLOMR will be submitted to the ACOE. The current floodplain fans across the development in an uncontrolled fashion. The The improvements to drainage will provide a more manageable situation relative to flooding, across the subject tentative map property and downstream. No geologic hazard areas are recognized within the development area.

☑ Provide for levels of services (i.e. water, sewer, road improvements, sidewalks, etc.) consistent with the Land Use designation and adequate for the proposed development (Land Use table

descriptions)?

Response: Conversation with Carson City Public Works has indicated that sufficient capacity and facilities exist for the proposed 61 lot tentative mapped development. The traffic impact study and supplemental study indicate that traffic generation from this and Ash Canyon will not overly-burden area streets and required levels of service will be maintained. Sidewalks and trails system connections will be provided such that the Mountain Street Trailhead trails will connect fully to the Quill Ranch public lands to the west, providing a great recreational resource to all existing and future residents. Pedestrian and vehicular access will be improved in the general area with connections made across the proposed development area of the 61 lots.

☐ If located within an identified Specific Plan Area (SPA), meet the applicable policies of that SPA (Land Use Map, Chapter 8)?

Response: The proposed development area is not located in an identified Specific Plan Area (SPA),

CHAPTER 4: EQUITABLE DISTRIBUTION OF RECREATIONAL OPPORTUNITIES

The Carson City Master Plan seeks to continue providing a diverse range of park and recreational opportunities to include facilities and programming for all ages and varying interests to serve both existing and future neighborhoods.

Is or does the proposed development:

☑Provide park facilities commensurate with the demand created and consistent with the City's adopted standards (4.1b, c)?

Response: The proposed 61 lot tentative mapped area provides a park area within the northwestern corner of the site exceeding the size requirements set forth in CCMC 17.10. Additionally, the proposed tentative map development provides a trailway system along the perimeter of the development that presents linkages to the existing and under development trailways to the west and east. The trail connections through the proposed tentative map area will provide connectivity from the Mountain Street Trailhead to the Quill Ranch public lands to the west. Without development of the subject property, this connectivity through a pedestrian trail system does not occur.

☑Consistent with the Open Space Master Plan and Carson River Master Plan (4.3a)?

Response: The open space and trail connections that are proposed within the tentative map development area, north of Ash Canyon Creek follow strategies identified in Carson City Open Space Master Plan in that the City

staff has worked with the property owner and the areas defined to be within trail networks are proposed to be permanent. Additionally, through continued discussions with City staff and officials, it is identified in the current plans that an area totaling approximately 9.46+/- acres is proposed to be set aside in a private open space area around the existing ranch house on the southern portion of the overall 80.03 acre parcel. Any development rights from existing zoning under the private open space area would be usable by the property owner with future development of the 50.33+/- acre southern portion of the subject property. The facilities proposed as new improvement or preserved community fixtures both are consistent with the Open Space Master Plan goals.

CHAPTER 5: ECONOMIC VITALITY

The Carson City Master Plan seeks to maintain its strong diversified economic base by promoting principles which focus on retaining and enhancing the strong employment base, include a broader range of retail services in targeted areas, and include the roles of technology, tourism, recreational amenities, and other economic strengths vital to a successful community.

Is or does the proposed development:

☐ Incorporating public facilities and amenities that will improve residents' quality of life (5.5e)?

Response: The proposed development area is providing infrastructure improvements that help to maintain or improve the surrounding area through recreational facilities and improvements to storm water containment.

☐ Promote revitalization of the Downtown core (5.6a)?

Response: The proposed development will not directly affect or promote the revitalization of the downtown core. However, the potential exists that the new residents of the development will either directly or indirectly contribute to this revitalization through visits to the area, or creation of jobs through a business located here.

☐ Incorporate additional housing in and around Downtown, including lofts, condominiums, duplexes, live-work units (5.6c)?

Response: The proposed development is providing additional housing stock for the entire area to assist in alleviating the housing crisis in the area.

CHAPTER 6: LIVABLE NEIGHBORHOODS AND ACTIVITY CENTERS

The Carson City Master Plan seeks to promote safe, attractive and diverse neighborhoods, compact mixed-use activity centers, and a vibrant, pedestrian-friendly Downtown.

Is or does the proposed development:

- ☑ Promote variety and visual interest through the incorporation of varied lot sizes, building styles and colors, garage orientation and other features (6.1b)?

Response: there are three different general lot shape, presenting varied widths and depths that will be incorporated into the development plan. This will allow for more variation than is typical within subdivisions all of standard or similar lot dimensions.

- ☑ Provide variety and visual interest through the incorporation of well-articulated building facades, clearly identified entrances and pedestrian connections, landscaping and other features consistent with the Development Standards (6.1c)?

Response: Building treatments for the residential units will be part of the final plan submittal for the project and will be required to meet articulation and variation standards set forth in the CCMC.

- ☑ Provide appropriate height, density and setback transitions and connectivity to surrounding development to ensure compatibility with surrounding development for infill projects or adjacent to existing rural neighborhoods (6.2a, 9.3b 9.4a)?

Response: The nearest neighborhood, to the north presents similar lotting sizes and is developed in the SF-12 zoning designation. Lots to the east and west The nearest 1 acre lots are along the western property line and there are four lots that will back up to the proposed subdivision. Each of those existing homes will be additionally buffered by an open space corridor and trail between residential lot lines.

- ☐ If located in an identified Mixed-Use Activity Center area, contain the appropriate mix, size and density of land uses consistent with the Mixed-Use district policies (7.1a, b)?

Response: The proposed development area is not located in an identified Mixed-Use Activity Center area,

- ☐ If located Downtown:
  - ☐ Integrate an appropriate mix and density of uses (8.1a, e)?
  - ☐ Include buildings at the appropriate scale for the applicable Downtown Character Area (8.1b)?
  - ☐ Incorporate appropriate public spaces, plazas and other amenities (8.1d)?

Response: The proposed development area is not located in the Downtown

area,

CHAPTER 7: A CONNECTED CITY

The Carson City Master Plan seeks promote a sense of community by linking its many neighborhoods, employment areas, activity centers, parks, recreational amenities and schools with an extensive system of interconnected roadways, multi-use pathways, bicycle facilities, and sidewalks.

Is or does the proposed development:

☐ Promote transit-supportive development patterns (e.g. mixed-use, pedestrian-oriented, higher density) along major travel corridors to facilitate future transit (11.2b)?

Response: The proposed development project is not located along any identified major travel corridors. The proposed development with its associated road network will benefit the area by providing alternative routes for travel.

☑ Maintain and enhance roadway connections and networks consistent with the Transportation Master Plan (11.2c)?

Response: The proposed development, with its associated road network, will benefit the area by providing alternative routes for travel, enhancing roadway connections or completing them where appropriate.

☑ Provide appropriate pathways through the development and to surrounding lands, including parks and public lands, consistent with the Unified Pathways Master Plan (12.1a, c)?

Response: The proposed development will enhance and link existing trailways and pathways around the site. Additional trail paths are incorporated into the site, with an additional connection to existing trails in the area located in the southwest corner. See civil drawings sheet C2.1 in Tab C for details.

TAB C

PLANT LEGEND

- ORNAMENTAL TREES
- DECIDUOUS SHADE TREES
- EVERGREEN TREES
- COMMON AREA LANDSCAPE
- RE-VEGETATION AREAS

LANDSCAPE DATA

SITE AREA: 1,294,923.40 SQ FT 29.727 ACRES)
JURISDICTION: CARSON CITY
ZONING: SF1A (SINGLE FAMILY 1 ACRE)

REQUIRED LANDSCAPE AREA = 6,100 SQ FT
- (100 SQ FT OF COMMON AREA PER UNIT (61 UNITS))
- FRONT AND SIDE YARDS

PROVIDED LANDSCAPE AREA
- COMMON AREA = 6,100 SQ FT MIN.
- FRONT AND SIDE YARDS

REQUIRED TREES = 111 MIN.
- (1 TREE PER 50 LN FT OF COMMON AREA PATH) = 71
- (1 TREE PER 30 LN FT ALONG STREET FRONTAGE = 40
  N. ORMSBY BLVD. (886 LN FT) = 30
  MANHATTAN DRIVE = (144 LN FT) = 5
  WEST BARDALINO DRIVE (129 LN FT) = 5

REQUIRED SHRUBS = 666 MIN.
- (6 SHRUBS PER REQUIRED TREE)

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, BEYOND THOSE REQUIRED BY CODE, MAY BE REDUCED IN SIZE AT INSTALLATION.

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) PLAN IS CONCEPTUAL. PLANT QUANTITIES INDICATED ARE PER CARSON CITY CODE REQUIREMENTS. PLANT LOCATIONS, FINAL SPECIES SELECTION, AND SIZE AT PLANTING SHALL BE DETERMINED DURING DEVELOPMENT OF THE FINAL CONSTRUCTION DOCUMENTS.

L.A. Studio Nevada
the landscape architecture studio
1550 C Street Sparks, NV 89431 (775) 323-2223 NV RLA #440
www.lastudionevada.com

REGISTERED LANDSCAPE ARCHITECT
MARC CHAPELLE
622
Expires 02/28/25
STATE OF NEVADA

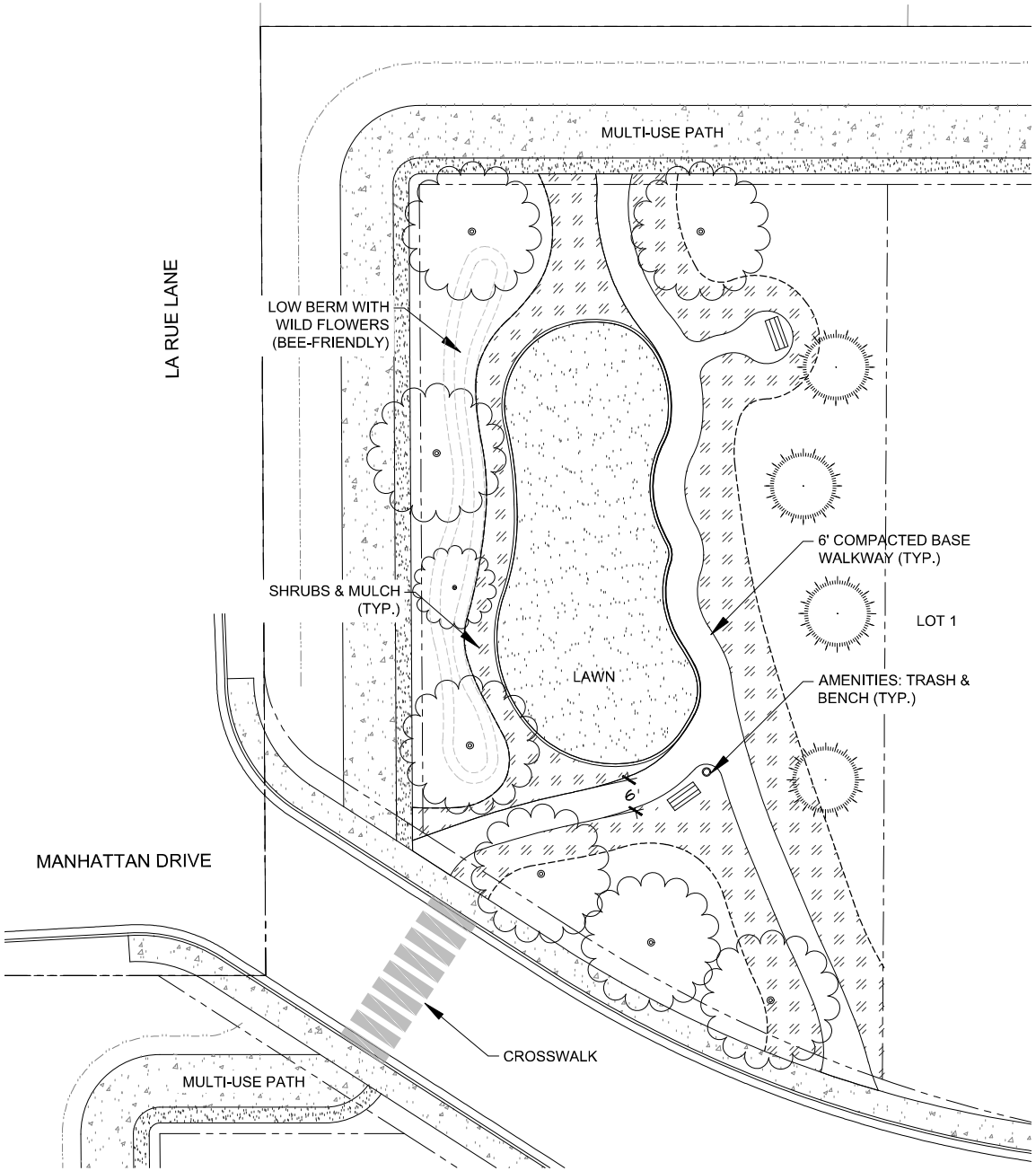
Nevada

Preliminary Landscape Plan
ANDERSEN RANCH WEST
Lumos & Associates
Carson City

No.	Revision Date

LA No.	874-804-06-22
Designed:	KRD
Drawn:	KRD
Checked:	MAC
Date:	5/24/23

Sheet L1 of 1



L.A. StudioNevada
the landscape architecture studio
1552 C Street Sparks, NV 89431 (775) 323-2223 NV RLA #440
www.lastudionevada.com

REGISTERED LANDSCAPE ARCHITECT
MARC A. CHAPPELLE
622
Expires 6/30/23
STATE OF NEVADA

Nevada

Preliminary Park Concept

ANDERSEN RANCH WEST

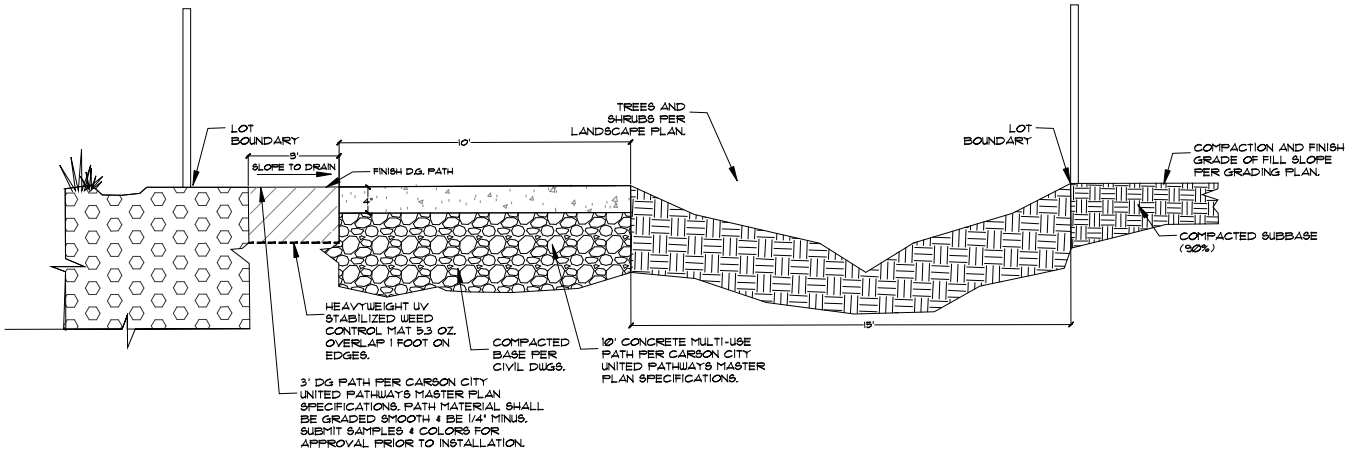
Lumos & Associates

Carson City

No.	Revision Date

LA No:	814-504-06-22
Designed:	MAC
Drawn:	AR
Checked:	MAC
Date:	8/29/23

Sheet: EX-1 of 2



MULTI-USE PATH SECTION

0' 2' 4' 6'

Scale in Feet

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the landscape architecture studio
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REGISTERED LANDSCAPE ARCHITECT
MARC A. CHAPPELLE
622
Expires 6/30/23
STATE OF NEVADA

Preliminary Landscape Plan_Easement Section Cut

ANDERSEN RANCH WEST

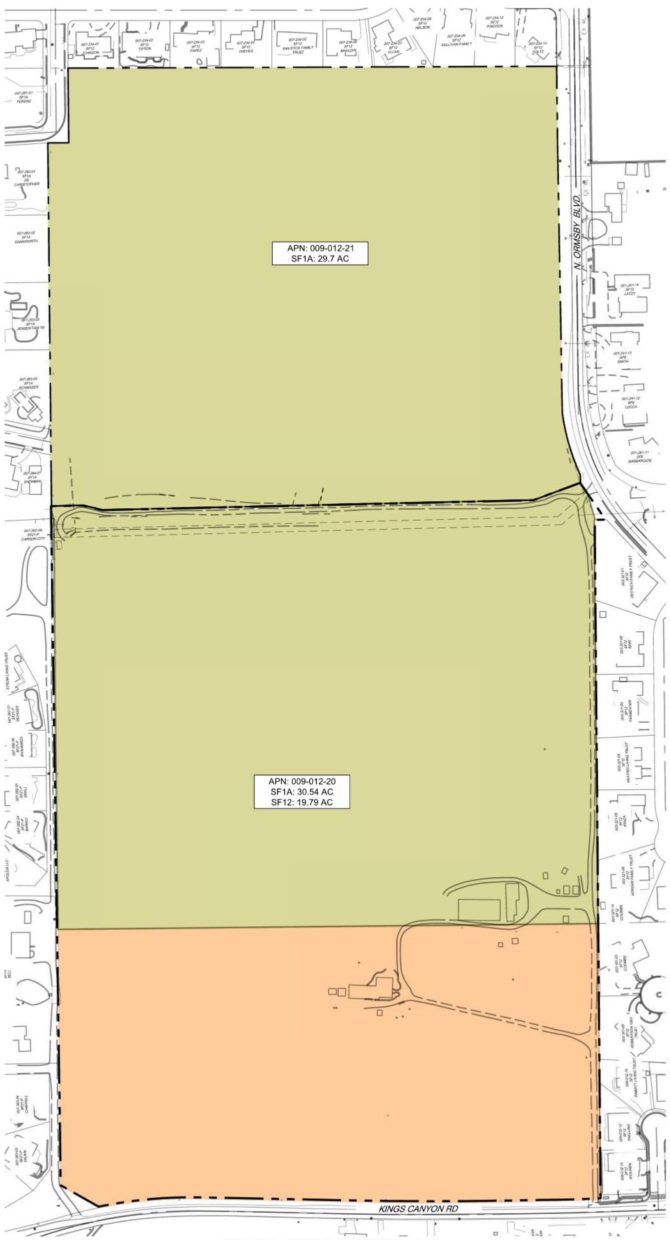
Lumos & Associates

Carson City Nevada

No.	Revision Date

LA No:	814-504-08-22
Designed:	MAC
Drawn:	AR
Checked:	MAC
Date:	8/29/23

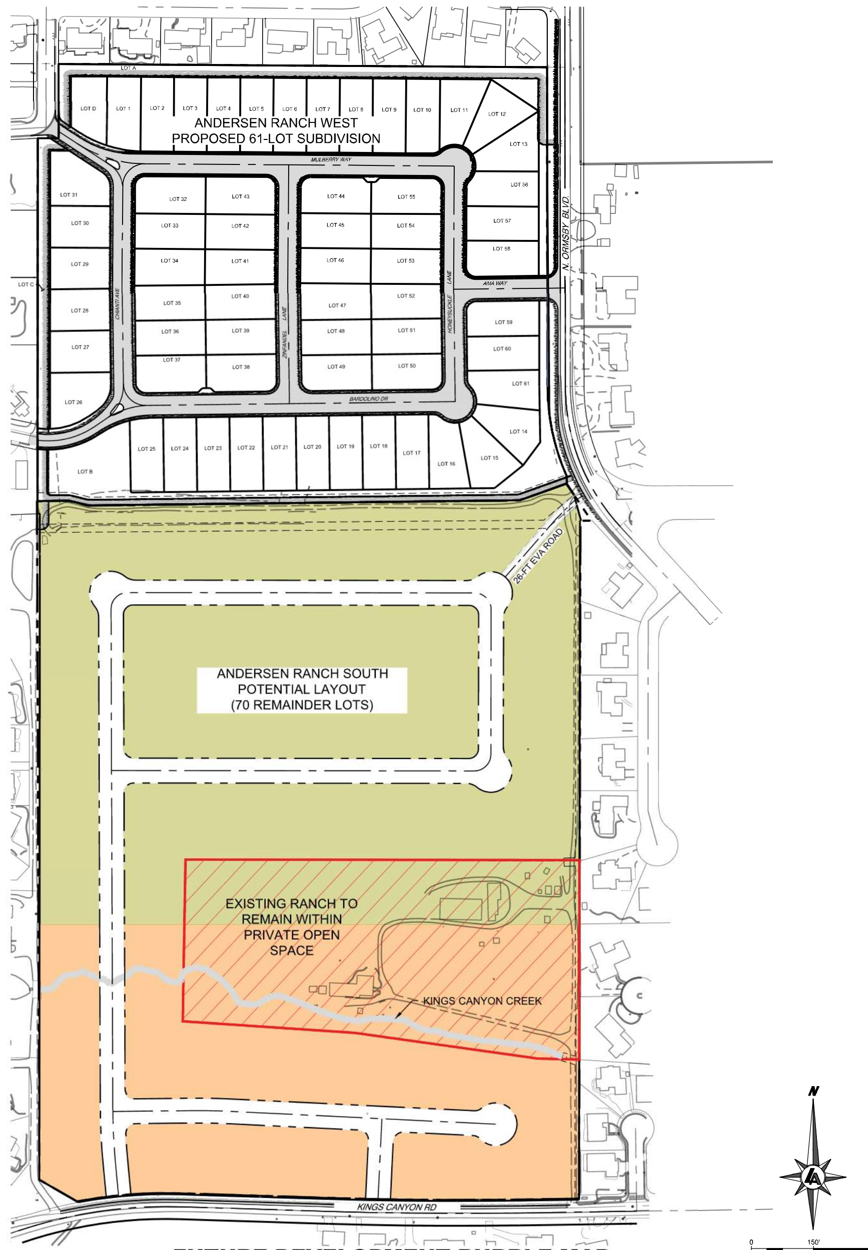
Sheet: EX-2 of 2



EXISTING ZONING

LEGEND

- SINGLE FAMILY 1 ACRE ZONING
- SINGLE FAMILY 12,000 S.F. ZONING



FUTURE DEVELOPMENT BUBBLE MAP

LUMOS & ASSOCIATES
950 SANDHILL ROAD, SUITE 100
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM
INFO@LUMOSINC.COM

ANDERSEN-COLARD RANCH ENTERPRISES., LLC

ANDERSEN RANCH WEST
CONCEPTUAL STIE PLAN
ZONING AND DEVELOPMENT BUBBLE MAP

CARSON CITY NV

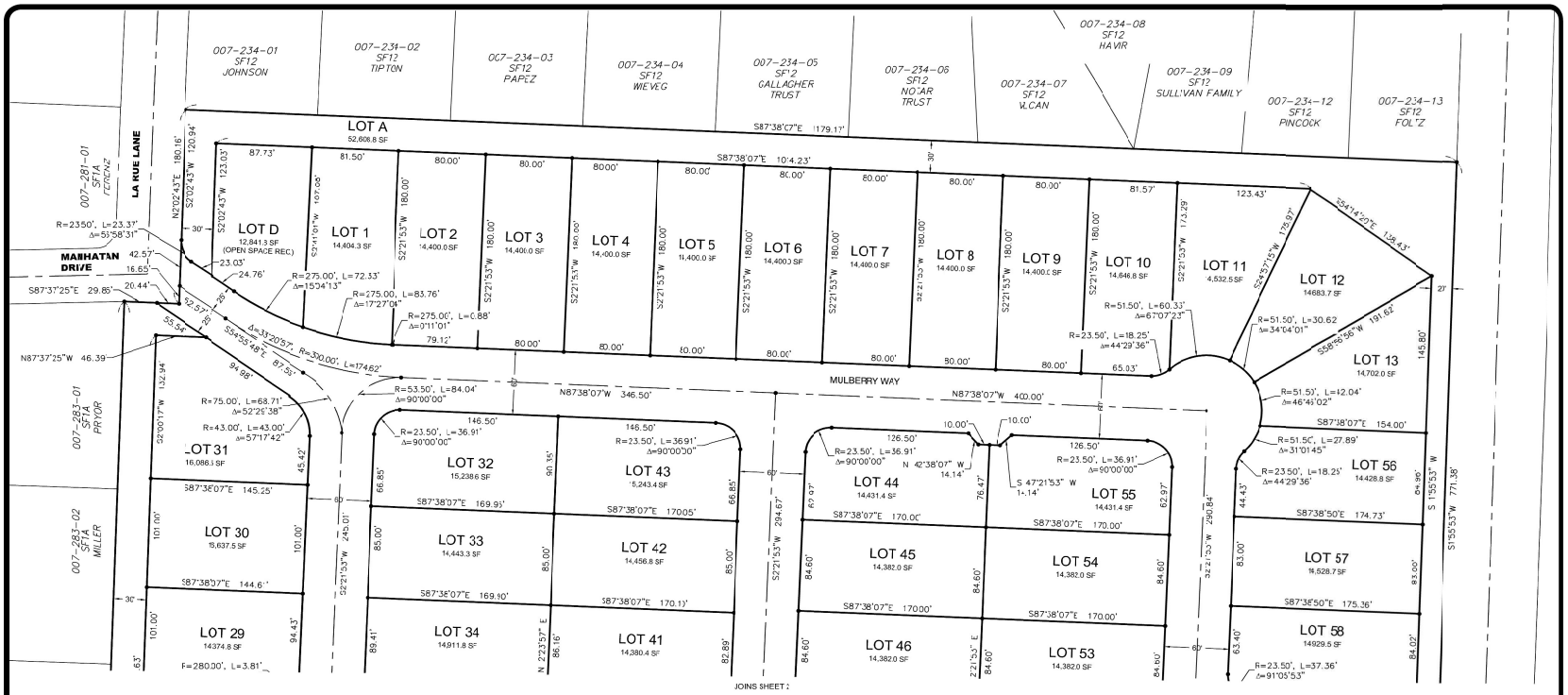
REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
MARCH 2023

BAR IS 1 INCH ON ORIGINAL DRAWING
0 N/A
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

EXHIBIT

DRAWN BY: JRL
DESIGNED BY: JRL
CHECKED BY: BMM
JOB NO.: 8947.004



AREA

APN - 009-012-2(
TOTAL NUMBER OF LOTS: 61 LOTS
TOTAL LOT AREA: LOTS 1 THRU 61 890,114.5± SQUARE FEET
TOTAL COMMON AREA LOTS A THRU D 169,698.0± SQUARE FEET
DEDICATION AREA: 233,110.9± SQUARE FEET
TOTAL AREA: 29.707± ACRES 1,294,023.4± SQUARE FEET
2.053UNITS PER ACRE

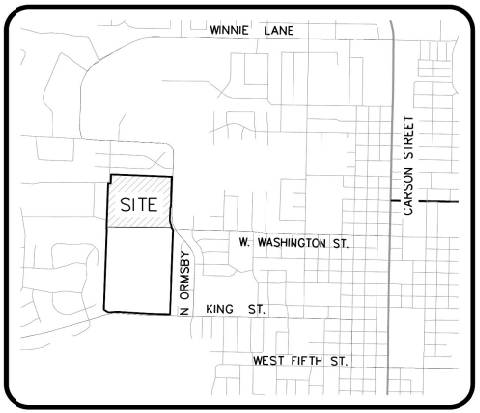
APN - 009-012-2(

1 LOT - (INCLUDNG 9.44+/-AC. OF "PRIVATE OPEN SPACE")

TOTAL AREA: 50.32± ACRES

BASIS OF BEARINGS

THE BASIS OF BEARING FOR THIS SURVEY IS BASED ON THE NEVADA COORDINATE SYSTEM OF 1983, WEST ZONE, NAD 83/94, CARSON CITY DATUM. DISTANCES SHOWN ARE GROUND DISTANCES USING A PROJECT COMBINED GRD TO GROUND SCALE FACTOR OF 1.000200 CARSON CITY MAP No. 2748.



VICINITY MAP

NOT TO SCALE

PROPERTY OWNER:

ANDERSEN-COLARD RANCH ENTERPRISES, LLC
PO BOX 1744
CARSON CITY, NV 89702

REFERENCES

R1) PARCEL MAP RECORDED AUGUST 18, 1999 UNDER FILE NO. 475227 AND MAP NO. 2913, OFFICIAL RECORDS OF CARSON CITY, STATE OF NEVADA.
R2) DEED RECORDED JANUARY 27, 2021 UNDER DOCUMENT NO. 515748, OFFICIAL RECORDS OF CARSON CITY, STATE OF NEVADA.

SCALE: 1"= 50'

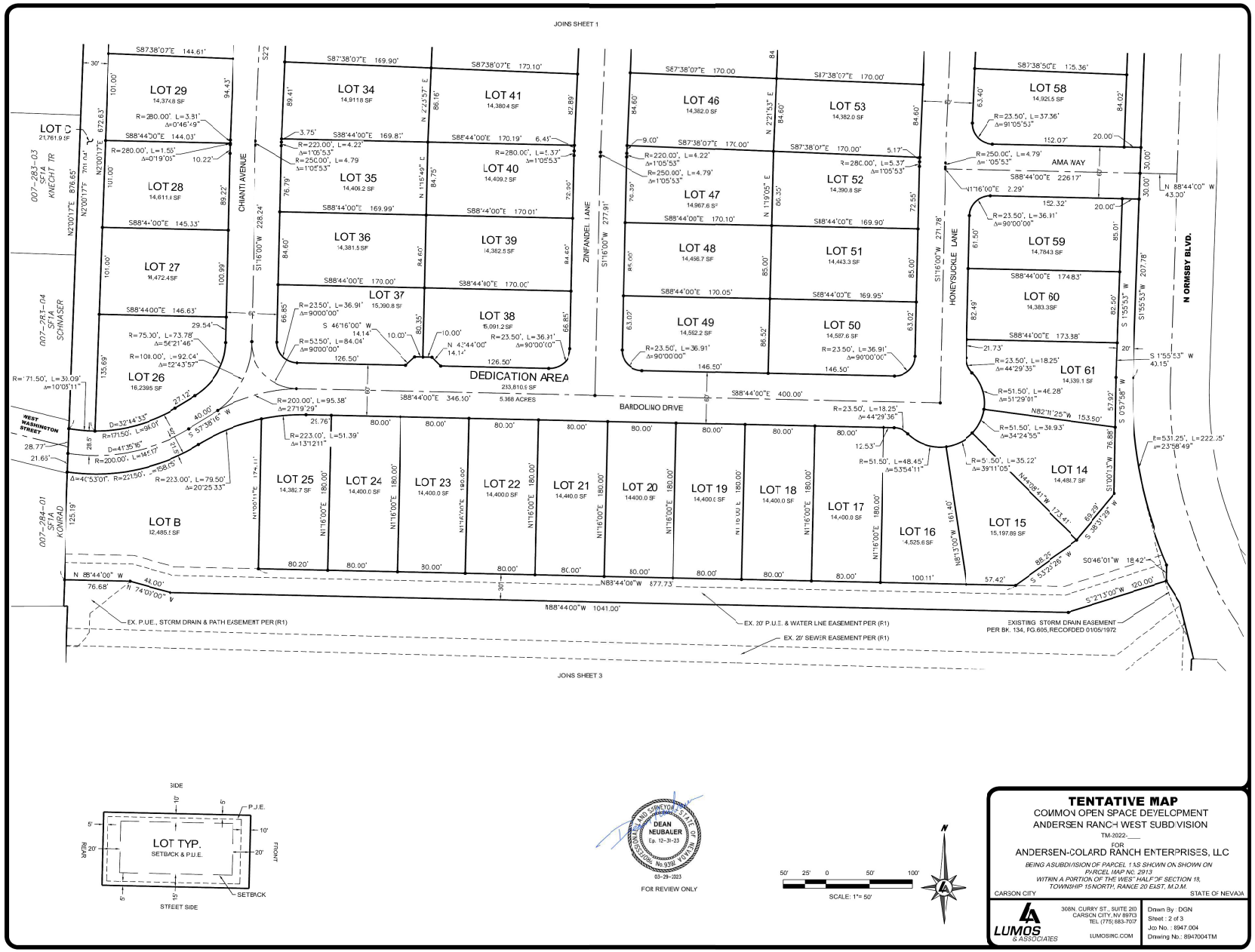
DEAN VEUBAUER
Exp. 12-3-23
No. 9392
03-29-2023
FOR REVIEW ONLY

TENTATIVE MAP

COMMON OPEN SPACE DEVELOPMENT
ANDERSEN RANCH WEST SUBDIVISION
TM-2022-____
FOR
ANDERSEN-COLARD RANCH ENTERPRISES, LLC
BEING A SUBDIVISION OF PARCEL 1 AS SHOWN ON SHOWN ON PARCEL MAP NO. 2913
WITHIN A PORTION OF THE W/E1/2 OF SECTION 18, TOWNSHIP 15 NORTH, RANGE 20 EAST, M.D.M.
CARSON CITY STATE OF NEVADA

LUMOS & ASSOCIATES
308N. CURRY ST., SUITE 200
CARSON CITY, NV 89703
TEL (775) 883-7077
LUMOSINC.COM

Drawn By : DGN
Sheet : 1 of 3
Job No. : 6947.004
Drawing No.: 6947004TM


JOINS SHEET 1
LOT 29
14,374.8 SF
LOT 34
14,9118 SF
LOT 41
14,380.4 SF
LOT 46
14,382.0 SF
LOT 53
14,382.0 SF
LOT 58
14,926.5 SF
LOT C
21,761.9 SF
LOT 28
14,611.1 SF
LOT 35
14,409.2 SF
LOT 40
14,409.2 SF
LOT 47
14,967.6 SF
LOT 52
14,390.8 SF
AMA WAY
LOT 27
14,472.4 SF
LOT 36
14,381.5 SF
LOT 39
14,382.5 SF
LOT 48
14,456.7 SF
LOT 51
14,443.3 SF
LOT 59
14,784.3
LOT 37
15,390.8 SF
LOT 38
15,091.2 SF
LOT 49
14,562.2 SF
LOT 50
14,587.6 SF
LOT 60
14,383.3SF
LOT 61
14,339.1 SF
LOT 26
16,2395 SF
DEDICATION AREA
233,810.6 SF
5.368 ACRES
LOT 25
14,382.7 SF
LOT 24
14,400.0 SF
LOT 23
14,400.0 SF
LOT 22
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LOT 21
14,440.0 SF
LOT 20
14400.0 SF
LOT 19
14,400.0 SF
LOT 18
14,400.0 SF
LOT 17
14,400.0 SF
LOT 16
14,525.6 SF
LOT 15
15,197.88 SF
LOT 14
14,481.7 SF
LOT B
12,485.1 SF
CHIANTI AVENUE
ZINFANDEL LANE
HONEYSUCKLE LANE
BARDOLINO DRIVE
WEST WASHINGTON STREET
N ORMSBY BLVD.
007-283-03 SFTA KNECHT TR
007-283-04 SFTA SCHNASER
007-284-01 SFTA KONRAD
EX. P.U.E., STORM DRAIN & PATH EASEMENT PER (R1)
EX. 20' P.U.E. & WATER LINE EASEMENT PER (R1)
EX. 20' SEWER EASEMENT PER (R1)
EXISTING STORM DRAIN EASEMENT PER BK. 134, PG.605,RECORDED 01/05/1972
JOINS SHEET 3
SIDE
P.U.E.
LOT TYP.
SETBACK & P.U.E.
SETBACK
REAR
FRONT
STREET SIDE
DEAN NEUBAUER
Exp. 12-31-23
03-29-2023
FOR REVIEW ONLY
SCALE: 1"= 50'
TENTATIVE MAP
COMMON OPEN SPACE DEVELOPMENT
ANDERSEN RANCH WEST SUBDIVISION
TM-2022-____
FOR
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BEING A SUBDIVISION OF PARCEL 1 AS SHOWN ON SHOWN ON PARCEL MAP NO. 2913
WITHIN A PORTION OF THE WEST HALF OF SECTION 18, TOWNSHIP 15 NORTH, RANCE 20 EAST, M.D.M.
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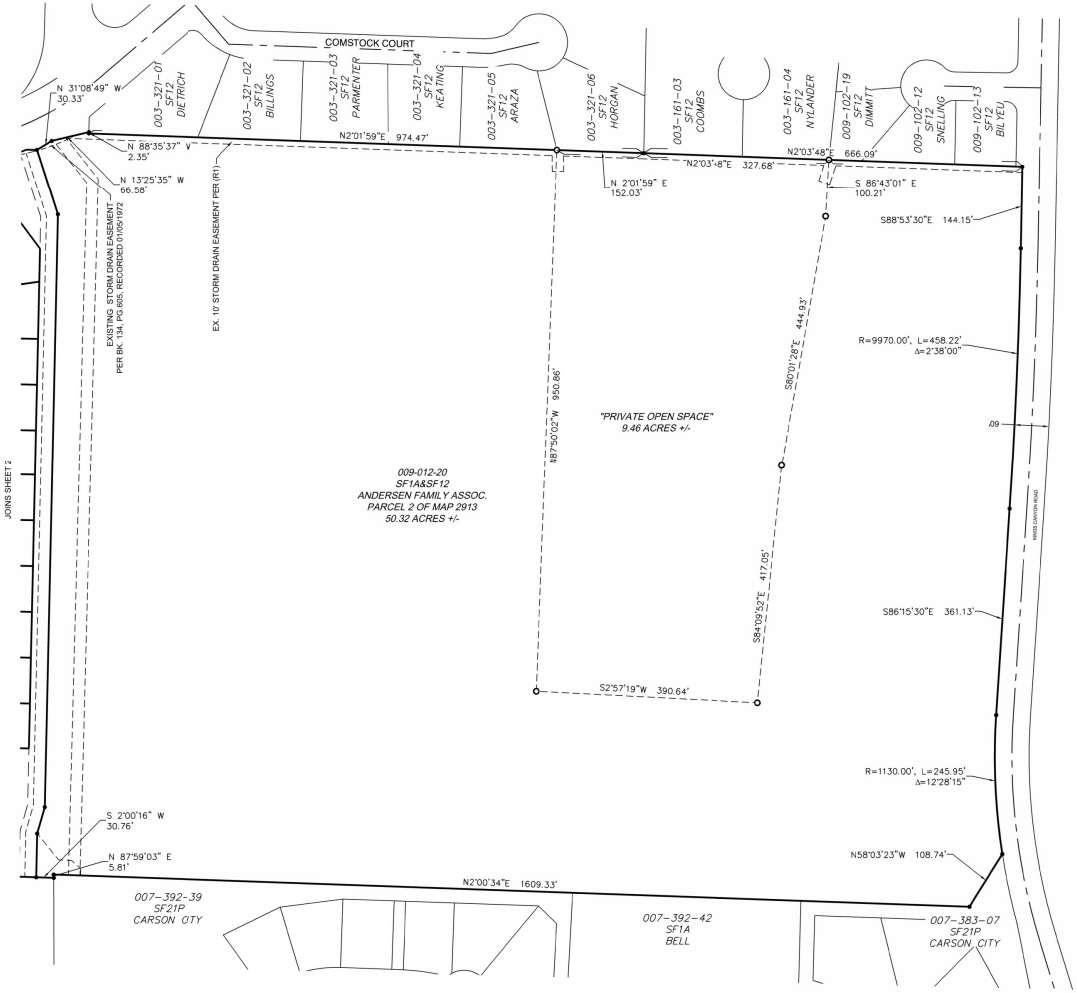
Drawn By : DGN
Sheet : 2 of 3
Jo No. : 6947.004
Drawing No.: 6947004TM



DEAN NEUBAUER
PROFESSIONAL LAND SURVEYOR STATE OF NEVADA
No. 9392
Exp. 12-31-23
03-29-2023

FOR REVIEW ONLY

100' 50' 0 100' 200'

SCALE: 1"= 100'

TENTATIVE MAP

COMMON OPEN SPACE DEVELOPMENT
ANDERSEN RANCH WEST SUBDIVISION
TM-2022-____
FOR
ANDERSEN-COLARD RANCH ENTERPRISES, LLC

BEING A SUBDIVISION OF PARCEL 1 AS SHOWN ON SHOWN ON PARCEL MAP NO. 2913
WITHIN A PORTION OF THE WEST HALF OF SECTION 18, TOWNSHIP 15 NORTH, RANGE 20 EAST, M.D.M.

CARSON CITY STATE OF NEVADA

LUMOS & ASSOCIATES
308 N. CURRY ST., SUITE 200
CARSON CITY, NV 89703
TEL (775) 883-7077
LUMOSINC.COM

Drawn By : DGN
Sheet : 3 of 3
Job No. : 8947.004
Drawing No.: 8947004TM

ANDERSEN-COLARD RANCH ENTERPRISES., LLC

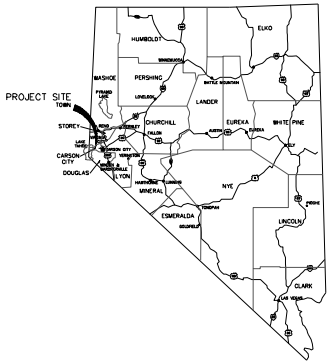
ANDERSEN RANCH WEST

COMMON OPEN SPACE TENTATIVE SUBDIVISION MAP

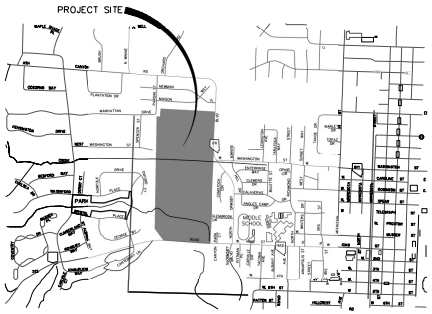
APN: 009-012-20, 009-012-21

OWNER/DEVELOPER

ANDERSEN-COLARD RANCH ENT., LLC
ATTN: MEG KALLEY
P.O. BOX 1746
CARSON CITY, NV 89702
TEL.: 775.721.3712



LOCATION MAP



VICINITY MAP

ENGINEER

LUMOS & ASSOCIATES
950 SANDHILL ROAD, SUITE 100
RENO, NEVADA 89521
TEL: 775.827.6111
INFO@LUMOSINC.COM

811
Know what's below.
Call before you dig.

BASIS OF BEARING

THE BASIS OF BEARING FOR THIS SURVEY IS BASED ON THE NEVADA COORDINATE SYSTEM OF 1983, WEST ZONE, NAD 83/94, CARSON CITY DATUM. DISTANCES SHOWN ARE GROUND DISTANCES USING A PROJECT COMBINED GRID TO GROUND SCALE FACTOR OF 1.000200. CARSON CITY MAP No. 2749.

LEGAL DESCRIPTION

ALL THAT CERTAIN REAL PROPERTY SITUATE WITHIN A PORTION OF THE SOUTH ONE-HALF (S ½) OF SECTION SEVEN (7) AND THE NORTH ONE-HALF (N ½) OF SECTION EIGHTEEN (18), TOWNSHIP FIFTEEN (15) NORTH, RANGE TWENTY (20) EAST, MOUNT DIABLO MERIDIAN, CARSON CITY, STATE OF NEVADA

PARCEL 1 OF PM 2913, FILE NO 475227

BASIS OF ELEVATION

THE BASIS OF ELEVATION FOR CONSTRUCTION ON THIS PROJECT IS:
DATUM: NAVD 88
PROJECT BENCHMARK = CARSON CITY CONTROL MONUMENT NO. CC079 HAVING AN ELEVATION OF 4763.20'

SITE INFORMATION

- ADDRESS: NW INTERSECTION OF KINGS CANYON ROAD & ORMSBY BOULEVARD
- PARCEL SIZE: 80.5± ACRES
- MASTER PLAN DESIGNATION: LOW DENSITY RESIDENTIAL & MEDIUM DENSITY RESIDENTIAL
- ZONING: SF-1A & SF12

SHEET INDEX:

LUMOS & ASSOCIATES
950 SANDHILL ROAD, SUITE 100
RENO, NV 89521
TEL. 775.827.6111
WWW.LUMOSINC.COM
INFO@LUMOSINC.COM

PROFESSIONAL ENGINEER-STATE OF NEVADA
BRIAN M. MOON
Exp: 12-31-23
CIVIL
No. 20940
03/28/2023

ANDERSEN-COLARD RANCH ENTERPRISES., LLC
ANDERSEN RANCH WEST
COMMON OPEN SPACE DEVELOPMENT
TITLE SHEET
CARSON CITY NV

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
MARCH 2023

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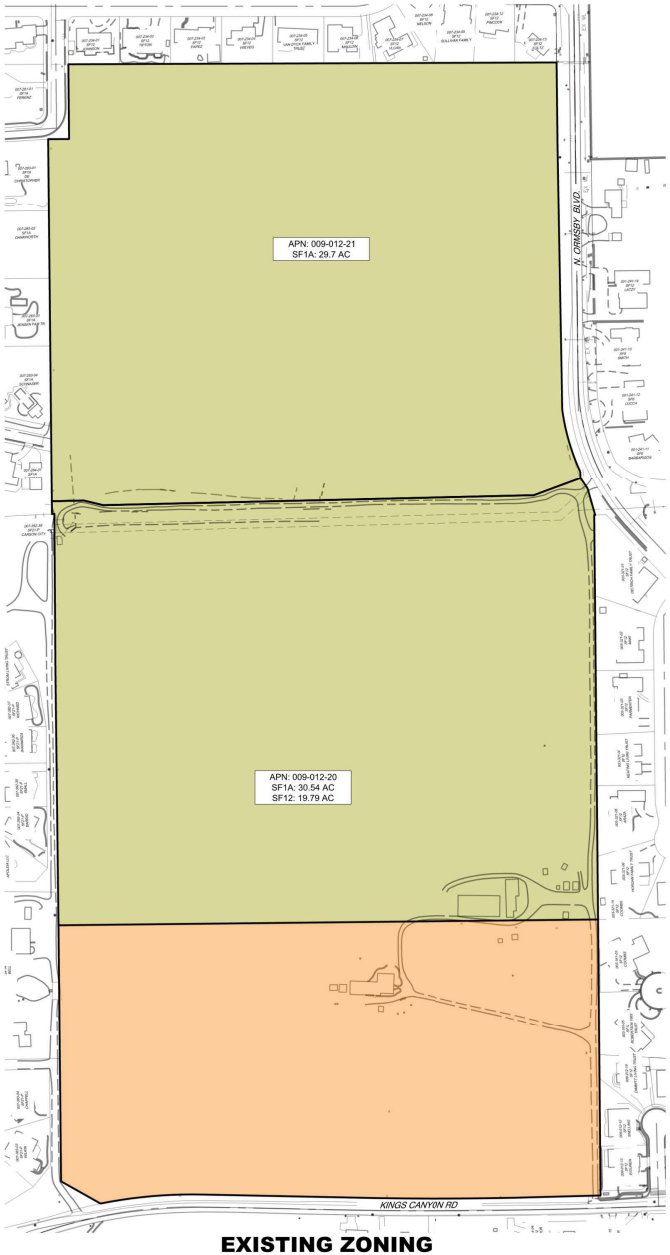
JOB NO.: 8947.004



EXISTING ZONING

LEGEND

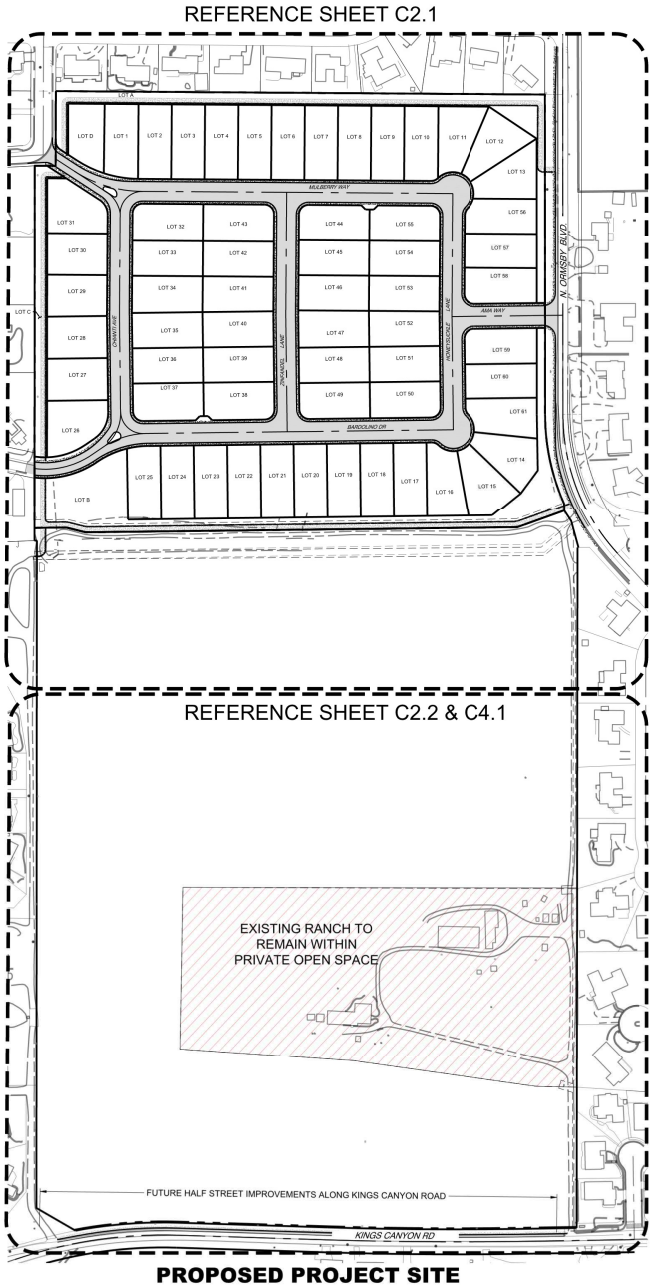
- SINGLE FAMILY 1 ACRE ZONING
- SINGLE FAMILY 12,000 S.F. ZONING

OVERALL PROJECT DENSITY

	TOTAL ACRES	DENSITY BY ZONING	MAX UNITS
SF1A (APN 009-012-21)	29.70	1 DU/ACRE	29.70
SF1A (APN 009-012-20)	30.54	1 DU/ACRE	30.54
SF12 (APN 009 012 20)	19.79	1DU/12,000 S.F.	71.64
TOTAL	**80.03**		**132**

OVERALL PROJECT UNIT COUNT

	EXISTING UNITS	PROPOSED UNITS	REMAINDER UNITS
APN 009-012-21	0	61	0
APN 009-012-20	1	0	70
TOTAL	**1**	**61**	**70**



PROPOSED PROJECT SITE

LUMOS & ASSOCIATES
950 SANDHILL ROAD, SUITE 100
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM
INFO@LUMOSINC.COM

NEVADA LICENSED ENGINEER JORDAN M. LARSON 12-31-23 CIVIL No. 20940 PROFESSIONAL ENGINEER
03/28/2023

ANDERSEN-COLARD RANCH ENTERPRISES., LLC

ANDERSEN RANCH WEST
COMMON OPEN SPACE SUBDIVISION
EXISTING ZONING AND SITE PLAN

CARSON CITY NV

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
MARCH 2023

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950 SANDHILL ROAD, SUITE 100
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM
INFO@LUMOSINC.COM

PROFESSIONAL ENGINEER-STATE OF NEVADA
BRIAN M. MOON
Exp: 12-31-23
CIVIL
No. 20940
03/28/2023

ANDERSEN-COLARD RANCH ENTERPRISES., LLC

ANDERSEN RANCH WEST
COMMON OPEN SPACE SUBDIVISION
SITE PLAN

NV
CARSON CITY

REV	DATE	DESCRIPTION	BY

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\\la.lumosengineering.net\Shared\LAPro\8947.004 - Andersen Ranch Development Tentative Map\DWG\Sheets\8947004 TM SITE PLAN.dwg,C2.2,
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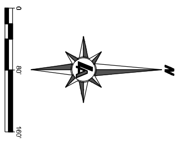

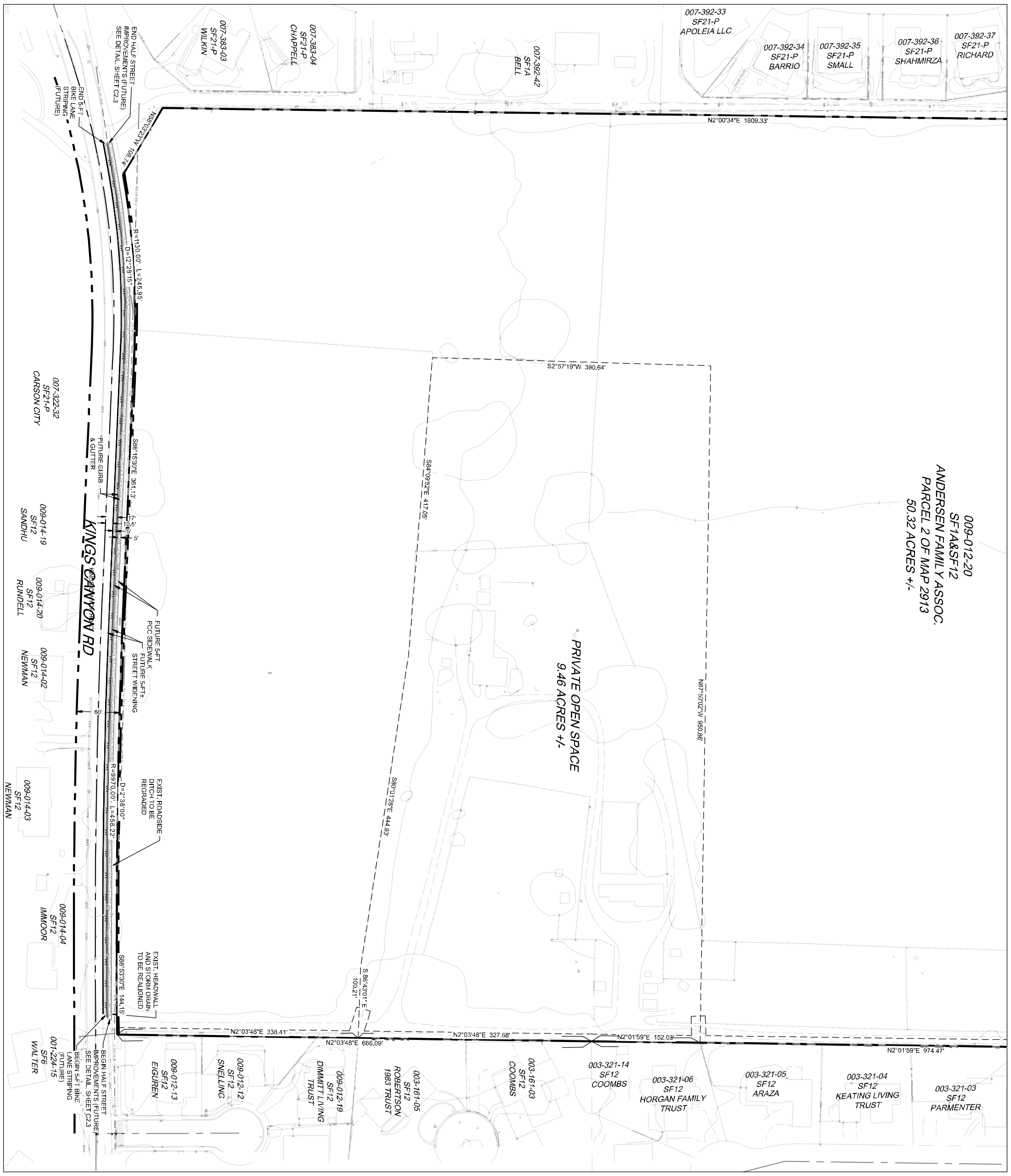

ANDERSEN-COLARD RANCH ENTERPRISES., LLC

ANDERSEN RANCH WEST
COMMON OPEN SPACE SUBDIVISION
KINGS CANYON RD IMPROVEMENTS

CARSON CITY NV

REV	DATE	DESCRIPTION	BY

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MARCH 2023

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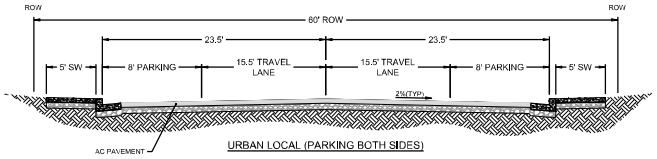
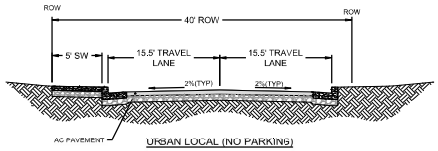
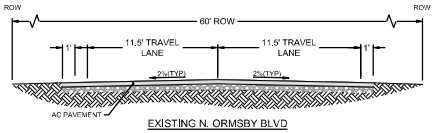


URBAN LOCAL (PARKING BOTH SIDES)

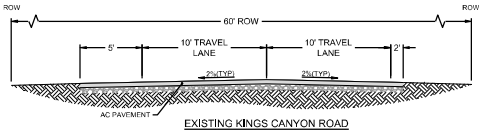


URBAN LOCAL (NO PARKING)

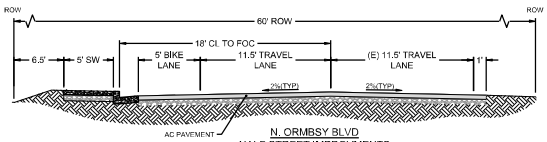
MINIMUM STRUCTURAL SECTION
ARTERIAL (MIN. 6" A.C. W/ MIN. 12" AGG. BASE)
COLLECTOR (MIN. 4" A.C. W/ 8" AGG. BASE)
LOCAL (MIN. 3" A.C. W/6" AGG. BASE)



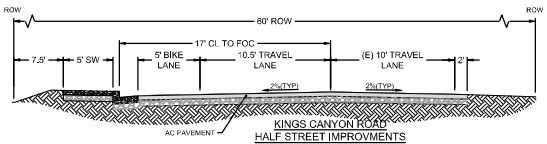
EXISTING N. ORMSBY BLVD



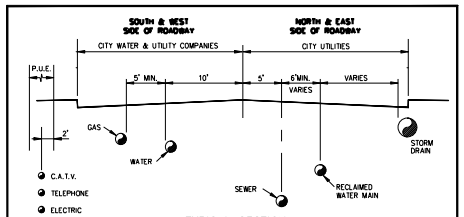
EXISTING KINGS CANYON ROAD



N. ORMBSY BLVD
HALF STREET IMPROVMENTS
(PROPOSED)



KINGS CANYON ROAD
HALF STREET IMPROVMENTS
(FUTURE)



TYPICAL SECTION
NTS

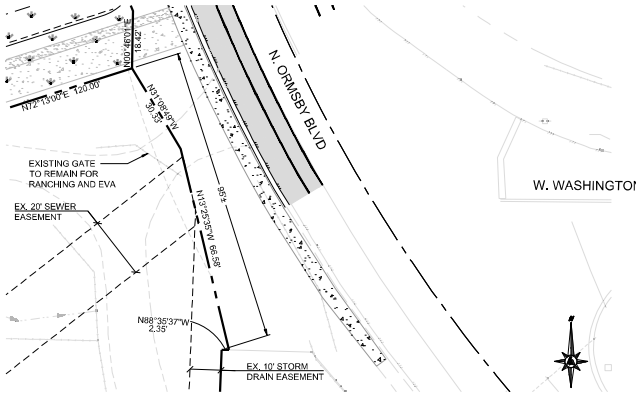
APPROX. DEPTH OF COVER	
STORM DRAIN	24" MIN.*
SANITARY SEWER	84"*
WATER MAIN	42"
RECLAIMED WATER	60"**
GAS MAIN	30"***
C.A.T.V.	48"***
ELECTRICITY	72"***

* SEE NOTES 4 & 6
** SEE NOTES 5 & 6
*** MINIMUM OR LOCAL UTILITY STANDARDS

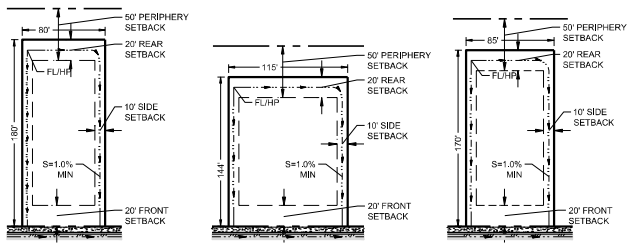
NOTES:

1. FOR COMMON TRENCH SECTION, SEE DETAIL, DWG. C-1.2.1. COMMON TRENCH WITH OTHER UTILITIES IS NOT ALLOWED FOR WATER, SEWER OR RECLAIMED WATER.
2. P.U.E. INDICATES PUBLIC UTILITY EASEMENT.
3. DEPTHS OF COVER AND LOCATION OTHER THAN THOSE PROVIDED HEREIN ARE SUBJECT TO CARSON CITY DEVELOPMENT ENGINEERING & PUBLIC WORKS APPROVAL.
4. DEPTH SHALL BE AS REQUIRED TO PROVIDE ADEQUATE CLEARANCE FROM OTHER UTILITIES AND TO SERVE UPSTREAM TRIBUTARY AREAS, AND TO MEET PROPER DESIGN REQUIREMENTS FOR DOWNSTREAM CONNECTIONS.
5. RECLAIMED WATER PIPE SHALL BE PURPLE IN COLOR. DEPTH MAY BE LESS THAN 60 INCHES IN LOCATIONS WHERE WATER MAINS ARE NEVER EXPECTED TO OCCUR.
6. LOCATION AND DEPTH SHALL BE AS REQUIRED TO MEET THE REQUIREMENTS OF NAC CHAPTER 445A AND THE NDEP BUREAU OF SAFE DRINKING WATER VERTICAL CROSSING CONFLICTS SUMMARY.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION
1	*** NOTE	9/17	TYPICAL UTILITY MAIN LOCATIONS	CARSON CITY
				DRAWING NO. C-1.2.4
APPROVED BY:		9/17		DATE SEP 2017



SOUTH PARCEL ACCESS
SCALE: 1" = 20'



LOTS 1-25 LOTS 26-31 LOTS 32-61

TYPICAL LOT LAYOUT

LUMOS & ASSOCIATES
950 SANDHILL ROAD, SUITE 100
RENO, NV 89521
TEL: 775.827.6111
WWW.LUMOSINC.COM
INFO@LUMOSINC.COM

PROFESSIONAL ENGINEER — STATE OF NEVADA — BRIAN M. MOON — Exp: 12-31-23 — CIVIL — No. 20940

03/28/2023

ANDERSEN-COLARD RANCH ENTERPRISES,, LLC

ANDERSEN RANCH WEST
COMMON OPEN SPACE SUBDIVISION
SITE PLAN DETAILS

NV
CARSON CITY

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
MARCH 2023

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PROFESSIONAL ENGINEER-STATE OF NEVADA
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No. 20940
03/28/2023

ANDERSEN-COLARD RANCH ENTERPRISES., LLC

ANDERSEN RANCH WEST
COMMON OPEN SPACE SUBDIVISION
PRELIMINARY UTILITY PLAN

CARSON CITY NV

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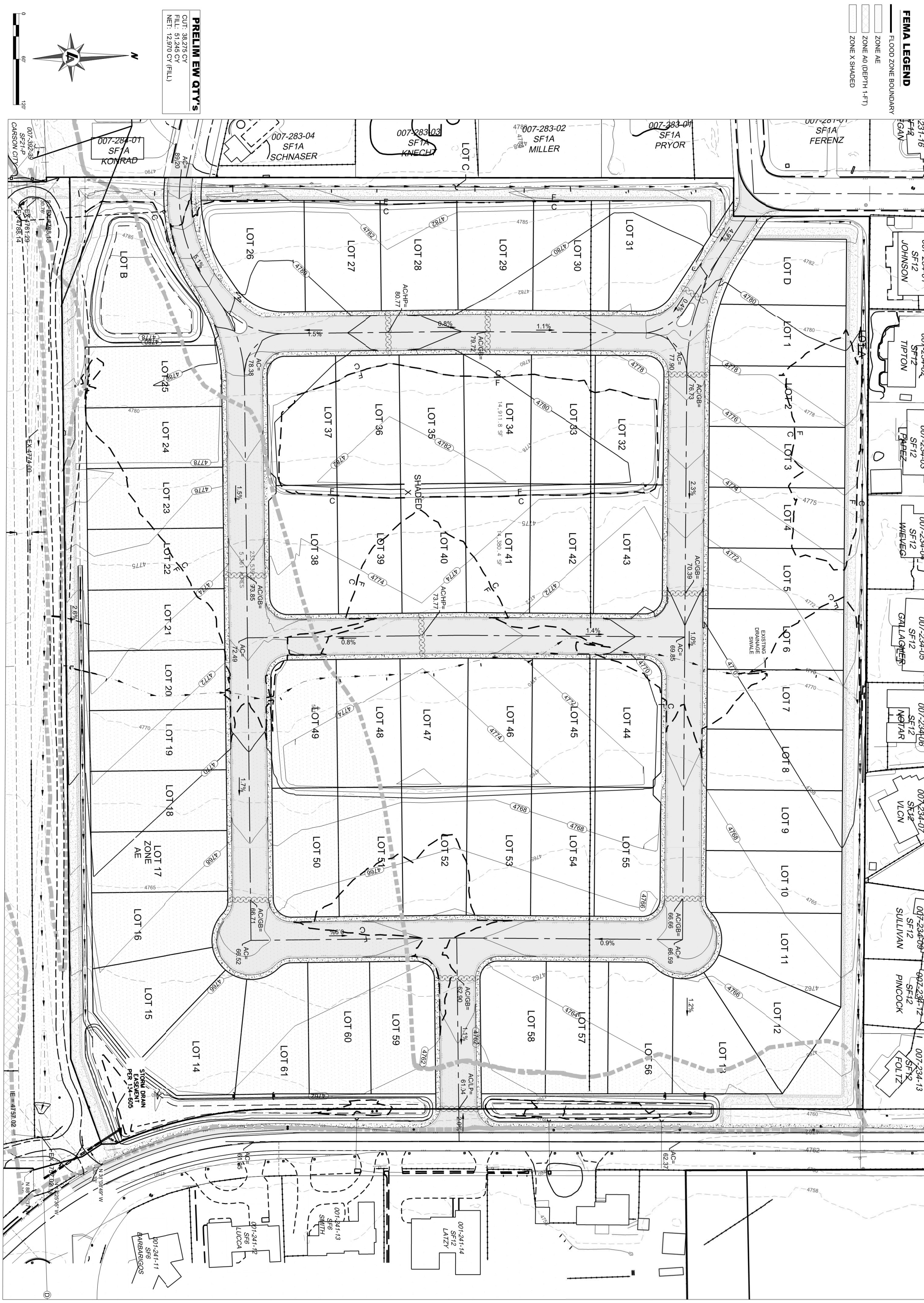

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ANDERSEN-COLARD RANCH ENTERPRISES., LLC

ANDERSEN RANCH WEST
COMMON OPEN SPACE SUBDIVISION
PRELIMINARY GRADING PLAN

CARSON CITY NV

PROFESSIONAL ENGINEER - STATE OF NEVADA
BRIAN M. MOON
Exp: 12-31-23
CIVIL
No. 20940
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LUMOS & ASSOCIATES
950 SANDHILL ROAD, SUITE 100
RENO, NV 89521
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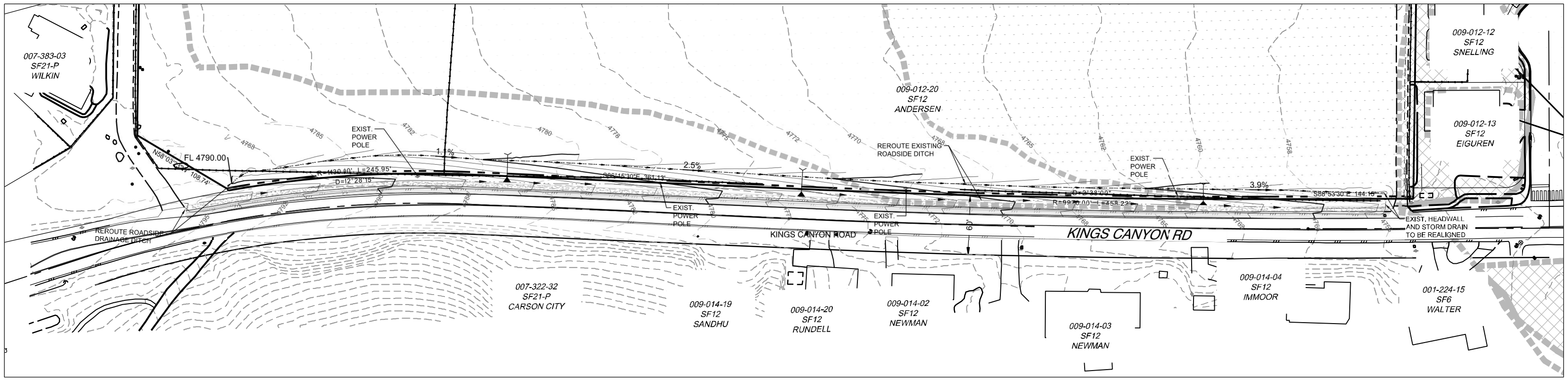
FEMA LEGEND

- FLOOD ZONE BOUNDARY
- ZONE AE
- ZONE A0 (DEPTH 1-FT)
- ZONE X SHADED



N

0 60' 120'

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RENO, NV 89521
TEL: 775.827.6111

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PROFESSIONAL ENGINEER - STATE OF NEVADA
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ANDERSEN RANCH WEST
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PRELIMINARY GRADING PLAN

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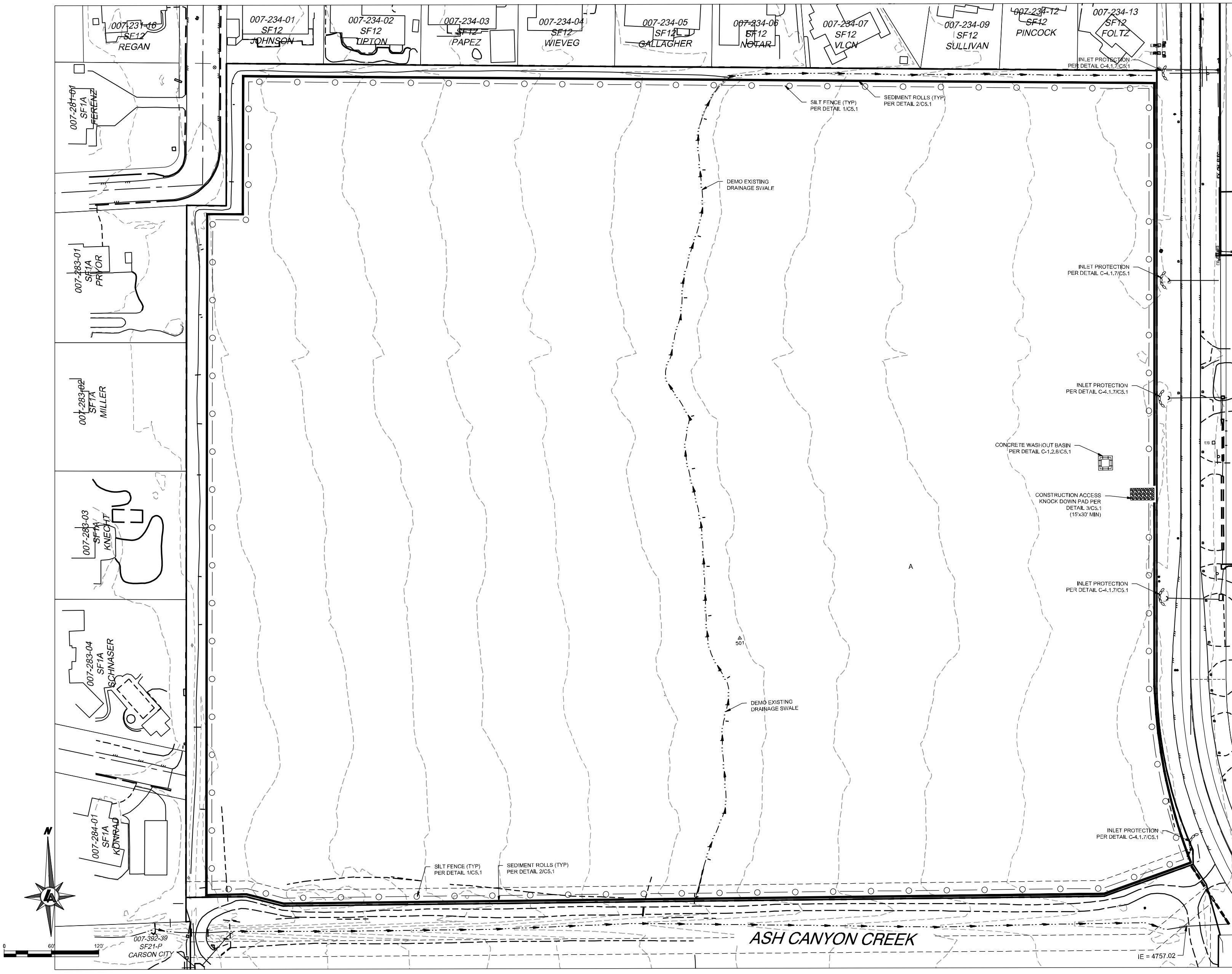

EROSION CONTROL NOTES:

1. IN CASE OF EMERGENCY CALL CONTRACTOR OF RECORD.
2. S STANDBY CREW FOR EMERGENCY WORK SHALL BE AVAILABLE AT
3. ALL TIMES. NECESSARY MATERIALS SHALL BE AVAILABLE ON-SITE AND STOCKPILES AT APPROVED LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES OR TO REPAIR DAMAGED EROSION CONTROL MEASURES.
4. AFTER A RAINSTORM, ALL SILT AND DEBRIS SHALL BE REMOVED FROM CHECK BERMS AND DESILTING FACILITIES. GRADED SLOPE SURFACE PROTECTION MEASURES DAMAGED DURING THE RAINSTORM SHALL ALSO BE REPAIRED.
5. FILL SLOPES AT THE PROJECT PERIMETER MUST DRAIN AWAY FROM THE TOP OF SLOPE AT THE CONCLUSION OF EACH WORKING DAY.
6. A SIX FOOT (6') HIGH PERIMETER FENCE OR TWENTY-FOUR (24) HOUR GUARD SHALL BE POSTED ON THE SITE WHENEVER THE DEPTH OF WATER IN A FACILITY EXCEEDS EIGHTEEN INCHES (18").

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950 SANDHILL ROAD, SUITE 100
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PROFESSIONAL ENGINEER - STATE OF NEVADA
BRIAN M. MOON
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ANDERSEN-COLARD RANCH ENTERPRISES., LLC

ANDERSEN RANCH WEST
COMMON OPEN SPACE SUBDIVISION
EROSION CONTROL PLAN

CARSON CITY NV

REV	DATE	DESCRIPTION	BY

PRELIMINARY
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MARCH 2023

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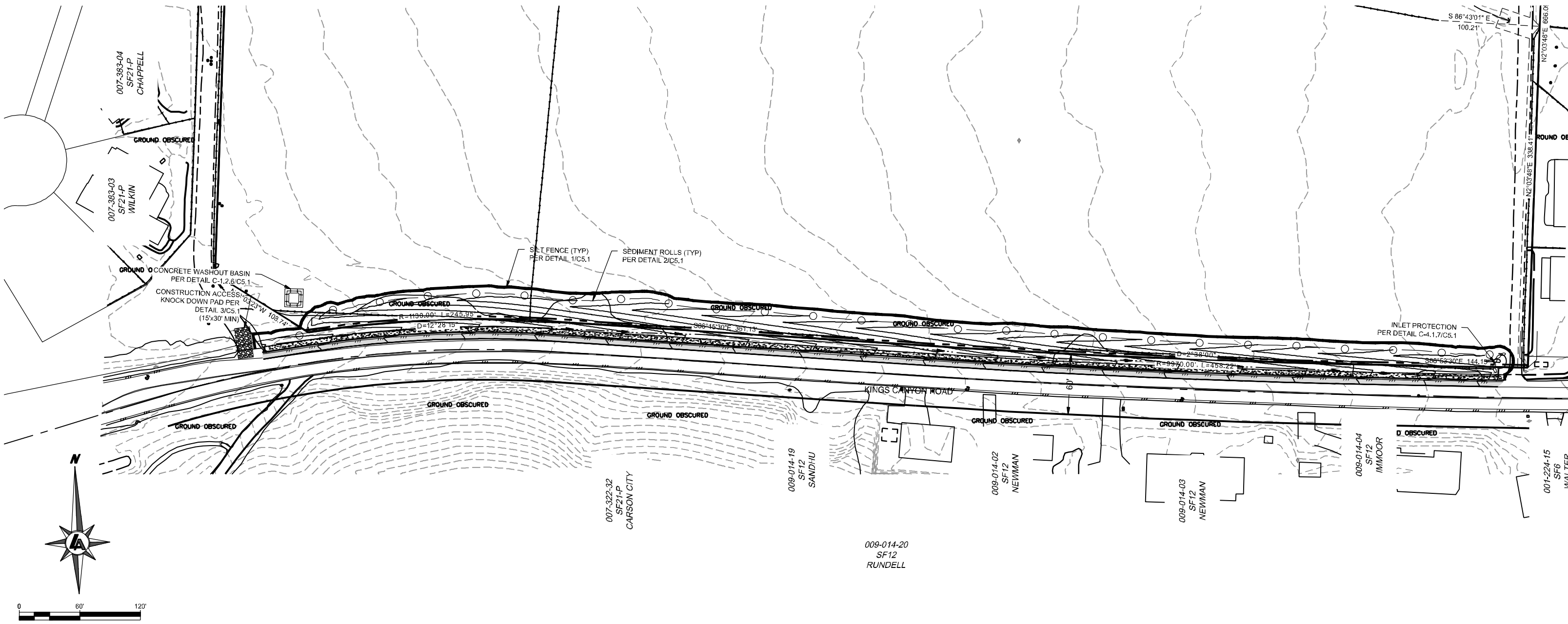

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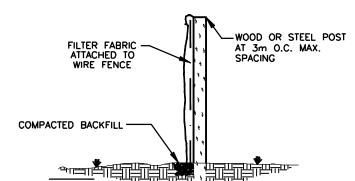
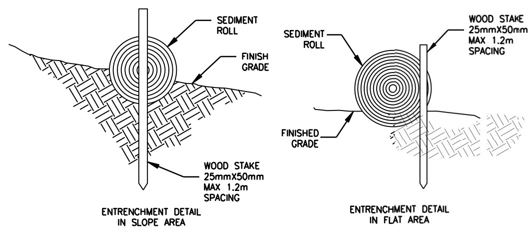


SILT FENCE DETAIL

NOTES:
1. TEMPORARY EROSION CONTROL (TEMPORARY SEDIMENT BARRIERS) SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE PROJECT SITE TO INTERCEPT AND RETAIN SMALL SEDIMENT FROM DISTURBED OR UNPROTECTED AREAS DURING CONSTRUCTION. INSTALLATION SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS. THE TEMPORARY SEDIMENT BARRIERS SHALL BE LOCATED AS INDICATED BELOW AND AS DIRECTED BY THE ENGINEER:

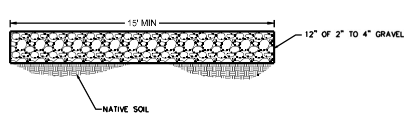
A. ALONG THE TOE OF SLOPES ON THE DOWNSTREAM SIDE OF THE LOWER CHIPMUNK TREATMENT BASIN.
B. FOLLOWING THE CONTOURS ACROSS EXCAVATED SWALES AND DITCHES, SPACED APPROX. 30 METERS APART
C. IN A SQUARE OR RECTANGULAR SHAPE AROUND ALL DROP INLETS & SEDIMENT TRAPS.

SILT FENCE ①
N.T.S

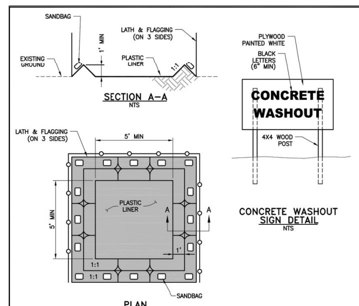


NOTES:
1. SEDIMENT ROLLS MAY BE FIBER ROLL LOGS OR RICE STRAW WATTLES. THEY SHALL BE A MINIMUM OF 400mm IN DIAMETER WHEN PLACED ON SOIL. SEDIMENT ROLLS PLACED ON AC PAVING SHALL BE WEIGHTED AND SHALL BE A MINIMUM OF 200mm IN DIAMETER.
2. ROLLS SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS, THESE DETAILS AND THE SPECIAL PROVISIONS.
3. WHEN MORE THAN ONE FIBER ROLL IS PLACED IN A ROW, THE ROLLS SHALL BE TIGHTLY ABUTTED AND STAKED, NOT OVERLAPPED.

SEDIMENT ROLL ②
N.T.S

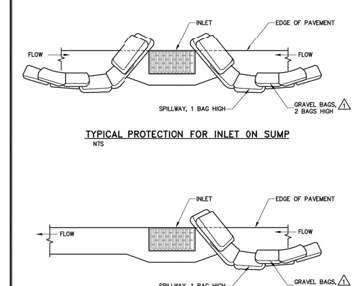


KNOCK DOWN/WASH DOWN PAD ③
N.T.S



NOTES:
1. WHERE POSSIBLE, CONCRETE SUPPLIERS SHALL CONDUCT WASHOUT ACTIVITIES AT THEIR OWN PLANTS OR DISPATCH FACILITIES.
2. AN EFFECTIVE MEANS OF ELIMINATING THE DISCHARGE OF WATER FROM THE WASHOUT CONCRETE SHALL BE PROVIDED.
3. CONCRETE WASHOUT FACILITIES SHALL NOT BE USED FOR THE DISPOSAL OF EXCESS CONCRETE AND CEMENT. TRUCKS SHALL NOT BE ALLOWED TO BACK TURN AND DISPOSE OF RESIDUAL LOADS.
4. LOCATE WASHOUT AREAS A MINIMUM OF 50 FEET FROM WATER WAYS AND STORM DRAIN SYSTEM INLETS.
5. WHEN THE WASHOUT IS 75 PERCENT FULL, IT MUST BE CLEANED OR A NEW WASHOUT MUST BE CONSTRUCTED. DISPOSE OF WASTE AT LEAST ONCE A WEEK.
6. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 15 FEET OF THE TEMPORARY CONCRETE WASHOUT BASIN.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY
			CONCRETE WASHOUT BASIN	DRAWING NO. C-1.2.6
APPROVED BY:		9/17		DATE SEP 2017



NOTES:
1. INTENDED FOR TEMPORARY SHORT–TERM USE.
2. USE TO MANAGE CURB WATER FLOW.
3. SEDIMENT CAPTURED BEHIND GRAVEL BAGS SHALL BE REMOVED WEEKLY DURING CONSTRUCTION.
4. INLET PROTECTION MUST BE PROPERLY MAINTAINED WHILE IN PLACE AND REMOVED WHEN REQUIREMENTS OF NDEP PERMIT HAVE BEEN MET.
5. GRAVEL BAGS SHALL BE FILLED WITH 3/8" – 3/4" WASHED ROCK. (2)

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY
1	GRAVEL BAG	05/14	STORM DRAIN INLET PROTECTION	DRAWING NO. C-4.1.7
2	ROCK SIZE	9/17		
APPROVED BY:		9/17		DATE SEP 2017

LUMOS & ASSOCIATES
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TEL: 775.827.6111
WWW.LUMOSINC.COM
INFO@LUMOSINC.COM

PROFESSIONAL ENGINEER – STATE OF NEVADA
BRIAN M. MOON
Exp: 12-31-23
CIVIL
No. 20940
03/28/2023

ANDERSEN-COLARD RANCH ENTERPRISES., LLC

ANDERSEN RANCH WEST COMMON OPEN SPACE SUBDIVISION EROSION CONTROL NOTES

CARSON CITY NV

REV	DATE	DESCRIPTION	BY

PRELIMINARY
NOT FOR CONSTRUCTION
MARCH 2023

BAR IS 1 INCH ON ORIGINAL DRAWING
0 N/A
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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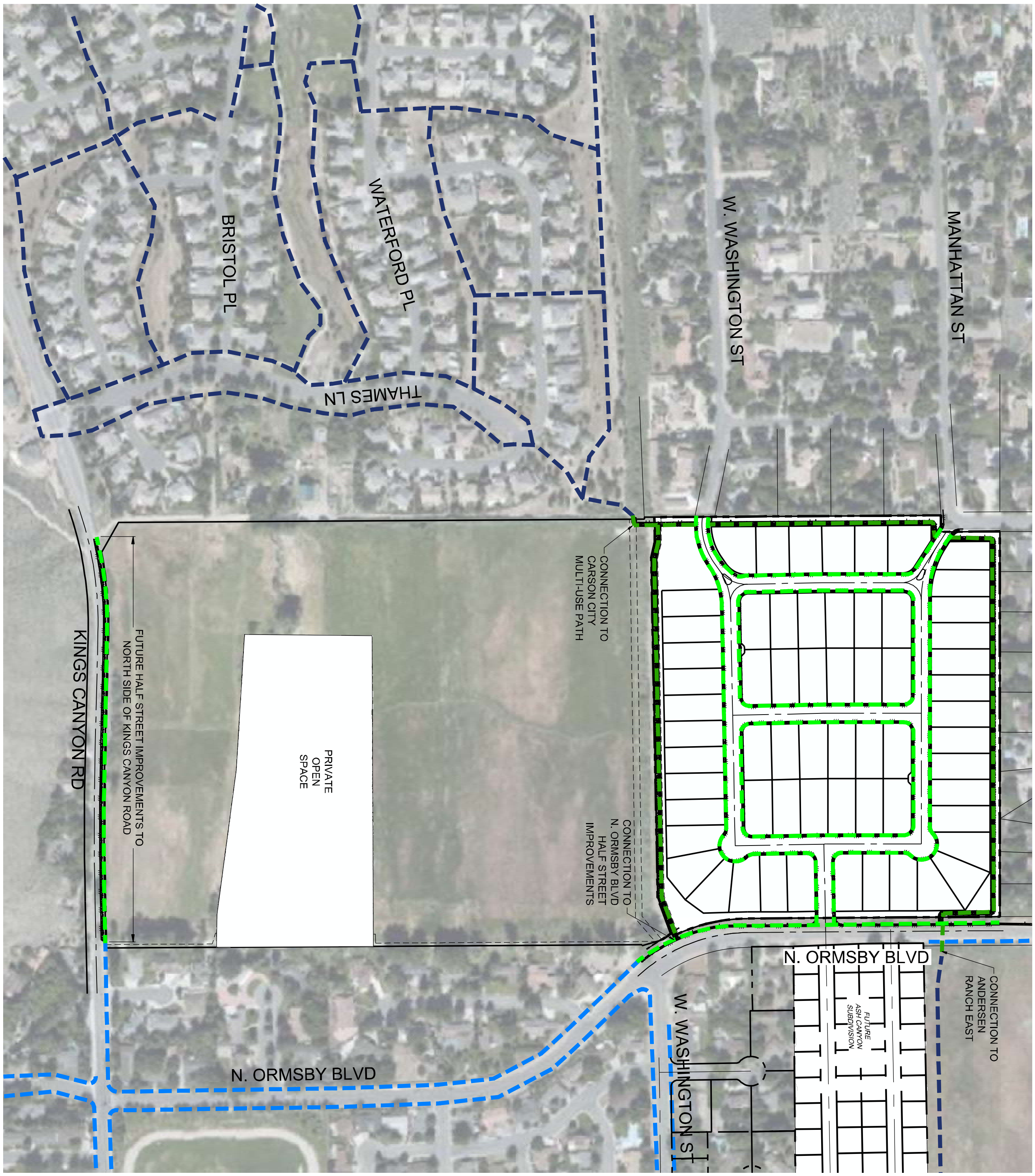
DRAWN BY: JRL
DESIGNED BY: JRL
CHECKED BY: BMM
JOB NO.: 8947.003

\\la.lumosengineering.net\Shared\LAProj\8947.004 - Andersen Ranch Development Tentative Map\DWG\Sheets\8947004 TM TRAILS.dwg,C6.0,
03/28/2023 01:30 pm jlistar



LEGEND:
- EXISTING TRAILS (APPROX).
- EXISTING R/W SIDEWALK
- PROPOSED TRAILS
- PROPOSED SIDEWALK

0 150' 300'
22x34 SHEETS: 1" = 150'
11x17 SHEETS: 1" = 300'

REV	DATE	DESCRIPTION	BY

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MARCH 2023

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DESIGNED BY: JRL
CHECKED BY: TR
JOB NO.: 8947.004

ANDERSEN-COLARD RANCH ENTERPRISES., LLC

ANDERSEN RANCH WEST COMMON OPEN SPACE SUBDIVISION TRAILS CONNECTIVITY MAP

CARSON CITY NV

PROFESSIONAL ENGINEER - STATE OF NEVADA
BRIAN M. MOON
Exp. 12-31-23
CIVIL
No. 20940
03/28/2023

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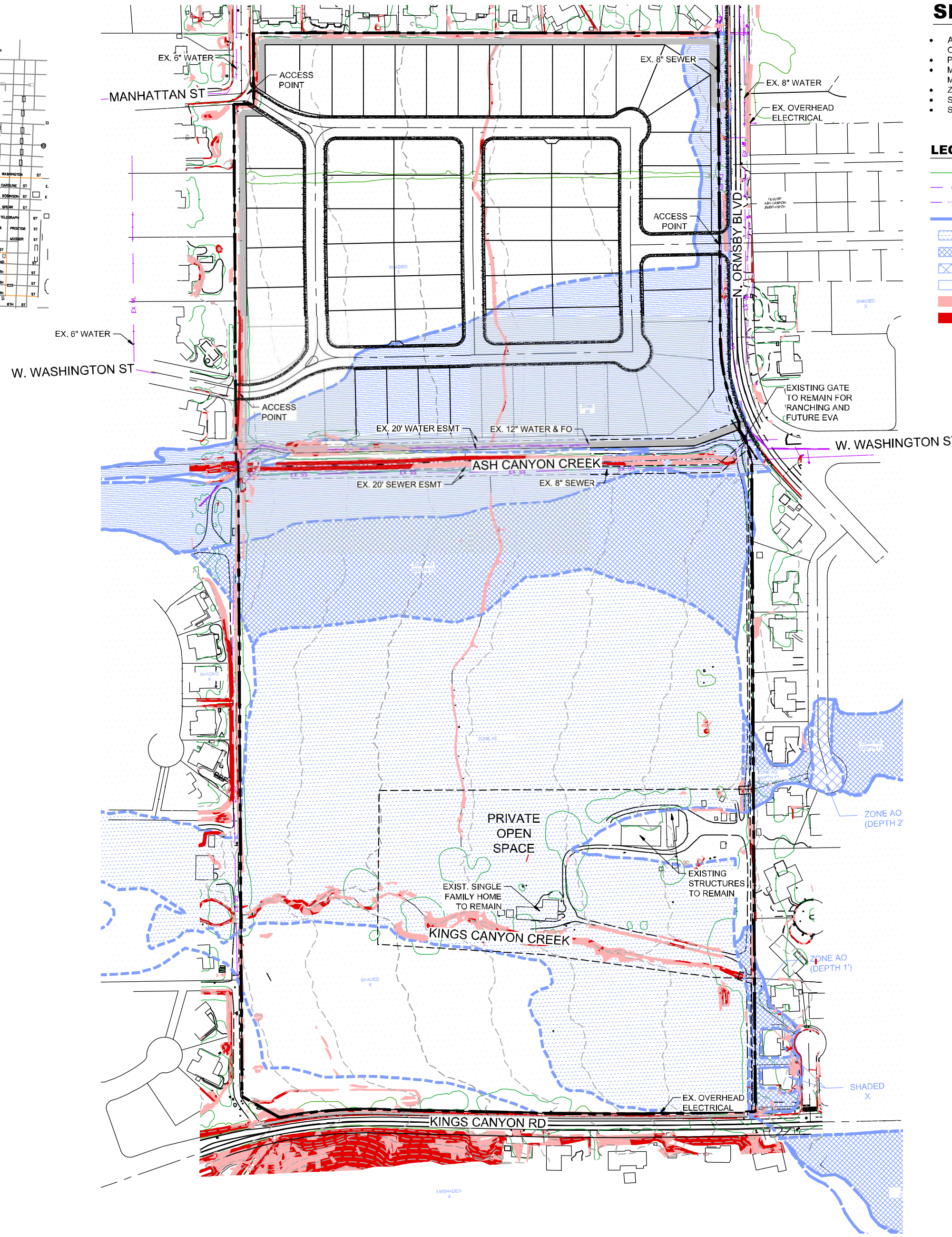
INFO@LUMOSINC.COM

\\lumosengineering.net\Shared\LAProj\8947.004 - Andersen Ranch Development Tentative Map\DWG\Sheets\8947004 TM SITE ANALYSIS.dwg,C7.0,
03/28/2023 01:30 pm jlstar

VICINITY MAP

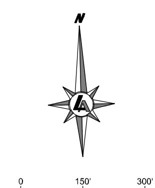


SITE INFORMATION

- ADDRESS: NW INTERSECTION OF KINGS CANYON ROAD & ORMSBY BOULEVARD
- PARCEL SIZE: 80.0± ACRES
- MASTER PLAN DESIGNATION: LOW DENSITY RESIDENTIAL & MEDIUM DENSITY RESIDENTIAL
- ZONING: SF-1A & SF12
- SEISMIC PARAMETERS: SITE CLASS D
- SCS SOIL CLASSIFICATION: JUBILEE COARSE SANDY LOAM

LEGEND:

- EX. VEGETATION
- EX. SEWER
- EX. WATER
- FLOOD ZONE BOUNDARY
- ZONE AE
- ZONE A0 (DEPTH 1-FT)
- ZONE A0 (DEPTH 2-FT)
- ZONE X SHADED
- SLOPES: 15%-33%
- SLOPES: > 33%



22x34 SHEETS: 1" = 150'
11x17 SHEETS: 1" = 300'

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CIVIL
No. 20940

03/28/2023

ANDERSEN-COLARD RANCH ENTERPRISES, LLC

ANDERSEN RANCH WEST
COMMON OPEN SPACE SUBDIVISION
OPEN SPACE SITE ANALYSIS

CARSON CITY | NV

REV	DATE	DESCRIPTION	BY

PRELIMINARY
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MARCH 2023

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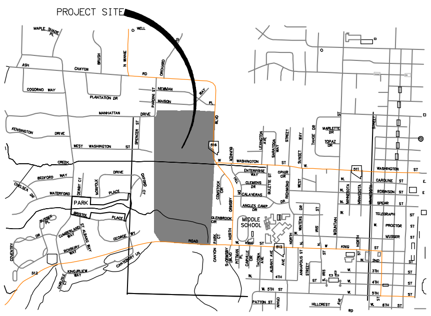
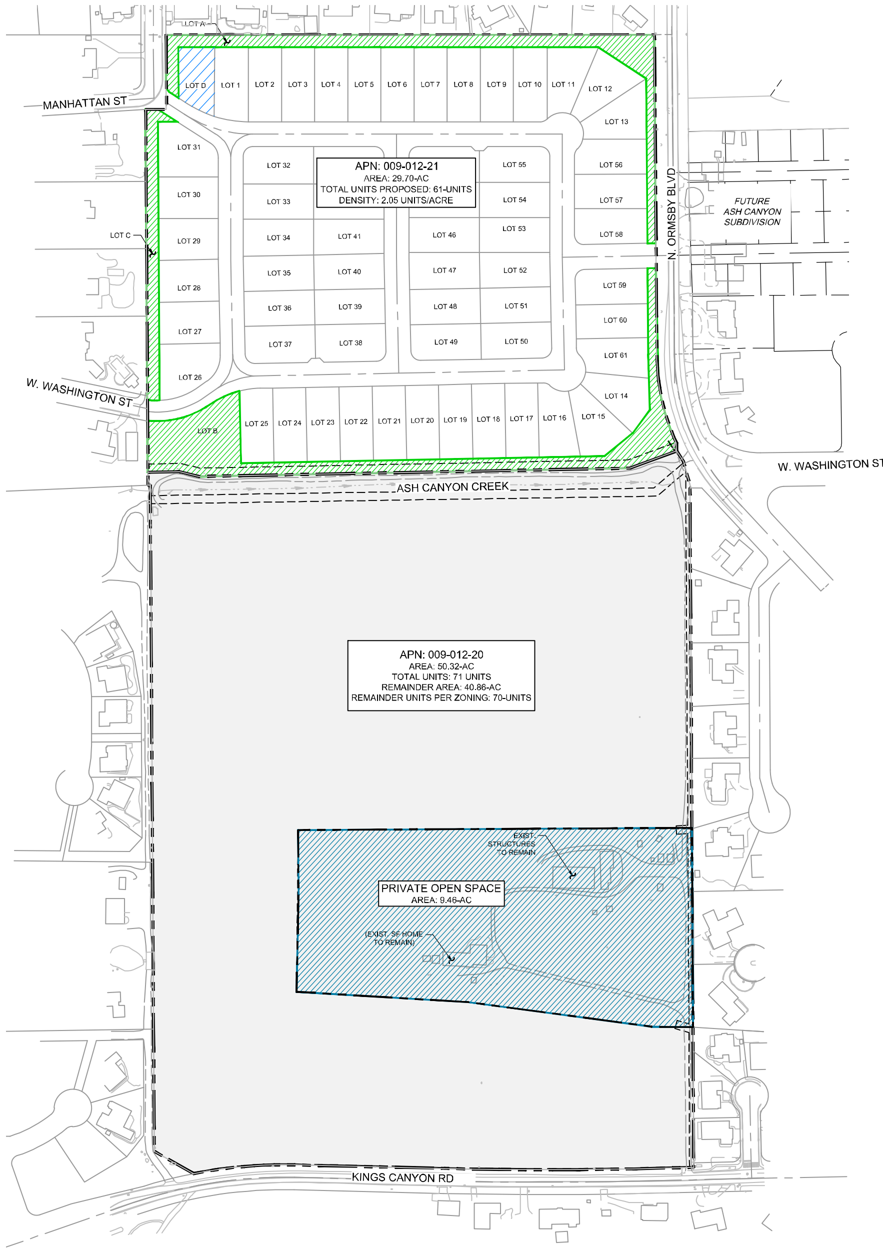
DESIGNED BY:	JRL
CHECKED BY:	TR
JOB NO.:	8947.004



VICINITY MAP



LEGEND

- COMMON OPEN SPACE AREA
- RECREATIONAL OPEN SPACE AREA
- PRIVATE OPEN SPACE
- REMAINDER LOT AREA

AREA DISTRIBUTION

	SQUARE FEET	ACRE	PERCENTAGE
ROW	233,809	5.36±	7%
RESIDENTIAL LOTS	890,520	20.44±	25%
COMMON & RECREATIONAL OPEN SPACE	169,698	3.90±	5%
PRIVATE OPEN SPACE	412,093	9.46±	12%
REMAINDER AREA	1,779,632	40.86±	51%
TOTAL	3,485,749	80.03±	100%

REQUIRED OPEN SPACE AREA

CODE REQUIREMENT (17.10.046 - OPEN SPACE)	TOTAL UNITS	REQUIRED OPEN SPACE AREA (SF)	PROVIDED OPEN SPACE AREA (SF)
COMMON OPEN SPACE 250 SQ. FT. PER DWELLING UNIT	62	15,500	**156,856**
RECREATIONAL OPEN SPACE 100 SQ. FT. PER DWELLING UNIT	62	6,200	**12,842**

OVERALL PROJECT DENSITY

	TOTAL ACRES	DENSITY BY ZONING	MAX UNITS
SF1A (APN 009-012-21)	29.70	1 DU/ACRE	29.70
SF1A (APN 009-012-20)	30.54	1 DU/ACRE	30.54
SF12 (APN 009-012-20)	19.79	1DU/12,OOO S.F.	71.84
TOTAL	**80.03**		**132**

OVERALL PROJECT UNIT COUNT

	EXISTING UNITS	PROPOSED UNITS	REMAINDER UNITS
APN 009-012-21	0	61	0
APN 009-012-20	1	0	70
TOTAL	**1**	**61**	**70**

N

0 150' 300'
22x34 SHEETS: 1" = 150'
11x17 SHEETS: 1" = 300'

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No. 20940
03/28/2023

ANDERSEN-COLARD RANCH ENTERPRISES., LLC

ANDERSEN RANCH WEST
COMMON OPEN SPACE SUBDIVISION
COMMON OPEN SPACE & DENSITY PLAN

CARSON CITY NV

REV	DATE	DESCRIPTION	BY

PRELIMINARY
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MARCH 2023

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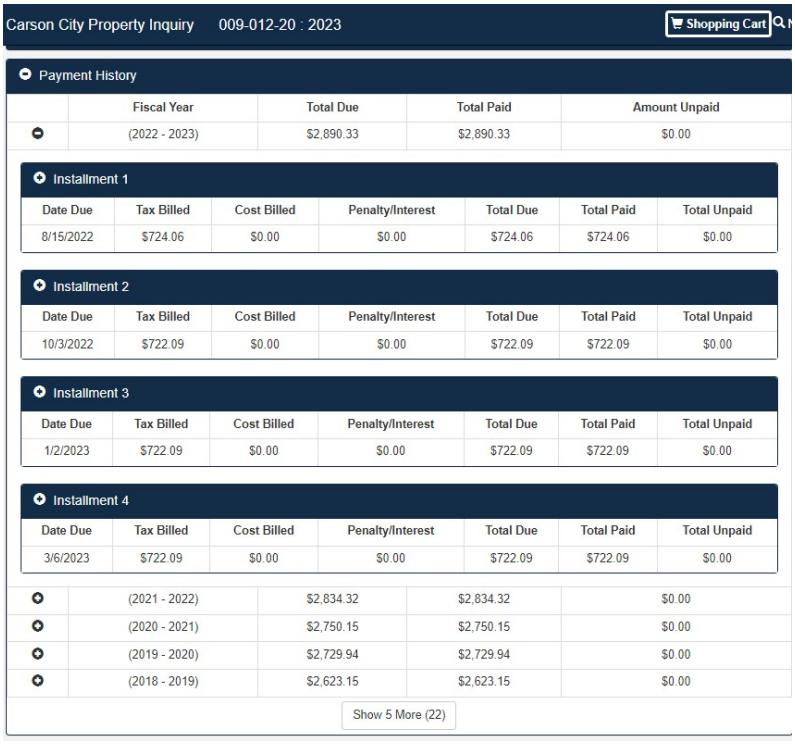
DESIGNED BY: JRL
CHECKED BY: TR
JOB NO.: 8947.004

TAB D

Andersen Ranch West Property Taxes – Proof of Payment
APN's 009-012-20 & 21



Carson City Property Inquiry 009-012-20 : 2023 Shopping Cart

Payment History

	Fiscal Year	Total Due	Total Paid	Amount Unpaid
⊖	(2022 - 2023)	$2,890.33	$2,890.33	$0.00

Installment 1

Date Due	Tax Billed	Cost Billed	Penalty/Interest	Total Due	Total Paid	Total Unpaid
8/15/2022	$724.06	$0.00	$0.00	$724.06	$724.06	$0.00

Installment 2

Date Due	Tax Billed	Cost Billed	Penalty/Interest	Total Due	Total Paid	Total Unpaid
10/3/2022	$722.09	$0.00	$0.00	$722.09	$722.09	$0.00

Installment 3

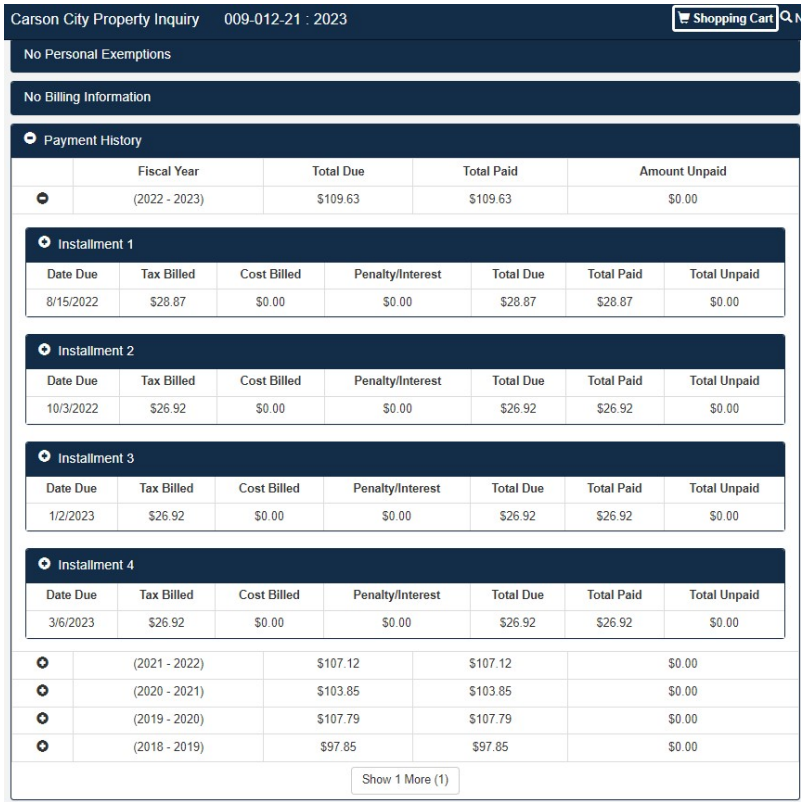
Date Due	Tax Billed	Cost Billed	Penalty/Interest	Total Due	Total Paid	Total Unpaid
1/2/2023	$722.09	$0.00	$0.00	$722.09	$722.09	$0.00

Installment 4

Date Due	Tax Billed	Cost Billed	Penalty/Interest	Total Due	Total Paid	Total Unpaid
3/6/2023	$722.09	$0.00	$0.00	$722.09	$722.09	$0.00

⊕	(2021 - 2022)	$2,834.32	$2,834.32	$0.00
⊕	(2020 - 2021)	$2,750.15	$2,750.15	$0.00
⊕	(2019 - 2020)	$2,729.94	$2,729.94	$0.00
⊕	(2018 - 2019)	$2,623.15	$2,623.15	$0.00

Show 5 More (22)



Carson City Property Inquiry 009-012-21 : 2023 Shopping Cart

No Personal Exemptions

No Billing Information

Payment History

	Fiscal Year	Total Due	Total Paid	Amount Unpaid
⊖	(2022 - 2023)	$109.63	$109.63	$0.00

Installment 1

Date Due	Tax Billed	Cost Billed	Penalty/Interest	Total Due	Total Paid	Total Unpaid
8/15/2022	$28.87	$0.00	$0.00	$28.87	$28.87	$0.00

Installment 2

Date Due	Tax Billed	Cost Billed	Penalty/Interest	Total Due	Total Paid	Total Unpaid
10/3/2022	$26.92	$0.00	$0.00	$26.92	$26.92	$0.00

Installment 3

Date Due	Tax Billed	Cost Billed	Penalty/Interest	Total Due	Total Paid	Total Unpaid
1/2/2023	$26.92	$0.00	$0.00	$26.92	$26.92	$0.00

Installment 4

Date Due	Tax Billed	Cost Billed	Penalty/Interest	Total Due	Total Paid	Total Unpaid
3/6/2023	$26.92	$0.00	$0.00	$26.92	$26.92	$0.00

⊕	(2021 - 2022)	$107.12	$107.12	$0.00
⊕	(2020 - 2021)	$103.85	$103.85	$0.00
⊕	(2019 - 2020)	$107.79	$107.79	$0.00
⊕	(2018 - 2019)	$97.85	$97.85	$0.00

Show 1 More (1)

TRAFFIC IMPACT STUDY UPDATE

for

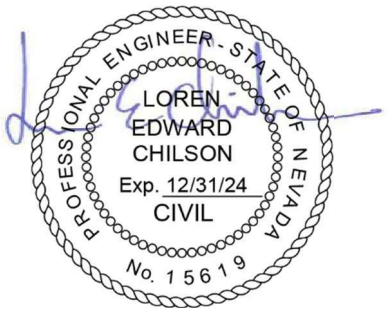
Andersen Ranch West

March 29, 2023

PREPARED FOR:

Lumos and Associates

PREPARED BY:



Headway Transportation, LLC
5482 Longley Lane, Suite B, Reno, Nevada 89511
775.322.4300
www.HeadwayTransportation.com

YOUR QUESTIONS ANSWERED QUICKLY

Why did you perform this study?

This Traffic Impact Study Update evaluates the potential traffic impacts associated with the proposed Andersen Ranch West project located west of N. Ormsby Boulevard and north of W. Washington Street in Carson City, 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 traffic impacts, if any are found.

What does the project consist of?

The project consists of 61 single-family residential lots.

How much traffic will the project generate?

The project is anticipated to generate approximately 576 Daily, 43 AM peak hour, and 58 PM peak hour trips to the external roadway network.

How will project traffic affect the roadway network?

Under Existing Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds. Under Future Year Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds.

Are any improvements recommended?

No vehicle capacity improvements are recommended since the roadway network will function within acceptable level of service thresholds with the addition of project traffic.

The project will construct standard curb, gutter, and sidewalk improvements along the N. Ormsby Boulevard project frontage. These frontage improvements will connect to the existing improvements located along the west side of N. Ormsby Boulevard south of W. Washington Street. In addition, Class 2 bike lanes are recommended in both directions along N. Ormsby Boulevard adjacent to the project site.

The project will construct half-street and shared use path improvements along the project frontage on Kings Canyon Road.

It is recommended that the project construct a marked crosswalk and Rectangular Rapid Flashing Beacon (RRFB) system on N. Ormsby Boulevard at the trail crossing north of the project access (south edge of Andersen Ranch East) if those improvements are not already conditioned upon or constructed by other projects such as Andersen Ranch East.

The project will be required to pay its pro-rata share for the N. Ormsby Boulevard extension to Winnie Lane based on a total cost estimate of $1,380,000 for the future extension project. The project's contribution is calculated as $113,160 (8.2% of the total project).

LIST OF FIGURES

LIST OF APPENDICES

INTRODUCTION

This report presents the findings of a Traffic Impact Study Update completed to assess the potential traffic impacts on local intersections associated with the Andersen Ranch West project in Carson City, Nevada. This traffic impact study update has been prepared to document existing traffic conditions, quantify traffic volumes generated by the proposed project, quantify traffic volumes that would reroute through 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 the preliminary site plan is shown on **Figure 2**.

Study Area and Evaluated Scenarios

The project consists of 61 single-family residential lots. The project is located west of N. Ormsby Boulevard, north of W. Washington Street (and Ash Canyon Creek), and south of Ash Canyon Road. The study intersections were identified based on communications with Carson City staff and are shown on **Figure 1**. The following intersections are included in this study:

- N. Ormsby Boulevard / W. Washington Street
- W. Washington Street / Richmond Street
- N. Ormsby Boulevard / Project Access / Ash Canyon Access

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
- Existing Plus Project Conditions
- Future Year (20-year horizon) Conditions (including trips generated from Andersen Ranch East and Ash Canyon)
- Future Year (20-year horizon) Plus Project Conditions

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), 6th 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, 6th Edition*

Level of service calculations were performed for the study intersections using the Synchro 11 software package with analysis and results reported in accordance with *HCM 6th Edition* methodology.

Level of Service Policy

Carson City

The *Carson City Municipal Code* provides the following level of service policy:

A traffic LOS D or better, in the context of providing a safe, efficient, and convenient transportation system, shall be maintained through mitigation of impacts from all conditions on all city maintained arterial and collector roads and at city road intersections, except as noted in the Carson City master plan.

Hence, LOS "D" has been used as the threshold criteria for this analysis.

Traffic engineering practitioners recognize that LOS E/F conditions for the side street approach, during the peak hour(s), does not indicate an intersection failure or the need for mitigation. This condition (LOS E/F for a minor side-street approach) commonly exists throughout urban and suburban areas and is manageable in most cases until both volumes and delay become excessive.

EXISTING CONDITIONS

Roadway Facilities

A brief description of the key roadways in the study area is provided below.

N. Ormsby Boulevard is generally a north-south 2-lane (one lane in each direction) minor collector roadway, per NDOT roadway classification, which connects W. King Street with Washington Street and Ash Canyon Road. N. Ormsby Boulevard provides access to the east side of the project via a new project road intersection (and provides connections on the west side of the project site via roadway extensions with Manhattan Drive and W. Washington Street). The posted speed limit in the project area is 35 mph.

W. Washington Street in the project area is generally an east-west minor collector roadway, per NDOT roadway classification, with two lanes (one lane in each direction). On-street parallel parking is generally allowed on the north side of W. Washington Street east of N. Ormsby Boulevard. The posted speed limit is 25 mph.

Richmond Street is generally a north-south 2-lane (one lane in each direction) local roadway. Curb, gutter, sidewalk, and on-street parallel parking currently exists along both sides of the roadway. It does not have a posted speed limit, but has a *prima-facie* speed limit of 25 mph.

Bicycle & Pedestrian Facilities

There are no bicycle or pedestrian facilities along N. Ormsby Boulevard immediately adjacent to the project site. An existing marked crosswalk is located across N. Ormsby Boulevard just south of its intersection with W. Washington Street. Sidewalks exist on both sides of N. Ormsby Boulevard south of W. Washington Street.

Class 2 bike lanes are located along both sides of W. Washington Street east of the project site. Sidewalks are provided along both sides of W. Washington Street east of N. Ormsby Boulevard and along both sides of Richmond Street. A crosswalk is located on the eastbound (west approach) leg of the W. Washington Street/Richmond Avenue intersection.

Transit Facilities

Jump Around Carson (JAC) provides four buses on four distinct fixed routes. While there are no transit routes in the immediate vicinity of the proposed Andersen Ranch West Project, a stop location for JAC Routes 1, 2A, 2B, and 3 are all located within one mile at the Downtown Transfer Plaza. These existing routes leave on 1-hour headways between the hours of 6:30 AM and 6:30 PM on weekdays and 8:30 AM to 3:30 PM. A transfer to RTC Intercity and Tahoe Transport District 19x is also available at this location. **Exhibit 1** shows a JAC route map of where the Downtown Transfer Plaza is located.

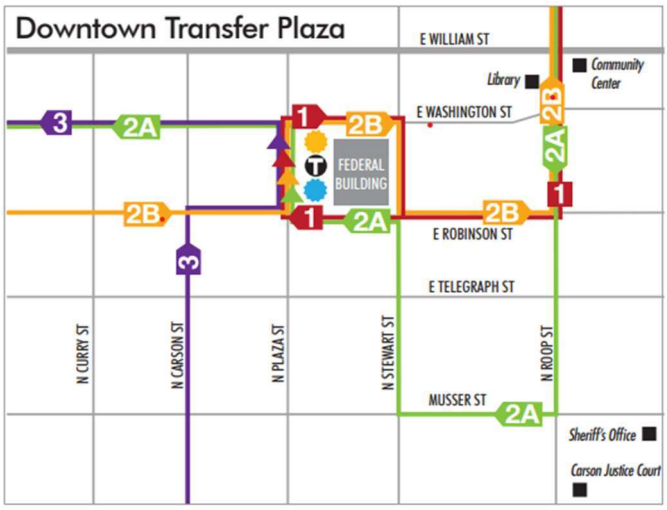


Exhibit 1: JAC Route Map

Crash History

Vehicle crash data within the project vicinity was obtained from NDOT for the most recent five years available (January 1, 2016, to January 1, 2021). During the most recent five years, only one (1) crash was reported in the project area. This crash occurred on January 11, 2018, at the intersection of W. Washington Street and N. Ormsby Boulevard. This crash was reported as a property damage only type crash involving a single vehicle that ran off the roadway. A summary of this crash (as provided by NDOT) is included in this report as **Appendix A.**

Traffic Volumes

AM and PM peak hour traffic volumes were collected at the study intersections on April 4 and April 5, 2022, with the Carson City School District in session. The existing AM and PM peak hour intersection turning movement volumes are shown on **Figure 3**.

Intersection Level of Service Analysis

Existing AM and PM peak hour intersection level of service analysis was performed for the study intersections using Synchro 11 analysis software. The existing intersection lane configurations and controls are shown on **Figure 3. Table 2** shows the existing conditions level of service results, and the technical calculations are provided in **Appendix B**.

Table 2: Existing Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1]	LOS	Delay[1]	LOS
1	N. Ormsby Boulevard/ W. Washington Street	Side-Street Stop				
	Southbound Left		7.9	A	7.4	A
	Westbound Approach		10.7	B	9.4	A
2	W. Washington Street/ Richmond Avenue	Side-Street Stop				
	Eastbound Left		7.4	A	7.5	A
	Westbound Left		8.2	A	7.4	A
	Northbound Approach		10.9	B	9.2	A
	Southbound Approach		17.3	C	9.8	A

Notes: 1. Delay is reported in seconds/vehicle for the worst approach/movement for side-street stop-controlled intersections.
Source: Headway Transportation, 2023

As shown in **Table 2**, the existing study intersections currently operate within policy level of service thresholds during the AM and PM peak hours.

PROJECT CONDITIONS

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 land use. **Table 3** shows the Daily, AM peak hour, and PM peak hour trip generation estimates.

Table 3: Project Trip Generation Estimates

Land Use (ITE Code)	Size[1]	Project Trips[2]				
		Daily	AM	AM In/Out	PM	PM In/Out
Single-Family Detached Housing (210)	61 du	576	43	11 / 32	58	37 / 21

Notes: 1. du = dwelling units; 2. Trips were calculated based on the following rates per du: Daily – 9.43; AM – 0.70 (26% in / 74% out); PM – 0.94 (63% in / 37% out)
Source: Headway Transportation, 2023

As shown in **Table 3** above, the project is expected to generate approximately 576 Daily, 43 AM peak hour, and 58 PM peak hour trips.

Since the proposed project will be connected to the residential neighborhoods to the west (via an extension of both Manhattan Drive and West Washington Street), additional rerouted trips were estimated (as diverted trips) and added to the project trips to and from the project site. It was assumed that 50% of the approximately 62 single family homes (i.e., 31 homes) located to the west of the project would reroute through the project site as shown in **Table 4** below.

Table 4: Diverted (rerouted) Trip Estimates

Land Use (ITE Code)	Size[1]	Project Trips[2]				
		Daily	AM	AM In/Out	PM	PM In/Out
Single-Family Detached Housing (210)	31 du	292	22	6 / 16	29	18 / 11

Notes: 1. du = dwelling units; 2. Trips were calculated based on the following rates per du: Daily – 9.43; AM – 0.70 (26% in / 74% out); PM – 0.94 (63% in / 37% out)
Source: Headway Transportation, 2023

As shown in **Table 4** above, rerouted traffic is expected to divert 292 Daily, 22 AM peak hour, and 29 PM peak hour trips from the surrounding roadway network to the study roadways.

Trip Distribution

Project trips and rerouted trips were distributed to the adjacent roadway network based on existing traffic volumes, the locations of complimentary land uses, and anticipated travel patterns. Project trips and rerouted trips were distributed based on the following:

- 35% to/from the north via N. Ormsby Boulevard
- 40% to/from the east via W. Washington Street
- 25% to/from the south via N. Ormsby Boulevard

Figure 4 shows the project trip distribution and assignment for the project trips plus the rerouted trips.

Project Access

Primary access to the project will be provided from one new roadway interesting N. Ormsby Boulevard and secondary access will be provided from street connections with Manhattan Drive and W. Washington Street to the west. The project access intersection on N. Ormsby Boulevard will be side-street stop controlled. The primary access will initially form a three-leg intersection with N. Ormsby Boulevard and ultimately form a four-leg intersection with construction of the Ash Canyon subdivision.

An exclusive southbound right turn lane is not warranted at the N. Ormsby Boulevard/Project Access intersection based on NDOT access management standards for unsignalized intersections on two-lane roadways in urban areas.

A northbound left turn lane may be technically warranted at the N. Ormsby Boulevard/Project Access intersection based on the NDOT access management standards for the state highway system for the existing plus project traffic volumes. However, a left turn lane is not recommended based on the low traffic volumes and LOS "A" operation for this movement, which will not create queuing of vehicles in any notable way. The left turn lane is also not recommended considering the character of N. Ormsby Boulevard which includes a low speed limit and has no left turn lanes at other intersections in the area.

EXISTING PLUS PROJECT CONDITIONS

Traffic Volumes

Project trips and rerouted trips (**Figure 4**) were added to the existing traffic volumes (**Figure 3**) to develop the Existing Plus Project traffic volumes, shown on **Figure 5**.

Intersection Level of Service

AM and PM peak hour intersection level of service analysis was performed for the study intersections based on the Existing Plus Project traffic volumes, the existing peak hour factors from the counts, and the lane configurations and controls shown on **Figure 5**. **Table 5** shows the level of service results, and the technical calculations are provided in **Appendix C**.

Table 5: Existing Plus Project Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1]	LOS	Delay[1]	LOS
1	N. Ormsby Boulevard/ W. Washington Street	Side-Street Stop				
	Southbound Left		8.0	A	7.5	A
	Westbound Approach		11.1	B	9.6	A
2	W. Washington Street/ Richmond Avenue	Side-Street Stop				
	Eastbound Left		7.4	A	7.5	A
	Westbound Left		8.2	A	7.4	A
	Northbound Approach		11.2	B	9.4	A
	Southbound Approach		18.1	C	10.1	B
3	N. Ormsby Boulevard/ Project Access	Side-Street Stop				
	Northbound Left		7.6	A	7.6	A
	Eastbound Approach		10.3	B	9.8	A

Notes: 1. Delay is reported in seconds/vehicle for the worst approach/movement for side-street stop-controlled intersections.
Source: Headway Transportation, 2023

As shown in **Table 5**, the study intersections are anticipated to operate within policy level of service thresholds during the AM and PM peak hours.

FUTURE YEAR CONDITIONS

The Future Year analysis estimates operating conditions for the 20-year horizon.

Planned Roadway Improvements

The extension of N. Ormsby Boulevard to Winnie Lane is shown as an improvement in the CAMPO 2050 unconstrained traffic model. This project will pay its Pro-Rata share to construct the future connection.

No capacity improvements are anticipated at the existing intersections for the Future Year conditions.

Exclusive southbound left turn and northbound right turn lanes are not warranted at the N. Ormsby Boulevard/Ash Canyon Access intersection based on NDOT access management standards for unsignalized intersections on two-lane roadways in urban areas. Left and right turn lanes are not recommended based on the very low traffic volumes and excellent LOS "A" operation for these movements. Exclusive turn lanes are also not recommended based on the character of N. Ormsby Boulevard which includes a low speed limit and has no turn lanes at other intersections in the area.

Traffic Volume Forecasts

Future Year background traffic volumes were developed based on applying a 1% per year growth rate for 20 years based on the projected growth of traffic volumes on N. Ormsby Boulevard from 2030 to 2050 in the constrained Carson City Travel Demand Model. In addition, trips generated from the proposed 203 single-family lot Andersen Ranch East and the 41 single-family lot Ash Canyon projects were added to the study intersections. Trips generated by the Andersen Ranch East project were obtained from the traffic impact study dated July 11, 2019 and supplement dated December 12, 2019. Trips generated by the Ash Canyon project obtained from the Traffic Impact Study Supplement to Andersen Ranch West - Addition of Ash Canyon dated September 26, 2022.

Two roads will provide access to Ash Canyon from N. Ormsby Boulevard with the southerly access aligning with the Andersen Ranch West access. However, all trips generated by Ash Canyon were assigned to the Ash Canyon south access in order to ensure conservative capacity analysis at the N. Ormsby Boulevard/Ash Canyon Access/Project Access intersection.

Figure 6 shows the Future Year traffic volumes, lane configurations, and controls at the study intersections.

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 6** shows the level of service results, and the technical calculations are provided in **Appendix D**.

Table 6: Future Year Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1]	LOS	Delay[1]	LOS
1	N. Ormsby Boulevard/ W. Washington Street	Side-Street Stop				
	Southbound Left		8.2	A	7.5	A
	Westbound Approach		12.3	B	9.9	A
2	W. Washington Street/ Richmond Avenue	Side-Street Stop				
	Eastbound Left		7.4	A	7.6	A
	Westbound Left		8.5	A	7.4	A
	Northbound Approach		12.8	B	10.1	B
	Southbound Approach		24.9	C	10.9	B
3	N. Ormsby Boulevard/ Ash Canyon South Access	Side-Street Stop				
	Southbound Left		7.7	A	7.6	A
	Westbound Approach		11.0	B	10.2	B

Notes: 1. Delay is reported in seconds/vehicle for the worst approach/movement for side-street stop-controlled intersections.
Source: Headway Transportation, 2023

As shown in **Table 6**, the study intersections are expected to operate within policy level of service thresholds under Future Year conditions.

FUTURE YEAR PLUS PROJECT CONDITIONS

Traffic Volumes

Project trips (**Figure 4**) were added to the Future Year traffic volumes (**Figure 6**) to develop the Future Year Plus Project traffic volumes, shown on **Figure 7**.

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. **Table 7** shows the level of service results, and the technical calculations are provided in **Appendix E**.

Table 7: Future Year Plus Project Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1]	LOS	Delay[1]	LOS
1	N. Ormsby Boulevard/ W. Washington Street	Side-Street Stop				
	Southbound Left		8.3	A	7.6	A
	Westbound Approach		12.9	B	10.3	B
2	W. Washington Street/ Richmond Avenue	Side-Street Stop				
	Eastbound Left		7.5	A	7.6	A
	Westbound Left		8.6	A	7.5	A
	Northbound Approach		13.3	B	10.3	B
	Southbound Approach		26.6	D	11.2	B
3	N. Ormsby Boulevard/Ash Canyon Access/Project Access	Side-Street Stop				
	Northbound Left		7.7	A	7.6	A
	Southbound Left		7.7	A	7.6	A
	Eastbound Approach		11.1	B	10.6	B
	Westbound Approach		12.3	B	11.7	B

Notes: 1. Delay is reported in seconds/vehicle for the worst approach/movement for side-street stop-controlled intersections.
Source: Headway Transportation, 2023

As shown in **Table 7**, the study intersections are expected to operate within policy level of service thresholds under Future Year Plus Project Conditions.

Recommended Improvements

No vehicle capacity improvements are recommended since the roadway network will function within acceptable level of service thresholds with the addition of project traffic.

Exclusive turn lanes are not recommended at the project access intersection on N. Ormsby Boulevard.

The project will construct standard curb, gutter, and sidewalk improvements along the N. Ormsby Boulevard project frontage. These frontage improvements will connect to the existing improvements located along the west side of N. Ormsby Boulevard south of W. Washington Street. In addition, Class 2 bike lanes are recommended in both directions along N. Ormsby Boulevard adjacent to the project site.

The project will construct half-street and shared use path improvements along the project frontage on Kings Canyon Road.

It is recommended that the project construct a marked crosswalk and Rectangular Rapid Flashing Beacon (RRFB) system on N. Ormsby Boulevard at the trail crossing north of the project access (south edge of

Andersen Ranch East) if those improvements are not already conditioned upon or constructed by other projects such as Andersen Ranch East.

Consistent with prior projects, this project will be required to pay a pro-rata share of the cost to construct the N. Ormsby Boulevard extension to Winnie Lane. It is estimated that 202 vehicles per day (35% of the 576 daily trips generated by the project) would utilize the future extension. The CAMPO 2050 travel demand model estimates this extension will carry 2,450 vehicles per day. The pro-rata share for this project is calculated as 8.2% (202/2,450 vehicles per day) or $113,160, which is 8.2% of the latest cost estimate received from Carson City staff of $1,380,000 to construct the extension.

CONCLUSIONS

The following is a list of our key findings and recommendations:

- The proposed project includes 61 Single-Family housing lots and is anticipated to generate approximately 576 Daily, 43 AM peak hour, and 58 PM peak hour trips on the external roadway network.
- Under Existing and Existing Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds.
- Under Future Year and Future Year Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds.
- The project will construct curb, gutter, and sidewalk improvements along the west side of N. Ormsby Boulevard adjacent to the project site consistent with the existing curb, gutter, and sidewalk just south of W. Washington Street.
- The installation of Class 2 bike lanes is recommended along N. Ormsby Boulevard in both directions adjacent to the project site.
- The project will construct half-street and shared use path improvements along the project frontage on Kings Canyon Road.
- It is recommended that the project construct a marked crosswalk and Rectangular Rapid Flashing Beacon (RRFB) system on N. Ormsby Boulevard at the trail crossing north of the project access (south edge of Andersen Ranch East) if those improvements are not already conditioned upon or constructed by other projects such as Andersen Ranch East.
- The project will be required to pay its pro-rata share for the N. Ormsby Boulevard extension to Winnie Lane based on a total cost estimate of $1,380,000 for the future extension project. The project's contribution is calculated as $113,160 (8.2% of the total project).

HEADWAY TRANSPORTATION

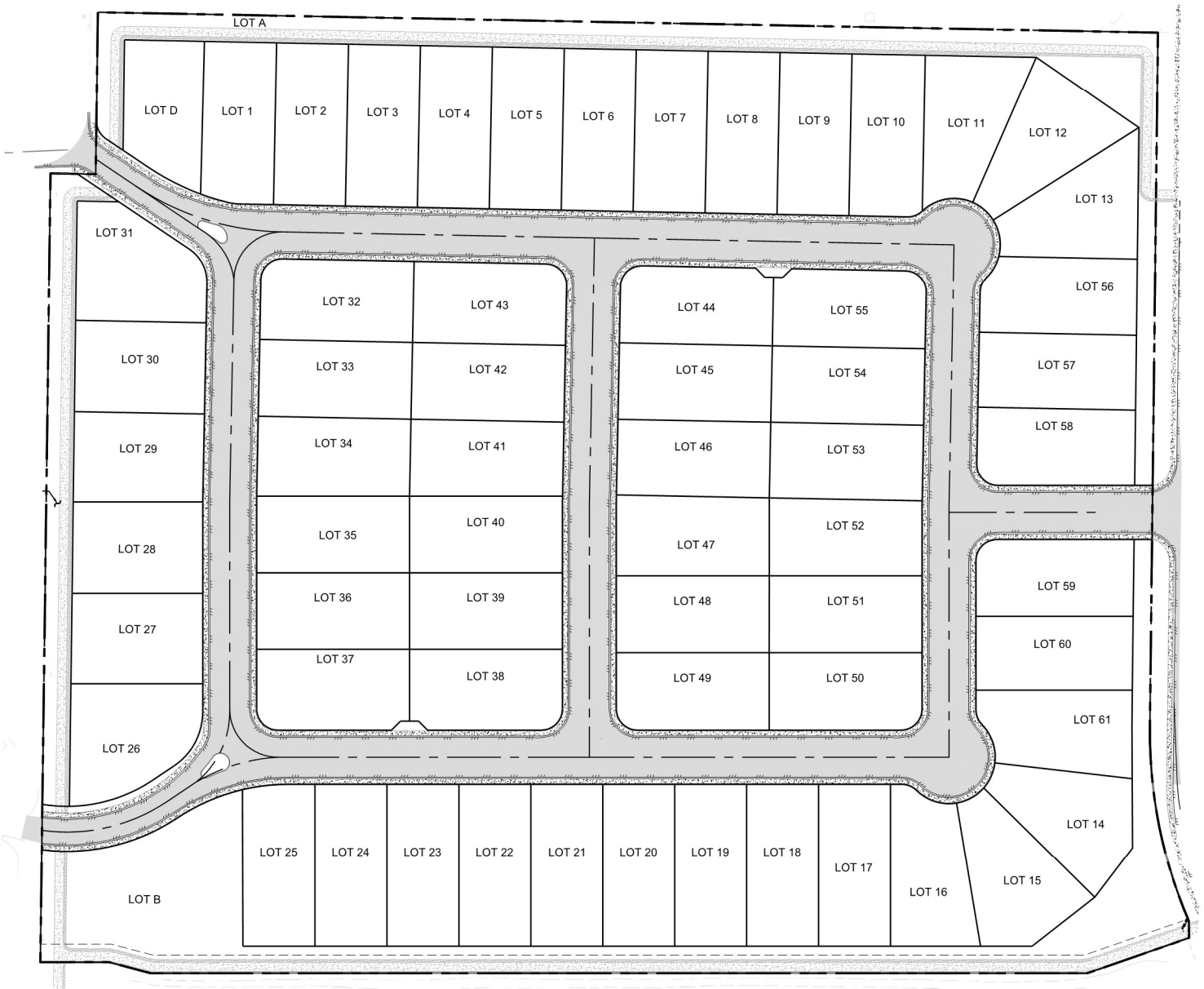
NO SCALE

- Project Site

(#) - Study Intersection

▪▪▪▪ - Future Connection

Figure 1
Andersen Ranch West
Traffic Impact Study Update
Project Location

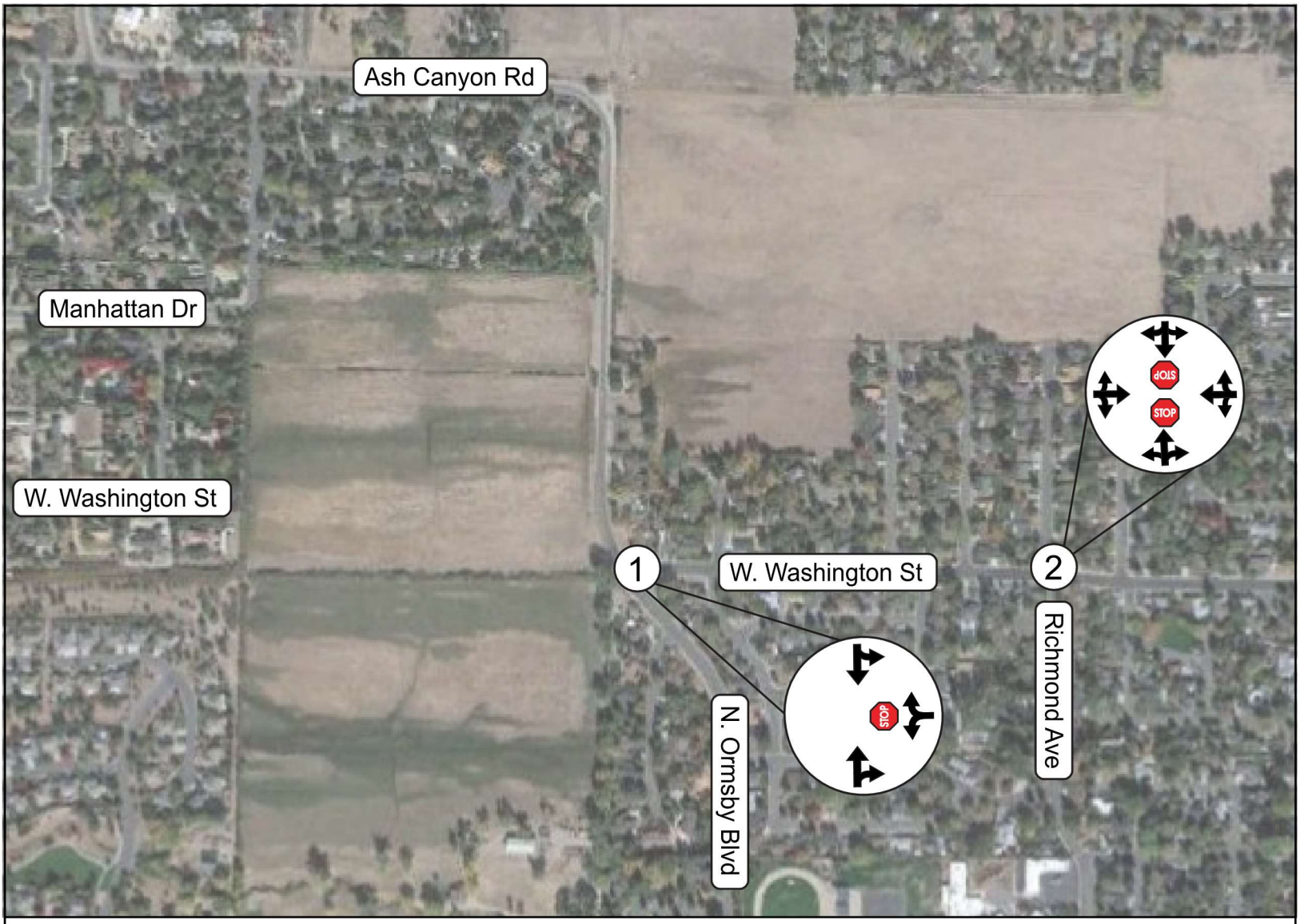


HEADWAY TRANSPORTATION

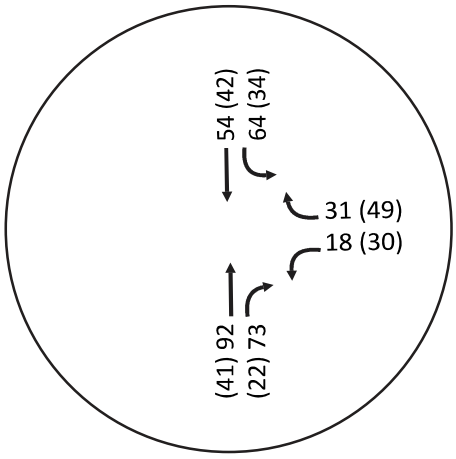
NO SCALE

Proposed 61 Single Family Lots

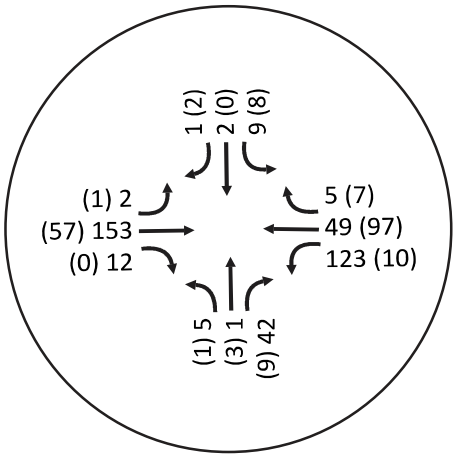
Figure 2
Andersen Ranch West
Traffic Impact Study Update
Preliminary Site Plan



1 *N. Ormsby Blvd / W. Ormsby St*



2 *W. Washington St / Richmond Ave*



HEADWAY TRANSPORTATION

NO SCALE

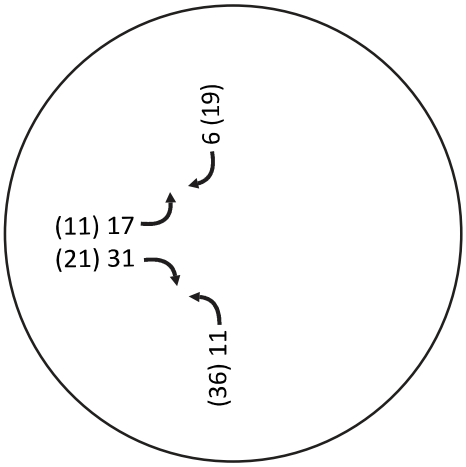
AM Peak Hour Volume (PM Peak Hour Volume)

(#) - Study Intersection STOP - Stop

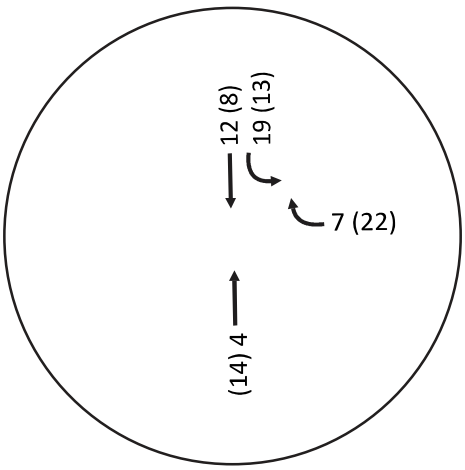
Figure 3

Andersen Ranch West
Traffic Impact Study Update

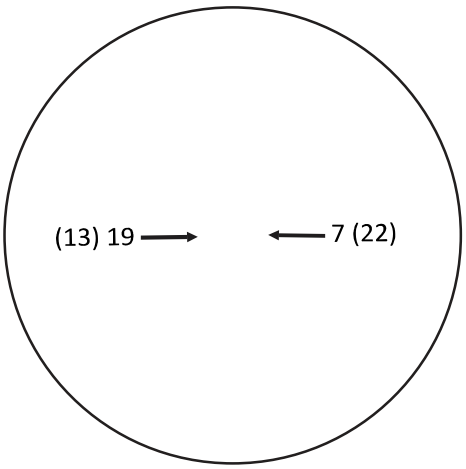
Existing Traffic Volumes, Lane Configurations, & Controls



3 *N. Ormsby Blvd / Project Access*



1 *N. Ormsby Blvd / W. Washington St*



2 *W. Washington St / Richmond Ave*

HEADWAY TRANSPORTATION

NO SCALE

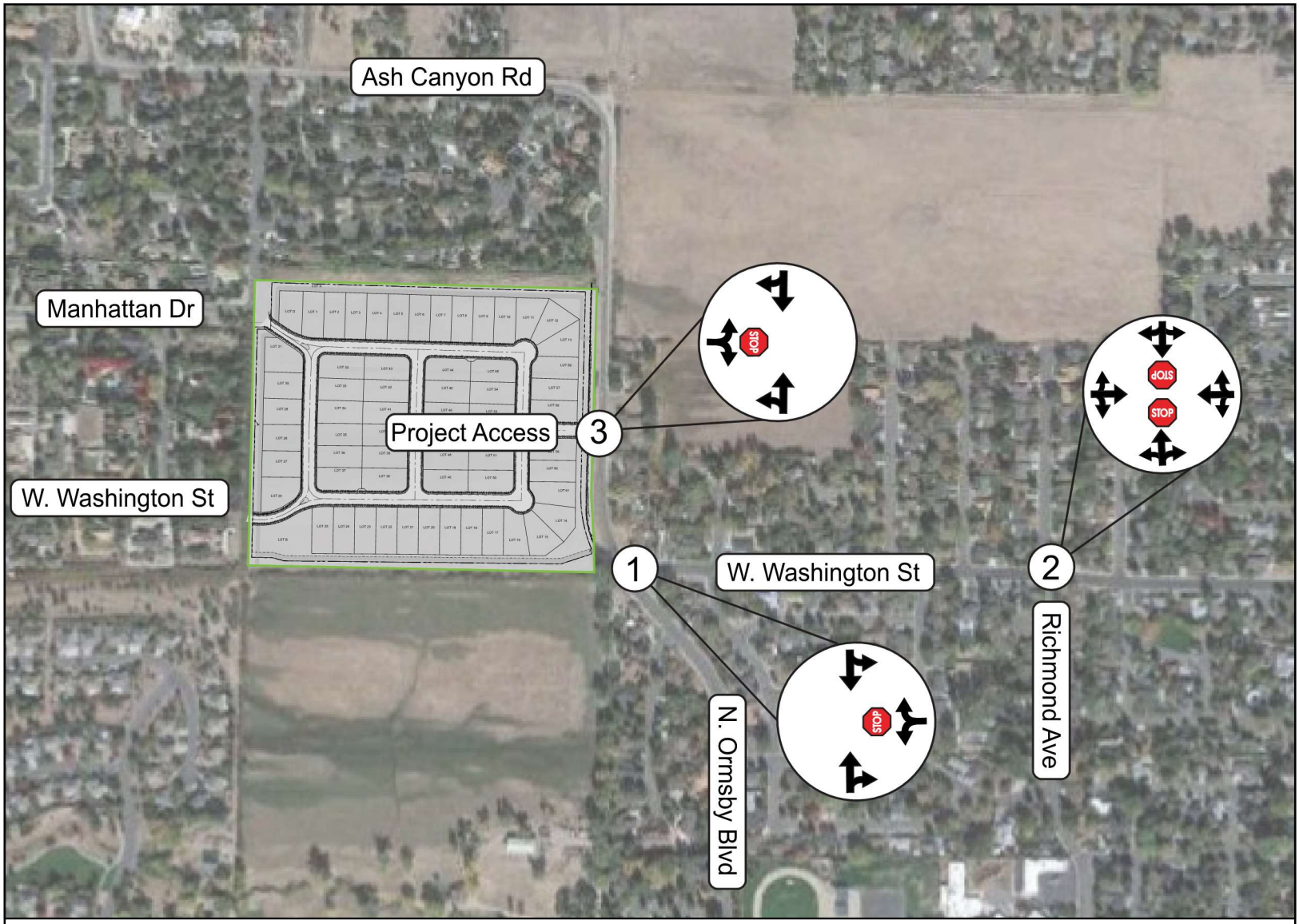
AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
- # - Study Intersection
- XX% - Trip Distribution

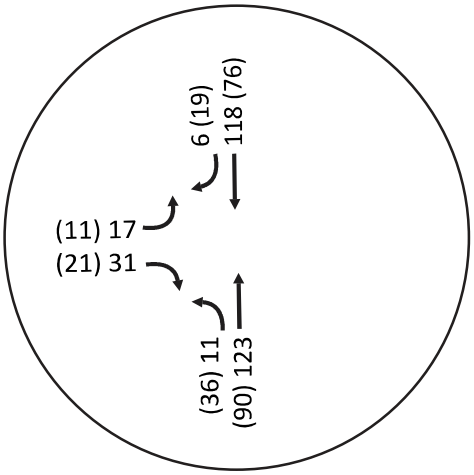
Figure 4

Andersen Ranch West
Traffic Impact Study Update

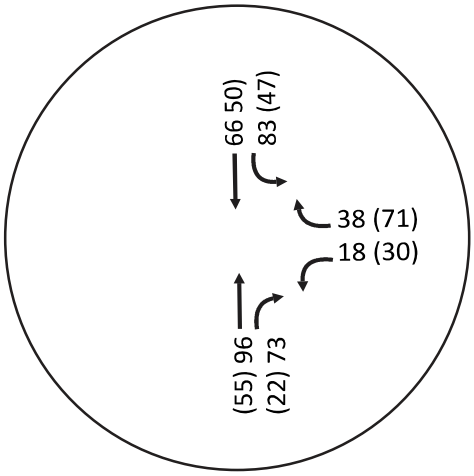
Project Trip Distribution & Assignment (including rerouted trips)



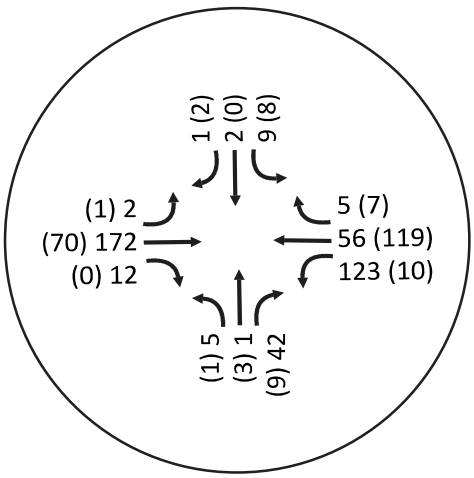
3 *N. Ormsby Blvd / Project Access*



1 *N. Ormsby Blvd / W. Washington St*



2 *W. Washington St / Richmond Ave*



HEADWAY TRANSPORTATION

NO SCALE

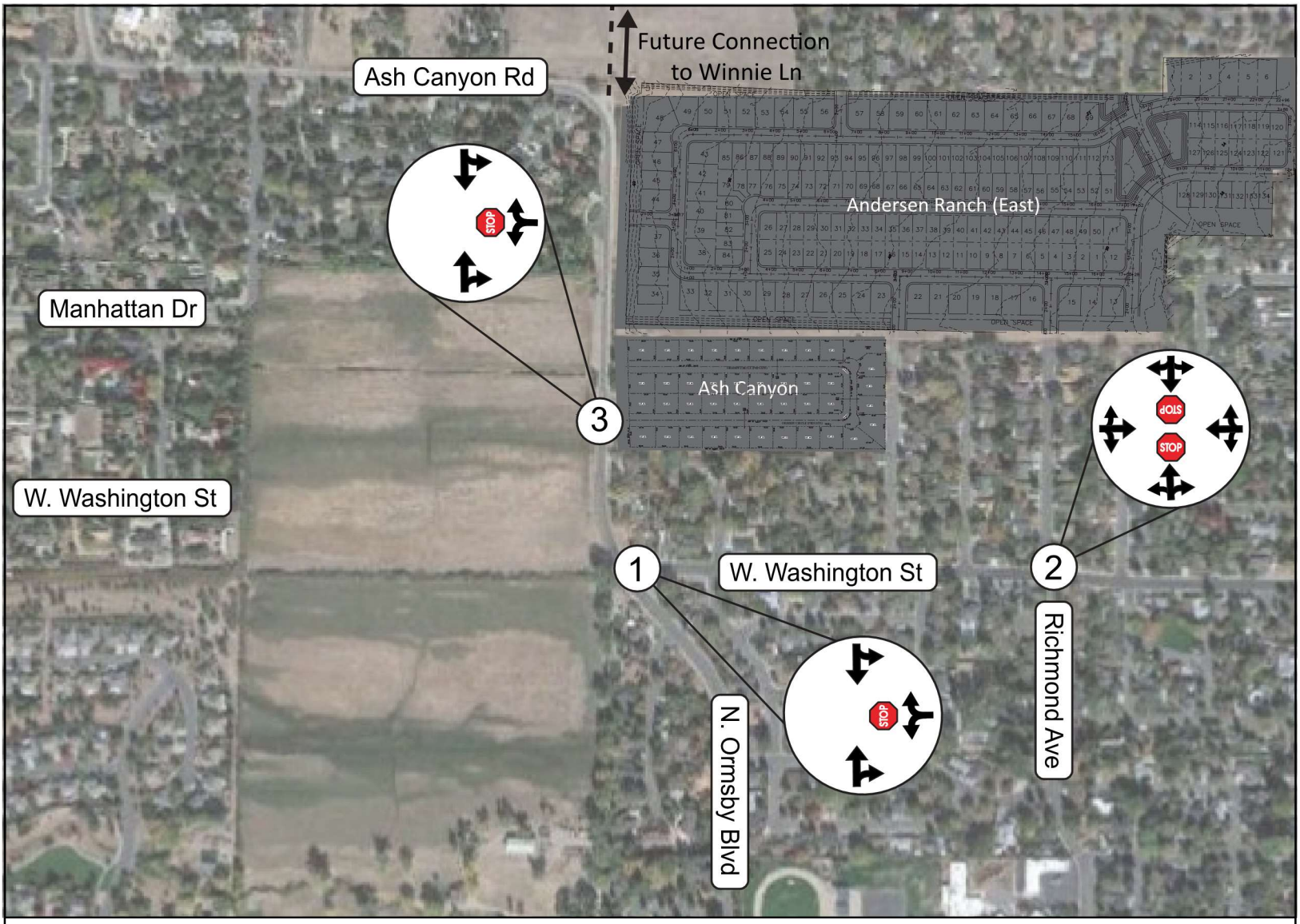
AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
- # - Study Intersection
- STOP - Stop

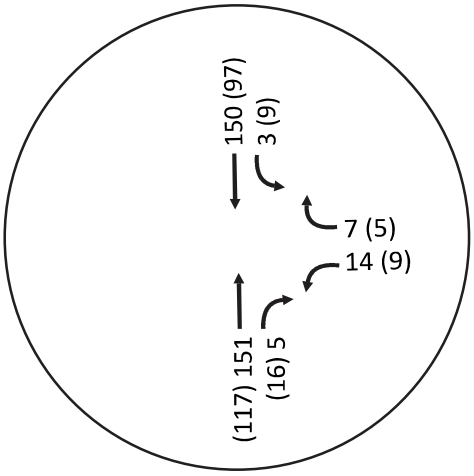
Figure 5

Andersen Ranch West
Traffic Impact Study Update

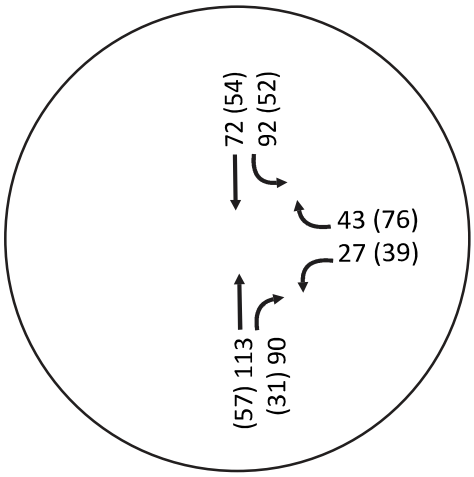
Existing Plus Project Traffic Volumes, Lane Configurations, & Controls



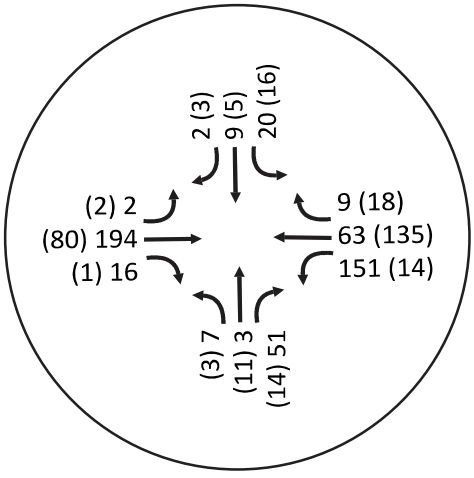
3 N. Ormsby Blvd / Ash Canyon Access



1 N. Ormsby Blvd / W. Washington St



2 W. Washington St / Richmond Ave



**Includes Andersen Ranch (East) and Ash Canyon Trip Gen*

HEADWAY TRANSPORTATION

NO SCALE

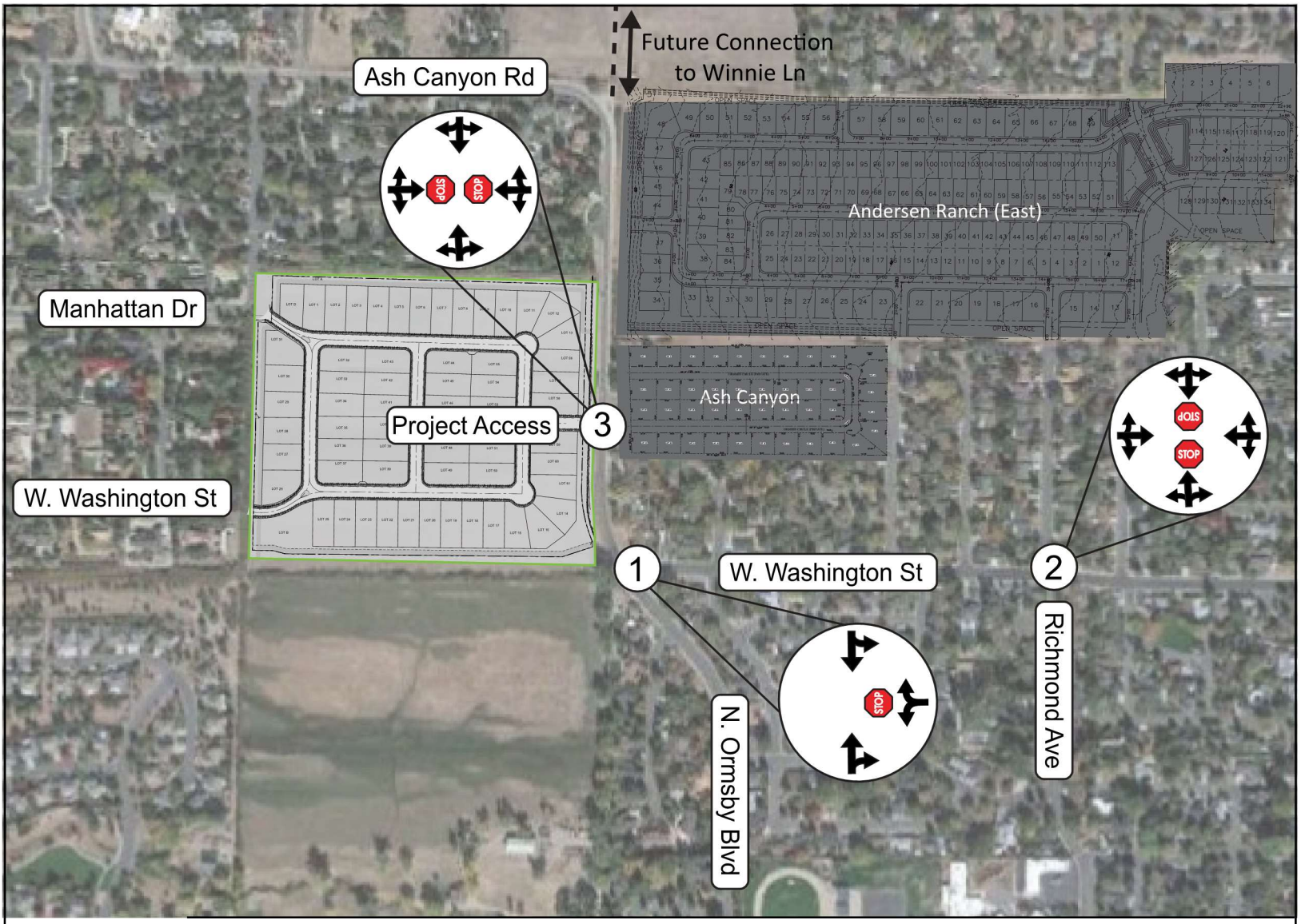
AM Peak Hour Volume (PM Peak Hour Volume)

(#) - Study Intersection STOP - Stop ---- - Future Connection

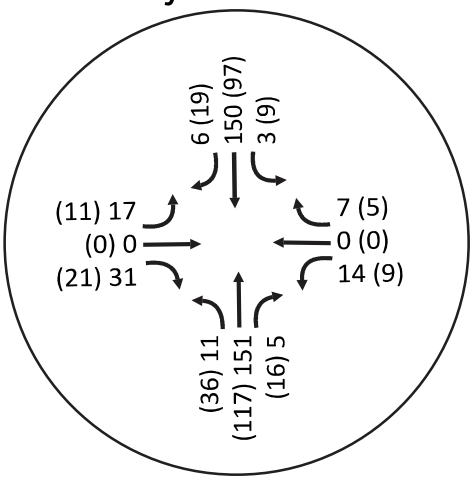
Figure 6

Andersen Ranch West
Traffic Impact Study Update

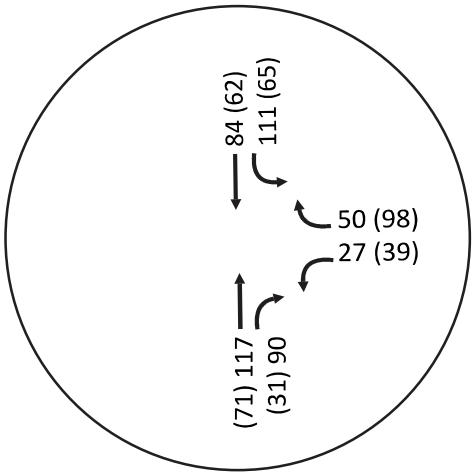
Future Year Traffic Volumes*, Lane Configurations, & Controls



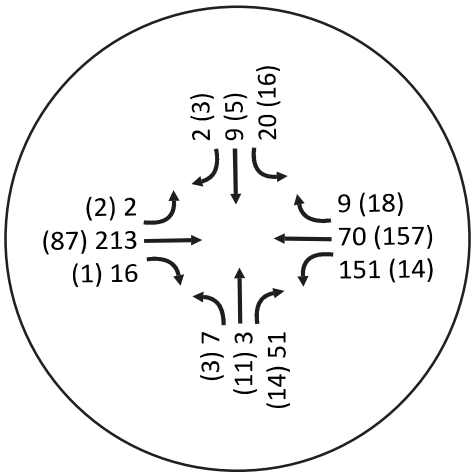
3 N. Ormsby Blvd / Ash Canyon Access/ Project Access



1 N. Ormsby Blvd / W. Washington St



2 W. Washington St / Richmond Ave



HEADWAY TRANSPORTATION

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
- # - Study Intersection
- STOP - Stop
- ---- - Future Connection

Figure 7

Andersen Ranch West
Traffic Impact Study Update

Future Year Plus Project Traffic Volumes, Lane Configurations, & Controls

Appendix A
NDOT Crash Data

INTERSECTION DETAIL
N ORMSBY BLVD @ W WASHINGTON ST
01 JAN 16 - 01 JAN 21

COUNTY: CARSON CITY

Crash Severity	Crash Date	Crash Year	Crash Time	Primary Street	Distance	Dir	Secondary Street	Weather	Fatalities	Injured	Property Damage Only	Injury Type	Crash Type	Total Vehicles
PROPERTY DAMAGE ONLY	11-Jan-2018	2018	08:01 PM	N ORMSBY BLVD	679	N	W WASHINGTON ST	OTHER			PDO		NON-COLLISION	1
									Sum: 0	Sum: 0	Count: 1			
									Count: 0	Count: 0				
									Total:	1				

V1 Type	V1 Dir	V1 Driver Age	V1 Lane Num	V1 Action	V1 Driver Factors	V1 Driver Distracted	V1 Vehicle Factors	V1 Most Harmful Event	V1 All Events
SEDAN, 4 DOOR	N			NOT REPORTED	APPARENTLY NORMAL		DROVE LEFT OF CENTER		RAN OFF ROAD LEFT: OVERTURN/ROLLOVER

V2 Type	V2 Dir	V2 Driver Age	V2 Lane Num	V2 Action	V2 Driver Factors	V2 Driver Distracted	V2 Vehicle Factors	V2 Most Harmful Event	V2 All Events	First Harmful Event	Nonmotorist Factors	Factors Roadway	Lighting	HWY Factors	Agency	Accident Num	Accident Rec Num
															CCSO	CCSO182	2404784

Appendix B
Existing LOS Calculations

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	31	92	73	64	54
Future Vol, veh/h	18	31	92	73	64	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	26	44	131	104	91	77

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	442	183	0	0	235	0
Stage 1	183	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	571	857	-	-	1326	-
Stage 1	846	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	530	857	-	-	1326	-
Mov Cap-2 Maneuver	530	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	726	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	4.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	699	1326	-
HCM Lane V/C Ratio	-	-	0.1	0.069	-
HCM Control Delay (s)	-	-	10.7	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	49	41	22	34	42
Future Vol, veh/h	30	49	41	22	34	42
Conflicting Peds, #/hr	3	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	34	56	47	25	39	48

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	189	60	0	0	72	0
Stage 1	60	-	-	-	-	-
Stage 2	129	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	802	1008	-	-	1534	-
Stage 1	965	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	779	1008	-	-	1534	-
Mov Cap-2 Maneuver	779	-	-	-	-	-
Stage 1	965	-	-	-	-	-
Stage 2	873	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	3.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	907	1534	-
HCM Lane V/C Ratio	-	-	0.099	0.025	-
HCM Control Delay (s)	-	-	9.4	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	153	12	123	49	5	5	1	42	9	2	1
Future Vol, veh/h	2	153	12	123	49	5	5	1	42	9	2	1
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	222	17	178	71	7	7	1	61	13	3	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	80	0	0	240	0	0	671	674	232	701	679	77
Stage 1	-	-	-	-	-	-	238	238	-	433	433	-
Stage 2	-	-	-	-	-	-	433	436	-	268	246	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1512	-	-	1321	-	-	369	375	805	352	372	981
Stage 1	-	-	-	-	-	-	763	706	-	599	580	-
Stage 2	-	-	-	-	-	-	599	578	-	735	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1509	-	-	1320	-	-	325	321	804	288	318	979
Mov Cap-2 Maneuver	-	-	-	-	-	-	325	321	-	288	318	-
Stage 1	-	-	-	-	-	-	761	704	-	597	497	-
Stage 2	-	-	-	-	-	-	511	495	-	677	699	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.7	10.9	17.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	679	1509	-	-	1320	-	-	311
HCM Lane V/C Ratio	0.102	0.002	-	-	0.135	-	-	0.056
HCM Control Delay (s)	10.9	7.4	0	-	8.2	0	-	17.3
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0.5	-	-	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	57	0	10	97	7	1	3	9	8	0	2
Future Vol, veh/h	1	57	0	10	97	7	1	3	9	8	0	2
Conflicting Peds, #/hr	2	0	7	7	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	1	64	0	11	109	8	1	3	10	9	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	120	0	0	71	0	0	210	215	71	211	211	117
Stage 1	-	-	-	-	-	-	73	73	-	138	138	-
Stage 2	-	-	-	-	-	-	137	142	-	73	73	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1474	-	-	1536	-	-	749	684	994	748	688	938
Stage 1	-	-	-	-	-	-	939	836	-	868	784	-
Stage 2	-	-	-	-	-	-	869	781	-	939	836	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1470	-	-	1526	-	-	736	671	987	730	675	934
Mov Cap-2 Maneuver	-	-	-	-	-	-	736	671	-	730	675	-
Stage 1	-	-	-	-	-	-	931	829	-	865	775	-
Stage 2	-	-	-	-	-	-	859	772	-	925	829	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	9.2	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	870	1470	-	-	1526	-	-	763
HCM Lane V/C Ratio	0.017	0.001	-	-	0.007	-	-	0.015
HCM Control Delay (s)	9.2	7.5	0	-	7.4	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Appendix C
Existing Plus Project LOS Calculations

Intersection	
Int Delay, s/veh	3.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	38	96	73	83	66
Future Vol, veh/h	18	38	96	73	83	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	26	54	137	104	119	94

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	521	189	0	0	241	0
Stage 1	189	-	-	-	-	-
Stage 2	332	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	514	850	-	-	1320	-
Stage 1	841	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	465	850	-	-	1320	-
Mov Cap-2 Maneuver	465	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	656	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	4.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	671	1320	-
HCM Lane V/C Ratio	-	-	0.119	0.09	-
HCM Control Delay (s)	-	-	11.1	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.3	-

Intersection	
Int Delay, s/veh	4.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	71	55	22	47	50
Future Vol, veh/h	30	71	55	22	47	50
Conflicting Peds, #/hr	3	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	34	81	63	25	53	57

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	242	76	0	0	88	0
Stage 1	76	-	-	-	-	-
Stage 2	166	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	749	988	-	-	1514	-
Stage 1	950	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	720	988	-	-	1514	-
Mov Cap-2 Maneuver	720	-	-	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	832	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	3.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	890	1514	-
HCM Lane V/C Ratio	-	-	0.129	0.035	-
HCM Control Delay (s)	-	-	9.6	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	172	12	123	56	5	5	1	42	9	2	1
Future Vol, veh/h	2	172	12	123	56	5	5	1	42	9	2	1
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	249	17	178	81	7	7	1	61	13	3	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	90	0	0	267	0	0	708	711	259	738	716	87
Stage 1	-	-	-	-	-	-	265	265	-	443	443	-
Stage 2	-	-	-	-	-	-	443	446	-	295	273	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1499	-	-	1291	-	-	348	357	777	332	355	969
Stage 1	-	-	-	-	-	-	738	688	-	592	574	-
Stage 2	-	-	-	-	-	-	592	572	-	711	682	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1496	-	-	1290	-	-	306	304	776	270	302	967
Mov Cap-2 Maneuver	-	-	-	-	-	-	306	304	-	270	302	-
Stage 1	-	-	-	-	-	-	736	686	-	590	490	-
Stage 2	-	-	-	-	-	-	502	488	-	653	680	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.5	11.2	18.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	651	1496	-	-	1290	-	-	293
HCM Lane V/C Ratio	0.107	0.002	-	-	0.138	-	-	0.059
HCM Control Delay (s)	11.2	7.4	0	-	8.2	0	-	18.1
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0.5	-	-	0.2

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	70	0	10	119	7	1	3	9	8	0	2
Future Vol, veh/h	1	70	0	10	119	7	1	3	9	8	0	2
Conflicting Peds, #/hr	2	0	7	7	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	1	79	0	11	134	8	1	3	10	9	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	145	0	0	86	0	0	250	255	86	251	251	142
Stage 1	-	-	-	-	-	-	88	88	-	163	163	-
Stage 2	-	-	-	-	-	-	162	167	-	88	88	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1443	-	-	1517	-	-	706	650	976	704	654	908
Stage 1	-	-	-	-	-	-	922	824	-	841	765	-
Stage 2	-	-	-	-	-	-	842	762	-	922	824	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1439	-	-	1507	-	-	694	638	969	687	642	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	694	638	-	687	642	-
Stage 1	-	-	-	-	-	-	915	817	-	838	757	-
Stage 2	-	-	-	-	-	-	832	754	-	908	817	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	9.4	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	842	1439	-	-	1507	-	-	722
HCM Lane V/C Ratio	0.017	0.001	-	-	0.007	-	-	0.016
HCM Control Delay (s)	9.4	7.5	0	-	7.4	0	-	10.1
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	31	11	123	118	6
Future Vol, veh/h	17	31	11	123	118	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	24	44	16	176	169	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	382	174	178	0	-	0
Stage 1	174	-	-	-	-	-
Stage 2	208	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	618	867	1392	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	610	867	1392	-	-	-
Mov Cap-2 Maneuver	610	-	-	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	824	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1392	-	754	-	-
HCM Lane V/C Ratio	0.011	-	0.091	-	-
HCM Control Delay (s)	7.6	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	21	36	90	76	19
Future Vol, veh/h	11	21	36	90	76	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	16	30	51	129	109	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	354	123	136	0	-	0
Stage 1	123	-	-	-	-	-
Stage 2	231	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	642	925	1442	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	618	925	1442	-	-	-
Mov Cap-2 Maneuver	618	-	-	-	-	-
Stage 1	866	-	-	-	-	-
Stage 2	805	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1442	-	790	-	-
HCM Lane V/C Ratio	0.036	-	0.058	-	-
HCM Control Delay (s)	7.6	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Appendix D
Future Year LOS Calculations

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	43	113	90	92	72
Future Vol, veh/h	27	43	113	90	92	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	39	61	161	129	131	103

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	591	226	0	0	290	0
Stage 1	226	-	-	-	-	-
Stage 2	365	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	468	811	-	-	1266	-
Stage 1	809	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	417	811	-	-	1266	-
Mov Cap-2 Maneuver	417	-	-	-	-	-
Stage 1	809	-	-	-	-	-
Stage 2	623	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	4.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	594	1266	-
HCM Lane V/C Ratio	-	-	0.168	0.104	-
HCM Control Delay (s)	-	-	12.3	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.3	-

Intersection	
Int Delay, s/veh	5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	76	57	31	52	54
Future Vol, veh/h	39	76	57	31	52	54
Conflicting Peds, #/hr	3	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	44	86	65	35	59	61

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	265	83	0	0	100	0
Stage 1	83	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	726	979	-	-	1499	-
Stage 1	943	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	694	979	-	-	1499	-
Mov Cap-2 Maneuver	694	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	815	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	859	1499	-
HCM Lane V/C Ratio	-	-	0.152	0.039	-
HCM Control Delay (s)	-	-	9.9	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	194	16	151	63	9	7	3	51	20	9	2
Future Vol, veh/h	2	194	16	151	63	9	7	3	51	20	9	2
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	281	23	219	91	13	10	4	74	29	13	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	106	0	0	305	0	0	844	844	294	876	849	100
Stage 1	-	-	-	-	-	-	300	300	-	538	538	-
Stage 2	-	-	-	-	-	-	544	544	-	338	311	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1479	-	-	1250	-	-	282	299	743	268	297	953
Stage 1	-	-	-	-	-	-	707	664	-	525	521	-
Stage 2	-	-	-	-	-	-	521	517	-	674	656	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1476	-	-	1249	-	-	231	242	742	203	241	951
Mov Cap-2 Maneuver	-	-	-	-	-	-	231	242	-	203	241	-
Stage 1	-	-	-	-	-	-	705	662	-	523	423	-
Stage 2	-	-	-	-	-	-	410	420	-	602	654	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.8	12.8	24.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	547	1476	-	-	1249	-	-	225
HCM Lane V/C Ratio	0.162	0.002	-	-	0.175	-	-	0.2
HCM Control Delay (s)	12.8	7.4	0	-	8.5	0	-	24.9
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.6	-	-	0.7

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	80	1	14	135	18	3	11	14	16	5	3
Future Vol, veh/h	2	80	1	14	135	18	3	11	14	16	5	3
Conflicting Peds, #/hr	2	0	7	7	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	2	90	1	16	152	20	3	12	16	18	6	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	175	0	0	98	0	0	302	309	98	306	299	166
Stage 1	-	-	-	-	-	-	102	102	-	197	197	-
Stage 2	-	-	-	-	-	-	200	207	-	109	102	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1407	-	-	1501	-	-	652	607	961	648	615	881
Stage 1	-	-	-	-	-	-	906	813	-	807	740	-
Stage 2	-	-	-	-	-	-	804	732	-	899	813	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1403	-	-	1491	-	-	633	592	955	619	600	878
Mov Cap-2 Maneuver	-	-	-	-	-	-	633	592	-	619	600	-
Stage 1	-	-	-	-	-	-	898	806	-	803	729	-
Stage 2	-	-	-	-	-	-	784	721	-	869	806	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	10.1	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	737	1403	-	-	1491	-	-	638
HCM Lane V/C Ratio	0.043	0.002	-	-	0.011	-	-	0.042
HCM Control Delay (s)	10.1	7.6	0	-	7.4	0	-	10.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	7	151	5	3	150
Future Vol, veh/h	14	7	151	5	3	150
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	20	10	216	7	4	214

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	442	220	0	0	223	0
Stage 1	220	-	-	-	-	-
Stage 2	222	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	571	817	-	-	1340	-
Stage 1	814	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	569	817	-	-	1340	-
Mov Cap-2 Maneuver	569	-	-	-	-	-
Stage 1	814	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	633	1340	-
HCM Lane V/C Ratio	-	-	0.047	0.003	-
HCM Control Delay (s)	-	-	11	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	5	117	16	9	97
Future Vol, veh/h	9	5	117	16	9	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	13	7	167	23	13	139

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	344	179	0	0	190	0
Stage 1	179	-	-	-	-	-
Stage 2	165	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	650	861	-	-	1378	-
Stage 1	850	-	-	-	-	-
Stage 2	862	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	644	861	-	-	1378	-
Mov Cap-2 Maneuver	644	-	-	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	853	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	708	1378	-
HCM Lane V/C Ratio	-	-	0.028	0.009	-
HCM Control Delay (s)	-	-	10.2	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Appendix E

Future Year Plus Project LOS Calculations

Intersection	
Int Delay, s/veh	4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	50	117	90	111	84
Future Vol, veh/h	27	50	117	90	111	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	39	71	167	129	159	120

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	670	232	0	0	296	0
Stage 1	232	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	421	805	-	-	1260	-
Stage 1	804	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	364	805	-	-	1260	-
Mov Cap-2 Maneuver	364	-	-	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	561	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	4.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	565	1260	-
HCM Lane V/C Ratio	-	-	0.195	0.126	-
HCM Control Delay (s)	-	-	12.9	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.4	-

Intersection	
Int Delay, s/veh	5.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	98	71	31	65	62
Future Vol, veh/h	39	98	71	31	65	62
Conflicting Peds, #/hr	3	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	44	111	81	35	74	70

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	320	99	0	0	116	0
Stage 1	99	-	-	-	-	-
Stage 2	221	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	676	960	-	-	1479	-
Stage 1	927	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	639	960	-	-	1479	-
Mov Cap-2 Maneuver	639	-	-	-	-	-
Stage 1	927	-	-	-	-	-
Stage 2	773	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	3.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	840	1479	-
HCM Lane V/C Ratio	-	-	0.185	0.05	-
HCM Control Delay (s)	-	-	10.3	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.2	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	213	16	151	70	9	7	3	51	20	9	2
Future Vol, veh/h	2	213	16	151	70	9	7	3	51	20	9	2
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	309	23	219	101	13	10	4	74	29	13	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	116	0	0	333	0	0	882	882	322	914	887	110
Stage 1	-	-	-	-	-	-	328	328	-	548	548	-
Stage 2	-	-	-	-	-	-	554	554	-	366	339	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1466	-	-	1221	-	-	266	284	717	253	282	941
Stage 1	-	-	-	-	-	-	683	645	-	519	515	-
Stage 2	-	-	-	-	-	-	515	512	-	651	638	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1463	-	-	1220	-	-	216	228	716	190	226	939
Mov Cap-2 Maneuver	-	-	-	-	-	-	216	228	-	190	226	-
Stage 1	-	-	-	-	-	-	680	642	-	516	415	-
Stage 2	-	-	-	-	-	-	402	413	-	578	635	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.6	13.3	26.6
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	522	1463	-	-	1220	-	-	211
HCM Lane V/C Ratio	0.169	0.002	-	-	0.179	-	-	0.213
HCM Control Delay (s)	13.3	7.5	0	-	8.6	0	-	26.6
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.6	0	-	-	0.7	-	-	0.8

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	87	1	14	157	18	3	11	14	16	5	3
Future Vol, veh/h	2	87	1	14	157	18	3	11	14	16	5	3
Conflicting Peds, #/hr	2	0	7	7	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	2	98	1	16	176	20	3	12	16	18	6	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	199	0	0	106	0	0	334	341	106	338	331	190
Stage 1	-	-	-	-	-	-	110	110	-	221	221	-
Stage 2	-	-	-	-	-	-	224	231	-	117	110	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1379	-	-	1491	-	-	621	583	951	618	590	854
Stage 1	-	-	-	-	-	-	898	806	-	784	722	-
Stage 2	-	-	-	-	-	-	781	715	-	890	806	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1375	-	-	1481	-	-	603	569	945	590	576	851
Mov Cap-2 Maneuver	-	-	-	-	-	-	603	569	-	590	576	-
Stage 1	-	-	-	-	-	-	890	799	-	780	711	-
Stage 2	-	-	-	-	-	-	762	704	-	860	799	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.6	10.3	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	716	1375	-	-	1481	-	-	610
HCM Lane V/C Ratio	0.044	0.002	-	-	0.011	-	-	0.044
HCM Control Delay (s)	10.3	7.6	0	-	7.5	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	0	31	14	0	7	11	151	5	3	150	6
Future Vol, veh/h	17	0	31	14	0	7	11	151	5	3	150	6
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	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	24	0	44	20	0	10	16	216	7	4	214	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	484	482	219	501	483	220	223	0	0	223	0	0
Stage 1	227	227	-	252	252	-	-	-	-	-	-	-
Stage 2	257	255	-	249	231	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	491	482	818	479	482	817	1340	-	-	1340	-	-
Stage 1	773	714	-	750	697	-	-	-	-	-	-	-
Stage 2	745	695	-	753	711	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	479	474	818	447	474	817	1340	-	-	1340	-	-
Mov Cap-2 Maneuver	479	474	-	447	474	-	-	-	-	-	-	-
Stage 1	762	712	-	740	687	-	-	-	-	-	-	-
Stage 2	726	685	-	710	709	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	12.3	0.5	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1340	-	-	654	526	1340	-	-
HCM Lane V/C Ratio	0.012	-	-	0.105	0.057	0.003	-	-
HCM Control Delay (s)	7.7	0	-	11.1	12.3	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	0	21	9	0	5	36	117	16	9	97	19
Future Vol, veh/h	11	0	21	9	0	5	36	117	16	9	97	19
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	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	2	2	2	3	2	3	2	3	3	3	3	2
Mvmt Flow	16	0	30	13	0	7	51	167	23	13	139	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	463	471	153	475	473	179	166	0	0	190	0	0
Stage 1	179	179	-	281	281	-	-	-	-	-	-	-
Stage 2	284	292	-	194	192	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.13	6.52	6.23	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.13	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.13	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.527	4.018	3.327	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	509	491	893	498	490	861	1412	-	-	1378	-	-
Stage 1	823	751	-	724	678	-	-	-	-	-	-	-
Stage 2	723	671	-	805	742	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	486	466	893	463	466	861	1412	-	-	1378	-	-
Mov Cap-2 Maneuver	486	466	-	463	466	-	-	-	-	-	-	-
Stage 1	790	743	-	695	651	-	-	-	-	-	-	-
Stage 2	688	644	-	770	735	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	11.7	1.6	0.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1412	-	-	693	555	1378	-	-
HCM Lane V/C Ratio	0.036	-	-	0.066	0.036	0.009	-	-
HCM Control Delay (s)	7.6	0	-	10.6	11.7	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0	-	-

September 26, 2022

Tim Russell, PE
Engineering Director
Lumos & Associates
308 N. Curry Street, Suite 200
Carson City, NV 89703

Traffic Impact Study Supplement to Andersen Ranch West – Addition of Ash Canyon (41 Single Family Lots)

Dear Mr. Russell,

This letter report summarizes the findings of a supplement analysis to the Traffic Impact Study (TIS) for Andersen Ranch West (Headway Transportation, July 27, 2022) to include an additional single family residential development (Ash Canyon) in the Future Plus Project scenario.

The Andersen Ranch West TIS was performed based on a site plan that included 61 single family lots and the previously approved 203 single-family lot Andersen Ranch (East) project. Ash Canyon would add an additional 41 single family lots on the east side of North Ormsby Boulevard, opposite the proposed Andersen Ranch West project. For the purposes of this supplemental study, "Plus Ash Canyon" refers to the addition of the Ash Canyon trips to the plus project scenario analyzed in the Andersen Ranch West Traffic Impact Study. In other words, this is a cumulative analysis including Andersen Ranch East, Andersen Ranch West, and Ash Canyon.

The location of the projects is shown on **Figure 1**.

Study Area and Evaluated Scenario

The study intersections analyzed were the same four (4) intersections identified by City staff for study in the Andersen Ranch West traffic impact study and include:

- North Ormsby Boulevard / North Project Road (with Manhattan Drive connection)
- North Ormsby Boulevard / South Project Road (with West Washington Street connection)
- North Ormsby Boulevard / West Washington Street (east of Ormsby)
- West Washington Street / Richmond Avenue

This supplement 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 scenario is:

- Future Year (20-year horizon) Plus Project Conditions, Plus Ash Canyon

PROJECT CONDITIONS

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 Ash Canyon project based on the Single-Family Detached Housing rates (ITE Code 210). **Table 1** shows the Daily, AM peak hour, and PM peak hour trip generation estimates.

Table 1: Ash Canyon Trip Generation Estimates

Land Use (ITE Code)	Size[1]	Project Trips[2]				
		Daily	AM In/Out	AM Total	PM In/Out	PM Total
Single-Family Detached Housing (210)	41 du	387	8 / 21	29	25 / 14	39

Notes: 1. du = dwelling units; 2. Trips were calculated based on the following rates per du: Daily – 9.43; AM – 0.70 (26% in / 74% out); PM – 0.94 (63% in / 37% out)
Source: Headway Transportation, 2022

As shown in **Table 1** above, the 41 dwelling unit Ash Canyon project is expected to generate approximately 387 Daily, 29 AM peak hour, and 39 PM peak hour trips.

Trip Distribution

Ash Canyon trips were distributed to the adjacent roadway network based on existing traffic volumes, the locations of complimentary land uses, and anticipated travel patterns. Ash Canyon trips were distributed based on the following (same distribution used for Andersen Ranch West):

- 25% to/from the north via North Ormsby Boulevard
- 50% to/from the east via West Washington Street
- 25% to/from the south via North Ormsby Boulevard

FUTURE YEAR PLUS PROJECT CONDITIONS

Traffic Volumes

Ash Canyon trips were added to the future plus project traffic volumes from the Andersen Ranch West TIS (including the background Andersen Ranch East project trips) to develop the Future Year Plus Project Plus Ash Canyon condition traffic volumes, shown on **Figure 1**.

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 Plus Ash Canyon traffic volumes. **Table 2** shows the level of service results, and the technical calculations are provided in **Appendix A**.

Table 2: Future Year Plus Project Plus Ash Canyon Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1]	LOS	Delay[1]	LOS
1	N. Ormsby Boulevard/ W. Washington Street	Side-Street Stop				
	Southbound Approach		5.1	A	4.3	A
	Westbound Approach		13.2	B	10.3	B
2	W. Washington Street/ Richmond Avenue	Side-Street Stop				
	Eastbound Approach		0.1	A	0.1	A
	Westbound Approach		5.6	A	0.5	A
	Northbound Approach		13.5	B	10.5	B
	Southbound Approach		27.3	D	11.5	B
3	N. Ormsby Boulevard/ North Project Road	Side-Street Stop				
	Northbound Approach		0.3	A	1.1	A
	Eastbound Approach		9.6	A	9.3	A
4	N. Ormsby Boulevard/ South Project Road	Side-Street Stop				
	Northbound Approach		0.3	A	0.9	A
	Eastbound Approach		9.8	A	9.3	A

Notes: 1. Delay is reported in seconds per vehicle for the worst approach/movement for side-street stop-controlled intersections.
Source: Headway Transportation, 2022

As shown in **Table 2**, the study intersections are expected to operate within policy level of service thresholds (level of service "D" or better) under Future Year Plus Project Plus Ash Canyon Conditions.

CONCLUSIONS

The following is a list of our key findings and recommendations:

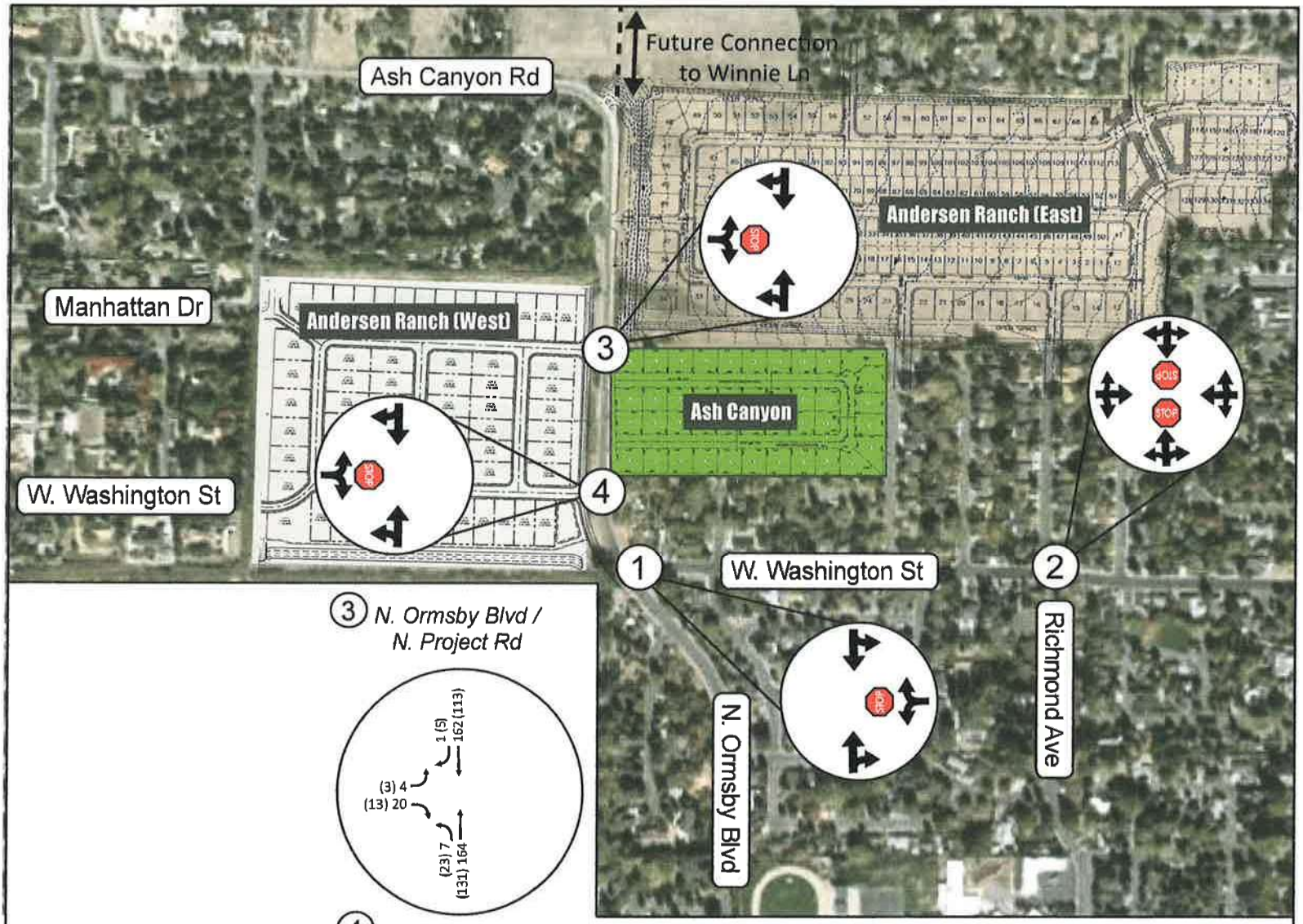
- The Ash Canyon project includes 41 Single-Family housing lots and is anticipated to generate approximately 387 Daily, 29 AM peak hour, and 39 PM peak hour trips on the external roadway network.
- Under Future Year Plus Project Plus Ash Canyon conditions, the study intersections are expected to operate within policy level of service thresholds (level of service "D" or better).

Sincerely,
HEADWAY TRANSPORTATION, LLC

Loren E. Chilson, PE
Principal

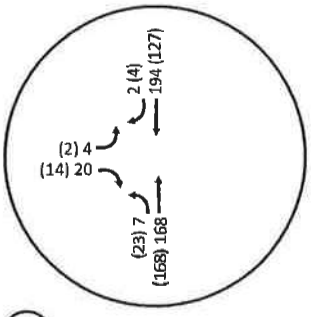
Attachments:

Figure 1 – Future Year Plus Project Plus Ash Canyon Traffic Volumes, Lane Configurations and Controls
Appendix A – LOS Worksheets

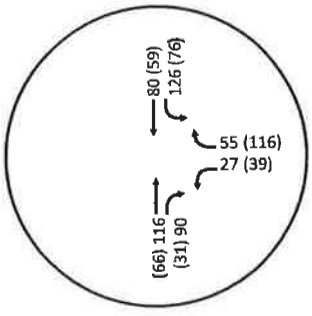


3 *N. Ormsby Blvd / N. Project Rd*

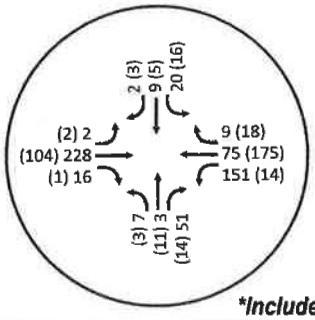
4 *N. Ormsby Blvd / S. Project Rd*



1 *N. Ormsby Blvd / W. Washington St*



2 *W. Washington St / Richmond Ave*



***Includes Andersen Ranch (East & West) and Ash Canyon**

HEADWAY TRANSPORTATION

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
- (#) - Study Intersection
- STOP - Stop
- ···· - Future Connection

Figure 1
Ash Canyon
Traffic Impact Study

Future Year Plus Project Plus Ash Canyon Traffic Volumes*, Lane Configurations, & Controls

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	55	116	90	126	80
Future Vol, veh/h	27	55	116	90	126	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	39	79	166	129	180	114

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	705	231	0	0	295	0
Stage 1	231	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	401	806	-	-	1261	-
Stage 1	805	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	340	806	-	-	1261	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	529	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.2	0	5.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	555	1261	-
HCM Lane V/C Ratio	-	-	0.211	0.143	-
HCM Control Delay (s)	-	-	13.2	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.5	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	228	16	151	75	9	7	3	51	20	9	2
Future Vol, veh/h	2	228	16	151	75	9	7	3	51	20	9	2
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	326	23	216	107	13	10	4	73	29	13	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	122	0	0	350	0	0	899	899	339	930	904	116
Stage 1	-	-	-	-	-	-	345	345	-	548	548	-
Stage 2	-	-	-	-	-	-	554	554	-	382	356	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1459	-	-	1203	-	-	259	278	701	247	276	934
Stage 1	-	-	-	-	-	-	668	634	-	519	515	-
Stage 2	-	-	-	-	-	-	515	512	-	638	627	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1456	-	-	1202	-	-	210	223	700	185	221	932
Mov Cap-2 Maneuver	-	-	-	-	-	-	210	223	-	185	221	-
Stage 1	-	-	-	-	-	-	665	631	-	516	415	-
Stage 2	-	-	-	-	-	-	401	412	-	566	624	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.6	13.5	27.3
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	510	1456	-	-	1202	-	-	205
HCM Lane V/C Ratio	0.171	0.002	-	-	0.179	-	-	0.216
HCM Control Delay (s)	13.5	7.5	0	-	8.6	0	-	27.3
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.6	0	-	-	0.7	-	-	0.8

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	20	7	164	162	1
Future Vol, veh/h	4	20	7	164	162	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	22	8	178	176	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	371	177	177	0	-	0
Stage 1	177	-	-	-	-	-
Stage 2	194	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	630	866	1399	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	626	866	1399	-	-	-
Mov Cap-2 Maneuver	626	-	-	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	839	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1399	-	814	-	-
HCM Lane V/C Ratio	0.005	-	0.032	-	-
HCM Control Delay (s)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	20	7	168	194	2
Future Vol, veh/h	4	20	7	168	194	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	22	8	183	211	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	411	212	213	0	-	0
Stage 1	212	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	597	828	1357	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	593	828	1357	-	-	-
Mov Cap-2 Maneuver	593	-	-	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	835	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1357	-	777	-	-
HCM Lane V/C Ratio	0.006	-	0.034	-	-
HCM Control Delay (s)	7.7	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	116	66	31	76	59
Future Vol, veh/h	39	116	66	31	76	59
Conflicting Peds, #/hr	3	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	43	129	73	34	84	66

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	327	90	0	0	107	0
Stage 1	90	-	-	-	-	-
Stage 2	237	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	669	971	-	-	1490	-
Stage 1	936	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	628	971	-	-	1490	-
Mov Cap-2 Maneuver	628	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	755	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	4.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	854	1490	-
HCM Lane V/C Ratio	-	-	0.202	0.057	-
HCM Control Delay (s)	-	-	10.3	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	104	1	14	175	18	3	11	14	16	5	3
Future Vol, veh/h	2	104	1	14	175	18	3	11	14	16	5	3
Conflicting Peds, #/hr	3	0	7	7	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	2	116	1	16	194	20	3	12	16	18	6	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	217	0	0	124	0	0	370	377	124	374	367	208
Stage 1	-	-	-	-	-	-	128	128	-	239	239	-
Stage 2	-	-	-	-	-	-	242	249	-	135	128	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1359	-	-	1469	-	-	588	556	929	585	563	835
Stage 1	-	-	-	-	-	-	878	792	-	767	709	-
Stage 2	-	-	-	-	-	-	764	702	-	871	792	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1355	-	-	1459	-	-	570	543	923	558	549	832
Mov Cap-2 Maneuver	-	-	-	-	-	-	570	543	-	558	549	-
Stage 1	-	-	-	-	-	-	870	785	-	763	698	-
Stage 2	-	-	-	-	-	-	745	691	-	841	785	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	10.5	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	688	1355	-	-	1459	-	-	580
HCM Lane V/C Ratio	0.045	0.002	-	-	0.011	-	-	0.046
HCM Control Delay (s)	10.5	7.7	0	-	7.5	0	-	11.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	13	23	131	113	5
Future Vol, veh/h	3	13	23	131	113	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	14	25	142	123	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	318	126	128	0	-	0
Stage 1	126	-	-	-	-	-
Stage 2	192	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	675	924	1458	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	662	924	1458	-	-	-
Mov Cap-2 Maneuver	662	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	841	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	1.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1458	-	860	-	-
HCM Lane V/C Ratio	0.017	-	0.02	-	-
HCM Control Delay (s)	7.5	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	13	23	168	127	4
Future Vol, veh/h	2	13	23	168	127	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	14	25	183	138	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	373	140	142	0	-	0
Stage 1	140	-	-	-	-	-
Stage 2	233	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	628	908	1441	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	806	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	616	908	1441	-	-	-
Mov Cap-2 Maneuver	616	-	-	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	806	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1441	-	854	-	-
HCM Lane V/C Ratio	0.017	-	0.019	-	-
HCM Control Delay (s)	7.5	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

TRAFFIC IMPACT STUDY

FOR

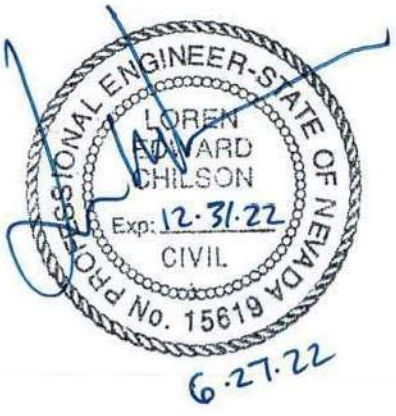
Andersen Ranch West

June 27, 2022

PREPARED FOR:

Lumos and Associates

PREPARED BY:



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YOUR QUESTIONS ANSWERED QUICKLY

Why did you perform this study?

This Traffic Impact Study evaluates the potential traffic impacts associated with the proposed Andersen Ranch West project located west of North Ormsby Boulevard and north of West Washington Street in Carson City, 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 traffic impacts, if any are found.

What does the project consist of?

The project consists of 61 single-family residential lots.

How much traffic will the project generate?

The project is anticipated to generate approximately 576 Daily, 43 AM peak hour, and 58 PM peak hour trips to the external roadway network.

How will project traffic affect the roadway network?

Under Existing Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds.

Under Future Year Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds.

Are any improvements recommended?

No improvements are recommended to mitigate traffic impacts as the roadway network will function within acceptable level of service thresholds with the addition of project traffic. The project will construct standard frontage improvements (curb, gutter, and sidewalk) along North Ormsby Boulevard adjacent to the project frontage. These frontage improvements will connect to the existing improvements located along the west side of North Ormsby Boulevard that end just south of the N. Ormsby Blvd./W. Washington St. intersection. In addition, Class 2 bike lanes are recommended in both directions along North Ormsby Boulevard adjacent to the project site.

It is anticipated the project will be required to pay its pro rata share of approximately $81,420 (5.9%) for the North Ormsby Boulevard extension to Winnie Lane based on a total cost estimate of $1,380,000 for the future extension project.

LIST OF FIGURES

LIST OF APPENDICES

INTRODUCTION

This report presents the findings of a Traffic Impact Study completed to assess the potential traffic impacts on local intersections associated with the Andersen Ranch West Project in Carson City, Nevada. This traffic impact study has been prepared to document existing traffic conditions, quantify traffic volumes generated by the proposed project, quantify traffic volumes that would reroute through 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 the preliminary project site plan is shown on **Figure 2**.

Study Area and Evaluated Scenarios

The project consists of 61 single-family residential lots. The project is located west of North Ormsby Boulevard, north of West Washington Street (and Ash Canyon Creek), and south of Ash Canyon Road. The study intersections were identified based on communications with Carson City staff and are shown on **Figure 1**. The following intersections are included in this study:

- North Ormsby Boulevard / North Project Road (with Manhattan Drive connection - plus project scenarios only)
- North Ormsby Boulevard / South Project Road (with West Washington Street connection - plus project scenarios only)
- North Ormsby Boulevard / West Washington Street (east of Ormsby)
- West Washington Street / Richmond Street

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
- Existing Plus Project Conditions
- Future Year (20-year horizon) Conditions (including trips generated from the Andersen Ranch "East" development)
- Future Year (20-year horizon) Plus Project Conditions

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), 6th 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, 6th Edition*

Level of service calculations were performed for the study intersections using the Synchro 11 software package with analysis and results reported in accordance with *HCM* methodology.

Level of Service Policy

Carson City

The *Carson City Municipal Code* provides the following level of service policy:

A traffic LOS D or better, in the context of providing a safe, efficient, and convenient transportation system, shall be maintained through mitigation of impacts from all conditions on all city maintained arterial and collector roads and at city road intersections, except as noted in the Carson City master plan.

Hence, LOS "D" has been used as the threshold criteria for this analysis.

Traffic engineering practitioners recognize that LOS E/F conditions for the side street approach, during the peak hour(s), does not indicate an intersection failure or the need for mitigation. This condition (LOS E/F for a minor side-street approach) commonly exists throughout urban and suburban areas and is manageable in most cases until both volumes and delay become excessive.

EXISTING CONDITIONS

Roadway Facilities

A brief description of the key roadways in the study area is provided below.

North Ormsby Boulevard is generally a north-south 2-lane (one lane in each direction) minor collector roadway, per NDOT roadway classification, that connects West King Street with Washington Street and Ash Canyon Road. North Ormsby Boulevard provides access to the east side of the project via two new project road intersections (and provides connections on the west side of the project site via roadway extensions with Manhattan Drive and West Washington Street). The posted speed limit in the project area is 35 mph.

West Washington Street in the project area is generally an east-west minor collector roadway, per NDOT roadway classification, with two lanes (one lane in each direction). On-street parallel parking is generally allowed on the north side of West Washington Street east of North Ormsby Boulevard. The posted speed limit is 25 mph.

Richmond Street is generally a north-south 2-lane (one lane in each direction) local roadway. Curb, gutter, sidewalk, and on-street parallel parking currently exists along both sides of the roadway. It does not have a posted speed limit, but has a *prima-facie* speed limit of 25 MPH.

Bicycle & Pedestrian Facilities

There are no bicycle or pedestrian facilities along North Ormsby Boulevard immediately adjacent to the project site. An existing marked crosswalk is located across North Ormsby Boulevard just south of its intersection with West Washington Street. Sidewalks exist on both sides of North Ormsby Boulevard south of West Washington Street.

Class 2 bike lanes are located along both sides of West Washington Street east of the project site. Sidewalks are provided along both sides of West Washington Street east of North Ormsby Boulevard and along both sides of Richmond Street. A crosswalk is located on the eastbound (west approach) leg of the West Washington Street/Richmond Avenue intersection.

Transit Facilities

Jump Around Carson (JAC) provides four buses on four distinct fixed routes. While there are no transit routes in the immediate vicinity of the proposed Andersen Ranch West Project, a stop location for JAC Routes 1, 2A, 2B, and 3 are all located within one mile at the Downtown Transfer Plaza. These existing routes leave on 1-hour headways between the hours of 6:30 AM and 6:30 PM on weekdays and 8:30 AM to 3:30 PM. A transfer to RTC Intercity and Tahoe Transport District 19x is also available at this location. **Exhibit 1** shows a JAC route map of where the Downtown Transfer Plaza is located.

Exhibit 1: JAC Route Map

Crash History

Vehicle crash data within the project vicinity was obtained from NDOT for the most recent five years available (January 1, 2016, to January 1, 2021). During the most recent five years, only one (1) crash was reported in the project area. This crash occurred on January 11, 2018, at the intersection of West Washington Street and North Ormsby Boulevard. This crash was reported as a property damage only type crash involving a single vehicle that ran off the roadway. A summary of this crash (as provided by NDOT) is included in this report as **Appendix A.**

Traffic Volumes

AM and PM peak hour traffic volumes were collected at the study intersections on April 4 and April 5, 2022, with the Carson City School District in session. The existing AM and PM peak hour intersection turning movement volumes are shown on **Figure 3**.

Intersection Level of Service Analysis

Existing AM and PM peak hour intersection level of service analysis was performed for the study intersections using Synchro 11 analysis software. The existing intersection lane configurations and controls are shown on **Figure 3. Table 2** shows the existing conditions level of service results, and the technical calculations are provided in **Appendix B**.

Table 2: Existing Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1]	LOS	Delay[1]	LOS
1	N. Ormsby Boulevard/ W. Washington Street	Side-Street Stop				
	Southbound Approach		4.3	A	3.3	A
	Westbound Approach		10.7	B	9.4	A
2	W. Washington Street/ Richmond Avenue	Side-Street Stop				
	Eastbound Approach		0.1	A	0.1	A
	Westbound Approach		5.7	A	0.6	A
	Northbound Approach		10.9	B	9.2	A
	Southbound Approach		17.3	C	9.8	A

Notes: 1. Delay is reported in seconds per vehicle for the worst approach/movement for side-street stop-controlled intersections.
Source: Headway Transportation, 2022

As shown in **Table 2**, the existing study intersections currently operate within policy level of service thresholds during the AM and PM peak hours.

PROJECT CONDITIONS

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 3** shows the project Daily, AM peak hour, and PM peak hour trip generation estimates.

Table 3: Project Trip Generation Estimates

Land Use (ITE Code)	Size[1]	Project Trips[2]				
		Daily	AM	AM In/Out	PM	PM In/Out
Single-Family Detached Housing (210)	61 du	576	43	11 / 32	58	37 / 21

Notes: 1. du = dwelling units; 2. Trips were calculated based on the following rates per du: Daily – 9.43; AM – 0.70 (26% in / 74% out); PM – 0.94 (63% in / 37% out)
Source: Headway Transportation, 2022

As shown in **Table 3** above, the project is expected to generate approximately 576 Daily, 43 AM peak hour, and 58 PM peak hour trips.

Since the proposed project will be connected to the residential neighborhoods to the west (via an extension of both Manhattan Drive and West Washington Street), additional rerouted trips were estimated (as diverted trips) and added to the project trips to and from the project site. It was assumed that 50% of the approximately 62 single family homes (i.e., 31 homes) located to the west of the project would reroute through the project site as shown in **Table 4** below.

Table 4: Diverted (rerouted) Trip Estimates

Land Use (ITE Code)	Size[1]	Project Trips[2]				
		Daily	AM	AM In/Out	PM	PM In/Out
Single-Family Detached Housing (210)	31 du	292	22	6 / 16	29	18 / 11

Notes: 1. du = dwelling units; 2. Trips were calculated based on the following rates per du: Daily – 9.43; AM – 0.70 (26% in / 74% out); PM – 0.94 (63% in / 37% out)
Source: Headway Transportation, 2022

As shown in **Table 4** above, rerouted traffic is expected to divert 292 Daily, 22 AM peak hour, and 29 PM peak hour trips from the surrounding roadway network to the study roadways.

Trip Distribution

Project trips and rerouted trips were distributed to the adjacent roadway network based on existing traffic volumes, the locations of complimentary land uses, and anticipated travel patterns. Project trips and rerouted trips were distributed based on the following:

- 25% to/from the north via North Ormsby Boulevard
- 50% to/from the east via West Washington Street
- 25% to/from the south via North Ormsby Boulevard

Trips entering/exiting the project site (including the rerouted traffic) were distributed with approximately half assigned to each project road (50% to north project road and 50% to the south project road). To be conservative, 100% of the project trips were assigned to North Ormsby Boulevard. Diverted trips were assigned to North Ormsby Boulevard and West Washington Street using the same distribution as the project trips. **Figure 4** shows the project trip distribution and assignment for the project trips plus the rerouted trips.

Project Access

The primary access to the project site will be via two (2) new east-west project roads that will each form a new "tee" intersection with North Ormsby Boulevard on the east side of the project site where North Ormsby Boulevard is relatively flat and straight. These two project roads will extend across the project site and provide secondary access to the west side of the project site via connections with Manhattan

Drive and West Washington Street respectively. The two project road intersections with North Ormsby Boulevard will be side street stop-controlled and analyzed as a "north" project road intersection and a "south" project road intersection.

EXISTING PLUS PROJECT CONDITIONS

Traffic Volumes

Project trips and rerouted trips (**Figure 4**) were added to the existing traffic volumes (**Figure 3**) to develop the Existing Plus Project conditions traffic volumes, shown on **Figure 5**.

Intersection Level of Service

AM and PM peak hour intersection level of service analysis was performed for the study intersections based on the Existing Plus Project traffic volumes, the existing peak hour factors from the counts, and the lane configurations and controls shown on **Figure 5**. **Table 5** shows the level of service results, and the technical calculations are provided in **Appendix C**.

Table 5: Existing Plus Project Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1]	LOS	Delay[1]	LOS
1	N. Ormsby Boulevard/ W. Washington Street	Side-Street Stop				
	Southbound Approach		4.9	A	4.1	A
	Westbound Approach		11.2	B	9.7	A
2	W. Washington Street/ Richmond Avenue	Side-Street Stop				
	Eastbound Approach		0.1	A	0.1	A
	Westbound Approach		5.4	A	0.5	A
	Northbound Approach		11.4	B	9.4	A
	Southbound Approach		18.7	C	10.3	B
3	N. Ormsby Boulevard/ North Project Road	Side-Street Stop				
	Northbound Approach		0.4	A	1.5	A
	Eastbound Approach		9.2	A	9.0	A
4	N. Ormsby Boulevard/ South Project Road	Side-Street Stop				
	Northbound Approach		0.4	A	1.3	A
	Eastbound Approach		9.4	A	9.0	A

Notes: 1. Delay is reported in seconds per vehicle for the worst approach/movement for side-street stop-controlled intersections.
Source: Headway Transportation, 2022

As shown in **Table 5**, the study intersections and driveways are expected to operate at LOS "C" or better with the additional of project traffic and rerouted traffic.

FUTURE YEAR CONDITIONS

The Future Year analysis estimates operating conditions for the 20-year horizon (year 2042).

Planned Roadway Improvements

The extension of North Ormsby Boulevard to Winnie Lane is shown as an improvement in the CAMPO 2050 unconstrained traffic model. This project will pay its pro rata share to construct the future connection.

Traffic Volume Forecasts

Future Year (2042) background traffic volumes were developed based on applying a 1% per year growth rate for 20 years (based on the projected growth of traffic volumes on North Ormsby Boulevard from 2030 to 2050 in the constrained Carson City Travel Demand Model). In addition, trips generated from the

proposed 203 single-family lot Andersen Ranch (East) project, were added to the study intersections (for both the Future Year No Project and Future Year Plus Project scenarios), based on trip distribution and assignment assumptions identified in the traffic impact study previously completed for that project (July 11, 2019 and supplement from December 12, 2019).

Figure 6 shows the Future Year (No Project) traffic volumes at the study intersections.

Intersection Level of Service

AM and PM peak hour intersection level of service analysis was performed for the study intersections using Synchro analysis software. **Table 6** shows the Future Year conditions level of service results, and the technical calculations are provided in **Appendix D**.

Table 6: Future Year Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1]	LOS	Delay[1]	LOS
1	N. Ormsby Boulevard/ W. Washington Street	Side-Street Stop				
	Southbound Approach		4.5	A	3.5	A
	Westbound Approach		12.0	B	9.8	A
2	W. Washington Street/ Richmond Avenue	Side-Street Stop				
	Eastbound Approach		0.1	A	0.2	A
	Westbound Approach		5.8	A	0.7	A
	Northbound Approach		12.5	B	10.0	B
	Southbound Approach		23.6	C	10.7	B

Notes: 1. Delay is reported in seconds per vehicle for the worst approach/movement for side-street stop-controlled intersections.
Source: Headway Transportation, 2022

As shown in **Table 6**, the study intersections are expected to operate within policy level of service thresholds under Future Year (no project) conditions.

FUTURE YEAR PLUS PROJECT CONDITIONS

Traffic Volumes

Project trips (**Figure 4**) were added to the Future Year (including the Andersen Ranch East project trips) traffic volumes (**Figure 6**) to develop the Future Year Plus Project conditions traffic volumes, shown on **Figure 7**.

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. **Table 7** shows the level of service results, and the technical calculations are provided in **Appendix E**.

Table 7: Future Year Plus Project Intersection Level of Service

Int. ID	Intersection	Control	AM		PM	
			Delay[1]	LOS	Delay[1]	LOS
1	N. Ormsby Boulevard/ W. Washington Street	Side-Street Stop				
	Southbound Approach		5.0	A	4.1	A
	Westbound Approach		12.8	B	10.1	B
2	W. Washington Street/ Richmond Avenue	Side-Street Stop				
	Eastbound Approach		0.1	A	0.2	A
	Westbound Approach		5.6	A	0.5	A
	Northbound Approach		13.2	B	10.3	B
	Southbound Approach		26.3	D	11.3	B
3	N. Ormsby Boulevard/ North Project Road	Side-Street Stop				
	Northbound Approach		0.3	A	1.1	A
	Eastbound Approach		9.6	A	9.2	A
4	N. Ormsby Boulevard/ South Project Road	Side-Street Stop				
	Northbound Approach		0.3	A	1.0	A
	Eastbound Approach		9.7	A	9.2	A

Notes: 1. Delay is reported in seconds per vehicle for the worst approach/movement for side-street stop-controlled intersections.
Source: Headway Transportation, 2022

As shown in **Table 7**, the study intersections are expected to operate within policy level of service thresholds under Future Year Plus Project Conditions.

Recommended Improvements

Consistent with prior projects, it is anticipated that this project will be required to pay a pro rata share of the cost to construct the Ormsby Boulevard Extension to Winnie Lane. It is estimated that 144 vehicles per day (i.e., 25% of the 576 daily trips generated from the project) would utilize the future extension. The CAMPO 2050 travel demand model estimates this extension will carry 2,450 vehicles per day. The pro rata share for this project is approximately 5.9% (144/2450 vehicles per day) or $81,420, which is 5.9% of the latest cost estimate received from Carson City staff of $1,380,000 to construct the roadway extension.

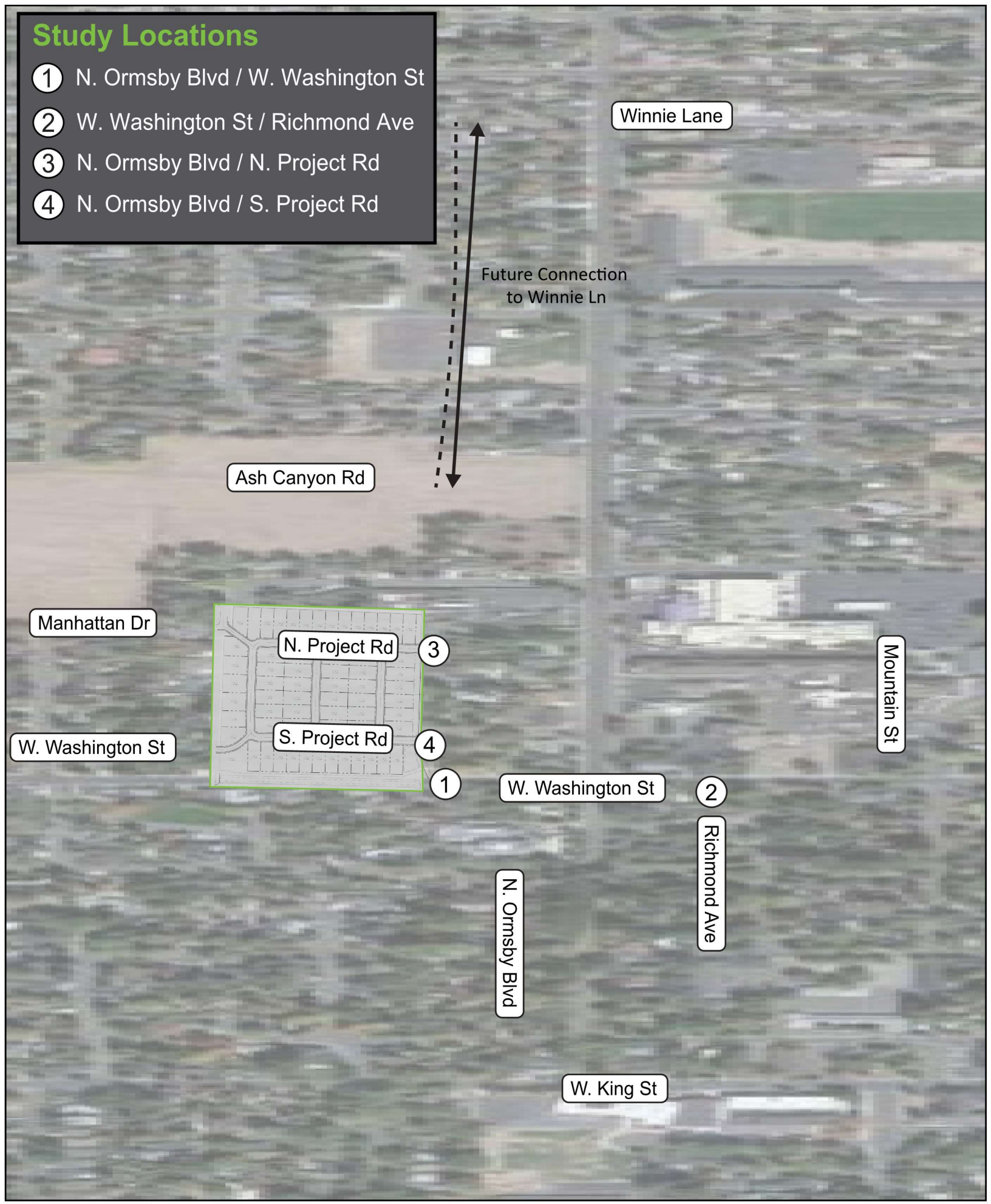
The project will construct frontage improvements (curb, gutter, and sidewalk) along the site frontage of North Ormsby Boulevard. These improvements will conform to the existing curb, gutter, and sidewalk located along the west side of North Ormsby Boulevard just south of the North Ormsby Boulevard/West Washington Street intersection.

It is recommended that the project install a Class 2 bike lane in both the northbound and southbound direction on North Ormsby Boulevard adjacent to the project site. Turn lanes on North Ormsby Boulevard at the project road intersections are not warranted based on NDOT standards at unsignalized intersections for two-lane roadways in urban areas.

CONCLUSIONS

The following is a list of our key findings and recommendations:

- The proposed project includes 61 Single-Family housing lots and is anticipated to generate approximately 576 Daily, 43 AM peak hour, and 58 PM peak hour trips on the external roadway network.
- Under Existing and Existing Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds.
- Under Future Year and Future Year Plus Project conditions, the study intersections are expected to operate within policy level of service thresholds.
- The project will construct curb, gutter, and sidewalk frontage improvements along the west side of North Ormsby Boulevard adjacent to the project site consistent with the existing curb, gutter, and sidewalk just south of the North Ormsby Boulevard/West Washington Street intersection.
- The installation of Class 2 bike lanes is recommended along North Ormsby Boulevard in both directions adjacent to the project site.
- It is anticipated the project will be required to pay its pro rata share of approximately $81,420 (5.9%) for the North Ormsby Boulevard extension to Winnie Lane based on a total cost estimate of $1,380,000 for the future extension project.

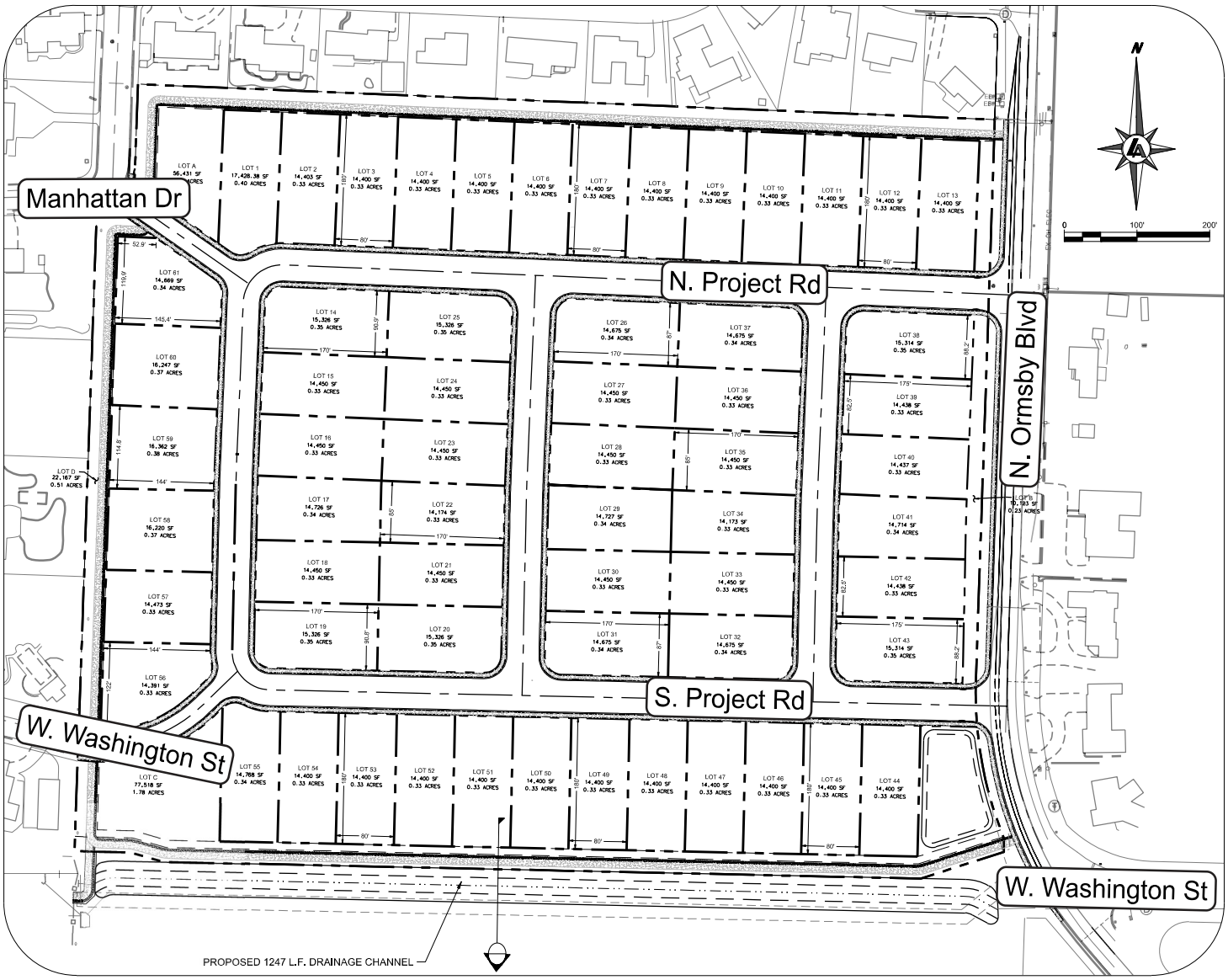


HEADWAY TRANSPORTATION

NO SCALE

- Project Site
(#) - Study Intersection
- - - - Future Connection

Figure 1
Andersen Ranch West
Traffic Impact Study
Project Location

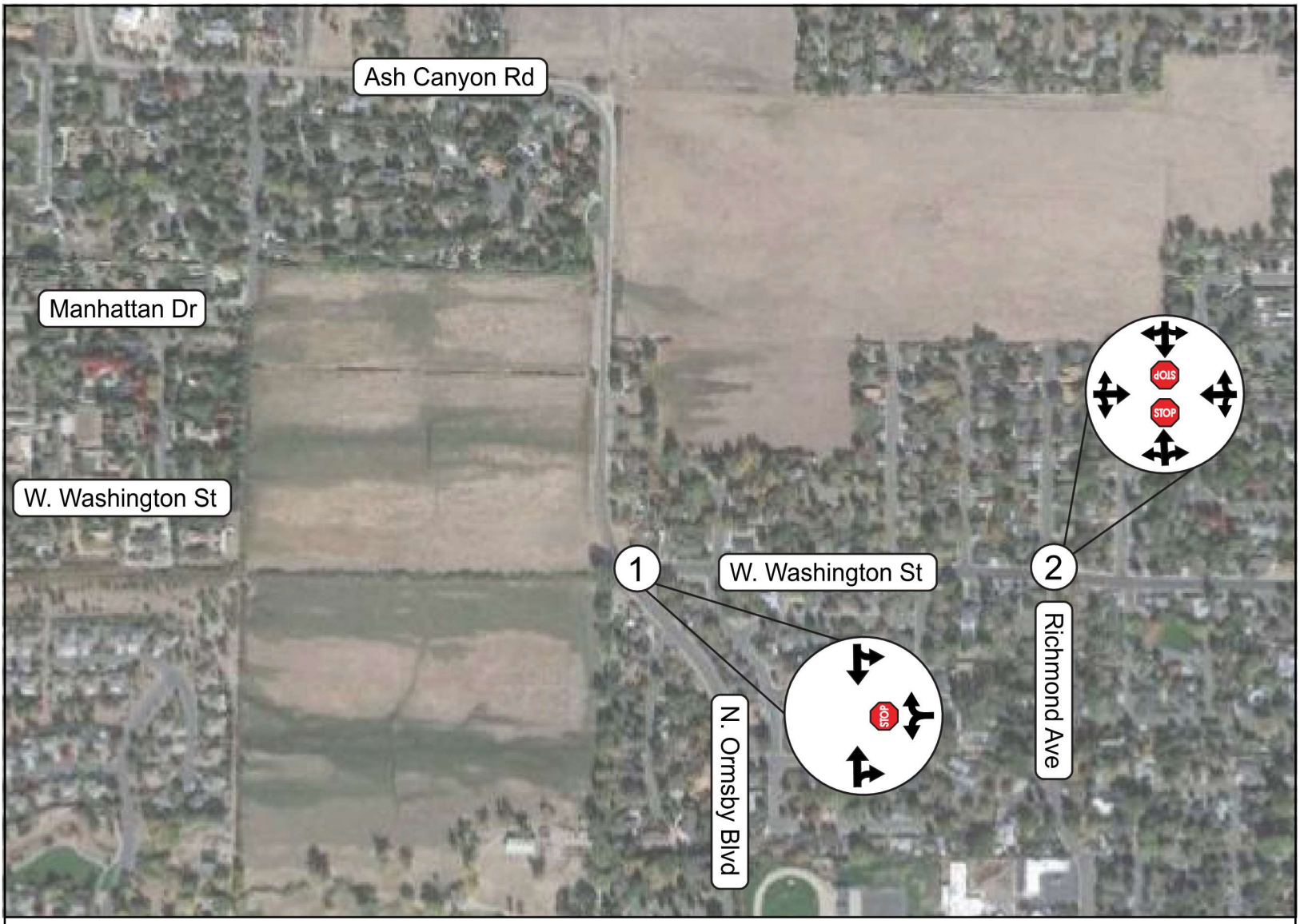


HEADWAY TRANSPORTATION

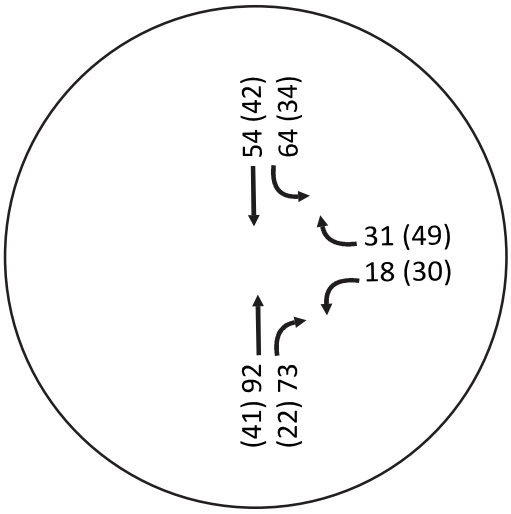
NO SCALE

Proposed 61 Single Family Lots

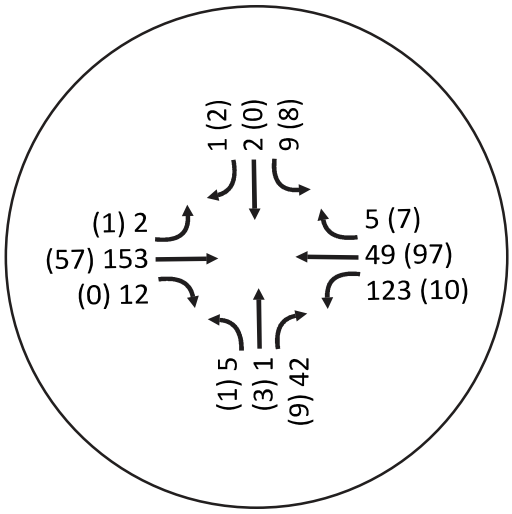
Figure 2
Andersen Ranch West
Traffic Impact Study
Preliminary Site Plan



1 *N. Ormsby Blvd / W. Washington St*



2 *W. Washington St / Richmond Ave*



HEADWAY TRANSPORTATION

NO SCALE

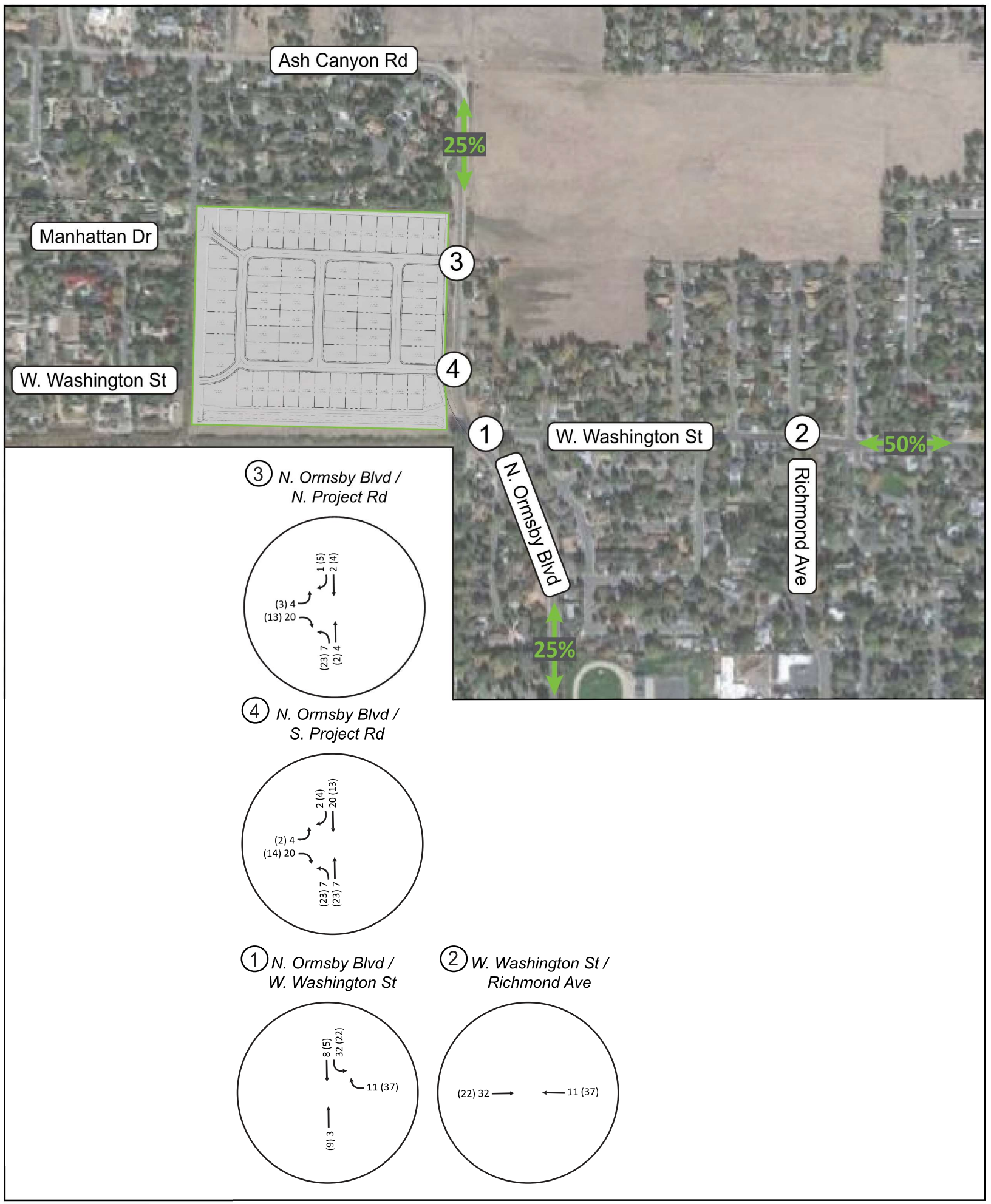
AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
- # - Study Intersection
- STOP - Stop

Figure 3

Andersen Ranch West
Traffic Impact Study

Existing Traffic Volumes, Lane Configurations, & Controls



HEADWAY TRANSPORTATION

NO SCALE

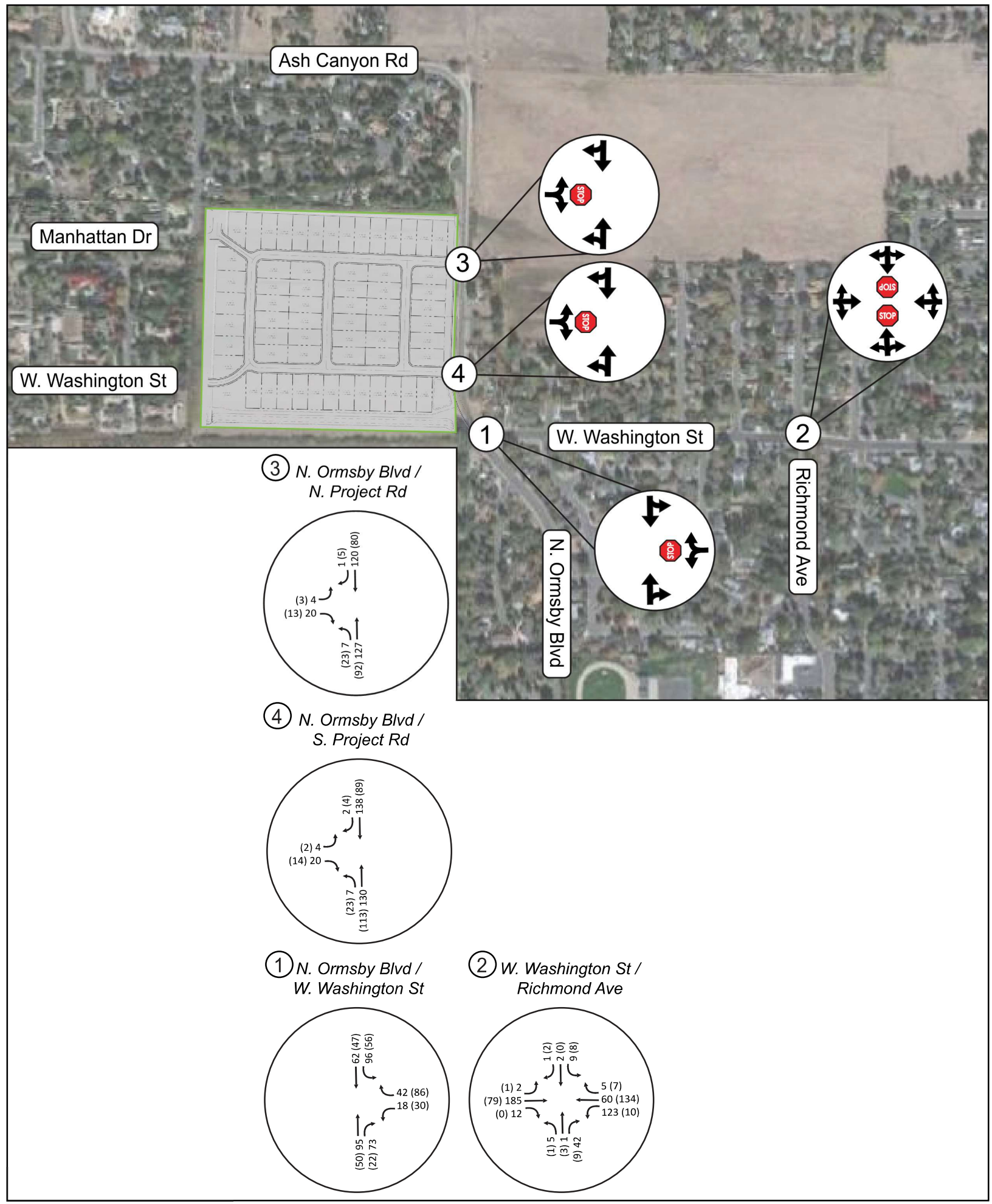
AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
- # - Study Intersection
- XX% - Trip Distribution

Figure 4

Andersen Ranch West
Traffic Impact Study

Project Trip Distribution & Assignment (including rerouted trips)



3 *N. Ormsby Blvd / N. Project Rd*

4 *N. Ormsby Blvd / S. Project Rd*

1 *N. Ormsby Blvd / W. Washington St*

2 *W. Washington St / Richmond Ave*

HEADWAY TRANSPORTATION

NO SCALE

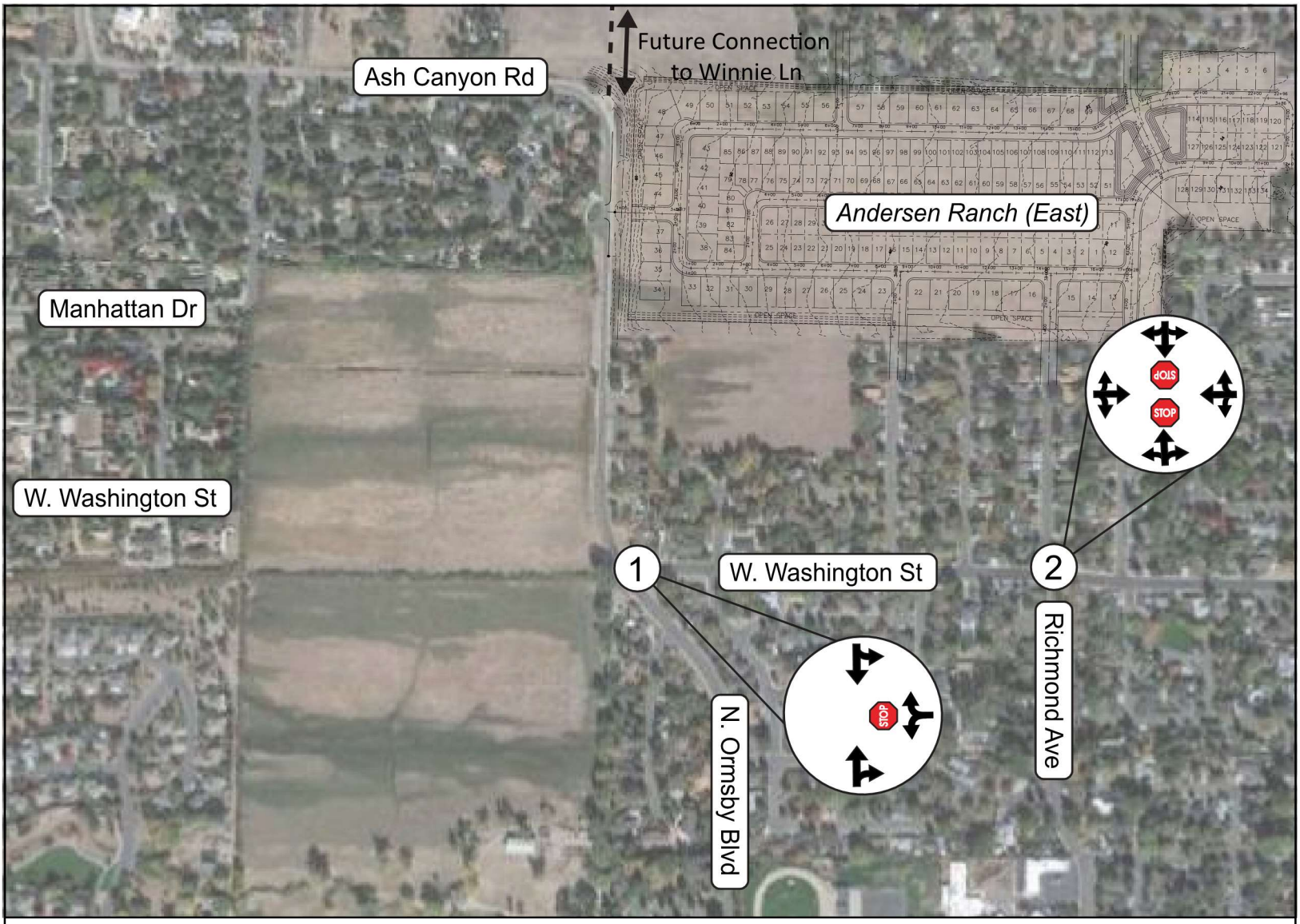
AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
- # - Study Intersection
- STOP - Stop

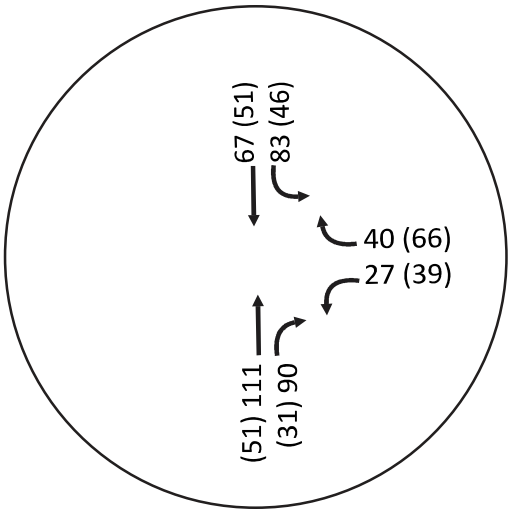
Figure 5

Andersen Ranch West
Traffic Impact Study

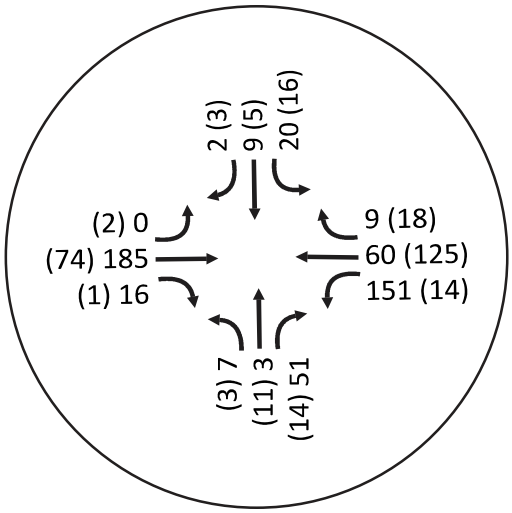
Existing Plus Project Traffic Volumes, Lane Configurations, & Controls



1 N. Ormsby Blvd / W. Washington St



2 W. Washington St / Richmond Ave



**Includes Andersen Ranch (East) Trip Gen*

HEADWAY TRANSPORTATION

NO SCALE

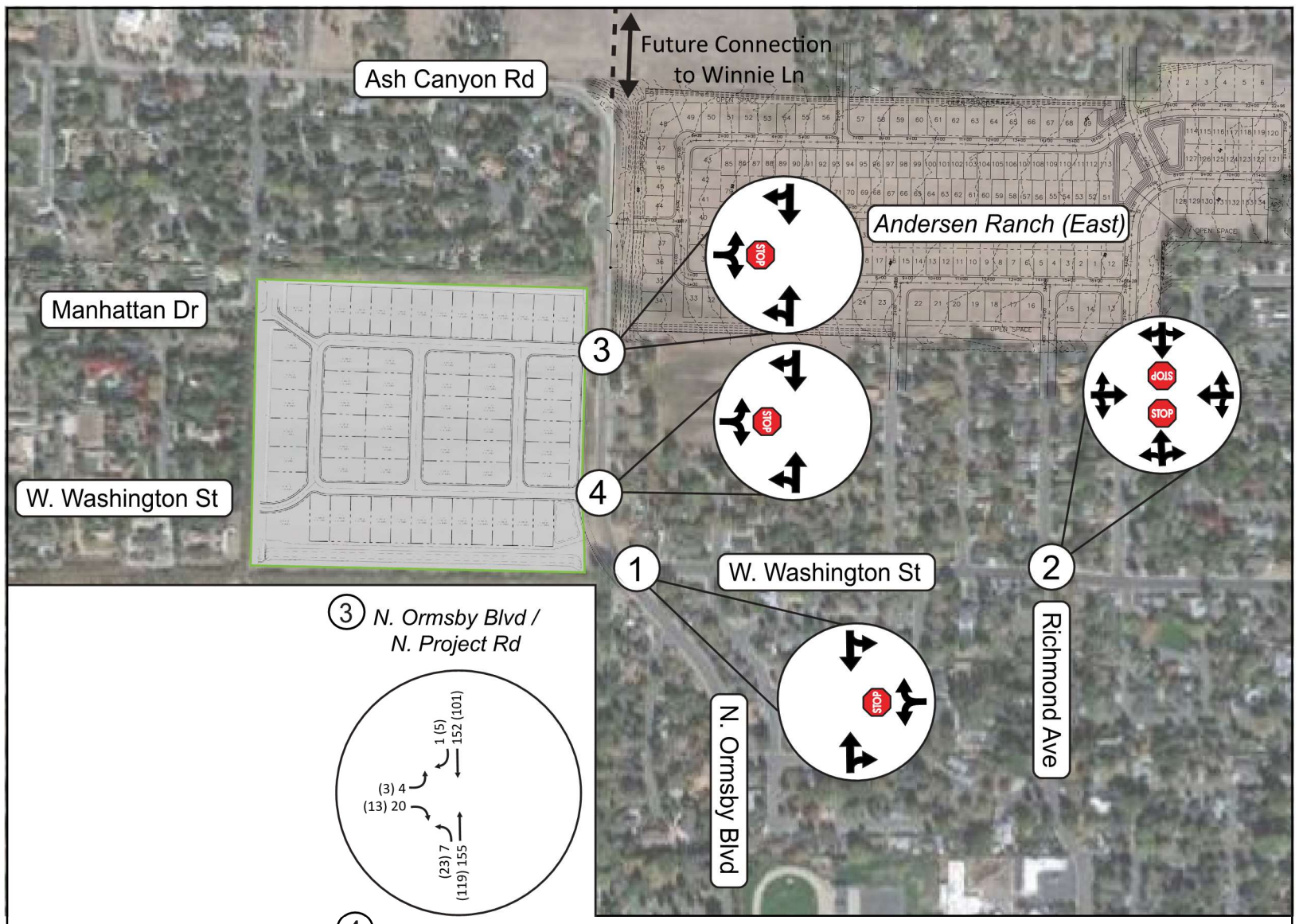
AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
- # - Study Intersection
- STOP - Stop
- ···· - Future Connection

Figure 6

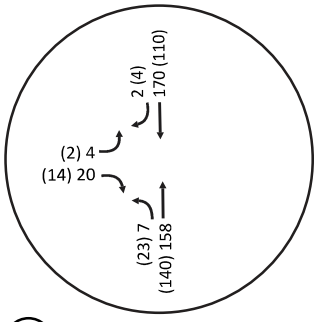
Andersen Ranch West
Traffic Impact Study

Future Year Traffic Volumes*, Lane Configurations, & Controls

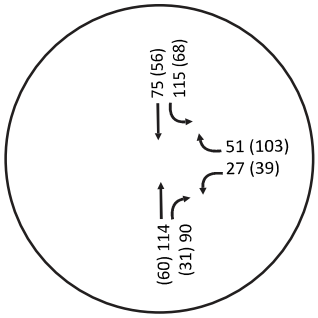


3 *N. Ormsby Blvd / N. Project Rd*

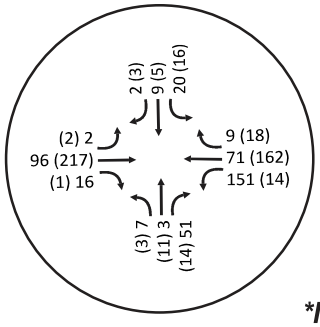
4 *N. Ormsby Blvd / S. Project Rd*



1 *N. Ormsby Blvd / W. Washington St*



2 *W. Washington St / Richmond Ave*



***Includes Andersen Ranch (East) Trip Gen**

HEADWAY TRANSPORTATION

NO SCALE

AM Peak Hour Volume (PM Peak Hour Volume)

- Project Site
- # - Study Intersection
- STOP - Stop
- ---- - Future Connection

Figure 7

Andersen Ranch West
Traffic Impact Study

Future Year Plus Project Traffic Volumes*, Lane Configurations, & Controls

Appendix A
NDOT Crash Data

INTERSECTION DETAIL
N ORMSBY BLVD @ W WASHINGTON ST
01 JAN 16 - 01 JAN 21

COUNTY: CARSON CITY

Crash Severity	Crash Date	Crash Year	Crash Time	Primary Street	Distance	Dir	Secondary Street	Weather	Fatalities	Injured	Property Damage Only	Injury Type	Crash Type	Total Vehicles
PROPERTY DAMAGE ONLY	11-Jan-2018	2018	08:01 PM	N ORMSBY BLVD	679	N	W WASHINGTON ST	OTHER			PDO		NON-COLLISION	1
									Sum: 0	Sum: 0	Count: 1			
									Count: 0	Count: 0				
									Total:	1				

V1 Type	V1 Dir	V1 Driver Age	V1 Lane Num	V1 Action	V1 Driver Factors	V1 Driver Distracted	V1 Vehicle Factors	V1 Most Harmful Event	V1 All Events
SEDAN, 4 DOOR	N			NOT REPORTED	APPARENTLY NORMAL		DROVE LEFT OF CENTER		RAN OFF ROAD LEFT: OVERTURN/ROLLOVER

V2 Type	V2 Dir	V2 Driver Age	V2 Lane Num	V2 Action	V2 Driver Factors	V2 Driver Distracted	V2 Vehicle Factors	V2 Most Harmful Event	V2 All Events	First Harmful Event	Nonmotorist Factors	Factors Roadway	Lighting	HWY Factors	Agency	Accident Num	Accident Rec Num
															CCSO	CCSO182	2404784

Appendix B
Existing LOS Calculations

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	31	92	73	64	54
Future Vol, veh/h	18	31	92	73	64	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	26	44	131	104	91	77

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	442	183	0	0	235	0
Stage 1	183	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	571	857	-	-	1326	-
Stage 1	846	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	530	857	-	-	1326	-
Mov Cap-2 Maneuver	530	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	726	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	4.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	699	1326	-
HCM Lane V/C Ratio	-	-	0.1	0.069	-
HCM Control Delay (s)	-	-	10.7	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

Intersection	
Int Delay, s/veh	4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	49	41	22	34	42
Future Vol, veh/h	30	49	41	22	34	42
Conflicting Peds, #/hr	3	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	34	56	47	25	39	48

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	189	60	0	0	72	0
Stage 1	60	-	-	-	-	-
Stage 2	129	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	802	1008	-	-	1534	-
Stage 1	965	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	779	1008	-	-	1534	-
Mov Cap-2 Maneuver	779	-	-	-	-	-
Stage 1	965	-	-	-	-	-
Stage 2	873	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	3.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	907	1534	-
HCM Lane V/C Ratio	-	-	0.099	0.025	-
HCM Control Delay (s)	-	-	9.4	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	153	12	123	49	5	5	1	42	9	2	1
Future Vol, veh/h	2	153	12	123	49	5	5	1	42	9	2	1
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	222	17	178	71	7	7	1	61	13	3	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	80	0	0	240	0	0	671	674	232	701	679	77
Stage 1	-	-	-	-	-	-	238	238	-	433	433	-
Stage 2	-	-	-	-	-	-	433	436	-	268	246	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1512	-	-	1321	-	-	369	375	805	352	372	981
Stage 1	-	-	-	-	-	-	763	706	-	599	580	-
Stage 2	-	-	-	-	-	-	599	578	-	735	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1509	-	-	1320	-	-	325	321	804	288	318	979
Mov Cap-2 Maneuver	-	-	-	-	-	-	325	321	-	288	318	-
Stage 1	-	-	-	-	-	-	761	704	-	597	497	-
Stage 2	-	-	-	-	-	-	511	495	-	677	699	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.7	10.9	17.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	679	1509	-	-	1320	-	-	311
HCM Lane V/C Ratio	0.102	0.002	-	-	0.135	-	-	0.056
HCM Control Delay (s)	10.9	7.4	0	-	8.2	0	-	17.3
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0.5	-	-	0.2

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	57	0	10	97	7	1	3	9	8	0	2
Future Vol, veh/h	1	57	0	10	97	7	1	3	9	8	0	2
Conflicting Peds, #/hr	3	0	7	7	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	1	64	0	11	109	8	1	3	10	9	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	120	0	0	71	0	0	210	215	71	211	211	117
Stage 1	-	-	-	-	-	-	73	73	-	138	138	-
Stage 2	-	-	-	-	-	-	137	142	-	73	73	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1474	-	-	1536	-	-	749	684	994	748	688	938
Stage 1	-	-	-	-	-	-	939	836	-	868	784	-
Stage 2	-	-	-	-	-	-	869	781	-	939	836	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1470	-	-	1526	-	-	736	671	987	730	675	934
Mov Cap-2 Maneuver	-	-	-	-	-	-	736	671	-	730	675	-
Stage 1	-	-	-	-	-	-	931	829	-	865	775	-
Stage 2	-	-	-	-	-	-	859	772	-	925	829	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.6	9.2	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	870	1470	-	-	1526	-	-	763
HCM Lane V/C Ratio	0.017	0.001	-	-	0.007	-	-	0.015
HCM Control Delay (s)	9.2	7.5	0	-	7.4	0	-	9.8
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Appendix C
Existing Plus Project LOS Calculations

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	42	95	73	96	62
Future Vol, veh/h	18	42	95	73	96	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	26	60	136	104	137	89

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	551	188	0	0	240	0
Stage 1	188	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.13	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.227	-
Pot Cap-1 Maneuver	494	851	-	-	1321	-
Stage 1	842	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	440	851	-	-	1321	-
Mov Cap-2 Maneuver	440	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	625	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	4.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	665	1321	-
HCM Lane V/C Ratio	-	-	0.129	0.104	-
HCM Control Delay (s)	-	-	11.2	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.3	-

Intersection	
Int Delay, s/veh	5.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	86	50	22	56	47
Future Vol, veh/h	30	86	50	22	56	47
Conflicting Peds, #/hr	3	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	34	98	57	25	64	53

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	254	70	0	0	82	0
Stage 1	70	-	-	-	-	-
Stage 2	184	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	737	996	-	-	1522	-
Stage 1	955	-	-	-	-	-
Stage 2	850	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	703	996	-	-	1522	-
Mov Cap-2 Maneuver	703	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	4.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	899	1522	-
HCM Lane V/C Ratio	-	-	0.147	0.042	-
HCM Control Delay (s)	-	-	9.7	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	185	12	123	60	5	5	1	42	9	2	1
Future Vol, veh/h	2	185	12	123	60	5	5	1	42	9	2	1
Conflicting Peds, #/hr	2	0	1	1	0	2	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	69	69	69	69	69	69	69	69	69	69	69	69
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	3	268	17	178	87	7	7	1	61	13	3	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	96	0	0	286	0	0	733	736	278	763	741	93
Stage 1	-	-	-	-	-	-	284	284	-	449	449	-
Stage 2	-	-	-	-	-	-	449	452	-	314	292	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.13	6.53	6.23	7.13	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.227	-	-	2.227	-	-	3.527	4.027	3.327	3.527	4.027	3.327
Pot Cap-1 Maneuver	1491	-	-	1270	-	-	335	345	758	320	343	961
Stage 1	-	-	-	-	-	-	721	675	-	587	571	-
Stage 2	-	-	-	-	-	-	587	569	-	695	669	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1488	-	-	1269	-	-	293	293	757	259	291	959
Mov Cap-2 Maneuver	-	-	-	-	-	-	293	293	-	259	291	-
Stage 1	-	-	-	-	-	-	719	673	-	585	485	-
Stage 2	-	-	-	-	-	-	496	484	-	636	667	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	5.4	11.4	18.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	632	1488	-	-	1269	-	-	281
HCM Lane V/C Ratio	0.11	0.002	-	-	0.14	-	-	0.062
HCM Control Delay (s)	11.4	7.4	0	-	8.3	0	-	18.7
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0.5	-	-	0.2

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	1	79	0	10	134	7	1	3	9	8	0	2
Future Vol, veh/h	1	79	0	10	134	7	1	3	9	8	0	2
Conflicting Peds, #/hr	3	0	7	7	0	3	1	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	1	89	0	11	151	8	1	3	10	9	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	162	0	0	96	0	0	277	282	96	278	278	159
Stage 1	-	-	-	-	-	-	98	98	-	180	180	-
Stage 2	-	-	-	-	-	-	179	184	-	98	98	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1423	-	-	1504	-	-	677	628	963	676	632	889
Stage 1	-	-	-	-	-	-	911	816	-	824	752	-
Stage 2	-	-	-	-	-	-	825	749	-	911	816	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1419	-	-	1494	-	-	665	616	957	660	620	886
Mov Cap-2 Maneuver	-	-	-	-	-	-	665	616	-	660	620	-
Stage 1	-	-	-	-	-	-	904	809	-	821	744	-
Stage 2	-	-	-	-	-	-	816	741	-	897	809	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	9.4	10.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	824	1419	-	-	1494	-	-	695
HCM Lane V/C Ratio	0.018	0.001	-	-	0.008	-	-	0.016
HCM Control Delay (s)	9.4	7.5	0	-	7.4	0	-	10.3
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	20	7	127	120	1
Future Vol, veh/h	4	20	7	127	120	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	22	8	138	130	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	285	131	131	0	-	0
Stage 1	131	-	-	-	-	-
Stage 2	154	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	705	919	1454	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	874	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	701	919	1454	-	-	-
Mov Cap-2 Maneuver	701	-	-	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	874	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1454	-	874	-	-
HCM Lane V/C Ratio	0.005	-	0.03	-	-
HCM Control Delay (s)	7.5	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	13	23	92	80	5
Future Vol, veh/h	3	13	23	92	80	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	14	25	100	87	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	240	90	92	0	-	0
Stage 1	90	-	-	-	-	-
Stage 2	150	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	748	968	1503	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	878	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	735	968	1503	-	-	-
Mov Cap-2 Maneuver	735	-	-	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	878	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	1.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1503	-	914	-	-
HCM Lane V/C Ratio	0.017	-	0.019	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	20	7	130	138	2
Future Vol, veh/h	4	20	7	130	138	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	22	8	141	150	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	308	151	152	0	-	0
Stage 1	151	-	-	-	-	-
Stage 2	157	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	684	895	1429	-	-	-
Stage 1	877	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	680	895	1429	-	-	-
Mov Cap-2 Maneuver	680	-	-	-	-	-
Stage 1	872	-	-	-	-	-
Stage 2	871	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1429	-	850	-	-
HCM Lane V/C Ratio	0.005	-	0.031	-	-
HCM Control Delay (s)	7.5	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-