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Page 1 of 148



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West Meadows Planned Unit Development Handbook

This page added to provide additional information required by NRS 111.312 Sections 1-2.
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When Recorded Return to:
KLS Planning & Design, Inc.
9480 Double Diamond Parkway
Reno, NV 89521

NOTICE OF DESIGN STANDARDS HANDBOOK FOR WEST MEADOWS PLANNED UNIT DEVELOPMENT

Notice is hereby given that the approval of the Final "West Meadows Planned Unit Development Handbook" was certified by the Reno City Council, on February 25, 2015. A copy of the Handbook is attached hereto and incorporated herein.

DATED this 27 day of Feb, 2015.

West Meadows Investments LLC, a Nevada Limited Liability Company

By [Signature]

Robert Fitzgerald, Manager

State of Nevada)
) ss
County of Washoe)

On this 27 day of February, 2015, personally appeared before me, a Notary Public, personally known to me (or proved) to be the person whose name is subscribed to the above instrument who acknowledged to me that he executed this instrument.

In witness whereof, I have hereunto set my hand and affixed my official stamp at my office in the Count of Washoe the day and year in this certificate first above written.

[Signature] (Seal)
Signature of Notary Public



WEST MEADOWS

Planned Unit Development Handbook

PREPARED FOR:
CITY OF RENO
1 EAST FIRST STREET
RENO, NV 89505

Adopted by Reno City Council on December 10, 2014

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- Appendix B - Legal Description
- Appendix C - JBR Environmental Policy Letter (dated January 7, 2014)
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- Appendix E - Traffic Study by Krater Consulting (revised October 2014)

1. Project Description

a. Introduction

The West Meadows PUD includes 5 parcels and 199.1± acres. The project site is located on Old Highway 40 in Verdi, and is roughly 1.35 miles from the westbound off-ramp of the I-80/East Verdi interchange. It is bordered by the Truckee River to the west, the entire south boundary is along Highway 40, and to the north & east is the approved Mortensen-Garson PUD. (See Figure 1, Vicinity Map)

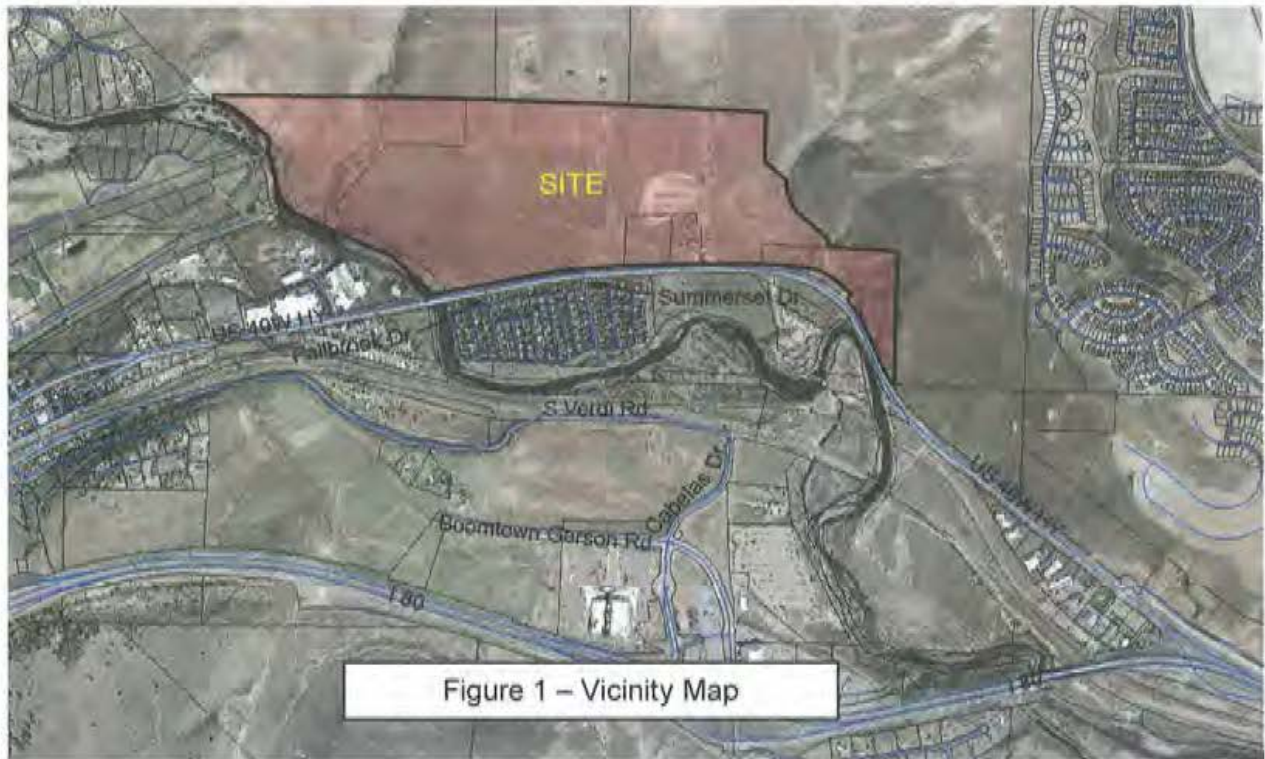
Current access to the site is available from Highway 40 which will be the sole access to the property at several locations. Property to the north and east is owned by private parties. Property to the south directly across the highway is the River Oak Subdivision (Glen Meadows Village), a small lot single family community.

The development plan for the West Meadows PUD builds upon the Verdi Area Plan goals and adjacent uses or planned uses to the north and south and will offer a mix of commercial and residential uses. This Planned Unit Development Handbook (PUD) represents the design standards to guide development of the 199.1± acre site.

b. Objective

The objective of the West Meadows PUD is to establish design standards and expectations with development of the property and address the following:

- Establish a nice residential community that respects the natural environment and provides a mix of single family housing opportunities.
- Establishment of a high quality neighborhood commercial center that includes commercial, and some possible office, employment and residential opportunities consistent with Verdi character;
- Sensitivity and compatibility with adjacent uses to the north, east and south;
- Pedestrian connectivity through the Open Space toward the Truckee River and adjacent single family land to the north and throughout the site.
- Utilization of sensitive grading with respect to the hillside environment, the varied topography, and the drainage ways traversing the property; and
- Future roadway realignments and extensions if appropriate.



c. Site Conditions

The site is currently approved for single family use. The property is relatively flat (mostly 0% to 10% grade) where development is planned and slopes more intensely to the north where the open space corridors are designated. There are several natural drianageways that traverse the site. The concept of "avoidance" has been implemented for the significant environmental features that are natural to the site, which include the drianageways and the hillside topography. Consistent with that notion, preliminary environmental analysis (Appendix C) agrees with the avoidance approach. When precise development plans are proposed, there will be road crossings of the drianageways that will require further study at that time to be reviewed through the required special use permit process. The developed portions of the site are located entirely outside of any floodways.

d. Project Development Concept

The project concept is to develop a single family community with support commercial uses and some community commercial uses. Also, high quality business and employment uses are expected to be in the commercial mix. The project will be consistent with expectations of the community and community planning elements to the west. The development plan includes the following land use categories, acreages and maximum allowable development yield and/or densities. See the Land Use Plan in Figure 2, on page 3.

Table 1 – Proposed Land Uses

Proposed Land Use	Area (in acres)	Maximum Density/Intensity	Maximum Yield
Open Space	90.5	None	None
Single Family	104.6	Max of 3.1 du/ac ¹	324 du
Neighborhood Commercial ²	4.0	.20 FAR	34,848 sq. ft.
Total	199.1	-----	-----

Note¹: The minimum lots size is 4,000 square feet and proposed lots sizes will vary for market segmentation purposes. Gross density for the single family area shall not exceed 3.1 du per acre based on the 104.6 acres of usable area. The maximum number of single family residential units is 324 with 4 acres of neighborhood commercial or 336 single family in lieu of the 4 acres of commercial.

Note²: In the event that multifamily residential uses are proposed, as allowed in the Neighborhood Commercial area (per Table 2), the maximum density shall be 3.1 dwelling units per acre. The maximum building area for commercial uses shall be decreased accordingly (i.e. 2 acres used for commercial has a maximum yield of 17,424 sq ft). Should multifamily residential uses be proposed in the Neighborhood Commercial area (subject to an approved SUP) the total number of residential dwelling units within the PUD plan area shall not exceed 336 units.

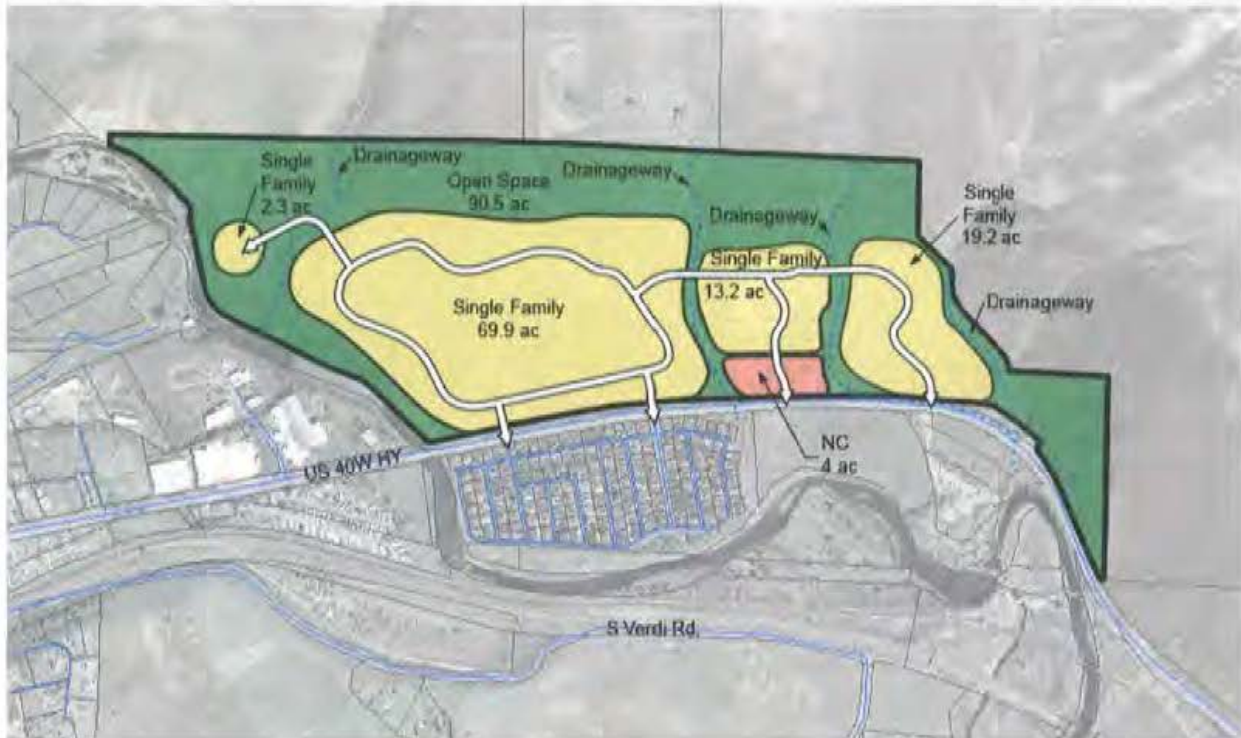


Figure 2 – Land Use Plan

e. Development Schedule/Phasing

Build out of the West Meadows PUD will be dependent on market conditions and is estimated to be about 5 to 10 years. A specific phasing plan is not proposed for the project at this time. However, the first phase is intended to be a residential phase and then commercial will be added as market conditions support the need for commercial. Grading and offsite infrastructure is expected to begin within 6 months of approval of the PUD. The ten year time frame shall start at the time of final approval (upon recording of certified document). If the project is not completed at the end of the ten years (i.e. all final maps are not recorded and maximum allowable building area is not completed) then the PUD will require application for an amendment to extend the project phasing prior to further development. This time frame does not apply to the construction of homes on individual lots with final map approval or for commercial tenant improvements.

f. Administration

The West Meadows PUD shall be administered by the Zoning Administrator or his/her designee as defined in the City of Reno Annexation and Land Development Code (RMC). All RMC references within this document are "as amended."

There shall be a Master Developer in place from the first phase of development of the PUD. This Master Developer shall continue throughout the development of the PUD until and unless a master property owner's association or other entity is created to serve the role of Master Developer. The role of the Master Developer, for the purposes of this PUD, shall be:

- To prescribe and administer methods and procedures to ensure and control the quality of development that occurs within the PUD;
- Maintain all common area improvements, storm drain and/or channels, detention and/or other flood control facilities;
- Construct, or have constructed, all pedestrian pathways, and sidewalks and common area landscaping;
- Only the Reno City Council and the Master Developer or his/her authorized designee may initiate an amendment to the PUD handbook.

g. Review Process

Prior to the submittal of a development application to the City, each project shall be reviewed by the Master Developer at their sole discretion. Each development application submitted to the City shall include written documentation of approval from the Master Developer. Written approval by the Master Developer does not constitute the City's approval of development applications. The construction of individual projects, including accessory structures shall follow the City of Reno building permit process. For some uses where a special use permit or site plan review is required, these processes shall precede the building permit process, as applicable.

h. Appeals

The applicant or developer may appeal any decision, comments, or recommendations of the Administrator in accordance with RMC Section 18.06.208 "Appeals."

i. Conflicts

In the event of a conflict between these design standards and City Code, these standards shall govern development of the West Meadows PUD. When a specific standard is not addressed by the PUD, then the applicable section of Reno Municipal Code Title 18, as amended, at the time of review shall prevail.

j. Flexibility

The Land Use Plan and Development Standards contained herein are intended to depict the general acreages of the various land uses allowed within the West Meadows PUD. Sufficient flexibility shall be allowed to permit detailed planning and design at the time of actual development. The acreage of each land use category may be increased by up to 5% to accommodate minor modifications to the project, if it is demonstrated to the satisfaction of the Zoning Administrator that additional acreage is necessary due to constraints and/or design issues to accommodate the project and that the open space designation is protected to the maximum extent feasible. This provision shall not exceed a cumulative total of 5% for each land use category.

k. Modifications

The Administrator shall have the ability to grant minor deviations as outlined in RMC 18.06.411(a)(1), "Minor Deviations." Minor deviations shall be subject to written approval from the Master Developer. Deviations of 10% or more shall conform to the City of Reno Variance process as outlined in RMC 18.06.408 "Variance."

2. Infrastructure

a. Access

Primary access to the property will be from US Highway 40. There will be several access points proposed as shown on the circulation plan. There is about one mile of site frontage on Highway 40 to ensure safe and adequate separation of intersections to the project. Highway 40 is classified as a Minor Arterial by the Nevada Department of Transportation (NDOT) and as a Moderate Access Control Arterial in the RTC Regional Transportation Plan. It is expected that several deceleration lanes will be added for project access when design is more defined. Right in, right out access may also be proposed at some driveways. US 40 is an NDOT roadway and all intersection connections must meet NDOT standards, have NDOT approval and obtain NDOT encroachment permits prior to construction of improvements.

b. Parking

Parking for all land use designations in the West Meadows PUD shall be provided and constructed in accordance with RMC Article XI Off-Street Parking and Loading, unless expressly modified within these development standards.

c. Traffic

Project traffic is discussed in detail in the Traffic Study and letter update prepared by KK Consulting (Appendix E). The original trip generation was based on the assumption of land uses acreages and gross building square footages that include a residential and commercial component. The updated trip generation, however, is based on land uses and acreages (that do not include residential). The average daily trips and peak hour trips analyzed in the Traffic Study are based on the land use assumption generating the highest traffic volumes. In summary, the total daily trips for the project shall not exceed 4,604 Average Daily Trips and 389 PM peak hour trips without an amendment to the PUD Handbook. A trip generation letter will be required with each project to verify the traffic volumes are within the trip generation envelopes.

d. Sanitary Sewer Service

The project is located within the City of Reno service district, and is served by the Truckee Meadows Water Reclamation Facility (TMWRF). Verdi is served by the Verdi-Lawton's Interceptor which is a large capacity interceptor. In the area of the project it is 24 inch and indications are the capacity is more than adequate to serve the project at build out. In fact, current flows in the interceptor are so low that additional flows are desired to increase the self-cleaning characteristics of the interceptor and reduce maintenance costs. The interceptor is located on the south side of Old US 40 and just off the roadway across from the east edge of the property. Given the project's proximity to the sewer interceptor, it is anticipated that future development will include a direct connection to the 24" public main, and a gravity flow sewer network within the project site. This assumption will verify the existing main is at a sufficient depth to allow for gravity flow from the property. As the West Meadows PUD allows some flexibility in land use categories, and final site layouts are not known at this time, a Technical Sanitary Sewer Study shall be required with each development permit/application on the site to ensure that adequate facilities are provided to service each project.

e. Domestic Water Service

Currently, the project site is located within the Truckee Meadows Water Authority (TMWA) service area. While adequate water capacity exists to serve the project, system improvements are needed to deliver adequate flows to the project. West Meadows Investments is currently in the process of designing a main extension to the property from the Verdi Business Park that will connect the property to the TMWA system. Upon completion, TMWA can provide service to approximately 150 to 200 homes. Further development will require additional upstream improvements in the TMWA system to serve the project at build out and includes increased pumping capacity, targeted main size increases and increased storage. The anticipated improvements are typical for a project of this size.

f. Hydrology

Stormwater flows originating on portions of the southwest flank of Mt. Peavine, flow downhill through the proposed development on their way to the Truckee River. Presently, the project site is bisected by four drainage ways that collect and convey stormwaters through this site in a roughly north to south alignment. These drainage ways have been excluded from the developable area of the project and will be left in their native condition as much as possible, with limited improvements made to efficiently capture flows and convey them thru the project site. Furthermore, flood zones associated with the drainage ways and depicted by FEMA have been excluded from the developable areas of the project. During the development of the project, a final Hydrologic Analysis will be completed and utilized during the construction phase in adherence with County and State Codes. Any stormwaters that increase due to construction of the proposed development will be captured and mitigated through the use of storm drains, stilling basins, and detention basin systems prior to being released to existing stormwater flowpaths at pre-development flow rates. Development of the project site will include low impact development (LID) treatment systems such as bio-swales, infiltration swales, etc. that will drain to the city system to the south as well.

g. Electric Service

Electric service will be provided by NV Energy. There is an overhead line with 3 phase power on the south side of Old Highway 40 adjacent to the property. There is capacity available in the system to serve the project at build out. The property currently has no direct electrical service to it, but being adjacent to the NV Energy overhead transmission lines make for a routine service connection. The project will be served by direct connections to these overhead lines with appropriate voltage step-downs and associated underground infrastructure as necessary within the development site.

h. Natural Gas

Gas service will be provided by NV Energy. The subject property has no direct natural gas service to it, but is adjacent to existing NV Energy gas mains adjacent to Highway 40 along the project site. There is an existing 8 inch steel main on the north side of Old US 40. The existing capacity is sufficient to serve approximately 200 homes. Further development will require upstream improvements in the NV Energy gas system to serve the project at build out. The anticipated improvements are typical for a project of this size.

i. Communications

Cable TV service will be provided by Charter Communications. They have facilities in the Glenn Meadows Village subdivision directly across Old US 40 from the property. Their current capacity will serve approximately 200 homes. Further development will require upstream improvements and a new Node. These improvements are typical for a project of this size. Charter can also provide alternative telephone and internet service. The area is also accessible to satellite TV service. Telephone service will be provided by AT&T with existing facilities on the south side of

Old US 40 with capacity to serve the initial phases. Additional capacity can be added easily from a central office which is close to the project. AT&T can also provide DSL internet service.

j. Public Safety

The homes and commercial retail space in the West Meadows development will create an increased demand and added calls for service for the fire department. The developer of West Meadows ("Developer") realizes that fire safety is a concern of, its customers, the residents of the community, and wants to alleviate the impact of public safety infrastructure concerns. As such, at the initial approval of the first final map for the project, excluding parcel maps, Developer will either: (i) agree to the terms and conditions described below; or (ii) in lieu of (i), will elect to submit to any generally applicable, comprehensive fire impact fee program or ordinance adopted by the City Council in accordance with NRS 278B in effect at the time of the initial approval of the first final map for the project. Specifically:

- a. Prior to the approval of a final map which contains the 250th lot in West Meadows or five years from approval of the first final map, whichever occurs first, Developer shall purchase or cause to be purchased a Type I triple combination pumper engine ("engine") specific to fire department specifications. The engine shall be primarily located at Reno Fire Department Station 11 but may, at the discretion of the fire chief or his designee, be used in other service areas as needed;
- b. Prior to the approval of the first final map, Developer shall seek and obtain approval of a "defensible space" program from the fire department.
- c. If the Developer defaults in the performance or observance of any term, covenant, or condition described above, the City shall notify the Developer in writing of the violation and allow the Developer fifteen (15) business days to cure. In the event Developer fails to cure within fifteen business (15) days, the City shall be entitled to pursue all its rights and remedies under the PUD ordinance, state law or case law including without limitation, the suspension, revocation or withholding of existing or pending building permits.

k. Schools

The project location is currently zoned for Verdi Elementary School (ES), Billingshurst Middle School and McQueen High School, which will serve the school aged children living within the West Meadows Estates PUD boundaries. Based on current enrollment; it is projected that Verdi ES will be over capacity prior to completion of the project. The Master Developer is committed to helping relieve elementary school capacity in the event that overcapacity is an issue prior to completion of the project. As such, at the initial approval of the first residential final map for the project, excluding parcel maps, the Master Developer will either (i) execute a School Facility Agreement with the Washoe County School District (WCSD) as described below; or (ii) in lieu of (i), will elect to submit to any generally applicable, comprehensive school impact fee program or ordinance adopted by the City Council that may be in effect at the time of the issuance of the first final map for the project. In no instance shall the developer pay both school impact fees and

construct the classroom at Verdi ES. School Impact Fees must be enabled by NRS prior to becoming a valid option as described above.

Unless both parties agree otherwise, the School Facility Agreement will include the following provisions:

- a. The Master Developer shall act in good faith and cooperate with WCSD officials if capacity at Verdi ES is identified as a problem during development of the project;
- b. At no cost to the WCSD, the Master Developer shall construct and dedicate a permanent modular classroom on site at Verdi ES prior to the approval of the 150th residential dwelling unit permit. The developer shall construct a 2nd classroom to the same standards if another one is warranted prior to buildout of the residential units approved for the project. This only applies if a full 2nd classroom is warranted after the 1st one is completed and prior to project completion.
- c. Classroom construction and size shall be built to WCSD standards and subject to WCSD approval;
- d. The Master Developer shall provide written notification to WCSD officials and the Zoning Administrator prior to submitting plans for the 150th residential building permit. In the event that WCSD officials determine that on-site capacity is not needed at Verdi ES, they shall inform the Master Developer and Zoning Administrator of the condition and there shall be no responsibility of the Master Developer to construct the classroom until the WCSD identifies that Verdi ES school capacity has been reached. In this instance, WCSD shall provide written notification to the Master Developer and Zoning Administrator when capacity has been reached and no further residential building permits shall be issued until the classroom is constructed on site;
- e. All building permits for residential units within the West Meadows Estates PUD shall clearly specify the number of residential building permits issued to date in relation to the 150th residential building permit/classroom threshold.

I. Regional Utility Corridor

There are two Regional Utility Corridors located on the site, both shown as public utility easements on Figure 3. Both of those corridors carry 120kv electrical transmission lines. The line located in the north portion of the property will remain and is in the Open Space part of the site with development proposed to avoid it. The line crossing the southwest part of the site is intended to be relocated along the perimeter of the site. Any relocation and/or undergrounding of regional utility lines shall require, at a minimum, approval of a Regional Plan amendment, a special use permit for major utilities and approval by NV Energy prior to relocation. Minimum setbacks from all existing and any approved future alignments for 120 KV lines shall be consistent with RMC 18.08.202(e)13 "Utilities, major." In no instance shall the setbacks from existing or proposed major utility corridors be less than ten feet. All uses within established setbacks shall be limited to passive uses including, but not limited to, parks, trails, parking, landscaping and fencing.

m. Easements

There is a public access easement located in the extreme south east portion of the site that grants public access from Highway 40 through a small parcel 038-111-03 (not-a-part) to 038-111-02. This easement eventually extends to the north boundary of the site and connects to a Forest Service Road. The project must make provisions in the project design to honor the easement alignment and public access legally required for this easement and any other public access easements. Obstructions to road access shall be removed prior to approval of first tentative map.

3. Environmental Considerations

a. Hillside Development

The site does trigger the Hillside Development Criteria in RMC because 25% of the site is more than 15% slope. For West Meadows PUD, about 33% of the site (67.3 acres) is more than 15% slope as shown in Figure 4 "Slope Map." The most significant issue with respect to meeting the ordinance is the amount of open space provided and avoidance of the drainageways and constrained hillside topography. Although a precise number is yet to be determined, the required open space for the site is 53.1 acres and approximately 90 acres are being proposed for open space. Based on this development plan, there is no further need for any SUP's for Hillside Development. The plan focuses development to the 0 to 15% portions of the site and the Open Space provided exceeds the amount required in the hillside ordinance.

b. Parks, Open Space & Trails

A trail system is conceptually shown on Exhibit 3 "Open Space and Trail Plan." There is a network of public trails planned for the property that must include connectivity throughout the project area. There are three separate improvements that must be installed by the 100th residential building permit. The first tentative map application shall include an overall schematic master trails plan system for West Meadows Estates consistent with Exhibit 3 on page 13 and include a directional signage package. Pursuant to NRS 278, the Residential Construction Tax collected from this project is not eligible to be used for trail or trailhead improvements.

In addition, a pocket park will be provided central to the residential area with the intent to serve a neighborhood of this size and properly amenitized for the neighborhood. Amenities typical of a pocket park include tot lots, BBQ areas, gazebos, swing sets, etc. The pocket park will be maintained by the Homeowners Association. If the developer requests use of Residential Construction Tax for design and construction of the park, then developer and City of Reno will enter into a Park Development and Maintenance Agreement prior to approval of the first tentative map; otherwise park shall be designed, funded, constructed, owned and maintained by developer and subsequent Homeowners Association.

The improvements to be completed are:

- a. An improved parking area, built to City of Reno standards on the west end providing angler access to the Truckee River to include 10 parking spaces;
- b. A trailhead parking area, built to City of Reno standards, adjacent to the project site next to Highway 40 on the east end to include 10 parking spaces;
- c. The trails shown on the Trail Plan will be a natural surface which is firm and stable, and be a minimum 4' wide with the design standard subject to approval by the Reno Parks, Recreation & Community Services Department;
- d. The improved trails will stub to adjacent vacant properties to the north and east. Also, the trail system will connect to the east property line where an approved planned neighborhood park is identified in that location as part of the Mortensen-Garson overlay zoning district;
- e. These trails will be owned and maintained by a master association for common interest and be open to the general public. The parking areas will be dedicated to the City of Reno which will maintain the infrastructure improvements, while the master association for common interest shall perform routine maintenance, including but not limited to trash, weed and litter control;
- f. The trails will be located within a 30-foot wide public access easement, in the event the trail alignment requires relocation due to site conditions or other factors. The Master Developer will record the public access easement with the first final map.
- g. All building permits for residential units within the West Meadows Estates PUD shall clearly specify the number of residential building permits issued to date in relation to the 100th residential building permit/trails installation threshold.
- h. The pocket park will be completed prior to the approval of the 100th residential dwelling unit permit. In addition, the Park Development and Maintenance Agreement, if applicable, shall include the following minimum provisions:
 - A process and timeline for design review and approval by the City of Reno Recreation and Parks Commission;
 - An approved budget for design and construction and method for reimbursement of Residential Construction Tax; and
 - Ownership, method of dedication and standards for maintenance.

c. Major Drainageways/Waters of the US

A preliminary investigation of water resources on site was conducted using the National Hydrography Dataset (NHD). As shown on the attached Figure 5 – Drainageways Map, areas with water features have been designated as Open Space to avoid impacts with the planning process.

The project site has been analyzed for potential impacts to hydrologic features. The zoning map includes locations of drainageways to be avoided during construction, and preserved as Open Space. A wetland delineation will be conducted once locations of road crossings are identified in

the planning process to further identify and protect hydrologic resources onsite that meets the United States Army Corps of Engineers (USACE) delineation requirements. The final WOUS delineation report will be submitted to the USACE for a jurisdictional determination. Once the USACE provides a jurisdictional determination, then this determination will be provided to the City of Reno.

A Waters of the United States (WOUS) delineation will be completed with the 1st tentative subdivision map and/or special use permit to avoid, minimize, or mitigate road crossings that impact wetlands and/or stream environments.

d. Biological Assessment

A preliminary Biological Assessment was conducted and collected preliminary data for potential water resources present onsite. This data has been used to amend zoning for the West Meadows PUD to avoid or minimize to the extent possible impacts to wildlife and water resources onsite. In this PUD planning process, it was the opinion of JBR that no significant natural resources will be impacted. However, prior to approval of the 1st Tentative Map and/or Special Use Permit, compliance with all applicable major drainageway policies and standards shall be made including policies E-4, E-6, E-7 and E-31.

e. Cultural Resources

The Nevada State Department of Cultural Affairs has performed a general inventory of the location in the 1980's and identified five archeological sites within the project area. There is reference in the Conservation Plan of the Reno Master Plan to encourage the City to ensure the "documentation, preservation and management of historic resources." A preliminary cultural resource study and a State Historic Preservation Office (SHPO) letter shall be submitted to staff indicating that an inventory has been completed and that all other agency requirements have been met shall be required prior to any further development of the site.

f. Green Development Program

West Meadows will include Low Impact Development (LID) best practices will be used in the design and construction of all commercial or residential developments to increase water infiltration and improve water quality. Any ordinances the City develops that prescribe green building practices will be used in the project as they become effective. Plans demonstrating application of best practices or conformance with adopted standards shall be provided with each tentative map, special use permit and/or building permit as applicable.

g. Energy Conserving Design

Subdivision design should utilize an appropriate street pattern where feasible to facilitate shading residences and passive solar design. Lot configurations and dimensions should consider north-south orientation and east-west orientations as determined by the design professional to best capture passive solar opportunities.

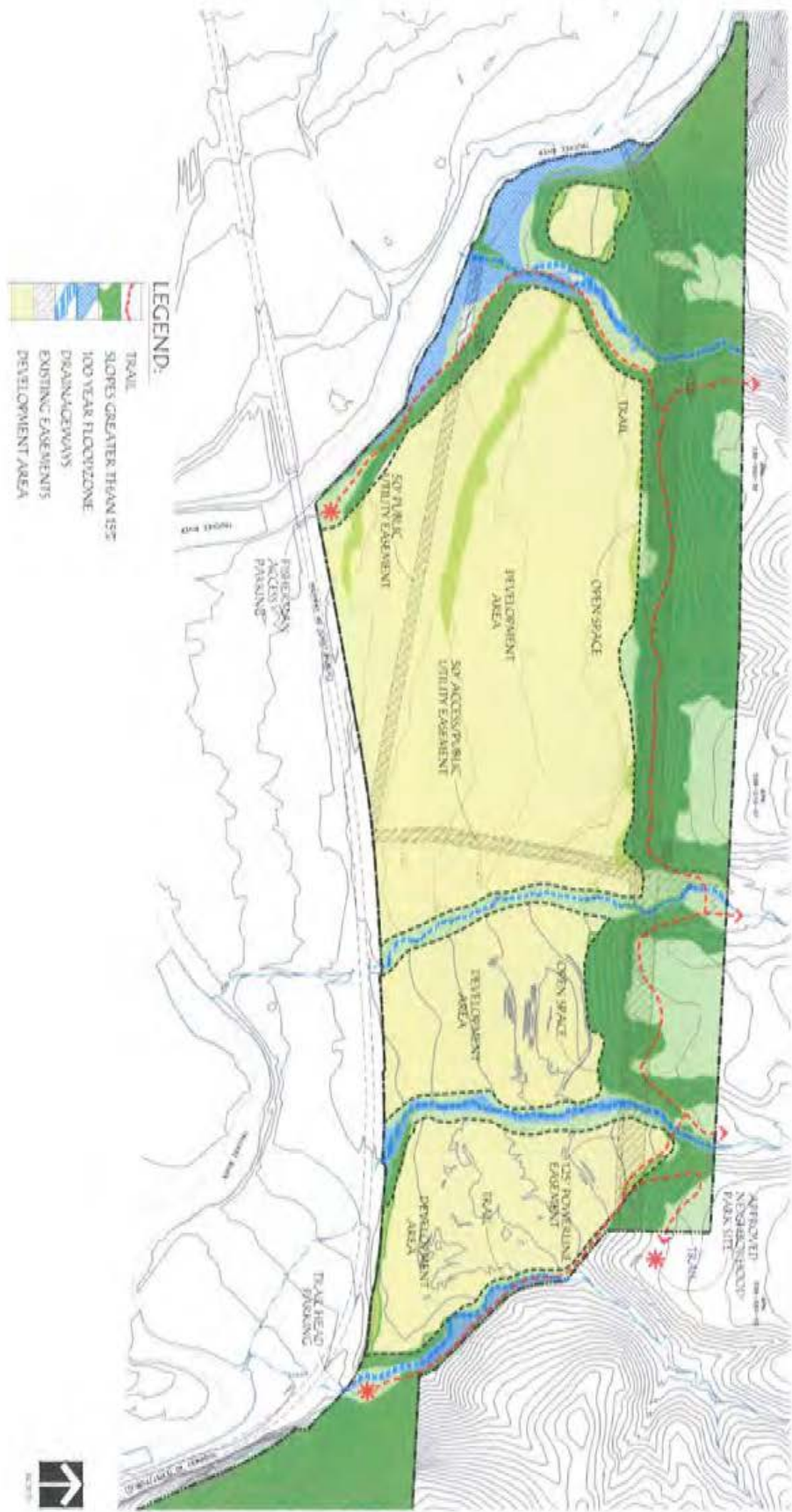
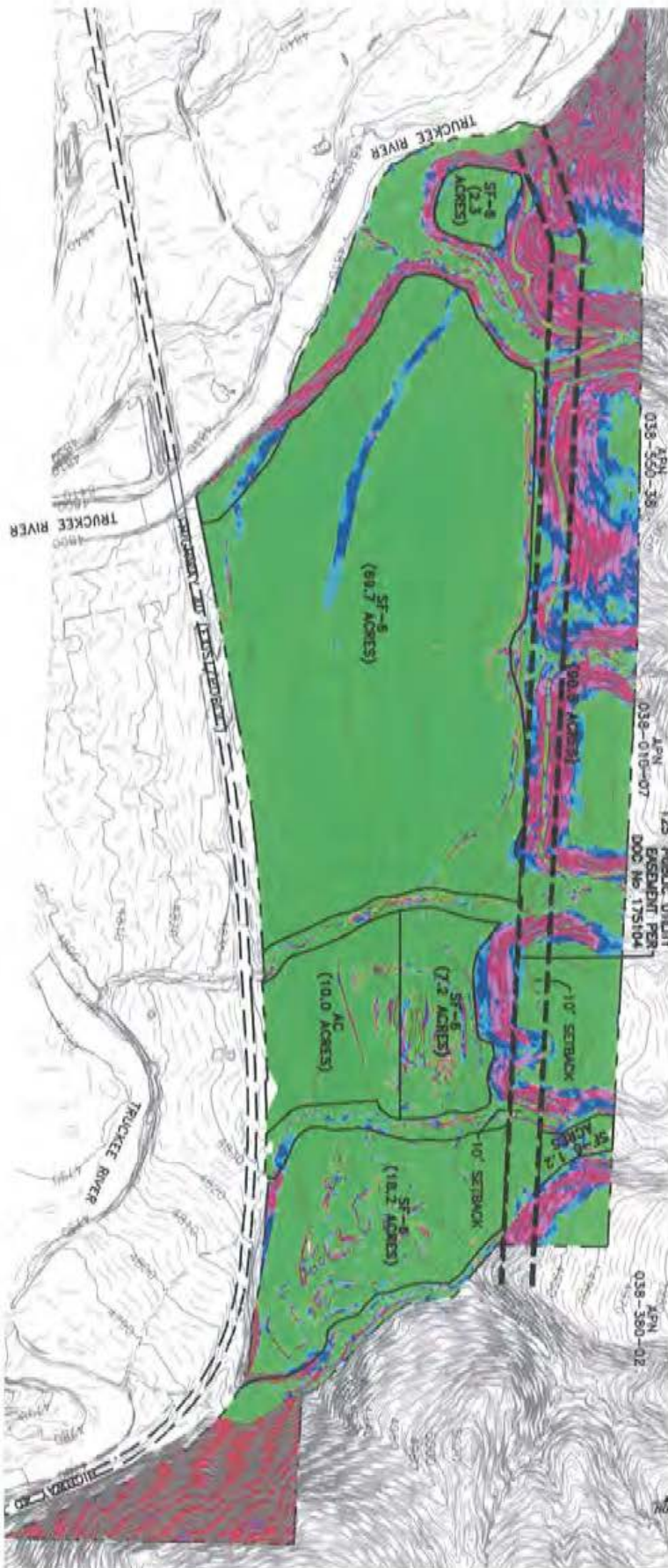


Figure 3 – Open Space & Trail Plan



COLOR	RANGE (%)	AREA (%)	AREA (ACRES)
Green	0 - 15	66.8	131.8
Light Blue	15 - 20	5.0	9.9
Dark Blue	20 - 25	4.7	9.3
Pink	25 - 30	4.3	8.5
Red	> 30	19.2	39.6
	TOTAL	100	199.1

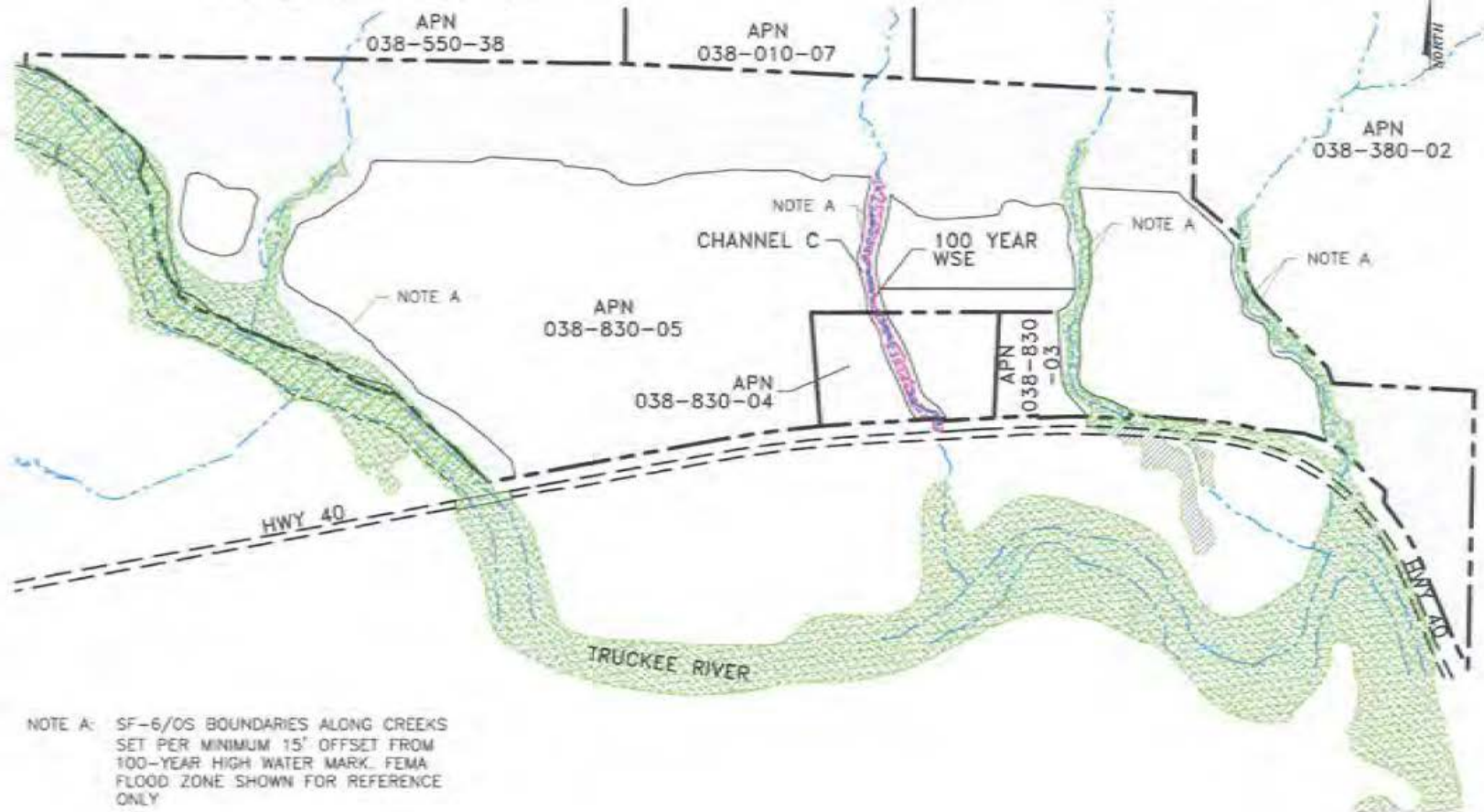
Figure 4 – Slope Map

LEGEND

- | | | | |
|---|---|---|------------------------------------|
|  | OPEN SPACE ZONING (PROPOSED) |  | PROPERTY LINE |
|  | FLOOD ZONE A |  | APPROXIMATE FEMA FLOOD ZONE LIMITS |
|  | FLOOD ZONE AE |  | APPROXIMATE DRAINAGE CENTERLINE |
|  | FLOOD ZONE SHADED X | | |
|  | FLOOD ZONE UNSHADED X
UNLESS NOTED OTHERWISE | | |

FEMA INFORMATION OBTAINED FROM FEMA FIRM
MAPS 32031C3013G & 32031C3014G
FEMA MAPS REVISION DATE MARCH 16, 2009

N.T.S.



NOTE A: SF-6/OS BOUNDARIES ALONG CREEKS
SET PER MINIMUM 15' OFFSET FROM
100-YEAR HIGH WATER MARK. FEMA
FLOOD ZONE SHOWN FOR REFERENCE
ONLY

Figure 5 – Drainageways Map

4. Design Standards

a. Introduction

This chapter addresses the development standards for the West Meadows PUD land use categories. The property is designated Commercial, Single Family and Open Space. The Commercial area is located to take advantage of future access points on Old Highway 40 while ample property is envisioned for development. Flexibility to accommodate wide ranging market conditions is intentional with this plan that will allow a mix of commercial and residential opportunities along with employment generating uses. A conceptual land use plan with acreages and estimated building square footage and densities is provided in Table 1, "Proposed Land Uses."

Development standards are provided for the three compatible land use categories: Single Family, Open Space and Commercial. The allowed uses, building height, setbacks, density/intensity, etc. that will guide future development of the West Meadows PUD are addressed within each land use area. Any development in the Open Space area is restricted to those uses allowed in RMC 18.08.202.

b. Land Use Categories

Summaries of the three land use categories are provided as follows:

1. Single Family

A total of ±104.6 acres of the property are designated for single family uses. Access to this area will be from several street connections to Old Highway 40. The maximum density for the single family land use is 3.1 dwellings per gross acre of Single Family usable acreage and total residential dwelling unit count shall not exceed 324 units. The PUD allows a minimum lot size of 4,000 square feet. This is to provide flexibility and allow entry to several different market segments. Several phases of single family development are expected and will be well defined with processing of tentative subdivision maps and related special use permits if triggered by grading (i.e. excess cuts/fills), disturbance of a major drainageway, or any other threshold. Development of single family homes, including accessory structures, shall apply those standards associated with the closest related single family zoning designation based on lot size.

2. Neighborhood Commercial

The Neighborhood Commercial area consists of ± 4 acres providing supporting commercial activity for the residential development. Access to this area will be directly from US Highway 40 and at the south end of the property. A north/south roadway is also anticipated to extend into the single family areas to the north.

The maximum FAR is .20, which establishes the maximum allowed commercial area. The Commercial area is intended as support neighborhood commercial, and possibly some office, employment, or live/work type of residential in the area. This means large retail establishments as defined in RMC 18.24.204.2390 are prohibited. To ensure the approved maximum commercial square footage is not exceeded, each building permit shall include the existing number and cumulative total of approved commercial square footage.

c. Permitted and Prohibited Uses

The specific uses permitted, as well as prohibited in the various PUD land use categories are listed in Table 2, Table of Uses Permitted and Prohibited Uses.

Table 2 - Permitted and Prohibited Uses

Neighborhood Commercial (4 acre area)

The land uses described under "AC" in RMC Table 18.08-5 shall apply with the following exceptions:

Prohibited Uses

Animal Clinic, Shelter, Hospital or Boarding/Kennel

Auto Repair Garage and Paint and Body Shop

Automobile & Truck Sales and Mobile Home, RV, Boat & Trailer Sales or Rental

Automobile Rental

Call Center

Car Wash

Drive-through Facility

Laboratory

Sale of Low Volume Bulky Goods

Gas Station

Pawn Shop

Tattoo Parlor

Sports Arena, Stadium, or Track

Motel

Blood/Plasma Donor Center

Cemetery/Mausoleum

College, University, or Seminary

Funeral Parlor

Hospital, Acute & Overnight Care

School Secondary (Public or Private)

School, Vocational or Trade

Collection Station

Crematorium

Helipad

Mini Warehouse

Drive-through Facility for Food & Beverage

Uses Allowed by Right (No SUP required) when a minimum of 200' separation from any residential use or residential property line.

Bar

Country Club, Private

Pool & Billiard parlor

Uses Requiring a Site Plan Review:

Indoor Manufacturing, Processing, Assembly, or Fabrication

Uses Requiring a Special Use Permit:

Multi-family (maximum of 4 du per building), Single Family Attached/Condominium/Townhouse, Single Room Occupancy, and Hotel (Maximum of 8 rooms) in the Neighborhood Commercial area.

Uses operating between 11 pm and 6 am

d. Development Standards

The following section provides development standards for the land uses within the West Meadows PUD. General standards for density/intensity; lot sizes; yards and setbacks; parking; landscaping; lighting and screening are addressed in Table 3: Development Standards. Standards relating to architecture; fencing; signage and pedestrian access are subsequently presented in a narrative format.

1. General Standards

Table 3: Development Standards

Single Family - Each project shall be evaluated under the Residential standards listed in RMC Table 18.12 - "Single Family Residential Zoning Districts - Bulk/Dimensional & Density Standards" unless provided in this table. Development of single family homes, including accessory structures, shall apply those standards associated with the closest related single family zoning designation based on lot size.	
Density/Intensity (units per acre)	
3.1 du per acre for the Single Family area (not to exceed 324 residential dwelling units)	
Lot Size Standards	
Minimum Lot Size	4,000 square feet
Minimum Lot Width	40
Yard and Setbacks¹	
Exterior (perimeter) boundary of PUD	15 feet
Neighborhood Commercial - Each project shall be evaluated under the AC standards listed in RMC Table 18.12-3 "Commercial and Mixed Use Zoning Districts - "Bulk/Dimensional & Intensity Standards" unless otherwise provided in this table.	
Front	10 feet
Side	0 or 10 feet
Rear	0 or 10 feet
Separation between buildings	10 feet
Maximum Building Height	35 feet
Parking	

RMC Article XI: "Off-Street Parking and Loading."
Landscaping
Arterial Commercial 15%; other RMC Article XII: "Landscaping and Screening" requirements shall apply.
Screening
Not required between Commercial land uses. Solid screening required between commercial and residential land uses to the north per RMC 18.12.1207 "Screening Between Land Uses" and 18.12.304 "Residential Adjacency Standards."

Notes for Table 3:

1. A fully landscaped setback of 15 feet is required adjacent to the south boundary of the PUD. A minimum of one tree per 300 square feet and six shrubs per tree is required with a minimum of one tree for every 30 feet of street frontage planted adjacent to the right-of-way per RMC 18.12.1205(f)(1) "Trees Required, Arterials". The width of these setbacks may be used to satisfy front, side and rear setbacks and overall landscape requirements, as applicable. The buffer shall be constructed with any phase of development that includes improved area in the Single Family and/or Commercial land uses abutting the buffer.
2. Landscaping requirements for the Neighborhood Commercial Land Use Designation are as follows:
 - The entire required front yard setback shall be landscaped with a minimum of 1 tree per 300 square feet of required front yard and six shrubs per tree. A minimum 10 foot landscaped area is required adjacent to the front of each building and may include a combination of planting, sidewalk and decorative paving;
 - Landscaping in parking areas shall include a minimum of 1 tree per 10 parking spaces. Trees may be placed in parking lot edge locations including adjacent to building entrances or in islands but shall be located within a maximum of 75 feet of each parking space. Islands and edges shall be a minimum of 10 feet in width and 126 square feet in area. Areas designated for truck and trailer parking and loading are exempt from island requirements; however, the 10 foot landscape edge shall be required.
 - 70% of the required trees shall have a minimum caliper of 2 ½ inches (deciduous) or have a minimum height of 10 feet (evergreen) while 30% may have a minimum caliper of 1 inch (deciduous) and minimum height of 6 feet (evergreen). Shrubs shall include a 75/25% mix of 1 and 5 gallon sizes.
 - Decorative paving, rock or other inert materials, up to 25% of the required landscape area may be provided.

2. Architecture

Residential and Commercial development shall be subject to the standards listed in RMC Article III: "Site Building and Design Standards." Architectural styles may vary from parcel to parcel within the West Meadows PUD. However, architecture must be consistent within each individual parcel.

Neighborhood Commercial Standards

In addition to the base standards listed in RMC Article III "Site and Building Design Standards" (as applicable to the AC zone), the following architectural standards shall apply to the Neighborhood Commercial designation:

- The commercial area is intended to be a village center in character as a central place for commercial activity and events. Strip retail and intense urban commercial type of development is prohibited. This is to promote a neighborhood by functionally integrating commercial uses with the residential and the community at large. This character must respect the elements of the Verdi Area Plan in terms of desired building design. Those include variations in size, height, style and bulk of buildings. Building elements that include historical elements known to Verdi are highly encouraged.
- Changes in texture or material patterns and colors; the use of windows; awnings; trellises with vines and/or other architectural features shall be provided and approved by the Master Developer prior to submission for review to the City of Reno.
- Parking areas may face Old Highway 40, and shall be landscaped in accordance with the landscape requirements outlined in this Handbook.
- Building articulation and exterior interest is required on the elevations of structures on land immediately adjacent to and facing Old Highway 40. All other interior elevations shall maintain consistent color and materials, and shall include wrapped architectural treatment from the exterior elevation to a logical terminus point on the interior elevation, subject to approval of the Zoning Administrator.
- Preferred exterior and accent materials include wood, glass, stone, pre-cast concrete, concrete block, stucco, brick and composition panels. The use of metal siding may be considered only if specifically approved by the Master Developer.
- The main surface color of the buildings shall be generally neutral earth tones, consistent with the surrounding area. Accent colors, however, are encouraged. All flashing, sheet metal, vent stacks and pipes shall be painted to match the main surface color of the buildings. Blank walls are prohibited along sidewalks.
- Roofs may be sloping or pitched, and flat roof elements used as an accent feature. Pitched roof materials shall be limited to standing seam or flat seam configuration metal, composition, or tile. Colors shall be approved by the Master Developer prior to submittal to the City of Reno, which

are consistent with the main building.

- Each project shall provide a visually appealing, identifiable path of entry for pedestrian and vehicular users from the street into the site, and from the site to the buildings. Landscaping, hardscaping and architectural design elements for the project site and building entries must work together to create a sense of arrival and shall be approved by the Master Developer.
- Dark sky lighting is required for the commercial development. These standards shall use the Mortensen-Garson Plan RMC18.08.406(i)(9) "Exterior Lighting standards or an equivalent subject to approval of the Zoning Administrator.
- The residential adjacency standards of RMC 18.12.304 shall apply to commercial areas adjacent to Open Space designations

3. Fencing and Screening

a. Perimeter Fencing

If perimeter fencing is provided by the Master Developer, fence type, style, height and materials must be compatible at all locations. Fences facing public streets shall be designed with architectural treatments such as top caps, pilasters and a decorative appearance on the side facing the street. Materials may include masonry, pre-cast stamped concrete panels and open view decorative type metal (but not chain link).

b. Other Fencing

- Other fencing for safety, security and screening purposes must be approved by the master developer.
- All walls and fences shall comply with RMC XIV "Fences and Walls" except as modified herein. All masonry/stucco walls shall be graffiti coated.

4. Signage

Signage within the West Meadows PUD will include center identification, monument, building and directional signs. Signs shall be consistent for each project and must conform to the standards of RMC Chapter 16 "Signs," with the following modifications noted below. For purposes of translation, the following table shall establish the comparable City of Reno zoning designation to the land use categories defined within this PUD handbook.

Signage Equivalency Table (Reference RMC Table 18.16-1 "Sign Regulations by Zoning District"). The Commercial land use shall use the AC standards.

a. Signage

- One double-sided free standing sign, not to exceed 25 feet in height and 150 square feet identifying the West Meadows PUD and major tenants is limited to the main entrance for the commercial area on US Highway 40.

All other signs shall be as follows:

- Two monument signs with a maximum height of 8 feet and a maximum of 100 square feet to be located at the main commercial access points to the project in each location.
- Building/wall signs with one square foot per lineal foot of building façade for a maximum of 100 square feet per sign with individual letters not to exceed 60 inches;
- Small, on-site directional signs as approved by the Master Developer.

5. Loop Road

For the purpose of this handbook, the road as shown in Exhibit 2, Land Use Plan is the "Loop Road." The loop road will be constructed in phases to meet project demands and will be the primary road for the project. Specific loop road design including width and streetscape elements shall be addressed in the first tentative subdivision map submittal and subject to pending approvals.

At a minimum, the following standards apply to this roadway:

- A landscape buffer shall be provided adjacent to each side of the loop roadway. A minimum of one tree per 300 square feet and six shrubs per tree is required within the buffer.
- Sidewalks, 4 four feet in width, shall be installed adjacent to the curb on both sides of the street in accordance with City standards or an 6 six foot wide meandering sidewalk may be provided on one side of the street.

6. Sidewalks

Sidewalks, 5' in width shall be required on at least one side of all other public streets within the West Meadows PUD. Where feasible, sidewalks or paths shall meander in landscape areas and connect to the overall sidewalk system and internal pathways on individual sites. There shall be a pedestrian connection either through a street connection or pedestrian crossing over the drianageways to provide for circulation through the PUD.

7. Disclosures

- Disclosures shall be provided to all future buyers and tenants within the PUD informing them of the existence of the approved Mortensen-Garson project to the north and provide details regarding that approval.
- The following language shall be included in any project CC&R's: "There exist several sewage treatment ponds to the north of West Meadows Estates that hold water into late spring providing habitat for mosquito and midges that can affect the residents of this

community. Until such time as these ponds are filled to grade, this will continue to provide habitat for these insects."

e. Conditions of Approval

Engineering

1. Prior to the approval of each permit, the applicant shall have an approved Sanitary Sewer Report in accordance with the Public Works Design Manual. Adequate easements and access shall be provided for all sanitary sewer improvements per the Public Works Design Manual. All required on-site and off-site sanitary sewer improvements necessary to serve the project shall be complete and functional prior to the issuance of any certificate of occupancy.
2. Prior to the approval of each permit, the applicant shall have an approved Hydrology Report addressing on-site and off-site storm water flows, detention, and facility capacities for the pre-development and post-development site conditions. Additionally, the applicant shall demonstrate that all grading and proposed storm water collection and discharge facilities, including infrastructure, access, and easements, are consistent with pre-development conditions as specified in the Reno Municipal Code and Public Works Design Manual.
3. All traffic study updates shall provide analyses and review of the site plan and proposed mitigations for project generated impacts, with regards to project and the trip generation distribution estimates included in the Traffic Analysis, on the adjacent roadway network, site accesses and pedestrian routes.
4. The applicant shall provide a copy of executed encroachment permits from NDOT prior to the issuance of any City permit for applications proposing site access, grading, drainage, sanitary sewer, utility, or roadway improvements within the State right-of-way for US Highway 40.

Planning

5. Hours of construction shall be limited to 7:00 a.m. to 6:00 p.m. Monday through Friday and 8 a.m. to 6 p.m. on Saturday. This restriction includes grading activity and road construction.
6. Prior to approval of the first tentative map, the applicant shall provide:
 - a. A wildlife mitigation plan that outlines measures to alleviate human-wildlife issues as well as habitat improvement to help stabilize the Loyalton-Truckee Deer Herd impacted by the project. This plan shall be developed in cooperation with the Nevada Department of Wildlife and the United States Fish and Wildlife Service.

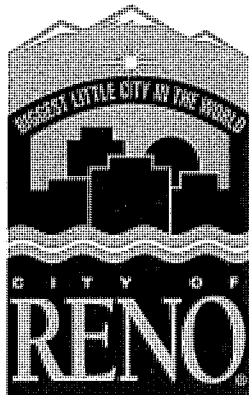
Based upon the wildlife impact analysis, residual impacts that cannot be avoided or minimized with appropriate design features will be accounted for through compensation, resulting in habitat improvement projects to offset the project impacts.

- b. A noxious and invasive plant species plan to help avoid introduction and spreading of further detrimental species to surrounding areas.
7. A disclosure shall be made by the developer to each homebuyer on their closing documents that students in this subdivision may be assigned to the nearest school(s) with available capacity in the event that the zoned schools cannot accommodate additional students."

Appendix A – City Council Decisions, Zoning Ordinance, Certification, and Regional Conformance Review

- a) City Clerks Letter dated December 12, 2014
(Zoning Map Amendment - Notice of Final Action, Decision of Order)
- b) Ordinance No. 6354 (3 pages)
- c) City Clerks letter dated December 1, 2014
(Certification of the Master Plan Amendment)
- d) City Clerks letter dated September 29, 2014
(Master Plan Amendment – Notice of Final Action, Decision of Order)
- e) Truckee Meadows Regional Planning Commission letter dated September 25, 2014 (Regional Plan Conformance Review approval)

Beverly Beaty-Benadom
Interim City Clerk
(775) 334-2030
Beaty-BenadomB@reno.gov



Office of the City Clerk
Central Cashiering (775) 334-2032
Parking Tickets (775) 334-2293

December 12, 2014

FILED THIS DATE
12 / 12 / 14
BY: BBB
CITY CLERK

Rob Fitzgerald
P.O. Box 8070
Reno, NV 89507

RE: Case No. LDC14-00023 (West Meadows Estates) – Zoning Map Amendment – **NOTICE OF FINAL ACTION, DECISION OR ORDER**

Dear Applicant:

At a regular meeting held December 10, 2014, the City Council passed and adopted Ordinance No. 6354, approving the above referenced case.

Sincerely,


Beverly Beaty-Benadom
Interim City Clerk

xc: Community Development
Jeff Mann, Parks, Recreation & Community Services
Nathan Gilbert, Community Development
West Meadows Investments, LLC, P.O. Box 8070, Reno NV 89507
John Krmptic, KLS Planning & Design, 9480 Double Diamond Parkway, Suite 299,
Reno NV 89521

EXPLANATION: Matter underlined is new; matter in brackets and stricken [---] is material to be repealed.

BILL NO. 6923

ORDINANCE NO. 6354

ORDINANCE TO AMEND TITLE 18, CHAPTER 18.08 OF THE RENO MUNICIPAL CODE, ENTITLED "ZONING", REZONING FIVE PARCELS TOTALING ±199.1 ACRES LOCATED NORTH OF US HIGHWAY 40 IN AN AREA SPANNING ±1,500 FEET WEST AND ±3,500 FEET EAST OF THE INTERSECTION OF SUMMERSET DRIVE AND US HIGHWAY 40 FROM LLR1 (LARGE LOT RESIDENTIAL – 1 ACRE) ON ±78.1 ACRES, UT40 (UNINCORPORATED TRANSITION – 40 ACRES) ON ±79 ACRES, SF15 (SINGLE FAMILY RESIDENTIAL – 15,000 SQUARE FEET) ON ±26.4 ACRES AND OPEN SPACE ON ±15.5 ACRES TO PUD (PLANNED UNIT DEVELOPMENT – WEST MEADOWS ESTATES) IN ORDER TO ALLOW DEVELOPMENT OF ±104.6 ACRES OF SINGLE FAMILY USES WITH UP TO 336 RESIDENTIAL UNITS WITH A GROSS DENSITY OF ±3.1 UNITS PER ACRE, ±4 ACRES OF COMMERCIAL USES WITH A MAXIMUM GROSS FLOOR AREA OF ±34,848 SQUARE FEET AND ±90.5 ACRES OF OPEN SPACE USES; TOGETHER WITH OTHER MATTERS PROPERLY RELATING THERETO.

SPONSORED BY: RENO CITY PLANNING COMMISSION

THE CITY COUNCIL OF THE CITY OF RENO DOES ORDAIN:

SECTION 1. Chapter 18.08 of the Reno Municipal Code is hereby amended by adding thereto a new section to be known as Section 18.08.102(b).1302 relating to five parcels totaling ±199.1 acres located north of US Highway 40 in an area spanning ±1,500 feet west and ±3,500 feet east of the intersection of Summerset Drive and US Highway 40 and more particularly described in the attached "Exhibit A" and rezoning said property from LLR1 (Large Lot Residential – 1 acre) on ±78.1 acres, UT40 (Unincorporated Transition – 40 acres) on ±79 acres, SF15 (Single Family Residential – 15,000 Square Feet) on ±26.4 acres and Open Space on ±15.5 acres to PUD (Planned Unit Development – West Meadows Estates) in order to allow development of ±104.6 acres of single family uses with up to 336 residential units with a gross density of ±3.1 units per acre, ±4 acres of commercial uses with a maximum gross floor area of ±34,848 square feet and ±90.5 acres of open space uses, the same to read as follows:

Sec. 18.08.102(b).1302. The zoning of the City of Reno as heretofore established is hereby amended in the manner shown on the map labeled Case No. LDC14-00023, thereby changing the use of land indicated therein, relating to five parcels totaling ±199.1 acres located north of US Highway 40 in an area spanning ±1,500 feet west and ±3,500 feet east of the intersection of Summerset Drive and US Highway 40 and more particularly described in the attached "Exhibit A", and rezoning said property from LLR1 (Large Lot Residential – 1 acre) on ±78.1 acres, UT40 (Unincorporated Transition – 40 acres) on ±79 acres, SF15 (Single Family Residential – 15,000 Square Feet) on ±26.4 acres and Open Space on ±15.5 acres to PUD (Planned Unit Development – West Meadows Estates) in order to allow development of ±104.6 acres of single family uses with up to 336 residential units with a gross density of ±3.1 units per acre, ±4 acres of commercial uses with a maximum gross floor area of ±34,848 square feet and ±90.5 acres of open space uses.


SECTION 2. This Ordinance shall be in effect from and after its passage, adoption and publication in one issue of a newspaper printed and published in the City of Reno, and upon certification by the City Council of the PUD Handbook for Case No. LDC14-00023 (West Meadows Estates) and upon recordation of the PUD Handbook.

SECTION 3. The City Clerk and Clerk of the City Council of the City of Reno is hereby authorized and directed to have this Ordinance published in one issue of the Reno-Gazette Journal, a newspaper printed and published in the City of Reno.

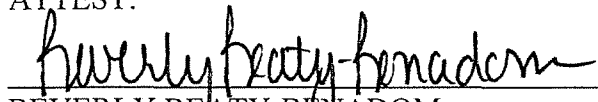
PASSED AND ADOPTED this 10th day of December, 2014, by the following vote of the Council:

AYES:	<u>Jardon, McKenzie, Bobzien, Duerr, Schieve</u>	
NAYS:	<u>Brekhus</u>	
ABSTAIN:	<u>None</u>	ABSENT: <u>Delgado</u>

APPROVED this 10th day of December, 2014.

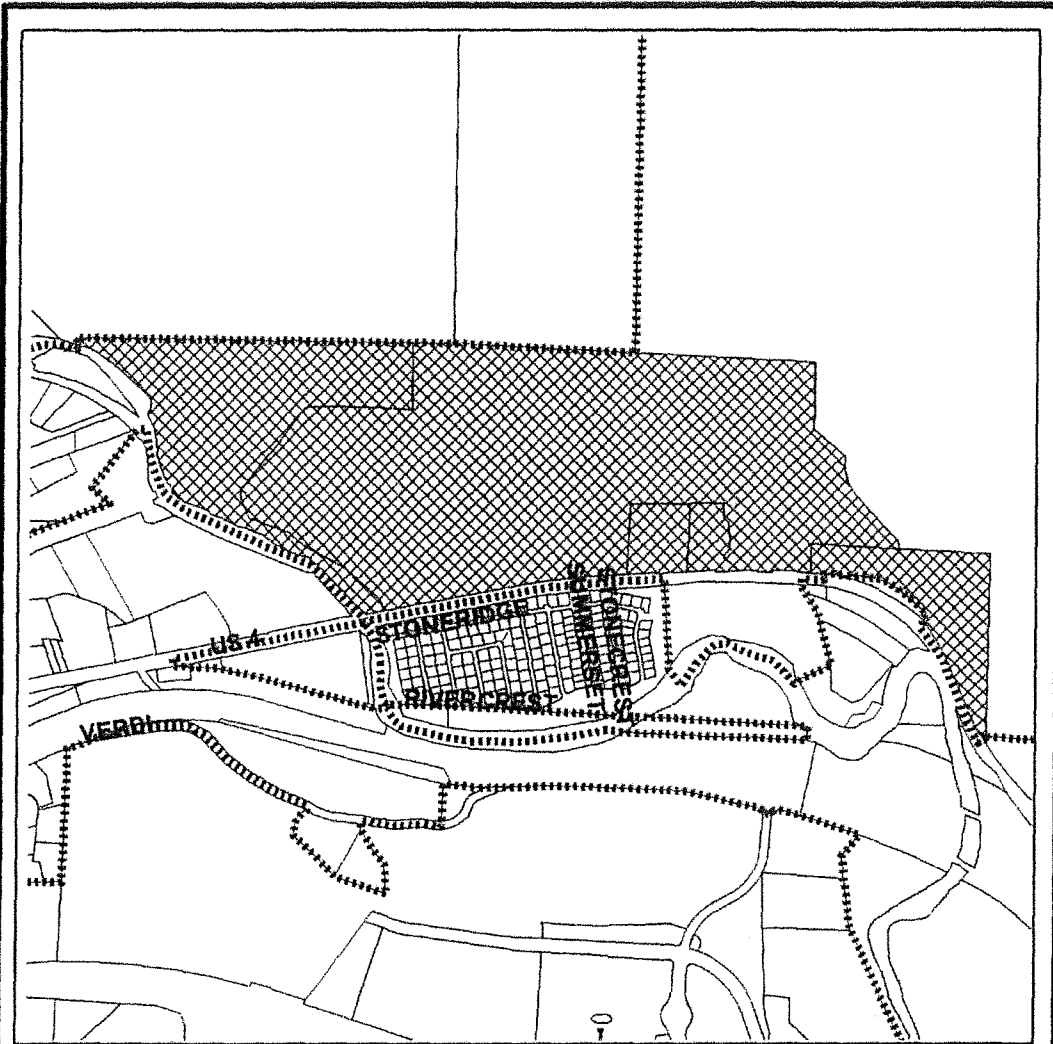

HILLARY SCHIEVE
MAYOR OF THE CITY OF RENO

ATTEST:


BEVERLY BEATY-BENADOM
INTERIM CITY CLERK AND INTERIM CLERK
OF THE CITY COUNCIL OF THE CITY OF
RENO, NEVADA



EFFECTIVE DATE: December 12, 2014.



LDC14-00023
(West Meadows Estates)

 Zoning Map Amendment to Planned Unit Development
(PUD - West Meadows Estates)

 City Limits

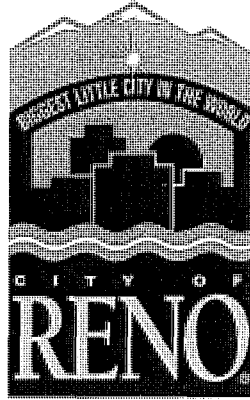


0 150 300 600 900 1,200 Feet
The information hereon is approximate and is intended for display purposes only. Reproduction is not permitted. For additional information, please contact the City of Reno, Community Development Department.
Map Produced: November, 2014



Community Development Department
1 East First Street Phone: 334-2023
P.O. Box 1900 Fax: 334-2043
Reno, NV 89505 www.cityofreno.com

Beverly Beaty-Benadom
Interim City Clerk
(775) 334-2030
Beaty-BenadomB@reno.gov



Office of the City Clerk
Central Cashiering (775) 334-2032
Parking Tickets (775) 334-2293

December 1, 2014

FILED THIS DATE
12 / 01 / 14
BY: BBB
CITY CLERK


Rob Fitzgerald
P.O. Box 8070
Reno, NV 89507

RE: Case No. LDC14-00023 (West Meadows Estates) – Certification of Master Plan Amendment

Dear Applicant:

At a regular meeting held November 24, 2014, the City Council upheld the staff recommendation and certified, in accordance with NRS 278.210, the Master Plan Amendment for the above referenced case. On September 24, 2014, the Master Plan Amendment was reviewed and approved by the Regional Planning Commission as to its conformance with the Regional Plan.

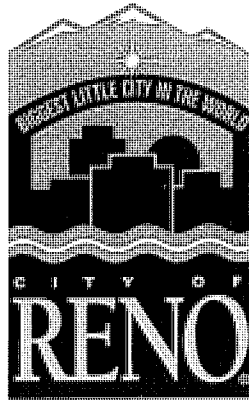
Sincerely,


Beverly Beaty-Benadom
Interim City Clerk

xc: Community Development
Jeff Mann, Parks, Recreation & Community Services
Nathan Gilbert, Community Development
West Meadows Investments, LLC, P.O. Box 8070, Reno NV 89507
John Krmpotic, KLS Planning & Design, 9480 Double Diamond Parkway, Suite 299,
Reno NV 89521

Lynnette R. Jones
City Clerk
(775) 334-2030
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Beverly Beaty-Benadom
Deputy City Clerk
(775) 334-2030
Beaty-BenadomB@reno.gov



Office of the City Clerk
Central Cashiering (775) 334-2032
Parking Tickets (775) 334-2293

FILED THIS DATE
9 / 29 / 14
BY: BBB
CITY CLERK

September 29, 2014


Mr. Rob Fitzgerald
P.O. Box 8070
Reno, NV 89507

RE: Case No. LDC14-00023 (West Meadows Estates) – Master Plan Amendment – ***NOTICE OF FINAL ACTION, DECISION OR ORDER***

Dear Applicant:

On August 27, 2014, the Reno City Council adopted Resolution No. 8000, to become effective upon a determination of conformance by the Regional Planning Commission (RPC). On September 24, 2014, the RPC held a public hearing and determined that the above matter conforms with the Comprehensive Regional Plan. Please see the attached letter dated September 25, 2014, from the RPC.

Sincerely,


Lynnette R. Jones
City Clerk

LRJ:bbb

Enclosure

xc: Community Development Department
Nathan Gilbert, Community Development
West Meadows Investments, P.O. Box 8070, Reno, NV 89507
John Krmptic, KLS Planning & Design, 9480 Double Diamond Pkwy Ste 299, Reno,
NV 89521



REGIONAL PLANNING COMMISSION

MEMBERS

Doug Voelz, Chair
Kevin Weiske, Vice-Chair
James Barnes
Roger Edwards
Tom Lean

Art Sperber
Dagny Stapleton
DJ Whittemore
Jason Woosley

Kimberly H. Robinson, Executive Director

September 25, 2014

Kimberly H. Robinson
Executive Director of Regional Planning, and
Clerk of the Regional Planning Commission
1105 Terminal Way, Suite 316
Reno, Nevada 89502

Received by Clerk *JAC 9.25.14*

Mailed: *9/25/14 87C*

Dear Ms. Robinson:

On September 24, 2014, the Regional Planning Commission (RPC) held a public hearing and determined that the following matter conforms with the comprehensive Regional Plan:

Regional Plan Conformance Review – City of Reno Master Plan amendment, West Meadows Estates (CR14-007) – a master plan amendment changing the land use designation from Single Family Residential on ±104.5 acres, Unincorporated Transition on ±15.5 acres and Open Space on ±79 acres to Special Planning Area on ±199.1 acres located north of US Highway 40 and spanning ±1,500 feet west and ±3,500 feet east of the intersection of Summerset Drive and US Highway 40.

This letter has been filed with the Clerk of the Regional Planning Commission on this date and constitutes notice of final action under NRS 278.0235, "Actions against Agency: Commencement," unless a petition for review is timely filed by a person seeking review of the RPC action or determination pursuant to section I.3 of the Regional Planning Governing Board's *Regulations on Procedure*.

Please do not hesitate to contact me at 775/321-8392 if you have any questions on this matter.

Sincerely,

A handwritten signature in cursive script that reads "Sienna Reid".

Sienna Reid
Senior Planner

Regional Planning Commission Conformance Review, CR14-004

Action Letter dated September 25, 2014

Page 2

cc: File CR14-007

Fred Turnier, City of Reno

Armando Ornelas, City of Sparks

Bill Whitney, Washoe County

Beverly Beaty-Benadom, City of Reno

Debra Goodwin, RTC

Nathan Gilbert, City of Reno

Appendix B – Legal Description

DESCRIPTION
WEST MEADOWS INVESTMENTS, LLC.

A PARCEL OF LAND SITUATE IN SECTIONS 8 & 9, TOWNSHIP 19 NORTH, RANGE 18 EAST, M.D.M., WASHOE COUNTY, NEVADA, AND MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE 1/4 CORNER COMMON TO SAID SECTIONS 8 AND 9; THENCE SOUTH 87°02'57" EAST A DISTANCE OF 2614.04 FEET TO THE CENTER OF SAID SECTION 9; THENCE SOUTH 00°59'15" WEST, ALONG THE NORTH-SOUTH CENTERLINE OF SAID SECTION 9, A DISTANCE OF 482.70 FEET; THENCE SOUTH 49°43'11" EAST A DISTANCE OF 295.03 FEET; THENCE SOUTH 05°04'57" EAST A DISTANCE OF 126.65 FEET; THENCE SOUTH 14°18'41" EAST A DISTANCE OF 83.54 FEET; THENCE SOUTH 32°22'13" EAST A DISTANCE OF 79.57 FEET; THENCE SOUTH 43°32'16" EAST A DISTANCE OF 176.01 FEET; THENCE SOUTH 44°40'41" EAST A DISTANCE OF 276.37 FEET; THENCE SOUTH 19°29'11" EAST A DISTANCE OF 76.16 FEET TO THE SOUTH LINE OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 9; THENCE SOUTH 86° 51' 57" EAST 647.63 FEET TO THE SOUTHEAST CORNER OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 9; THENCE ALONG THE EAST LINE OF THE SOUTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 9 SOUTH 1° 14' 49" WEST 1,298.96 FEET TO A POINT ON THE NORTHWESTERLY RIGHT-OF-WAY OF OLD HIGHWAY 40, SAID POINT BEING THE BEGINNING OF A NON-TANGENT 1,725.00 FOOT RADIUS CURVE TO THE RIGHT CONCAVE TO THE NORTHEAST FROM WHICH POINT THE RADIUS POINT BEARS NORTH 61° 57' 22" EAST;

THENCE ALONG SAID RIGHT-OF-WAY FROM A TANGENT WHICH BEARS NORTH 28° 02' 38" WEST NORTHWESTERLY ALONG SAID CURVE AN ARC DISTANCE OF 163.41 FEET THROUGH A CENTRAL ANGLE OF 5° 25' 39";

THENCE CONTINUING ALONG SAID RIGHT-OF-WAY NORTH 22° 36' 59" WEST 372.21 FEET TO THE BEGINNING OF A TANGENT 1,125.00 FOOT RADIUS CURVE TO THE LEFT CONCAVE TO THE SOUTHWEST FROM WHICH POINT THE RADIUS POINT BEARS SOUTH 67° 23' 01" WEST;

THENCE CONTINUING ALONG SAID RIGHT-OF-WAY NORTHWESTERLY ALONG SAID CURVE AN ARC DISTANCE OF 329.46 FEET THROUGH A CENTRAL ANGLE OF 16° 46' 45";

THENCE DEPARTING SAID RIGHT-OF-WAY NORTH 2° 29' 43" EAST 57.87 FEET;

THENCE NORTH 48° 52' 47" WEST 86.40 FEET;

THENCE NORTH 41° 58' 47" WEST 79.43 FEET;

THENCE NORTH 47° 53' 47" WEST 106.23 FEET;

THENCE NORTH 58° 22' 47" WEST 91.05 FEET;

THENCE NORTH 70° 52' 47" WEST 99.69 FEET;

THENCE NORTH 82° 50' 47" WEST 95.88 FEET;

THENCE NORTH 85° 12' 47" WEST 118.63 FEET TO A POINT ON THE NORTHERLY RIGHT-OF-WAY OF OLD HIGHWAY 40, SAID POINT BEING THE BEGINNING OF A NON-TANGENT 1,100.00 FOOT RADIUS CURVE TO THE LEFT CONCAVE TO THE SOUTH FROM WHICH POINT THE RADIUS POINT BEARS SOUTH 15° 16' 30" WEST;

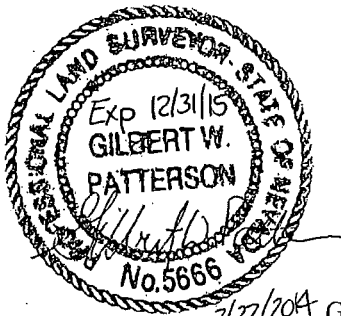
THENCE ALONG THE NORTHERLY LINE OF U.S. HIGHWAY 40, THE FOLLOWING ELEVEN (13) COURSES:

FROM A TANGENT WHICH BEARS NORTH 74° 43' 30" WEST WESTERLY ALONG SAID CURVE AN ARC DISTANCE OF 205.57 FEET THROUGH A CENTRAL ANGLE OF 10° 42' 28";
NORTH 85° 25' 58" WEST 113.12 FEET;
NORTH 85°25'58" WEST A DISTANCE OF 143.97 FEET;
ALONG A TANGENT CIRCULAR CURVE TO THE LEFT WITH A RADIUS OF 5050.00 FEET AND A CENTRAL ANGLE OF 01°28'50" AN ARC LENGTH OF 130.49 FEET;
SOUTH 03°05'12" WEST DISTANCE OF 17.22 FEET;
FROM A TANGENT WHICH BEARS NORTH 85°35'56" WEST, ALONG A CIRCULAR CURVE TO THE LEFT WITH A RADIUS OF 3030.00 FEET AND A CENTRAL ANGLE OF 07°50'46" AN ARC LENGTH OF 414.93 FEET;
NORTH 01°38'08" WEST A DISTANCE OF 9.01 FEET;
FROM A TANGENT WHICH BEARS SOUTH 88°21'52" WEST, ALONG A CIRCULAR CURVE TO THE LEFT WITH A RADIUS OF 5040.00 FEET AND A CENTRAL ANGLE OF 01°39'50" AN ARC LENGTH OF 146.36 FEET;
SOUTH 86°36'53" WEST A DISTANCE OF 286.38 FEET;
NORTH 03°23'07" WEST A DISTANCE OF 10.00 FEET;
SOUTH 86°36'53" WEST A DISTANCE OF 400.20 FEET;
FROM A TANGENT WHICH BEARS SOUTH 86°39'32" WEST, ALONG A CIRCULAR CURVE TO THE LEFT WITH A RADIUS OF 5050.00 FEET AND A CENTRAL ANGLE OF 07°19'31" AN ARC LENGTH OF 645.63 FEET;
SOUTH 79°16'15" WEST A DISTANCE OF 1062.00 FEET TO THE NORTHERLY LINE OF THE TRUCKEE RIVER; THENCE ALONG THE NORTHERLY LINE OF THE TRUCKEE RIVER THE FOLLOWING FIFTY NINE (59) COURSES:
NORTH 43°30'01" WEST A DISTANCE OF 28.12 FEET;
NORTH 48°44'08" WEST A DISTANCE OF 84.63 FEET;
NORTH 42°31'27" WEST A DISTANCE OF 88.49 FEET;
NORTH 46°15'40" WEST A DISTANCE OF 93.02 FEET;
NORTH 47°30'03" WEST A DISTANCE OF 103.64 FEET;
NORTH 44°16'38" WEST A DISTANCE OF 112.46 FEET;
NORTH 49°11'56" WEST A DISTANCE OF 84.96 FEET;
NORTH 80°40'21" WEST A DISTANCE OF 54.94 FEET;
NORTH 69°32'14" WEST A DISTANCE OF 126.69 FEET;
NORTH 58°46'56" WEST A DISTANCE OF 50.76 FEET;
NORTH 66°00'27" WEST A DISTANCE OF 41.82 FEET;
NORTH 49°49'48" WEST A DISTANCE OF 58.77 FEET;
NORTH 62°11'05" WEST A DISTANCE OF 63.66 FEET;
NORTH 76°53'27" WEST A DISTANCE OF 34.41 FEET;
NORTH 64°02'01" WEST A DISTANCE OF 76.76 FEET;
NORTH 73°31'15" WEST A DISTANCE OF 66.65 FEET;
NORTH 64°34'18" WEST A DISTANCE OF 105.76 FEET;
NORTH 69°54'28" WEST A DISTANCE OF 50.37 FEET;
NORTH 71°06'24" WEST A DISTANCE OF 55.61 FEET;
NORTH 25°56'04" WEST A DISTANCE OF 24.46 FEET;
NORTH 64°17'30" WEST A DISTANCE OF 50.73 FEET;
NORTH 69°33'48" WEST A DISTANCE OF 60.73 FEET;
NORTH 73°30'09" WEST A DISTANCE OF 67.28 FEET;
NORTH 59°17'35" WEST A DISTANCE OF 60.72 FEET;
NORTH 41°24'23" WEST A DISTANCE OF 33.88 FEET;
NORTH 86°21'54" WEST A DISTANCE OF 12.63 FEET;
NORTH 46°18'45" WEST A DISTANCE OF 21.57 FEET;
NORTH 04°59'56" EAST A DISTANCE OF 18.37 FEET;

NORTH 26°50'00" WEST A DISTANCE OF 37.89 FEET;
NORTH 50°17'55" WEST A DISTANCE OF 20.67 FEET;
NORTH 33°20'04" WEST A DISTANCE OF 31.49 FEET;
NORTH 10°59'33" WEST A DISTANCE OF 17.83 FEET;
NORTH 35°23'34" WEST A DISTANCE OF 13.99 FEET;
NORTH 16°19'29" WEST A DISTANCE OF 30.96 FEET;
NORTH 20°53'44" WEST A DISTANCE OF 11.78 FEET;
NORTH 38°24'57" WEST A DISTANCE OF 14.81 FEET;
NORTH 13°30'31" WEST A DISTANCE OF 89.91 FEET;
NORTH 62°12'50" WEST A DISTANCE OF 10.51 FEET;
NORTH 07°41'54" EAST A DISTANCE OF 22.40 FEET;
NORTH 03°25'38" WEST A DISTANCE OF 26.76 FEET;
NORTH 15°51'49" WEST A DISTANCE OF 39.52 FEET;
NORTH 07°51'20" EAST A DISTANCE OF 17.57 FEET;
NORTH 07°11'54" WEST A DISTANCE OF 47.08 FEET;
NORTH 10°33'38" WEST A DISTANCE OF 55.65 FEET;
NORTH 24°36'31" WEST A DISTANCE OF 51.16 FEET;
NORTH 31°22'47" WEST A DISTANCE OF 39.95 FEET;
NORTH 04°39'20" EAST A DISTANCE OF 34.52 FEET;
NORTH 32°38'34" EAST A DISTANCE OF 18.17 FEET;
NORTH 09°43'25" EAST A DISTANCE OF 50.94 FEET;
NORTH 24°37'17" WEST A DISTANCE OF 36.97 FEET;
NORTH 42°49'23" WEST A DISTANCE OF 33.55 FEET;
NORTH 50°31'54" WEST A DISTANCE OF 82.14 FEET;
NORTH 47°17'18" WEST A DISTANCE OF 90.25 FEET;
NORTH 44°57'24" WEST A DISTANCE OF 98.80 FEET;
NORTH 63°05'48" WEST A DISTANCE OF 30.51 FEET;
NORTH 38°28'24" WEST A DISTANCE OF 24.27 FEET;
NORTH 54°12'41" WEST A DISTANCE OF 131.18 FEET;
NORTH 61°03'59" WEST A DISTANCE OF 81.26 FEET;
NORTH 77°07'06" WEST A DISTANCE OF 86.68 FEET TO THE NORTH-SOUTH CENTERLINE OF SAID SECTION 8; THENCE NORTH 00°46'54" EAST A DISTANCE OF 54.54 FEET TO THE CENTER OF SAID SECTION 8; THENCE SOUTH 89°05'56" EAST, ALONG THE EAST-WEST CENTERLINE OF SAID SECTION 8, A DISTANCE OF 2746.76 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 197.33 ACRES OF LAND, MORE OR LESS.

BASIS OF BEARING: NEVADA STATE PLANE COORDINATE SYSTEM WEST ZONE (NAD 83/94)



3/22/2014 Gilbert W. Patterson, PLS 5666

Appendix C – JBR Environmental Policy Letter
(January 7, 2014)



JBR Environmental Consultants, Inc.

Nevada Division

1105 E. Jennings Way, Ste. 101

Elko, Nevada 89801

(p) 775.738.8788

(f) 775.738.2264

595 Double Eagle Ct., Ste. 2000

Reno, Nevada 89521

(p) 775.747.5777

(f) 775.747.2177

www.jbr.env.com

January 7, 2014

Rob Fitzgerald
West Meadows Investments, LLC
P.O. Box 8070
Reno, NV 89507

Re: West Meadows Estates Project – City of Reno Environmental Policy Letter
JBR Project Number: B.A13449.00

Dear Mr. Fitzgerald:

As per Mr. John Krmpotic of KLS Design Group's (KLS) request, JBR Environmental Consultants, Inc. (JBR) has prepared this letter to address the City of Reno's environmental policy concerns for the West Meadows Project Boundary (Figure 1). This letter will address the City of Reno Policy Plan, amended April 4, 2012; specifically, Environmental Policies E-4, E-6, E-7, and E-31.

Environmental Policy E-4 Requirement

There should be no net loss of wetlands, stream environments, playas, stream fed riparian and non-404 wetlands in the city in terms of both acreage and value. The goal of no net loss may be achieved in one or more of the following ways: designation of lands for resource or open space use, avoidance of these areas, mitigation or impacts on site, or mitigation off site.

Justification of Compliance with Environmental Policy E-4

JBR has conducted preliminary investigation of water resources on site using the National Hydrography Dataset (NHD) to be avoided during the planning process. Figure 2 displays drainages from the NHD dataset on site, along with the proposed zoning plan of development. As the figure depicts, areas with water features have been designated as 'open-space (OS)' as to avoid impacts.

Once the tentative mapping process can provide locations for where impacts are proposed, a waters of the United States (WOUS) delineation will be completed to avoid, minimize, or mitigate for road crossings that impact wetlands and/or stream environments.

Environmental Policy E-6

The City should identify and protect the functions of significant hydrologic resources and major drainageways within its jurisdiction to the degree possible.

Justification of Compliance with Environmental Policy E-6

As seen on Figure 2, the project site has been analyzed for potential impacts to hydrologic features. The zoning map has been revised to incorporate locations of drainageways to be avoided during construction, and reserved as OS. As stated, a wetland delineation will be conducted once locations of road crossings are identified in the planning process to further identify and protect hydrologic resources onsite.

Environmental Policy E-7

Master Plan maps depicting development constraint areas and areas of biodiversity should be used as a reference tool only in reviewing development applications. Existing entitlements granted by the City that are in conflict with these reference maps should be considered conforming to the Master Plan. When considering whether specific properties contain wetlands, significant hydrologic resources, steep slopes, major drainageways, and/or biodiversity, only technical data, delineations, and reports submitted with applications and approved by the administrator should be used. This technical data should be prepared by licensed professional engineers, surveyors, wetlands biologists, and/or qualified environmental consultants. Where the approved technical data is in conflict with the reference maps, the technical data approved by the administrator should be considered the most accurate depiction of the reference map and should be considered conforming to the Master Plan.

Justification of Compliance with Environmental Policy E-7

The zoning plan depicted in Figure 2 has been designed to conform to the Master Plan.

JBR staff are qualified to conduct a WOUS delineation that meets the United States Army Corps of Engineers (USACE) delineation requirements. The final WOUS delineation report will be submitted to the USACE for a jurisdictional determination. Once the USACE provides a jurisdictional determination, then this determination will be provided to the City of Reno.

Environmental Policy E-31

The City should promote the protection, conservation, and acquisition of significant wildlife habitats, environmentally significant lands (i.e., wetlands and stream environments), prominent ridgelines, and other natural and scenic resources for purposes of wildlife survival, community education, research, recreation and aesthetics.

Justification of Compliance with Environmental Policy E-31

On behalf of the City of Reno, JBR has conducted a preliminary Biological Assessment and collected preliminary data for potential water resources present onsite. This data has been used by KLS to amend zoning for the West Meadows Estate Project to avoid or minimize to the extent
JBR Environmental Consultants, Inc.

Mr. Fitzgerald
January 7, 2014
Page 3

possible impacts to wildlife and water resources onsite. In this current phase of the planning process, it is the opinion of JBR that no significant natural resources will be impacted.

If you have any further questions, please contact Sarah Brown at 775-747-5777.

Sincerely,

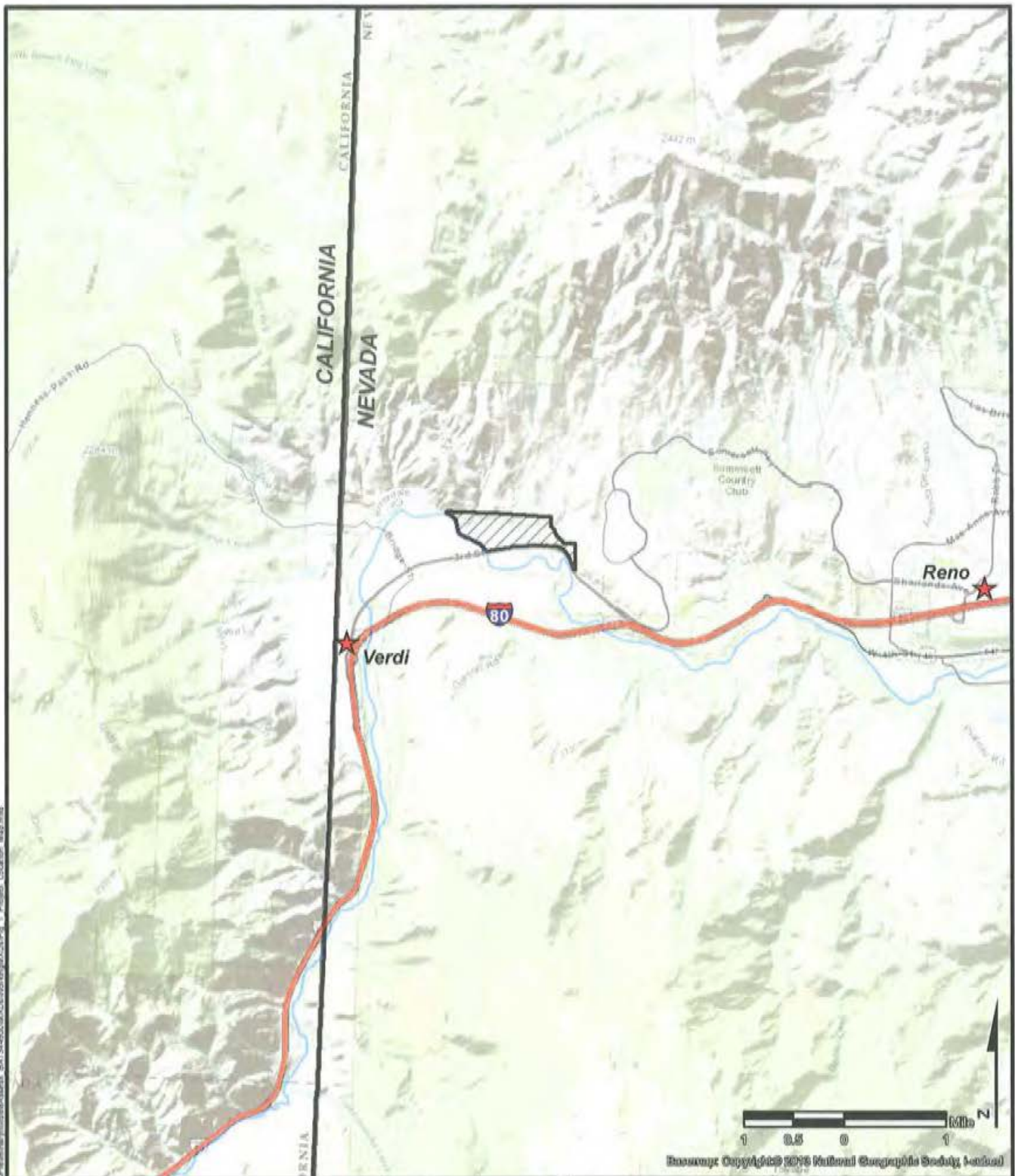
JBR ENVIRONMENTAL CONSULTANTS, INC.



Sarah Brown
Environmental Analyst

Figures

FIGURES



A:\Projects\13449\13449_000\13449_000.mxd; B:\13449\13449_000\13449_000.mxd; 1. Project Location Map.mxd

Project Area	Project Location	
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WEST MEADOWS INVESTMENTS, LLC

**FIGURE 1
PROJECT LOCATION**

	DRAWN BY	CHJ	DATE DRAWN	1/6/2014
	SCALE	1 in = 1 mile		
	PROJECT	B.A13449.00		

This document is for reference purposes only and should not be used as a legal document. JBR makes no guarantees to the accuracy of the data contained herein or any loss resulting therefrom.



WEST MEADOWS INVESTMENTS, LLC					
FIGURE 2 ZONING MAP WITH NHD DRAINAGES					
		CHU 16/2014 Date 1 in = 500 feet Author B.A134468 00			

This document is for reference purposes only and should not be used as a legal document. JBR makes no guarantees to the accuracy of the data contained herein or any loss resulting therefrom.

Appendix D – JBR Biological Assessment
(January 3, 2014)



creating solutions for today's environment

JBR Environmental Consultants, Inc.

Health Division

1001 Commercial Way, Ste. 101

1001 Commercial Way

1001 Commercial Way

1001 Commercial Way

1001 Commercial Way, Ste. 101

1001 Commercial Way

1001 Commercial Way

1001 Commercial Way

1001 Commercial Way

January 3, 2014

Rob Fitzgerald
West Meadows Investments, LLC.
P.O. Box 8070
Reno, NV 89507

Re: West Meadows Estates Project - Preliminary Biological Assessment
JBR Project Number: B.A13449.00

Dear Mr. Fitzgerald:

As per the City of Reno's request, JBR Environmental Consultants, Inc. (JBR) conducted a preliminary biological assessment for flora and fauna species within the West Meadows Project Boundary (Project Area). It is JBR's understanding that this preliminary assessment is appropriate for the Master Plan and Zoning Amendment stage and that an additional assessment may be necessary as the project progresses.

As part of the preliminary assessment, JBR contacted the Nevada Natural Heritage Program (NNHP) and the United States Fish and Wildlife Service (USFWS) requesting information on any federally- or state-listed threatened, endangered, or candidate species known to occur or that have a potential to occur within the survey area. JBR also contacted the Nevada Department of Wildlife (NDOW) to discuss potential wildlife concerns they may have for the project.

Nevada Natural Heritage Program

The NNHP provided a letter, a table, and shapefiles that contained recorded element occurrence records within Nevada and their associated attributes for the Project Area (**Attachment 1**). The shapefiles reported known occurrences of mono checkerspot (*Euphydryas editha monoensis*), Trowbridge's shrew (*Sorex trowbridgii*), long-legged bat (*Myotis volans*), little brown bat (*Myotis lucifugus*), mountain pocket gopher (*Thomomys monticola*), northern leopard frog (*Lithobates pipiens*), and northern rubber boa (*Charina bottae*) within a mile of the Project Area; however, there are no known occurrences within the Project Area. NNHP identified two additional species of concern that have potential to occur within the Project Area, which are the yuma bat (*Myotis yumanensis*) and steamboat monkey flower (*Mimulus ovatus*). JBR conducted a weed risk assessment on the proposed Bordertown to California 120 kV Transmission Line Project (Bordertown Project). While conducting field surveys for the Bordertown Project, which includes the West Meadows Project Area, JBR identified andesite popcorn flower

(*Plagiobothrys glomeratus*) within a mile of the West Meadows Project Area. Using the Bordertown Project data, JBR created a figure showing known noxious weed locations within the West Meadows Project Area (**Figure 1**).

United States Fish and Wildlife Service

As part of the preliminary assessment, JBR used the USFWS Information, Planning, and Conservation (IPaC) system to retrieve a list of USFWS threatened, endangered, proposed, and candidate species for the project. Results showed four threatened, endangered, or candidate species: Cui-ui (*Chasmistes cujus*), lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), greater sage-grouse (*Centrocercus urophasianus*), and Webber ivesia (*Ivesia webberi*) (**Attachment 1**). It should be noted that the IPaC database search results do not necessarily indicate that these species are present but rather that the species or their habitat may be present within the general proximity of the Project Area. No species location data is available through the use of the IPaC system search. Additional coordination with the USFWS may be necessary to determine if field surveys are necessary to determine species presence/absence and to reduce the potential for impacts.

Nevada Department of Wildlife

The NDOW provided the City of Reno with a letter on November 7, 2013 expressing their concerns with the project (**Attachment 1**). JBR reviewed the letter and followed it up with a phone call to NDOW Supervising Habitat Biologist Mark Freese to further discuss the project. During communications NDOW stressed the importance of mule deer habitat in the area. Their concerns pertain to the severe decline in mule deer population in the area due to factors such as loss of habitat through human encroachment, mortality on highways and railroads, and wildfires (both human caused and natural) destroying winter range, among other things. NDOW requested that the areas with increasing slope (i.e. northern portions) within the Project Area be set aside as open space to protect crucial winter range. It should be noted that based on the current proposed open space zoning for the Project Area (**Figure 2a**), where open space begins when slope exceeds approximately 25% (**Figure 2b**), this mule deer concern appears to be addressed. During communications, NDOW also encouraged the development and implementation of a mitigation plan that outlines measures to alleviate human-wildlife issues as well as habitat improvement above the project area to help stabilize the Loyalton-Truckee Deer Herd by offsetting the habitat impacted by the project.

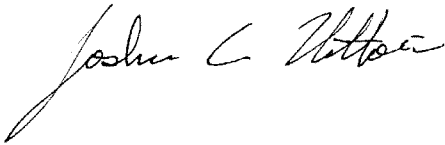
NDOW also communicated that they would like to ensure that Bull Canyon road still allows public access and that a 50 to 75 foot corridor along the Truckee River edge be established to allow public access to the river. They encouraged the development and implementation of a noxious and invasive species plan to help avoid introduction and spread of further detrimental species to surrounding areas. NDOW requested further coordination with the City of Reno, West Meadows Investments, LLC, Washoe County, and their agency to ensure the potential for wildlife impacts is minimized as the project progresses.

Mr. Fitzgerald
January 3, 2014
Page 3

JBR appreciates the opportunity to work with West Meadows Investments, LLC. If you have any questions, please feel free to call me at (775) 747-5777, or e-mail to jvittori@jbrenv.com.

Sincerely,

JBR ENVIRONMENTAL CONSULTANTS, INC.

A handwritten signature in black ink, appearing to read "Josh C. Vittori". The signature is written in a cursive style with a large, sweeping initial "J".

Josh Vittori
Supervisor/Project Manager

Enclosures

FIGURES



		WEST MEADOWS INVESTMENTS, LLC	
FIGURE 1 NOXIOUS WEEDS			
Project Area 	Noxious Weeds Medusahead Nodding plumeless thistle (Musk thistle) Bull thistle Scotch cotton thistle	Project Location Medusahead Perennial pepperweed (Tail whitetop) Scotch thistle Yellow-star thistle Tail whitetop Whietop (Hoary cress) Yellow star-thistle	CHU 10/20/14 1 in = 500 feet B-A13448-00

This document is for reference purposes only and should not be used as a legal document. JBR makes no guarantees as to the accuracy of the data contained herein or any loss resulting therefrom.

ATTACHMENT 1

Agency Consultation

LEO DROZDOFF
Director

Department of Conservation
and Natural Resources

JENNIFER E. NEWMARK
Administrator

BRIAN SANDOVAL
Governor



Nevada Natural Heritage Program
Richard H. Bryan Building
901 S. Stewart Street, suite 5002
Carson City, Nevada 89701-5245
U.S.A.

tel: (775) 684-2900
fax: (775) 684-2909



STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
Nevada Natural Heritage Program
<http://heritage.nv.gov>

11 December 2013

John Lemback
JBR Environmental Consultants, Inc.
595 Double Eagle Ct., Suite 2000
Reno, NV 89436

Dear Mr. Lemback:

Please find two sets of shape files containing the recorded endangered, threatened, candidate, and At Risk plant and animal elements (taxa) within the West Meadows Estates Project Area assumed to be extant, unless mentioned otherwise. This data set is packaged in GIS ArcMap 10 Format (projected, UTM Zone 11, NAD 1927). The shapefiles represent two separate shape file sets, which contain the recorded element occurrence records (EORs) within Nevada and their associated attributes for the area you requested. The files are labeled; *JBR_West_Meadows_comb.xxx* and *JBR_West_Meadows_obs.xxx*. Please refer to the Biotics Metadata (in xml files included) for explanations and interpretations of each data set along with its respective attributes.

Please find enclosed a shapefile of elements for which precise locations are considered sensitive. This shapefile (*JBR_West_Meadows_DS.xxx*) contains occurrence data with general locational data (township, range). Precise data may be supplied upon request if sufficient need can be demonstrated and confidentiality can be guaranteed.

Please note that your use of these data is contingent upon your acknowledgment of the enclosed DATA LIMITATIONS AND RESTRICTIONS (revised 30 November 2010). In particular, please be aware that we furnish data with the understanding that these data are privileged and are not to be provided to a third party without our consent. Products derived from our data should cite the Nevada Natural Heritage Program as a source, along with the month and year in which we provided the data.

Many of our documents, including species lists and keys to our symbols, can be found on our website www.state.nv.us/nvnhp/. Please visit our website to learn more about our program and the sensitive species of Nevada.

Sincerely,

Eric S. Miskow
Biologist/Data Manager

LEO DROZDOFF
Director

Department of Conservation
and Natural Resources

JENNIFER E. NEWMARK
Administrator

BRIAN SANDOVAL
Governor



Nevada Natural Heritage Program
Richard H. Bryan Building
901 S. Stewart Street, suite 5002
Carson City, Nevada 89701-5245
U.S.A.

tel: (775) 684-2900
fax: (775) 684-2909



STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
Nevada Natural Heritage Program
<http://heritage.nv.gov>

DATA LICENSE AGREEMENT

AGREEMENT: Each person or organization ("requestor") who accepts or uses data ("the data set") provided by the Nevada Natural Heritage Program ("NNHP") agrees to all of the following:

OWNERSHIP NOT GRANTED: ownership of the data set remains exclusively with NatureServe Inc., NNHP, and/or those who provided the data to NNHP or NatureServe ("owners").

DATA SET PROPRIETARY: the data set, and the analytic tools and processes from which it is derived, remain the privileged, confidential property of the owners. The data set shall be treated as proprietary in all respects, and requestor shall implement all procedures reasonably necessary to protect owners' proprietary rights.

DATA LICENSE GRANTED: subject to all the terms of this agreement, NNHP grants to requestor a limited, non-exclusive, non-transferable right of access to the data set ("data license"), for the sole internal use of the requestor and for a period not to exceed one year from the date NNHP supplied the data set.

DATA LICENSE LIMITED: the data set shall not be duplicated for, sold to, provided to, or otherwise allowed to be available to any person or organization, other than the requestor, by any means electronic, written, verbal, or otherwise, without the consent of NNHP. Any and all requests for data access from third parties shall be directed to NNHP.

DATA ACCESS LIMITED: if an organization, requestor shall ensure that internal access to the data set is limited to those individuals with a legitimate need to access the data for the stated project and purpose. If requestor is an individual, data access shall be limited to that individual.

LICENSE FEE DUE: requestor agrees to abide by the separate NNHP fee schedule and payment policy incorporated here by reference, unless a separate data exchange agreement is in place between NNHP and requestor. Fees are payable upon receipt of invoice, and are due within 30 days of the invoice date.

DATA LICENSE REVOCABLE: at the sole discretion of NNHP, the data license may be terminated, revoked, and denied for all past, present, and future uses of the data set, when the earliest of the following occurs: (1) we have not received timely payment of the license fee or other mutually agreed compensation or exchange, or (2) requestor fails to remedy a breach of any other provision of this agreement, to the satisfaction of NNHP, within 15 days of being notified of such breach.

EXPIRED DATA MUST BE DESTROYED: the data license and data set both expire no later than one year after NNHP supplied the data set, or when the data license is revoked for cause, whichever occurs first. The original and all copies of any expired data set must be destroyed by requestor within 3 business days of expiration.

ARCHIVE COPY PERMISSIBLE: if expiration was not due to revocation of license for cause, requestor may retain one archived copy of the expired data set for the sole purpose of supporting previous decisions and analyses. Expired data sets shall not be used to generate new products, analyses, or decisions.

EXTENSIONS NOT GRANTED: if requestor needs access to the data set for longer than one year, a new data license and refreshed data set may be obtained from NNHP at a reduced fee if requested prior to expiration of the old data set. Requests received after expiration are subject to full license fees.

SCOPE OF DATA USE LIMITED: except by written consent from NNHP, requestor shall not use the data set for any project or purpose other than the project and purpose stated in writing when the data were first requested.

SUBCONTRACTORS MUST SIGN SEPARATE AGREEMENT: any subcontractors of requestor who require access to the data set for the same project and purpose must either request access to the data set, or license a separate copy of the data set, and in either case must sign a separate copy of this agreement. Subcontractors granted access shall not use the data set for any other project or purpose unless they have licensed a separate copy for such other project or purpose.

DERIVED DATA PRODUCTS FOR EXTERNAL OR PUBLIC USE are limited to (1) mapped data displayed at a fixed scale of 1:3,000,000 or smaller; (2) mapped data not identifiable to species or ecosystem and displayed at a fixed scale of 1:1,000,000 or smaller, and/or (3) display or description of known presence/absence of individual species, ecosystems, or groups thereof, at the scale and precision of U.S. counties, 8-digit hydrologic units, or grid cell units larger than or equal to 36 square miles. These limitations do not apply to products supplied to NNHP.

DERIVED DATA PRODUCTS FOR INTERNAL USE ONLY include any and all products not meeting the requirements for external or public use above. Such products must be conspicuously marked "Confidential and Proprietary – For Internal Use Only" and may only be shared with members of the requesting organization and subcontractors authorized by NNHP under this agreement.

COMMERCIAL USE LIMITED: physical and electronic products derived in whole or in part from the data set shall not be sold for commercial gain. This does not preclude a for-profit requestor from supplying such products as contract deliverables, subject to all other terms of this agreement.

DATA SOURCE MUST BE CITED: any products derived from the data set must cite the Nevada Natural Heritage Program as a source, along with the month and year we provided the data set.

DATA SET INCOMPLETE: the data set is the result of ongoing analyses and quality controls performed by NNHP staff using tools, concepts, and methods that are the property of NatureServe, Inc., and the Natural Heritage Network. The raw data we analyze are entrusted to us by various private and public organizations and individuals, obtained from published and unpublished literature, or in some cases derived from staff field surveys, and new data are constantly being received and incorporated.

SENSITIVE LOCATIONS OMITTED: NNHP generally withholds precise locational data for a few taxa considered highly vulnerable to collecting, poaching, harassment, or vandalism. Generalized data for such occurrences are provided in printed form. The more precise data may be supplied on request if sufficient need can be demonstrated and confidentiality can be guaranteed to our satisfaction.

TAXONOMIC COVERAGE INCOMPLETE: With few exceptions, NNHP attempts to maintain current data on all species and subspecies in the state listed as threatened, endangered, candidate, or sensitive by any federal, state, or private organization, or otherwise considered at-risk by NNHP. The Nevada Department of Wildlife manages, protects, and restores Nevada's wildlife resources and associated habitat, and their GIS Coordinator should be contacted (775-688-1565) to obtain further information regarding wildlife resources in your area of interest. The Nevada Division of Forestry, under N.R.S. 527.060-.120, protects and regulates the harvest of all cacti, yuccas, and evergreen trees, most taxa of which are not tracked by NNHP.

GEOGRAPHIC COVERAGE INCOMPLETE: NNHP data sets incorporate recent and historical occurrence reports from throughout the State of Nevada. In many cases NNHP has general information for areas outside the state, but we do not normally collect specific data for such areas. Except in rare cases where recent field surveys have been performed by NNHP, the data set only summarizes past reports received by us, is not a definitive representation of all species present or absent in a given place, and cannot be substituted for comprehensive surveys of any site or area. **ABSENCE OF EVIDENCE IS NOT EVIDENCE OF ABSENCE.**

LAND STATUS ATTRIBUTES ADVISORY ONLY: When land ownership or management status attributes are supplied with the data set, they have been derived from the best available maps and other information at the time, but usually are not further verified or updated. We do not assess the ownership status of associated mineral and water rights, or the presence or absence of easements or other encumbrances.

AGREEMENT PERPETUAL: to the fullest extent permitted by law, all provisions of this data license agreement remain in effect in perpetuity for NNHP, Requestor, and any and all successors, heirs, and assigns thereof.

EST_ID	Scientific Name	Common Name	Family Name	Minor Group	Major Group	Potential to occur	NNHP Status	USFWS Status	Global Rank	State Rank	Wetland	Sand Dune	Endemic	BLM Status	USFS Status	Nevada Status	WAP 2012
18101	<i>Varichaeta nevadana</i>	endemic Tahoe annelid	Tubificidae	Annelid	Invertebrate		Track on a watch list only		GNR	SNR							
15930	<i>Stygobromus tahoenis</i>	Tahoe cave obligate amphipod	Crangonyctidae	Crustacean	Invertebrate		Track on a watch list only		G2G3	SNR	Y						
19544	<i>Euphydryas editha monensis</i>	Mono checkerspot	Nymphalidae	Insect	Invertebrate	Yes	Track all extant and selected historical EOs		G5T2T3	S1						NV	
19433	<i>Formica microphthalma</i>	northern Sierra endemic ant	Formicidae	Insect	Invertebrate		Track all extant and selected historical EOs		G2?	S1							
17594	<i>Limenitis archippus labantae</i>	Nevada vicerey	Nymphalidae	Insect	Invertebrate		Track all extant and selected historical EOs		G5T1T2	S1S2							
18854	<i>Myrmecocystus snellingi</i>	dune honey ant	Formicidae	Insect	Invertebrate		Track all extant and selected historical EOs		G2?	S2?		Y		Y			
14537	<i>Pterophila confusalis</i>	aquatic moth	Pyralidae	Insect	Invertebrate		Track on a watch list only		G3T2Q	S2							
18002	<i>Psolitea sabuleti alkalensis</i>	alkaline sandhill skipper	Hesperiidae	Insect	Invertebrate		Track all extant and selected historical EOs		G3T3T4	SNR							
19505	<i>Pseudocopaedeus unio obscurus</i>	Carson wandering skipper	Hesperiidae	Insect	Invertebrate		Track all extant and selected historical EOs	Listed endangered	G3G4T1	S1						NV	
14134	<i>Speyeria nokomis carsonensis</i>	Carson Valley silverspot	Nymphalidae	Insect	Invertebrate		Track all extant and selected historical EOs		G3T1	S1							NV
15142	<i>Stenamma wheelerorum</i>	endemic ant	Formicidae	Insect	Invertebrate		Track all extant and selected historical EOs		G1?	S1			Y				
15049	<i>Meesia triquetra</i>	three-ranked humpmoss	Meseciaceae	Bryophyte	Nonvascular Plant or Fungus		Track all extant and selected historical EOs		G5	S1	Y			N			
17094	<i>Orthotrichum shevockii</i>	Shevock bristleless	Orthotrichaceae	Bryophyte	Nonvascular Plant or Fungus		Track on a watch list only		G1	S1				N		NV	R4
15871	<i>Aspicilia fruticulosa</i>	rim lichen	Hymeneliaceae	Lichen	Nonvascular Plant or Fungus		Track all extant and selected historical EOs		G3	S1							
15317	<i>Arabis reclusiana</i> var. <i>simulans</i>	Washoe tall rockcress	Brassicaceae	Dicot	Vascular Plant		Track on a watch list only		G4G5T1Q	S1							R4
14256	<i>Arabis rigidissima</i> var. <i>demota</i>	Galena Creek rockcress	Brassicaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G3T2Q	S2							
19023	<i>Artemisia packardiae</i>	Packard mugwort	Asteraceae	Dicot	Vascular Plant		Track on a watch list only		G3	S2							
17416	<i>Astragalus lemmonii</i>	Lemmon milkvetch	Fabaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G3?	S1	M						CA
16317	<i>Astragalus porrectus</i>	Labontan milkvetch	Fabaceae	Dicot	Vascular Plant		Track on a watch list only		G3?	S3?					Y		
17840	<i>Astragalus pulsifera</i> var. <i>coronensis</i>	Rams Horn Spring milkvetch	Fabaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G4T3	S1						CA	R5
19541	<i>Astragalus pulsifera</i> var. <i>pulsifera</i>	Ames milkvetch	Fabaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G4T2	S1						NV	R5
15060	<i>Astragalus tiehmi</i>	Tiehmi milkvetch	Fabaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G3	S3				Y			NV
13477	<i>Boechera tiehmi</i>	Tiehmi rockcress	Brassicaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G2	S1							
14049	<i>Camissonia nevadensis</i>	Nevada suncup	Onagraceae	Dicot	Vascular Plant		Track on a watch list only		G3	S3				Y			
15647	<i>Cryptantha schoolcraftii</i>	Schoolcraft cats-eye	Boraginaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G3Q	S3					P		
16032	<i>Draba asterophora</i> var. <i>asterophora</i>	Tahoe draba	Brassicaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G2T2	S1S2							
14231	<i>Eriogonum crobylae</i>	Crosby buckwheat	Polygonaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G3	S3							NV
18508	<i>Eriogonum lemmonii</i>	Lemmon buckwheat	Polygonaceae	Dicot	Vascular Plant		Track on a watch list only		G3?	S3?					Y		
17146	<i>Eriogonum microthecum</i> var. <i>schoolcraftii</i>	Schoolcraft buckwheat	Polygonaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G5T2	S1				N		NV	
17901	<i>Eriogonum ovalifolium</i> var. <i>eximium</i>	Slide Mountain buckwheat	Polygonaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G5T3	S2							
19838	<i>Eriogonum ovalifolium</i> var. <i>williamsiae</i>	Steamboat buckwheat	Polygonaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs	Listed endangered	G5T1	S1	M			Y		NV	
14841	<i>Eriogonum procioidum</i>	prostrate buckwheat	Polygonaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G3	S1							NV
17131	<i>Eriogonum robustum</i>	altered adesite buckwheat	Polygonaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G2	S2S3				Y			R4
15920	<i>Gruonia pulchella</i>	sand cholla	Cactaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G4	S2S3		Y					NV
15907	<i>Hackelia costalis</i>	Coskie tickseed	Boraginaceae	Dicot	Vascular Plant		Track on a watch list only		G5?	S1							
17494	<i>Ivesia aperta</i> var. <i>aperta</i>	Sierra Valley mouse-tails	Rosaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G2T2	S1	M						NV
18498	<i>Ivesia rhypana</i> var. <i>rhypana</i>	grimy mouse-tails	Rosaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G2T1	S2							NV
14093	<i>Ivesia webberi</i>	Webber Ivesia	Rosaceae	Dicot	Vascular Plant	Yes	Track all extant and selected historical EOs	Candidate	G2	S1							NV
15411	<i>Loeflingia squarrosa</i> ssp. <i>artemisiarum</i>	sagebrush pygmyleaf	Caryophyllaceae	Dicot	Vascular Plant		Track on a watch list only		G5T2T3	S1S2		P					NV
14433	<i>Lomatium packardiae</i>	Succor Creek parsley	Apiaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G2	S1?							NV
19798	<i>Lomatium roseanum</i>	adobe parsley	Apiaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G2G3	S2S3							CA
14940	<i>Lupinus malacophyllus</i>	soft lupine	Fabaceae	Dicot	Vascular Plant		Track on a watch list only		G3?	S3?					Y		
16728	<i>Mimulus angustifolius</i>	Mount Rose monkeyflower	Scrophulariaceae	Dicot	Vascular Plant		Track on a watch list only		G17Q	S1?					Y		
19806	<i>Mimulus ovatus</i>	Steamboat monkeyflower	Scrophulariaceae	Dicot	Vascular Plant	Yes	Track all extant and selected historical EOs		G16Q	S1S2							
19162	<i>Oryzopsis nevadensis</i>	oryzopsis	Solanaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G2G3	S2S3		Y					NV
15156	<i>Penstemon sudans</i>	Susannah beardtongue	Scrophulariaceae	Dicot	Vascular Plant		Track on a watch list only		G2G3	S1							NV
16648	<i>Perideridia lemmonii</i>	tuni	Apiaceae	Dicot	Vascular Plant		Track on a watch list only		G4?	S3?							
15578	<i>Phacelia inundata</i>	playa phacelia	Hydrophyllaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G2	S2?	Y						NV
18318	<i>Phacelia lutea</i> var. <i>calva</i>	yellow scorpionflower	Hydrophyllaceae	Dicot	Vascular Plant		Track on a watch list only		G4T3	S1							R5
18735	<i>Plagiobothrys glomeratus</i>	altered adesite popcornflower	Boraginaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G2G3	S2S3							NV
14575	<i>Plagiobothrys salus</i>	salt marsh allcarya	Boraginaceae	Dicot	Vascular Plant		Track on a watch list only		G2G3	S2S3	Y						R4
17887	<i>Polyctenium williamsiae</i>	Williams combleaf	Brassicaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs		G2Q	S2	Y						NV
16631	<i>Rorippa subumbellata</i>	Tahoe yellowcress	Brassicaceae	Dicot	Vascular Plant		Track all extant and selected historical EOs	Candidate	G1	S1	Y						NV
19039	<i>Scutellaria holmgreniorum</i>	Ravensdale skullcap	Lamiaceae	Dicot	Vascular Plant		Track on a watch list only		G3Q	S3							NV
13836	<i>Silene nuda</i> ssp. <i>nuda</i>	naked catchfly	Caryophyllaceae	Dicot	Vascular Plant		Track on a watch list only		G4G5T1T2Q	S1S2					Y		
18277	<i>Tonestus eximius</i>	Tahoe goldenhead	Asteraceae	Dicot	Vascular Plant		Track on a watch list only		G3	S2							
14701	<i>Trifolium lemmonii</i>	Lemmon clover	Fabaceae	Dicot	Vascular Plant		Track on a watch list only		G4?	S1							
19840	<i>Pinus ponderosa</i> ssp. <i>washoensis</i>	Washoe pine	Pinaceae	Gymnosperm	Vascular Plant		Track all extant and selected historical EOs		G5T3Q	S1							NV
16373	<i>Calochortus leichtlinii</i>	Leichtlin mariposa lily	Liliaceae	Monocot	Vascular Plant		Track on a watch list only		G4	S3							
15490	<i>Elodea nevadensis</i>	Nevada waterweed	Hydrocharitaceae	Monocot	Vascular Plant		Track on a watch list only		G4Q	SH	Y				P		
15533	<i>Lithobates pipiens</i>	northern leopard frog	Ranidae	Amphibian	Vertebrate Animal	Yes	Track on a watch list only		G5	S2S3	Y						NV
19818	<i>Rana sierrae</i>	Sierra Nevada yellow-legged frog	Ranidae	Amphibian	Vertebrate Animal		Track all extant and selected historical EOs	Candidate	G1	SH	Y						NV
18960	<i>Accipiter gentilis</i>	Northern Goshawk	Accipitridae	Bird	Vertebrate Animal	No	Track all extant and selected historical EOs		G5	S2							NV
14936	<i>Agelaius tricolor</i>	Triplicate Blackbird	Icteridae	Bird	Vertebrate Animal		Track all extant and selected historical EOs		G2G3	S1B	Y						R4
14785	<i>Aquila chrysaetos</i>	Golden Eagle	Accipitridae	Bird	Vertebrate Animal	No	Track on a watch list only		G5	S4							NV
13817	<i>Asio flammeus</i>	Short-eared Owl	Strigidae	Bird	Vertebrate Animal		Track on a watch list only		G5	S4							NV
15061	<i>Asio otus</i>	Long-eared Owl	Strigidae	Bird	Vertebrate Animal		Track on a watch list only		G5	S4							NV
18392	<i>Athene cucularia hypugaea</i>	Western Burrowing Owl	Strigidae	Bird	Vertebrate Animal		Track on a watch list only		G4T4	S3B							NV
13783	<i>Baeolophus ridgwayi</i>	Juniper Titmouse	Paridae	Bird	Vertebrate Animal		Track on a watch list only		G5	S5B							NV
17474	<i>Buteo regalis</i>	Ferruginous Hawk	Accipitridae	Bird	Vertebrate Animal		Track all extant and selected historical EOs		G4	S2							NV
13860	<i>Buteo swainsoni</i>	Swainson's Hawk	Accipitridae	Bird	Vertebrate Animal		Track on a watch list only		G5	S2B							NV
17229	<i>Chlidonias niger</i>	Black Tern	Laridae	Bird	Vertebrate Animal		Track on a watch list only		G4	S2S3B	Y						NV
16320	<i>Contopus cooperi</i>	Olive-sided Flycatcher	Tyrannidae	Bird	Vertebrate Animal		Track on a watch list only		G4	S2B							NV
14658	<i>Falco mexicanus</i>	Prairie Falcon	Falconidae	Bird	Vertebrate Animal		Track on a watch list only		G5	S4							NV
14224	<i>Gavia immer</i>	Common Loon	Gaviidae	Bird	Vertebrate Animal		Track on a watch list only		G5	S2N	Y						NV
15703	<i>Grus canadensis tabida</i>	Greater Sandhill Crane	Gruidae	Bird	Vertebrate Animal		Track on a watch list only		G5T4	S2B,S3M							NV
15298	<i>Gymnorhinus cyanocephalus</i>	Pinyon Jay	Corvidae	Bird	Vertebrate Animal		Track on a watch list only		G5	S3S4							NV
19246	<i>Icteria virens</i>	Yellow-breasted Chat	Parulidae	Bird	Vertebrate Animal		Track on a watch list only		G5	S3B							NV

19133	Lanius ludovicianus	Loggerhead Shrike	Laniidae	Bird	Vertebrate Animal	Track on a watch list only	G4	S4		NV		SB	SCP
18313	Melanerpes lewis	Lewis's Woodpecker	Picidae	Bird	Vertebrate Animal	Track on a watch list only	G4	S3		NV	R4		SCP
14024	Numenius americanus	Long-billed Curlew	Scolopacidae	Bird	Vertebrate Animal	Track on a watch list only	G5	S2S3B	Y	NV	R4		SCP
19334	Oreortyx pictus	Mountain Quail	Odontophoridae	Bird	Vertebrate Animal	Track on a watch list only	G5	S3		NV	R4	GB	SCP
16060	Oreoscoptes montanus	Sage Thrasher	Mimidae	Bird	Vertebrate Animal	Track on a watch list only	G5	S5B		NV	R4	SB	SCP
19569	Otus flammeolus	Flammulated Owl	Strigidae	Bird	Vertebrate Animal	Track on a watch list only	G4	S4B		NV	R4		SCP
16866	Pelecanus erythrorhynchos	American White Pelican	Pelecanidae	Bird	Vertebrate Animal	Track on a watch list only	G3	S2B	Y	NV	R4		SCP
14036	Picoides albolarvatus	White-headed Woodpecker	Picidae	Bird	Vertebrate Animal	Track on a watch list only	G4	S2		NV	R4		SCP
18300	Plegadis chii	White-faced Ibis	Threskiornithidae	Bird	Vertebrate Animal	Track on a watch list only	G5	S3B	Y	NV	R4		SCP
17345	Pooecetes gramineus	Vesper Sparrow	Emberizidae	Bird	Vertebrate Animal	Track on a watch list only	G5	S4B		NV			
15564	Sphyrapicus nuchalis	Red-naped Sapsucker	Picidae	Bird	Vertebrate Animal	Track on a watch list only	G5	S455B		NV			
14503	Spizella breweri	Brewer's Sparrow	Emberizidae	Bird	Vertebrate Animal	Track on a watch list only	G5	S4B		NV	R4	SB	SCP
17185	Strix occidentalis occidentalis	California Spotted Owl	Strigidae	Bird	Vertebrate Animal	Track all extant and selected historical EOS	G3T3	S1N		CA			SCP
15166	Antrozous pallidus	palid bat	Vespertilionidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S3		NV	R5	PM	
15874	Aplodontia rufa	mountain beaver	Aplodontiidae	Mammal	Vertebrate Animal	Track all extant and selected historical EOS	G5	S1		NV			
16702	Brachylagus idahoensis	pygmy rabbit	Leporidae	Mammal	Vertebrate Animal	Track all extant and selected historical EOS	G4	S3		NV	R4	GM	SCP
17488	Corynorhinus townsendii	Townsend's big-eared bat	Vespertilionidae	Mammal	Vertebrate Animal	Track all extant and selected historical EOS	G4	S2		NV		SM	SCP
14158	Dipodomys deserti	desert kangaroo rat	Heteromyidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S2S3		NV			SCP
14159	Eptesicus fuscus	big brown bat	Vespertilionidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S4		NV			
19429	Euderma maculatum	spotted bat	Vespertilionidae	Mammal	Vertebrate Animal	Track all extant and selected historical EOS	G4	S2		NV	R4	TM	SCP
14945	Glaucomys sabrinus	northern flying squirrel	Sciuridae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S3		CA		PM	SCP
18972	Lasiorycteris noctivagans	silver-haired bat	Vespertilionidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S3B		NV			SCP
16715	Lasiurus blossevillii	western red bat	Vespertilionidae	Mammal	Vertebrate Animal	Track all extant and selected historical EOS	G5	S1M		NV	R5	SM	SCP
15183	Lasiurus cinereus	hoary bat	Vespertilionidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S3N		NV			SCP
16077	Lemmys curtatus	sagebrush vole	Cricetidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S3		NV			SCP
17615	Lepus americanus tahoenis	Sierra Nevada snowshoe hare	Leporidae	Mammal	Vertebrate Animal	Track on a watch list only	G5T3T4Q	S3		CA		GM	SCP
19428	Marthes americana	American marten	Mustelidae	Mammal	Vertebrate Animal	Track all extant and selected historical EOS	G5	S2S3		CA		FM	SCP
18340	Microdipodops pallidus	pale kangaroo mouse	Heteromyidae	Mammal	Vertebrate Animal	Track all extant and selected historical EOS	G3	S2	P	NV		PM	SCP
18802	Myotis californicus	California myotis	Vespertilionidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S4		NV			
17668	Myotis ciliolabrum	western small-footed myotis	Vespertilionidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S3		NV			SCP
13952	Myotis evotis	long-eared myotis	Vespertilionidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S4		NV			SCP
14085	Myotis lucifugus	little brown myotis	Vespertilionidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S3		NV			SCP
14006	Myotis thysanodes	fringed myotis	Vespertilionidae	Mammal	Vertebrate Animal	Track all extant and selected historical EOS	G4G5	S2		NV		PM	SCP
16263	Myotis volans	long-legged myotis	Vespertilionidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S4		NV			
14985	Myotis yumanensis	Yuma myotis	Vespertilionidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S3S4		NV			SCP
16399	Neotamias senex	Allen's chipmunk	Sciuridae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S2S3		NV			SCP
15894	Ochotona princeps	American pika	Ochotonidae	Mammal	Vertebrate Animal	Track all extant and selected historical EOS	G5	S2		NV		PM	SCP
18035	Parastrellus hesperus	western pipitrelle	Vespertilionidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S4		NV			
16956	Sorex pallietris	American water shrew	Soricidae	Mammal	Vertebrate Animal	Track all extant and selected historical EOS	G5	S2		NV			SCP
15212	Sorex preblei	Preble's shrew	Soricidae	Mammal	Vertebrate Animal	Track all extant and selected historical EOS	G4	S1S2		NV			SCP
18358	Sorex trowbridgii	Trowbridge's shrew	Soricidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S2		NV			
16599	Tadarida brasiliensis	Mexican free-tailed bat	Molossidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S3S4B		NV		PM	SCP
16871	Tamiasciurus douglasii	Douglas's squirrel	Sciuridae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S5		CA		PM	
13852	Thomomys monticola	mountain pocket gopher	Geomysidae	Mammal	Vertebrate Animal	Track on a watch list only	G5	S3		NV			SCP
17098	Vulpes macrotis	kit fox	Canidae	Mammal	Vertebrate Animal	Track on a watch list only	G4	S3		CA		FM	
16962	Zapus princeps	western jumping mouse	Dipodidae	Mammal	Vertebrate Animal	Track all extant and selected historical EOS	G5	S2		NV			SCP
13402	Charina bottae	northern rubber boa	Boidae	Reptile	Vertebrate Animal	Track on a watch list only	G5	S3S4		NV			SCP
17345	Elgaria coerulea palmeri	Sierra alligator lizard	Anguillidae	Reptile	Vertebrate Animal	Track all extant and selected historical EOS	G5T4	S2S3		NV		PR	SCP
28725	Elgaria coerulea shastensis	Shasta alligator lizard	Anguillidae	Reptile	Vertebrate Animal	Track all extant and selected historical EOS	G5T4	S1		N	NV	PR	SCP
16576	Phrynosoma douglasii	northwestern short-horned lizard	Phrynosomatidae	Reptile	Vertebrate Animal	Track on a watch list only	G5	SNR		NV			SCP
16988	Thamnophis couchii	Sierra garter snake	Colubridae	Reptile	Vertebrate Animal	Track on a watch list only	G4	S3		NV			

NNFS Status	CCVI	Counties
		Carson City, Douglas, Washoe
		Douglas, Washoe
		Carson City, Douglas, Lyon, Washoe
		Douglas, Washoe
		Churchill, Elko, Eureka, Humboldt, Lander, Lyon, Pershing, Storey, Washoe
		Churchill, Washoe
		Washoe
		Humboldt, Washoe
		Carson City, Douglas, Washoe
		Carson City, Douglas, Washoe
		Washoe
W		Washoe
M		Carson City, Douglas, Washoe
M		Elko, Humboldt, Washoe
T		Douglas, Washoe
W		Washoe
M		Elko, Humboldt, Washoe
W		Washoe
D		Churchill, Humboldt, Lyon, Pershing, Washoe
W		Washoe
W		Washoe
W		Humboldt, Washoe
W		Washoe
D		Carson City, Churchill, Douglas, Lyon, Mineral, Pershing, Storey, Washoe
W		Humboldt, Washoe
T		Douglas, Washoe
W		Humboldt, Washoe
D		Churchill, Lyon, Pershing, Storey, Washoe
W		Washoe
W		Carson City, Douglas, Washoe
E		Washoe
W		Humboldt, Washoe
W		Storey, Washoe
D		Churchill, Douglas, Elko, Esmeralda, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, Washoe, White Pine
M		Humboldt, Washoe
T		Storey, Washoe
W		Elko, Humboldt, Washoe
T		Douglas, Washoe
		Carson City, Lyon, Washoe
W		Humboldt, Washoe
W		Humboldt, Washoe
D		Carson City, Douglas, Lyon, Washoe
W		Washoe
T		Carson City, Douglas, Washoe
W		Churchill, Esmeralda, Humboldt, Mineral, Pershing, Storey, Washoe
W		Washoe
W		Carson City, Douglas, Lyon, Mineral, Washoe
W		Humboldt, Washoe
M		Humboldt, Lyon, Washoe
W		Storey, Washoe
W		Churchill, Elko, Esmeralda, Eureka, Humboldt, Lander, Lyon, Mineral, Nye, Pershing, Washoe
T		Douglas, Lyon, Mineral, Nye, Washoe
T		Carson City, Douglas, Washoe
D		Washoe
W		Carson City, Elko, Pershing, Washoe
M		Washoe
M		Washoe
W		Washoe
		Douglas, Mineral, Washoe
		Washoe
PS		Carson City, Churchill, Clark, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, Washoe, White Pine
PS		Carson City, Douglas, Washoe
MV		Carson City, Churchill, Elko, Eureka, Humboldt, Lander, Lyon, Pershing, Storey, Washoe, White Pine
PS		Carson City, Douglas, Lyon, Mineral, Storey, Washoe
PS		Carson City, Churchill, Clark, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, Washoe, White Pine
PS		Carson City, Churchill, Douglas, Elko, Eureka, Humboldt, Lander, Lyon, Pershing, Storey, Washoe, White Pine
PS		Carson City, Churchill, Clark, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, Washoe, White Pine
PS		Carson City, Churchill, Clark, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, Washoe, White Pine
PS		Carson City, Churchill, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, Washoe, White Pine
PS		Carson City, Churchill, Elko, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, Washoe, White Pine
IL		Carson City, Douglas, Elko, Eureka, Lander, Lyon, Mineral, Storey, Washoe
PS		Carson City, Churchill, Clark, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, Washoe, White Pine
PS		Carson City, Elko, Mineral, Washoe
PS		Churchill, Elko, Eureka, Humboldt, Lander, Lincoln, Pershing, Washoe, White Pine
PS		Carson City, Churchill, Clark, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lincoln, Lyon, Mineral, Nye, Pershing, Storey, Washoe, White Pine
PS		Carson City, Churchill, Clark, Douglas, Elko, Eureka, Humboldt, Lander, Lincoln, Lyon, Nye, Pershing, Storey, Washoe, White Pine



United States Department of the Interior



FISH AND WILDLIFE SERVICE
NEVADA FISH AND WILDLIFE OFFICE
1340 FINANCIAL BOULEVARD, SUITE 234
RENO, NV 89502
PHONE: (775)861-6300 FAX: (775)861-6301
URL: www.fws.gov/nevada/

Consultation Tracking Number: 08ENV00-2014-SLI-0055

December 12, 2013

Project Name: West Meadows Estate

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project.

To Whom It May Concern:

The attached species list indicates threatened, endangered, proposed, and candidate species and designated or proposed critical habitat that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act of 1973, as amended (ESA, 16 U.S.C. 1531 *et seq.*), for projects that are authorized, funded, or carried out by a Federal agency. Candidate species have no protection under the ESA but are included for consideration because they could be listed prior to the completion of your project. Consideration of these species during project planning may assist species conservation efforts and may prevent the need for future listing actions. For additional information regarding species that may be found in the proposed project area, visit <http://www.fws.gov/nevada/es/ipac.html>.

The purpose of the ESA is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the ESA and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Guidelines for preparing a Biological Assessment can be found at: http://www.fws.gov/midwest/endangered/section7/ba_guide.html.

If a Federal action agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:
<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLDS.PDF>.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this species list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally listed, proposed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally, as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation, for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the attached list.

The Nevada Fish and Wildlife Office (NFWO) no longer provides species of concern lists. Most of these species for which we have concern are also on the Animal and Plant At-Risk Tracking List for Nevada (At-Risk list) maintained by the State of Nevada's Natural Heritage Program (Heritage). Instead of maintaining our own list, we adopted Heritage's At-Risk list and are partnering with them to provide distribution data and information on the conservation needs for at-risk species to agencies or project proponents. The mission of Heritage is to continually evaluate the conservation priorities of native plants, animals, and their habitats, particularly those most vulnerable to extinction or in serious decline. In addition, in order to avoid future conflicts, we ask that you consider these at-risk species early in your project planning and explore management alternatives that provide for their long-term conservation.

For a list of at-risk species by county, visit Heritage's website (<http://heritage.nv.gov>). For a specific list of at-risk species that may occur in the project area, you can obtain a data request form from the website (http://heritage.nv.gov/get_data) or by contacting the Administrator of Heritage at 901 South Stewart Street, Suite 5002, Carson City, Nevada 89701-5245, (775) 684-2900. Please indicate on the form that your request is being obtained as part of your coordination with the Service under the ESA. During your project analysis, if you obtain new information or data for any Nevada sensitive species, we request that you provide the information to Heritage at the above address.

Furthermore, certain species of fish and wildlife are classified as protected by the State of Nevada (<http://www.leg.state.nv.us/NAC/NAC-503.html>). You must first obtain the appropriate license, permit, or written authorization from the Nevada Department of Wildlife (NDOW) to take, or possess any parts of protected fish and wildlife species. Please visit <http://www.ndow.org> or contact NDOW in northern Nevada (775) 688-1500, in southern Nevada (702) 486-5127, or in eastern Nevada (775) 777-2300.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Service's wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

The Service's Pacific Southwest Region developed the *Interim Guidelines for the Development of a Project Specific Avian and Bat Protection Plan for Wind Energy Facilities* (Interim Guidelines). This document provides energy facility developers with a tool for assessing the risk of potential impacts to wildlife resources and delineates how best to design and operate a bird- and bat-friendly wind facility. These Interim Guidelines are available upon request from the NFWO. The intent of a Bird and Bat Conservation Strategy is to conserve wildlife resources while supporting project developers through: (1) establishing project development in an adaptive management framework; (2) identifying proper siting and project design strategies; (3) designing and implementing pre-construction surveys; (4) implementing appropriate conservation measures for each development phase; (5) designing and implementing appropriate post-construction monitoring strategies; (6) using post-construction studies to better understand the dynamics of mortality reduction (*e.g.*, changes in blade cut-in speed, assessments of blade "feathering" success, and studies on the effects of visual and acoustic deterrents) including efforts tied into Before-After/Control-Impact analysis; and (7) conducting a thorough risk assessment and validation leading to adjustments in management and mitigation actions.

The template and recommendations set forth in the Interim Guidelines were based upon the Avian Powerline Interaction Committee's Avian Protection Plan template (<http://www.aplic.org/>) developed for electric utilities and modified accordingly to address the unique concerns of wind energy facilities. These recommendations are also consistent with the Service's wind energy guidelines. We recommend contacting us as early as possible in the planning process to discuss the need and process for developing a site-specific Bird and Bat Conservation Strategy.

The Service has also developed guidance regarding wind power development in relation to prairie grouse leks (sage-grouse are included in this). This document can be found at: http://www.fws.gov/southwest/es/Oklahoma/documents/te_species/wind%20power/prairie%20grouse

Migratory Birds are a Service Trust Resource. Based on the Service's conservation responsibilities and management authority for migratory birds under the Migratory Bird Treaty Act of 1918, as amended (MBTA; 16 U.S.C. 703 *et seq.*), we recommend that any land clearing or other surface disturbance associated with proposed actions within the project area be timed to avoid potential destruction of bird nests or young, or birds that breed in the area. Such destruction may be in violation of the MBTA. Under the MBTA, nests with eggs or young of migratory birds may not be harmed, nor may migratory birds be killed. Therefore, we recommend land clearing be conducted outside the avian breeding season. If this is not feasible, we recommend a qualified biologist survey the area prior to land clearing. If nests are located, or if other evidence of nesting (*i.e.*, mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat

requirements of the species) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active.

Guidance for minimizing impacts to migratory birds for projects involving communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/contow.html>.

If wetlands, springs, or streams are known to occur in the project area or are present in the vicinity of the project area, we ask that you be aware of potential impacts project activities may have on these habitats. Discharge of fill material into wetlands or waters of the United States is regulated by the U.S. Army Corps of Engineers (ACOE) pursuant to section 404 of the Clean Water Act of 1972, as amended. We recommend you contact the ACOE's Regulatory Section regarding the possible need for a permit. For projects located in northern Nevada (Carson City, Churchill, Douglas, Elko, Esmeralda, Eureka, Humboldt, Lander, Lyon, Mineral, Pershing, Storey, and Washoe Counties) contact the Reno Regulatory Office at 300 Booth Street, Room 3060, Reno, Nevada 89509, (775) 784-5304; in southern Nevada (Clark, Lincoln, Nye, and White Pine Counties) contact the St. George Regulatory Office at 321 North Mall Drive, Suite L-101, St. George, Utah 84790-7314, (435) 986-3979; or in California along the eastern Sierra contact the Sacramento Regulatory Office at 650 Capitol Mall, Suite 5-200, Sacramento, California 95814, (916) 557-5250.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: West Meadows Estate

Official Species List

Provided by:

NEVADA FISH AND WILDLIFE OFFICE
1340 FINANCIAL BOULEVARD, SUITE 234
RENO, NV 89502
(775) 861-6300
<http://www.fws.gov/nevada/>

Consultation Tracking Number: 08ENV00-2014-SLI-0055

Project Type: Development

Project Description: West Meadows Estate



United States Department of Interior
Fish and Wildlife Service

Project name: West Meadows Estate

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-119.9825179 39.5271539, -119.9635924 39.5268064, -119.9634637 39.5256147, -119.9626687 39.5250511, -119.9624552 39.5240589, -119.9610808 39.5230318, -119.9589554 39.5229964, -119.9589994 39.5195726, -119.9607364 39.5221192, -119.9630765 39.5227178, -119.9652437 39.5227674, -119.9669818 39.5227012, -119.9732412 39.5220127, -119.9748137 39.5217413, -119.9755647 39.5223371, -119.9765303 39.5229827, -119.9775388 39.5233799, -119.979749 39.5240254, -119.9802425 39.5252337, -119.9803129 39.5257363, -119.9807152 39.5261939, -119.9825179 39.5271539)))

Project Counties: Washoe, NV



United States Department of Interior
Fish and Wildlife Service

Project name: West Meadows Estate

Endangered Species Act Species List

There are a total of 4 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed on the **Has Critical Habitat** lines may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

cui-ui (*Chasmistes cujus*)

Population: Entire

Listing Status: Endangered

Greater sage-grouse (*Centrocercus urophasianus*)

Population: entire

Listing Status: Candidate

Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*)

Population: Entire

Listing Status: Threatened

Webber Ivesia (*Ivesia webberi*)

Listing Status: Proposed Threatened

Has Critical Habitat: Proposed



United States Department of Interior
Fish and Wildlife Service

Project name: West Meadows Estate

Critical habitats that lie within your project area

There are no critical habitats within your project area.



BRIAN SANDOVAL
Governor

STATE OF NEVADA
DEPARTMENT OF WILDLIFE

1100 Valley Road
Reno, Nevada 89512
(775) 688-1500 • Fax (775) 688-1595

TONY WASLEY
Director

RICHARD L. HASKINS, II
Deputy Director

PATRICK O. CATES
Deputy Director

November 7, 2013

Nathan Gilbert
Community Development Department
Development and Businesses Services Center
One East First Street
Reno, NV 89505

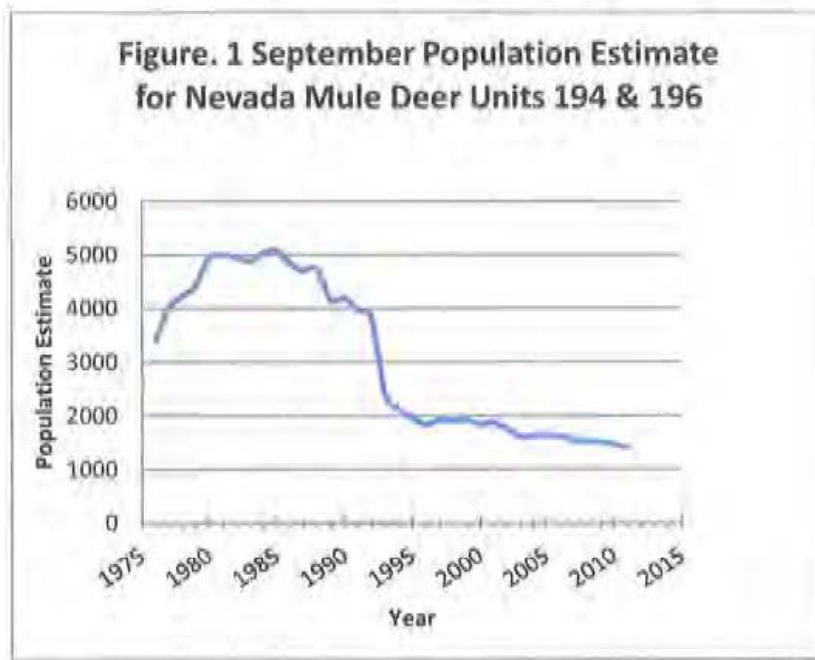
Subject: West Meadows Estates

Dear Mr. Gilbert:

Thank you for providing the Nevada Department of Wildlife (NDOW) with the opportunity to review the West Meadows Estates proposed plan. It is our job to identify potential impacts to wildlife prior to project implementation and to suggest mitigation measures to avoid and lessen impacts to wildlife. As such, we have identified the following measures to minimize and mitigate impacts to wildlife and look forward to future collaboration.

Mule deer have experienced severe population declines (Fig. 1) within the Loyalton-Truckee Deer Herd Area (which includes Peavine). Much of the decline in deer numbers can be attributed to "a combination of factors including, but not limited to, loss of habitat through human encroachment, significant mortality on highways and railroads, reduced habitat productivity resulting from natural vegetational changes, and harassment caused by greatly increased human recreational use (1982 Loyalton-Truckee Deer herd Plan)". Today, these issues still exist with urban and ex-urban development and associated recreational uses and loss of habitat due to invasion of weedy species following wildfires being the greatest threats. Human development and wildfires (human caused and natural) continue permanently removing winter range; subsequently, reducing the carrying capacity of the Loyalton-Truckee/Verdi Interstate herd. Much work has been done and continues toward minimizing threats to this herd (2010 Interstate Deer Project: Loyalton-Truckee Deer Herd Report and Management Plan Update).

**Figure. 1 September Population Estimate
for Nevada Mule Deer Units 194 & 196**



Our agency has a history working with the City of Reno, Washoe County and various developers through land use planning and zoning, project planning, project implementation, and mitigation projects (see enclosed letters). Cooperatively, we have attempted to stave off the impacts to mule deer and other wildlife; however, these efforts have fallen short as indicated by the present and past mule deer population declines. We will continue to support protection and conservation measures for wildlife on Peavine and other areas surrounding Reno. We recognize and concede that the West Meadows Estates project will not crash the remaining mule deer population, but the question remains, how much is enough or too much? We believe that with good foresight, planning, and management we can limit further habitat degradation that has caused mule population declines, to stabilize the population and provide wildlife benefits to all wildlife. However, if we continue to incrementally remove and degrade wildlife habitat (which we have been opposed to [see enclosed letters]), the cumulative impacts will continue to cause further population declines for mule deer and other wildlife.

First, we must decide where we are going to draw the line to conserve this herd. This is a simple task that can be easily accomplished through proper planning. We are willing to concede and work cooperatively through the West Meadow Estates development planning process, but hope that areas above (i.e. to the north) are set aside permanently as open space to protect this crucial winter range. We also believe that this is a palatable approach from the development aspect as building constraints exist with increasing slope. This includes areas upslope of Somerset, Verdi, and in other areas on Peavine where urban sprawl has lowered the carrying capacity for mule deer. We would also appreciate discussing other areas (e.g. Garson) that are in need of protection. Our primary objective is to stabilize or increase the mule deer carrying capacity.

We would like to work cooperatively with the City of Reno, Washoe County and developers on a mitigation plan that may enhance habitat values upslope on Peavine in an attempt to limit the population decline. Developing such a plan will ensure project impacts from the West Meadows

Estates project can adequately offset the negative impacts, resulting in a net neutral or positive impact to mule deer and other wildlife.

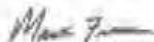
We encourage the City of Reno to work cooperatively with the developers and housing associations to develop a comprehensive understanding that mule deer and other wildlife will coexist with them. We anticipate complaints will arise and will need to be addressed; however, our agency lacks sufficient manpower to address complaints and wildlife nuisance issues that may arise. Exclusionary measures will need to be addressed within the final proposal. Through development and implementation of a mitigation plan that enhances habitat above the development we expect complaints will be minimized but will not completely alleviate issues.

We would like to ensure public access is allowed up the Bull Canyon road located to the east. Furthermore, we recall that one of the older plans established a 50 – 75 foot corridor along the Truckee River edge to allow public access to the river. We continue to support this corridor and are willing to partner to enhance public access for fishing and wildlife viewing opportunities.

NDOW encourages developing and implementing a noxious and invasive species plan to prevent the further introduction and spread of undesirable species into adjacent habitat. Such a plan should include prevention measures, inventory, monitoring, and treatment. Noxious and invasive species plans ensure wildlife compatibility with new development by protecting and conserving adjacent habitat.

NDOW is available for further discussion regarding the West Meadows Estates Project. We look forward to working with the City of Reno and others. Please let us know if you have any questions, concerns, or need additional information.

Sincerely,



Mark Freese
Supervisory Habitat Biologist

Cc:

Washoe County Planning Department

Enclosures

2-17-2004 NDOW letter regarding January 2004 Mortensen-Garson Plan

12-11-2002 NDOW Letter regarding Somerset Plan

4-30-2002 NDOW memorandum regarding Lakemont Homes

2-6-1996 NDOW letter regarding Somerset Project (2)

1-31-1994 NDOW letter regarding Quilici Ranch-Verdi AP Amendment

12-14-1989 NDOW Letter regarding Granit Construction Project

9-29-1989 NDOW letter regarding Anderson Hill Quarry

Literature

California Department of Fish and Game. 1982. Loyalton-Truckee Deer Herd Plan. California Department of Fish and Game, Sacramento, USA.

California Fish and Game and Nevada Department of Wildlife. 2010. Interstate Deer Project: Loyalton-Truckee Deer Herd Report and Management Plan Update.



STATE OF NEVADA
DEPARTMENT OF WILDLIFE

1100 Valley Road
P.O. Box 10678

Reno, Nevada 89520-0022
(702) 789-0500

BOB MILLER
Acting Governor

WILLIAM A. MOLINI
Director

December 14, 1989

Mr. Larry J. Johnson
Vice President
SEA Consulting Engineers
950 Industrial Way
Sparks, Nevada 89431-6092

Dear Larry:

Please find enclosed a map depicting mule deer distribution on Peavine Mountain. Our agency is party to the Loyalton-Truckee Mule Deer Herd Management Plan (May 6, 1983) with the Toiyabe National Forest, Carson City District of the Bureau of Land Management and California Fish and Game. According to the plan objectives, all agencies must strive to achieve a population goal of 8,400 mule deer. Peavine Mountain provides critical winter range and migratory corridors for this herd.

Current population data indicates the spring fawn to adult ratio of 22.3 is far below the plan objective of 44 to 45. These data indicate the need to protect, restore and maintain Nevada mule deer winter ranges. Consistent with this plan and coordinating agencies, we emphasize the need to place this habitat into public ownership. Standards and guidelines of the Toiyabe Forest Plan will manage these lands for its wildlife and watershed values.

We would appreciate Granite Construction's consideration to exchange these lands for other federal holdings. If there are any questions on this matter, please feel free to contact our office.

Sincerely,

WILLIAM A. MOLINI, DIRECTOR

Richard T. Heap Jr.
Regional Manager
Region I

REL:rel\ph

1459

Leach



KENNY C. GUINN
Governor

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF WILDLIFE

1100 Valley Road
Reno, Nevada 89512
(775) 688-1500 • Fax (775) 688-1505

R. MICHAEL TURNIPSEED, P.E.
Director
Department of Conservation
and Natural Resources

TERRY R. CRAWFORTH
Administrator

December 9th, 2002

City of Reno
Community Development Department
P.O. Box 1900
Reno, NV 89505

Attn: Ms. Cheryl Ryan

Re: Somerset Planned Unit Development

Dear Ms Ryan:

I am in receipt of your furnished copy of the development standards handbook for the above project (Somerset). I regret to inform you that I will be unable to examine the entire DSL in order to provide a comprehensive assessment in the time frame that you request. I am further handicapped by the fact that the Division's original correspondence regarding this project is archived and will take some effort to retrieve, again outside of the time frame.

What I can offer you is a comparison of the conceptual land use plan, identified as Figure 1-5 in the DSL, to the copy of plan that you have identified for me as the approved site plan. I acknowledge that property boundaries have changed. I also note that the DSL map leaves considerably less undeveloped land than the original, or more properly, the *approved site plan*. The latter clarification is provided because I cannot claim with any certainty that the *approved site plan* is the same one that our agency mutually scrutinized with the project proponents back in January 1996. Can you tell me whether the approved site plan is the same as the original plan developed by Jeff Codega Planning/Design Inc. following our input? Regardless, both maps delineate considerably more dwelling units than Washoe County's original (pre-1996) zoning allowed.

Our concerns at that time remain similar to what they are now – the project will eliminate key winter habitat utilized by the Loyalton-Truckee Interstate Mule Deer Herd through conversion to urban landscape and infrastructure. Peripheral impacts caused by intensified human activity within the project envelope and within adjacent public and private lands will jeopardize herd survival under a harsh winter climatic regime.

We expressed these concerns to the proponents in 1996. Upon their request, we forwarded our suggestions for land use actions that could mitigate the impacts to the herd. Principally, we suggested that the proponents increase the carrying capacity of the remaining vacant land through a series of vegetative manipulations. Increasing the density of forage plant species over most vacant ground and planting upper-story cover plant species within vacant drainages were two mitigation elements that could sustain deer albeit under higher densities. Seed mix recommendations were not limited to a 50 foot wide buffer strip as indicated in the handbook. Forage plant seedings were to occur on land away from the housing tracts in order to discourage deer from loitering in unsafe proximity. I was not provided with Book 2 of the DSL so I cannot offer an assessment of the proponent's current plans regarding this buffer. I suspect that what the Division agreed to in 1996 may not be applicable now.

City of Reno
December 9th, 2002
Page 2

The success of these efforts can only be guaranteed if disturbance is minimal. Human activity in vacant areas would have to be controlled and road access to higher elevation housing phases would have to incorporate minimal road surface. Additionally, we requested that overland travel on these roads be kept at a low rate of speed. We also acknowledge that Somerset Parkway is now located further to the north. This plan iteration requires us to reassess our original comments. This action, along with the redistribution of village sites will effectively eliminate any potential mitigation value that the original suggestions measures might have had.


The Division opposed the development of a golf course, citing that landscape vegetation, not the greens and fairways themselves, will attract deer. The playing surfaces will inevitably attract Canada geese. Presence of either species will create a nuisance, and perhaps even a hazard, to community's residents. I recollect that the golf course was dropped from the original concept plan, yet I now see that it is incorporated into the development. The Division may have missed an opportunity to provide input to an amendment at some point in the recent past.

Suffice it to say that our faith in these mitigation measures was then and is now guarded. We believe that the deer herd will respond to the increased human presence as it has elsewhere in the Truckee Meadows and in other similar circumstances throughout the west. The herd will diminish in number. The herd will suffer dramatic losses under severe winter weather when they are can no longer utilize the low elevation, south facing, sagebrush-covered slopes that the site affords, hence its designation as 'critical' winter range. Individual animals will adjust to the human presence and will interact at random, sometimes causing problems for or at the very least eliciting concern from the community's residents. Deer presence always supports the presence of deer predators. Coyotes and mountain lions will be present at current numbers until such time that their primary prey are reduced in number. New human residents will have to adjust to the fact that these animals will always exist along the periphery and will be a threat to persons and property. The threat to the former is only slight while the threat to the latter is highly probable. Efforts to control pets are admirable on paper; however, pets will still end up missing.

In conclusion, the Division believes that the increased amount of acreage subject to development, the redistribution of villages, the realignment of traffic routes and the inclusion of the golf course now render our original input moot.

If I can be of any further assistance, please feel free to contact me.

Sincerely,



CRAIG A. MORTIMORE
Supervising Game Biologist
Western Region

cc: Western Region Habitat Bureau
W. Mandeville
CDFG - J. Holley



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Fallon, Nevada 89406

BOB MILLER
Acting Governor

WILLIAM A. MOLINI
Director

September 29, 1989

Mr. Larry J. Johnson
Vice President
SEA Consulting Engineers
950 Industrial Way
Sparks, Nevada 89431-6092

RE: Anderson Hill Quarry - Peavine Mountain

Dear Larry:

We appreciate consulting with you and Granite Construction concerning wildlife resources on Peavine Mountain in Washoe County. Our agency is working with California Fish and Game and the Toiyabe National Forest to preserve critical habitat for the Truckee-Loyalton Interstate Mule Deer Herd. This herd is dependent on Peavine Mountain for critical winter range and migratory corridors to other winter ranges near Cold Springs.

It is the position of our agency that Peavine Mountain has important and unique wildlife, recreation and watershed values in need of protection and management. The Department endorses all zoning ordinances and policies of Washoe County that inhibit development on Peavine Mountain. In addition, our agency is under an agreement with California to manage for a viable herd within its carry capacity. The Toiyabe Forest has adopted strict standards and guidelines to manage their lands to support the state's herd management goal. Therefore, we must review any development or management proposals within the guidelines of these agreements and regulations.

In review of the preliminary assessment we find the quarry site is within mule deer habitat. This area provides some wintering habitat and is within a migratory corridor. We request that Granite Construction consider mitigation.

72

Mr. Larry J. Johnson
September 29, 1989
Page 2

For Granite lands within the boundaries of the U.S. Forest Service and beyond the Anderson Hill Quarry and Gravel Plant, please consider:

1. Offer for sale to the U.S. Forest Service.
2. Offer to exchange these lands to the Forest Service for federal lands in Nevada.
3. Offer a deed restriction to limit development, disallow grazing and allow public access.
4. Offer the state a conservation easement addressing development, livestock grazing and public access.
5. Disallow livestock grazing.

For Granite Construction lands east of Highway 395, near Silver Lake Playa, please consider:

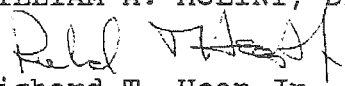
1. Donate lands at "L" Lake to the Department's Watchable Wildlife Program.

The above suggestions can fully offset the direct and indirect impacts of Granite Construction's proposal. We feel that Peavine Mountain needs intensive management for watershed, wildlife and recreation values. Current private holdings and land uses are degrading and threatening important resources on Peavine Mountain. Please consider the above mitigation to help in resolving present conflicts.

We look forward to working with SEA and Granite Construction Company to find a mutual agreement concerning this matter. If there are any questions or need for future meetings, please contact Mr. Roy Leach, Supervising Biologist, 423-3171.

Sincerely,

WILLIAM A. MOLINI, DIRECTOR


Richard T. Heap Jr.
Regional Manager
Region I

REL:rel/ph

CC: Habitat, Reno
Washoe County, John Warlaw
Granite, James Roberts, Box 2087, Sparks, 89432
Toiyabe Forest, Guy Pence
Rich Trachok, 232 Court St., Reno 89501



NEVADA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF WILDLIFE

1100 Valley Road ★ Reno, Nevada 89512-2817
(775) 688-1500

MEMORANDUM

4 MAY 02

*Washoe
County*

April 30, 2002

To: Western Region Habitat, Roy Leach

From: Walter Mandeville

Re: Lakemont Homes

When I first looked at this map, I thought I had it upside down or was not looking at it properly. Finally I realized that, in fact the view is correct. This development is located in the middle of some of the best deer winter range in Western Nevada. During the recent spring survey we classified about 1,100 mule deer from north of the McQueen area over to Verdi. This project is going to remove some of this habitat.

It is interesting to note that Washoe County has named the mule deer a keynote species for the Peavine plan. It appears that at the current rate of development along the Peavine front that there are not too many people that have that big of an interest in mule deer in this area.

This development will certainly impact mule deer on this winter range. It is a surety that each development will cause a reduction in this herd. This herd will become smaller to the point of the only deer in the area are those that adapt to the urban environment and become yearlong residents such as those that live along the river corridors in Western Nevada. I do not believe that there is any mitigation that can replace this loss of habitat especially the critical winter habitat that is becoming more limited as time passes. This includes all of the Western Nevada front from north of Reno and south to Carson Valley and the Minden/Gardnerville area. This area is beginning to resemble the area of Colorado from Fort Collins to South of Colorado Springs, and probably Pueblo

Colorado.

I am not sure what can be done about this but I do feel that this development should be opposed by NDOW in that it will destroy prime winter range. It does not matter if it is built as a cluster or any other design it still seriously impacts this interstate herd. The residents of this community will have dogs, ATV's etc. and they will all promise to do the right thing for wildlife. All in all, this development will have a great impact to the wildlife values in this particular area.



KENNY C. GUINN
Governor

STATE OF NEVADA
DEPARTMENT OF WILDLIFE

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Reno, Nevada 89512
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TERRY R. CRAWFORTH
Director

GENE WELLER
Deputy Director

Reno City Planning
Cheryl Ryan
P.O. Box 1900
Reno, NV 89501

February 17, 2004

Re: Mortensen et. al. Development Standard Handbook

Dear Ms. Ryan

The Nevada Department of Wildlife (NDOW) has recently reviewed the Mortensen et. al. Development Standard Handbook prepared by Summit Engineering. It appears that little information has been included regarding wildlife that inhabit the area and in fact are dependent upon some of the region as critical winter range, migration corridors and a source of forage and water. These species include mule deer, passerine birds, raptors, small mammals, and a variety of predatory species including mountain lion and coyote. To that end NDOW would recommend the following wildlife stipulations be included in the Development Standard Handbook to provide for these species continued existence into the future:

The Developer shall provide and maintain wildlife corridors throughout the development. Working closely with the Department of Wildlife, the developer(s) will preserve greenbelt/wildlife areas, which exist in the project. These areas serve as a habitat for mule deer and other species during the winter months and may, in some cases be improved by planting and restoring native vegetation or species like forage kochia. This will ensure that the natural habitat and migration routes of wildlife will be provided for. These areas will also provide visual breaks between developed areas. Greenbelts and wildlife areas will be maintained as dedicated easements.

Wildlife corridors should be designed with the following criteria in mind:

- *Corridors shall be as wide as possible. Corridor width may vary, with the habitat type, but should be a minimum of 1000 feet wide (see attached).
- *As much open space as possible shall be maintained next to any culverts to encourage use of the culverts.
- *Maximize land uses adjacent to the corridor that reduces human impacts to the corridor. Having surrounding habitat similar to that found within corridors can offset isolation effects along corridors.

*Do not allow housing or other impacts to project into the corridor to form impediments to movement and increase harmful edge effects.

*Develop strict lighting restrictions for the houses adjacent to the corridor to prevent light pollution into the corridor. Lights must be directed downward and inward towards any homes or businesses.

*All wildlife corridors shall be maintained as dedicated easements.

Natural areas that support wildlife enhance water quality by reducing the total areas of paving and other man-made features, can act as recharge areas, manage stormwater and provide views and recreational opportunities. A majority of the development shall be left in its natural state or as open space. These open space areas shall be dedicated easements.

Natural buffers shall be maintained along all boundaries between parcels, developed areas and wildlands. These parcels shall be maintained as dedicated easements.

All drainage-ways, annual, intermittent and perennial streams shall be used for wildlife enhancement, improvement of water quality and to maintain/enhance native vegetation. Natural rock check dams shall be constructed in key drainage locations approved by the City of Reno and the Department of Wildlife to create natural water resources and features and for moisture retention for enhanced riparian growth/habitat. These areas shall be maintained as dedicated easements.

Wildlife edges shall be created within the development to ensure that wildlife habitat is protected. In addition, open space preserves around the perimeter of the project will ensure that adjacent properties are buffered from new neighborhoods. These open space and wildlife edges shall be maintained as dedicated easements.

All drainage-ways, intermittent, annual and perennial streams within the developed area shall be preserved as open space and wildlife corridors. These areas shall be maintained as dedicated easements. This will add aesthetic appeal to the community and will help ensure that wildlife habitat and access to the public lands is retained or provided for.

Landscaping of open space or drainage-ways may occur. Turf areas will be kept to a minimum to conserve water. Priority will be placed on native vegetation species. Secondary priority will be given to those nonnative species that provide good wildlife habitat and food value.

All areas that are disturbed during and after the initial development/construction phase shall be restored to as natural a condition as possible by utilizing native plant species.

The developer(s) shall provide all changes, proposed changes, amendments, alternatives, additions and deletions to the Department of Wildlife at least 30 (thirty) days prior to any meetings to provide for proper review.

The developer(s) shall provide for protection, loss prevention or mitigation of loss of any sensitive species of plant or animal as listed by the Nevada Natural Heritage Program.

Vehicular access must be maintained to the USFS road that connects to the southeast corner of the south property. This road represents the only access point to reach Bronco, Gray and Deep Creeks. These creeks are identified as Lahontan Cutthroat Trout Recovery Streams and must be accessible to NDOW fisheries biologists for management activities. Additionally, this is one of the few remaining access points for recreationists to get to the USFS lands that lie along the perimeter of the project.

Due to its proximity to the Truckee River, the 65 acre business park proposed to be built along the Southern Pacific railroad tracks on the former Quilici Ranch should be subject to the same prohibited industrial uses outlined in the Critical Stream Zone Buffer Area Development Standards. These uses include aggregate facilities (permanent or temporary), energy production, general industrial (heavy), inoperable vehicle storage, mining operations, salvage yards, and wholesaling, storage and distribution (heavy).

These recommendations are based upon NDOW input to the Planning Policies adopted by the City of Reno for the Somerset Development in 2001/2002. That plan provided for wildlife and their habitats in an urban interface setting. We appreciate the opportunity to provide input to the final development of the Mortensen et. al. Development Standard Handbook and are hopeful that the developer will seek future assistance from NDOW in development of a wildlife friendly project.

Sincerely,

A handwritten signature in dark ink, appearing to read "Doug Hunt", followed by a long horizontal line extending to the right.

Doug Hunt, Habitat Bureau Chief

DH
Attachment

cc: Mike Dobel, Supervising Game Biologist
Roy Leach, Supervising Habitat Biologist
1231, 1319
Verdi Citizens Advisory Board

Principles of Wildlife Corridor Design

Monica Bond

Center for Biological Diversity

October 2003

Summary

Wildlife corridors have been proposed as a means to moderate some of the adverse ecological effects of habitat fragmentation. This document discusses principles of evaluating and designing wildlife corridors to facilitate use by target species.

Introduction

Habitat fragmentation affects numerous ecological process across multiple spatial and temporal scales, including changes in abiotic regimes, shifts in habitat use, altered population dynamics, and changes in species compositions (Schweiger et al. 2000). Patch size has been identified as a major feature influencing the plant and small mammal communities, and some wildlife populations are vulnerable to collapse in habitat fragments. The composition, diversity, and spatial configuration of patch types, distances from sources, edge-to-area ratios, and ecotonal features may also structure the plant and animal communities. For example, Bolger et al (1997) found that canyon coastal sage scrub and chaparral fragments under about 60 acres in San Diego County that had been isolated for at least 30 years supported very few populations of native rodents.

Wildlife movement corridors, also called dispersal corridors or landscape linkages as opposed to linear habitats,¹ are linear features whose primary wildlife function is to connect at least two significant habitat areas (Beier and Loe 1992). These corridors may help to reduce or moderate some of the adverse effects of habitat fragmentation by facilitating dispersal of individuals between substantive patches of remaining habitat, allowing for both long-term genetic interchange and individuals to re-colonize habitat patches from which populations have been locally extirpated. Many natural areas are critical core habitat, and are therefore inappropriate for any human development; thus the preservation of corridors will not mitigate against additional loss of core habitat (Beier 1993, Rosenberg 1997). In cases where some development may be acceptable, corridors can be incorporated into the design of a development project by conserving an existing landscape linkage or restoring habitat to function as a connection between larger protected areas.

The level of connectivity needed to maintain a population of a particular species will vary with the demography of the population, including population size, survival and birth

¹ Linear habitats (such as fencerows in an agricultural landscape or streamside buffers) are valued primarily as habitat (Beier and Loe 1992)

rates, and genetic factors such as the level of inbreeding and genetic variance (Rosenberg et al. 1997). These demographic parameters are important baseline data to determine the efficacy of a corridor. In addition, there are a number of general principles for designing and monitoring the effectiveness of wildlife corridors, which are described below.

Corridor Evaluation

Beier and Loe (1992) outlined a six-step "checklist" for evaluating corridors:

Step 1: Identify the habitat areas the corridor is designed to connect.

Step 2: Select several target species for the design of the corridor (i.e., select "umbrella species")².

Step 3: Evaluate the relevant needs of each target species³.

Step 4: For each potential corridor, evaluate how the area will accommodate movement by each target species.

Step 5: Draw the corridor on a map.

Step 6: Design a monitoring program.

Evaluating how the potential corridor will accommodate movement by each species (*Step 4*) is a critical step in the process. This evaluation includes the consideration of how likely the animal will encounter the entrance to the corridor, actually enter the corridor, and follow it to the end. Additionally, it is important to consider whether there is sufficient concealing cover, food, and water within the corridor for the animal to reach the full length of the corridor, or whether such elements need to be created and maintained. Finally, specific impediments to movement within the potential corridor must be assessed, including topography, roads and type of road crossing, fences, outdoor lighting, domestic pets, noise from vehicle traffic or nearby buildings, and other human impacts.

Specifics of Corridor Design

Corridor Features

- The corridor should be as wide as possible. The corridor width may vary with habitat type or target species, but a rule of thumb is about a minimum of 1,000 feet wide (but larger if possible).
- Maintain as much natural open space as possible next to any culverts to encourage the use of the culverts.
- Maximize land uses adjacent to the corridor that reduce human impacts to the corridor (Beier and Loe 1992). Isolation effects along corridors can be offset by

² Because vegetative or topographic structures that facilitate movement for one species may inhibit movement for another, the selected species should cover a range of habitat associations and vagilities (Beier and Loe 1992).

³ Identify the movement and dispersal patterns of selected species, including seasonal migrations (Beier and Loe 1992).

having surrounding habitat similar to that found within corridors (Perault and Lomolino 2000).

- Do not allow housing or other impacts to project into the corridor to form impediments to movement and increase harmful edge effects.
- If housing is to be permitted next to the corridor, put conservation easements on adjacent lots to prohibit structures nearest the corridor.
- Develop strict lighting restrictions for the houses adjacent to the corridor to prevent light pollution into the corridor. Lights must be directed downward and inward toward the home.

Culvert Design

- Bridged undercrossings are preferable.
- If a bridge is not possible, use a 12-foot by 12-foot box culvert or bigger for larger animals.
- Install a small, one-foot diameter tube parallel to the large box culvert for small animals. The upstream end of the small tube should be a few inches higher than the bottom of the upstream end of the box culvert, so that it will stay dry and free of debris (P. Beier, personal communication).
- The culvert bottoms should be as close as possible to any canyon bottom and not be perched up a fill slope.
- Use natural substrate on the bottom of the culvert, such as dirt with pebbles. Underlay the natural substrate with cobbled concrete. Replace the dirt when necessary (i.e., if it is washed out).
- On the road above the culverts, install speed bumps and wildlife crossing signs to slow the cars, and prohibit street lighting to facilitate use of the crossing.
- Plant and maintain lots of vegetative cover (shrubs and low cover) near the entrance-exits of the culverts, without visually or physically blocking the entries.
- Install appropriate fencing (at least six feet in height) to funnel animals towards the culverts.

Vegetation Restoration

- Require maintenance or restoration of native vegetation, and long-term management.
- Provide an adequate endowment for restoration and management of the corridor.
- Plant native trees, shrubs, and other plants to provide food and cover, as well as nesting opportunities for birds.

Management and Enforcement

- If housing is to be permitted adjacent to the corridor, require the Home Owner's Association or each homeowner to maintain -- on their own property -- a mowed, 30-foot to 60-foot buffer along a flat or slightly sloped grade between the native vegetation in the corridor and each adjacent lot, for fire abatement.

- No wood fences should be allowed in the corridor and along any of the lots adjacent to the corridor.
- No domestic pets are to be allowed in the corridor. Cats and dogs should be trapped and returned to owners if they have a collar, or brought to the animal shelter if they have no identification tags.
- No feeding of wild animals, other than bird feeders, should be allowed.
- Educate each landowner adjacent to the corridor about the regulations (lighting, mowing the buffer, no trespass, etc.) and ask each of them to watchdog the corridor for trespass. Develop a pamphlet and convene a meeting. In appropriate locations, install educational signs about the corridor and the species that could potentially use the corridor.
- Any violations should be strictly enforced and citable.

Conclusion

Wildlife corridors are not proposed as mitigation for loss of core habitat. However, with careful planning and design, wildlife corridors can help reduce the negative effects of habitat fragmentation by allowing dispersal of individuals between large patches of remaining habitat. While additional study on the efficacy of wildlife corridors is necessary, some general principles of evaluation and design are available and should be implemented. Monitoring the use of corridors by target wildlife species is an important step in corridor planning, to allow for adaptive management.

Citations

Beier, P. 1993. Determining minimum habitat areas and habitat corridors for cougars. *Conservation Biology* 7:94-108.

Beier, P. and S. Loe. 1992. A checklist for evaluating impacts to wildlife movement corridors. *Wildlife Society Bulletin* 20:434-440.

Bolger, D. T., A. C. Alberts, R. M. Sauvajot, P. Potenza, C. McCalvin, D. Tran, S. Mazzoni, and M. E. Soule. 1997. Response of rodents to habitat fragmentation in coastal Southern California. *Ecological Applications* 7:552-563.

Perault, D. R. and M. V. Lomolino. 2000. Corridors and mammal community structure across a fragmented, old-growth forest landscape. *Ecological Monographs* 70:401-422.

Rosenberg, D. K., B. R. Noon, and E. C. Meslow. 1997. Biological corridors: Form, function, and efficacy. *BioScience* 47:677-687.

Schweiger, E. W., J. E. Diffendorfer, R. D. Holt, R. Pierotti, and M. S. Gaines. 2000. The interaction of habitat fragmentation, plant, and small mammal succession in an old field. *Ecological Monographs* 70:383-400.



BOB MILLER
Governor

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF WILDLIFE

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PETER G. MORROS
Director
Department of Conservation
and Natural Resources

WILLIAM A. MOLINI
Administrator

February 6, 1996

Jeff Codega
Jeff Codega Planning/Design, Inc.
433 West Plumb Lane
Reno, NV 89509

RE: Somerset Project

Dear Mr. Codega:

We appreciate the effort that you, Blake Smith and Bob Sader have taken to include mule deer as an integral component in the planning of the Somerset Project. As we have stated in our previous meetings, your endeavor to include our agency prior to project submittal is unique among developers. I am sending this letter in order to continue our working relationship. Please consider our following comments:

1. Current Land Use Designation

Within the Truckee Meadows Regional Plan, Washoe County has demonstrated a desire to manage for an open space environment at the base of Peavine Mountain. We understand that this designation is due in part to input that we submitted several years ago. The county understood then that the presence of mule deer contributed to the quality of life. Their foresight was verified in the form of public support for mule deer as a central issue with the Reno Ranch and other development proposals.

Current land use designation allows for one dwelling unit per 40 acres for much of the proponent's 1,728± acres. We calculated a total theoretical build-out at 43.2 units. We continue to assert our belief that total build-out is unrealistic in this area. We further disagree with the assertion that such a build-out would have more deleterious effect on the deer herd than cluster developments would. We admit that supporting data is sparse; however, this is principally due to the fact that most winter range has been developed at high densities, particularly along the Sierra Front.

2. Precedent for Further Urbanization

We share the concerns expressed by the citizens of Mogul and Verdi regarding the westerly creep of Reno City limits. We have heard your rebuttal and are in general agreement with you. Your overture to place the project's open space in a conservation easement is commendable.

3. Mitigation

We have discussed the area's value as crucial winter habitat in our previous meetings and through correspondence with your consultants. To briefly reiterate, the slope and aspect of the lower elevation terrain offers forage conditions and a climatic regime that support deer during the most stressful winters. Unfortunately, this very same terrain is also the most buildable. We can come to agreement with your project if we can mitigate the impacts to the herd through design alteration and on-site strategies. Basically, we would like to see the area's current carrying capacity remain constant or be increased within that open space that remains after build-out. Most of the ideas stated within Bob's 1/19/96 memo to Blake are acceptable to us.

A. Design Alteration

We believe that elimination of Clusters 1, 4, 5, 6 and 7 would allow deer to utilize these good aspect, moderate to steep slopes with minimal disturbance. However, under heavy snow accumulations, deer would still be forced from these areas. Elimination of Villages 4 and 5 would leave the deer with some lower elevation, gentle terrain habitat.

Jeff Codega
February 6, 1996
Page 3

B. Vegetative Manipulation

Within the remaining open space, particularly if you elect to eliminate Villages 4 and 5, improvement of the forage base could maintain or increase the area's carrying capacity. We discussed forage kochia at our last meeting. Introduction of this plant and other plant species will accomplish this. Creation of small check dams on the area's many drainages would create reliable water sources from which willow riparian zones can be created. This cover provides the thermal protection needed by stressed deer. Full maturation of sage and four-wing saltbrush plantings in the uplands would also achieve this end. We have had success in rehabilitating burned deer winter range and see the same opportunities here. We will forward written material to you.

4. Future Complaints by Residents

We would like some assurance that future residents will have a comprehensive understanding that mule deer and other wildlife will coexist with them. We anticipate that legitimate complaints will arise and will need to be addressed; however, our agency lacks sufficient manpower to respond to them. Exclusionary measures will need to be addressed within the final proposal.

Jeff, I completely understand the proponent's desire to utilize the land in a profitable venture. We do not wish to obstruct this basic tenet of American culture. However, we must accept our statutory responsibility to represent the state's wildlife resources. I believe that we can accomplish both through a cooperative approach. It will be hard work, but together we may create an innovative precedent.

Sincerely,

William A. Molini
Administrator

CC: Blake Smith
Bob Sader
Region I
Habitat Bureau
Craig Mortimore



STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF WILDLIFE

P.O. Box 10678

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Reno, Nevada 89520-0022

PETER G. MORROS
Director
Department of Conservation
and Natural Resources

WILLIAM A. MOLINI
Administrator

BOB MILLER
Governor

FAX MEMO (702) 688-1500 • Fax (702) 688-1595
PAGES 2 DATE 2/1/94 FAX# 328-3648
TO Ms. Cynthia Herman
FROM Rick Head
CO. ADOL
PH# 423-3171 FAX# 423-8171

January 31, 1994

Ms. Cynthia Herman
Washoe County Department of Comprehensive Planning
P.O. Box 11130
Reno, Nevada 89520

FAX 328-3648

RE: Quilici Ranch/Verdi AP Amendment

Dear Cynthia:

We have had the opportunity to review a copy of the Staff Report regarding the Verdi Area Plan amendment requested by applicants Ed and Louise Graham. Our agency's concerns are appropriately identified within the Staff Concerns and Comprehensive Plan Consistency (Conservation element) sections.

This area serves as key winter range for the Loyalton-Truckee interstate mule deer herd. The area also provides habitat for mountain quail, a species that appears to be in decline throughout the west. We believe that development of this area would negatively affect these and other wildlife species. During the formation of the Verdi Area Plan, we commented that retention of open space through low density zoning was the best alternative for wildlife within the plan area.

We remain committed to this ideal. Since we are unable to attend tomorrow's planning commission hearing or today's caucus, we ask that you convey our position.

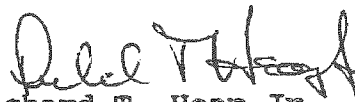
90

Ms. Cynthia Herman
January 31, 1994
Page 2

If you have any questions, please do not hesitate to call our office at 423-3171. The biologist for this area is Craig Mortimore at 463-2918.

Sincerely,

WILLIAM A. MOLINI, ADMINISTRATOR



Richard T. Heap Jr.
Regional Manager
Region I

CM:pp

CC: Habitat, Reno
Craig Mortimore

Appendix E – Traffic Study
(Revised October 2014)

Traffic Study

For

West Meadows Estates

Prepared For:

WEST MEADOWS INVESTMENTS, LLC
PO BOX 8070
Reno, Nevada 89507

Prepared By:

KKRATER CONSULTING

A Nevada professional corporation
901 Dartmouth Drive
Reno, Nevada 89509
(775) 815-9561

October 2013

Revised October 2014



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I. INTRODUCTION

This report documents the findings of a preliminary traffic study conducted by KKrater Consulting to evaluate the impacts of a proposed new residential development that includes a commercial component located on US Highway 40 in the Verdi area of Reno, Nevada.

Project Description

West Meadows Estates is a proposed +/-199 acre residential development that will have a commercial component of approximately 4.0 acres. This project is located on the north side of US Highway 40 approximately 1.35 miles from the I-80 westbound off ramp to the main project entrance. The main entrance is proposed to line up with an existing street to the south called Summerset Drive that provides access to Glen Meadows Village, an existing and well established mobile home subdivision.

West Meadows Village is currently in the planning stages and at this time, a Master Plan Amendment and Planned Unit Development are proposed to entitle the land use portion of the project. No specific details were provided as to number of single family lots or square feet or types of commercial. Thus, assumptions were made to determine the development potential of the project based on the authors knowledge and professional experience with similar projects.

As currently proposed, the project will consist of 109 acres of single family residential development with a 6,000 sq. ft. minimum lot size, 4.0 acres of commercial/retail development, and 86 acres of open space. The open space will encompass steep hillsides with slopes exceeding 30%. A 120kV overhead electric line also exists on the site, running in an east-west direction through the single family portion of the project that will reduce the overall density of development.

Project Assumptions

In order to determine the potential level of development, the following assumptions were used.

- The average lot size will be 25% greater than the allowed minimum size lot of 6,000 sq. ft. This will account for street curvature, larger corner lots, and other constraints that will yield an estimated average minimum lot size of +/-7,500 sq. ft.
- 25% of the developable single family area will consists of streets, pathways, common areas, and easements. This will result in an average density of +/-4.6 dwelling units per acre.
- With 109 acres of single family residential development area at an assumed density of +/-4.6 dwelling units per acre, it is assumed that this project could yield +/-500 single family residential units at buildout. However, upon completion of several neighborhood meetings, the developer has agreed to limit the maximum number of allowed residential units to three hundred twenty four.

- 4.0 acres of commercial development will allow a small neighborhood shopping center with one mid size box as an anchor, line shops, pads, and associated common areas. It is assumed the ultimate floor area ratio of this development will be +/-20%, consistent with similar projects. This assumption results in a development potential of 35,000 sq. ft. of commercial development.
- It is assumed that the main access to the project will be located directly across from Somerset Drive that provides access to Glen Meadows Village, resulting in a four leg intersection.

Study Scope

The scope of analysis for this study is limited due to the fact that no actual development is proposed at this time. The goal of this study is to determine whether the existing roadway network will be able to accommodate this project in the future and if major improvements will be needed to address potential capacity issues. Both analysis time frames and segments to analyze were all identified as part of the study approach. Once an actual project is designed, a comprehensive traffic study will be required to analyze project impacts and determine required mitigations.

Evaluation Scenarios

This study, which is directed at the analysis of the US Highway 40 assumed a future horizon year of project buildout in the year 2033, a twenty year time horizon. Given that no project exists and no timeline is given for development, this scenario is the only reasonable condition to study. The following traffic scenarios was thus identified for analysis as part of the study scope:

- Project Buildout Conditions at 2033 – The analysis of buildout conditions twenty years hence is intended to provide a basis for the study. The buildout condition includes an assessment of land use, area streets, traffic volumes, and operating conditions.

Road Segments Analyzed

The following road segments have been identified for analysis for the scenarios described above:

- **US Highway 40** – US Highway 40 is a two lane highway with a single travel lane in each direction and paved shoulders. No left turn pockets are provided within the vicinity of the proposed project. The current speed limit in the highway near the site is 45 mph.



Jurisdiction

US Highway 40 is owned and maintained by the Nevada Department of Transportation (NDOT).

Significant Impact Criteria

The City of Reno and RTC have established target performance levels (level of service) for street segments and intersections in the study area. These level of service targets were adopted as part of the Regional Road Impact Fee process.

A project would be considered to cause a significant traffic impact if, as a result of additional project traffic, level of service targets or thresholds are exceeded. If these thresholds were exceeded, mitigations would be required to bring the street segment and/or intersection back within the target levels. If the mitigation measure accomplishes this, the project would be identified as not having a significant impact on that location.

If the entire roadway system operates within the established performance targets after the project traffic is added to the streets and after required mitigations are implemented, then the project can be said to have no significant impacts. This is not to say that the project will not have any impacts on the area street system. There will be locations where congestion is increased but also locations where operating conditions are improved. Yet, not enough additional congestion is created to cause level of service targets to be exceeded.

II. EXISTING CONDITIONS

A data collection effort was undertaken to develop a description of existing conditions within the study area. The assessment of conditions relevant to this study includes: an inventory of the street system; Annual Average Daily Traffic Volumes on area facilities; and operating conditions along the analyzed roadway segment in the study area.

Existing Street System

US Highway 40 provides the only access to the study area. The I-80/ US Highway 40 Interchange (East Verdi) provides primary access to the area from Reno. The westbound off ramp is located approximately 1.35 miles east of the proposed main project entrance. US Highway 40 continues to the west of the project passing through the town of Verdi and intersecting I-80 again at the West Verdi exit. US Highway 40 to the west of the project site provides access to the Verdi Post Office, Verdi Elementary School, recreation areas, small restaurants, shops, fast food restaurants, and a gas station and casino ("Gold Ranch").

US Highway 40 is classified as a "minor arterial" by the Nevada Department of Transportation. The 2030 Regional Transportation Plan classifies US Highway 40 as a moderate access control arterial. US Highway 40 provides five foot wide paved shoulders that encourage bicycle traffic in both the westbound and eastbound directions. Light to moderate bicycle traffic was noted when site observations were conducted.

Existing Volumes and Level of Service

The following section presents a description of the methodology used to analyze the level of service within the study area.

Existing Traffic Volumes

The latest published historical count data available is contained within the Nevada Department of Transportation's "2012 Annual Traffic Report". Current and historical volume data is available for US highway 40 in the vicinity of the project - NDOT count station # 031-0023. The current traffic volume on the highway is 3,300 annual average daily trips (AADT).

Level of Service Methodology

Level of service (LOS) is a qualitative measure used to describe the condition of traffic flow, ranging from excellent conditions at LOS A to beyond capacity at LOS F. Level of service for Signalized Intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Total delay is the difference in time that it takes motorists to traverse a signalized intersection verses the time it would take in the absence of a traffic signal or any traffic control conditions. The methodology used is from the Highway Capacity Manual, which is the most comprehensive methodology available to determine traffic operating conditions on streets and highways. The Highway Capacity Manual was developed and is maintained by the Transportation Research Board.

III. FUTURE TRAFFIC CONDITIONS

In order to properly evaluate the potential impact of the proposed project on highways and intersections within the study area, it was necessary to develop estimates of future traffic conditions both with and without the project. The cumulative plus project scenario represents the estimated future traffic conditions with the development of the proposed project.

Future Cumulative Base and 2033 Traffic Projections

Year 2033 cumulative base traffic projections were prepared based on historical growth rates for the Reno area. A regression analysis was considered using historical count data but it was determined that the impact of the great recession made these estimates invalid as traffic volumes have declined since 2005.

Historically, the City of Reno has experienced annual growth rates of just under 2.3% and the growth rate forecast from 2010 to 2030 is approximately 1.8% ("City of Reno Master Plan, Population Plan, 2008"). The housing boom in the early to mid 2000's saw tremendous increases in growth and traffic volumes. The economic collapse created a huge excess supply of housing and many local housing experts believe that we are just recently beginning to move back to more normal-historical growth patterns. As an example, volumes at NDOT count station # **031-0023** have decreased from a reading of 4,400 AADT in 2004 and 2005 to a low of 3,200 AADT in both in 2008 and 2009. Note that as a community grows, it take a larger increase in population each year to maintain a consistent growth rate as the population increases each year. A likely scenario at this point is two to three years of nominal growth and then returning to an annual growth rate between 2.0% and 2.5%.

To obtain future 2033 traffic volumes for the analysis, current traffic counts were factored up by growth rates of both 2.0% and 2.5%. A growth rate of 2.0% would yield a 2033 annual average daily traffic volume of 4,900 while a growth rate of 2.5% would yield a 2033 annual average daily traffic volume of 5,400. Verdi has historically been a slow growth community but given the lack of accurate data on housing numbers and commercial uses and square footage, the more conservative number of 5,400 AADT is used in this report for a 2033 traffic volume on US Highway 40.

The Regional Transportation Commission's Regional Roadway Capital Improvement Program was reviewed to determine planned future improvements within the study area. No improvements are currently planned on US Highway 40 as adequate capacity exists for anticipated traffic growth, as evidenced by the capacity analysis.

Future Cumulative plus Project Traffic Projections

The development of the project traffic volume estimates involves the use of a two-step process including trip generation and trip distribution.

Project Trip Generation

The trip generation estimate for the portion of the project that will use the new driveway was computed based on a comparison of trip generation data obtained in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 7th Edition* document. TABLE 1 summarizes project trip generation values for the planned project. With pass by trips accounted for, 389 new PM peak hour trips will be added to the Regional Roadway network. As discussed above, once an actual project is designed and accurate numbers are available the traffic study should be updated to determine project impacts and required mitigations.

TABLE 1 - TRIP GENERATION (PORTION OF PROJECT TO USE NEW DRIVEWAY)

WEST MEADOWS ESTATES	Acres	Type	AM Peak		PM Peak		-5 th Peak					
			Auto	Transit	Auto	Transit	Auto	Transit	Auto	Transit		
1. 177 (4000) sq ft Commercial Office	30,000	sq ft	100	10	100	10	100	10	100	10	100	10
2. 177 (4000) sq ft Office Building	30,000	sq ft	100	10	100	10	100	10	100	10	100	10
3. Single Family Residential	100	1000 sq ft	100	10	100	10	100	10	100	10	100	10
Total Trip Generation			200	20	200	20	200	20	200	20	200	20
Pass by Trips (Estimated)			100	10	100	10	100	10	100	10	100	10
Total Trips			300	30	300	30	300	30	300	30	300	30

Project Trip Distribution

It was assumed that 90% of motorists accessing the parcel will enter from the east from I-80 and the Somerset area and 10% of motorists will arrive from the Verdi area east of the project site. (FIGURE 2).

FIGURE 2 - PROJECT TRIP DISTRIBUTION



Future Traffic Operating Conditions

This section presents an analysis of the projected cumulative plus project traffic volumes to determine the potential impacts of the proposed project on the US Highway 40.

Significant Traffic Impact Criteria

The RTC in conjunction with Reno, Sparks, and Washoe County has established a Regional Road Impact Fee Ordinance. Within this ordinance, the following levels of service standards have been adopted.

- o LOS D for the Following Facilities – All regional roadway facilities projected to carry less than 27,000 ADT at the latest RTC horizon.
- o LOS E for the Following Facilities – All regional roadway facilities projected to carry 27,000 or more ADT at the latest RTP horizon.
- o LOS F for the Following Facilities
 - Plumas Street—Plumb Lane to California Avenue
 - Rock Boulevard—Glendale Avenue to Victorian Avenue
 - South Virginia Street—Kietzke Lane to South McCarran Boulevard
 - Sun Valley Boulevard—2nd Avenue to 5th Avenue
 - Intersection of North Virginia Street and Interstate 80 ramps

- Except as noted above, all intersections shall be designed to provide a level of service consistent with maintaining the policy level of service of the intersecting corridors.

Based on these standards, a project is considered to have a significant traffic impact if the traffic conditions with the proposed project cause the LOS on the regional impact fee roadway system to exceed the above limits. Based upon the 2030 adjusted RTC Model Volumes, following are the acceptable level of service standards for study area streets.

- US Highway 40 LOS "D"

Existing Traffic Conditions

Based on Exhibit B from the Regional Road Impact Fee System "Capital Improvement Program", a 2-lane Moderate Access Control Arterial (Appendices) operates at a level of service B up to 5,500 ADT, level of service C up to 14,800 ADT, and a level of service D up to 17,500 ADT. Thus, based on a current traffic volume of 3,300 AADT, US Highway 40 is currently operating at a LOS B.

2033 Cumulative Plus Project Improvements Traffic Conditions

Based on the project trip generation, assumed distribution and projected traffic growth in the Verdi area, it is anticipated that the future 2033 traffic volumes on US Highway 40 east of the project will be 9,550 ADT. This volume falls in the range of Level of Service "C"

TABLE 2 – LEVEL OF SERVICE SUMMARY

Facility Location	"Level of Service"	
	2013 Existing LOS	2033 Projected LOS
SEGMENT		
US Highway 40 between the project and I-80 westbound off ramp.	"B"	"C"

ACCESS ISSUES

A review of project access indicates that substantial improvements will be required to accommodate the proposed project. As the Nevada Department of Transportation (NDOT) has jurisdiction of US Highway 40, the developer will be required comply with NDOT's Access Management System and Standards publication (See Appendices).

The Access Management System and Standards publication contains detailed information on intersection and driveway design. Plans must be submitted to NDOT for an encroachment permit that conforms to the standards including spacing requirements, geometry, and all other requirements for a minor arterial with an estimated 85th percentile speed of 50 mph (assumed based on a 45 mph posted speed limit).

Likely improvements will include left turn pockets, right turn deceleration lanes, medians, and potential signalization of the main project access into the commercial area. Note that NDOT will not allow an intersection to be signalized until traffic signal warrants are met.

IV. SUMMARY

This study indicates that the proposed project can be accommodated without unduly burdening streets or intersections within the study area. The project will be required to construct all improvements in accordance with with the Nevada Department of Transportation's Access Management System and Standards publication and all other NDOT specifications and requirements.

Project Mitigations

This project will be subject to regional roadway impact fees, to be paid prior to issuance of building permits.

Recommendations

The following recommendations are made as a part of this study:

1. Prior to submittal of a Tentative Map, the traffic study should be updated to thoroughly analyze project impacts and determine required mitigations including intersection design and driveway location and design.
2. All improvements that impact US highway 40 should be designed in conformance with the Nevada Department of Transportation's Access Management System and Standards publication and all other NDOT specifications and requirements.

V. APPENDICES

- 1. Land Use Assumptions**
- 2. Trip Generation/Distribution**
- 3. NDOT AADT's**
- 4. Site Photo**
- 5. RTC Functional Classification**
- 6. NDOT Functional Classification**
- 7. RTC Capital Improvement Plan Exhibits (Includes Exhibit B)**
- 8. NDOT Access Management System and Standards publication**

1. Land Use Assumptions

WEST MEADOWS ESTATES

Single Family Residential	
6,000	sq. ft.
25%	Add for topography and corner lots
7,500	sq. ft.
25%	Add for Streets, common area, and easements.
9,375	sq. ft.
43,560	sq. ft. per acre
4.6464	units per acre
4.6	assumed units per acre
109	Acres SFR-6
501.4	Maximum single family units
324	Assumed maximum single family units

Neighborhood Commercial	
4	Acres Neighborhood Commercial
20%	Assumed floor area ratio
34,848	Maximum commercial area
35,000	Assumed maximum commercial area

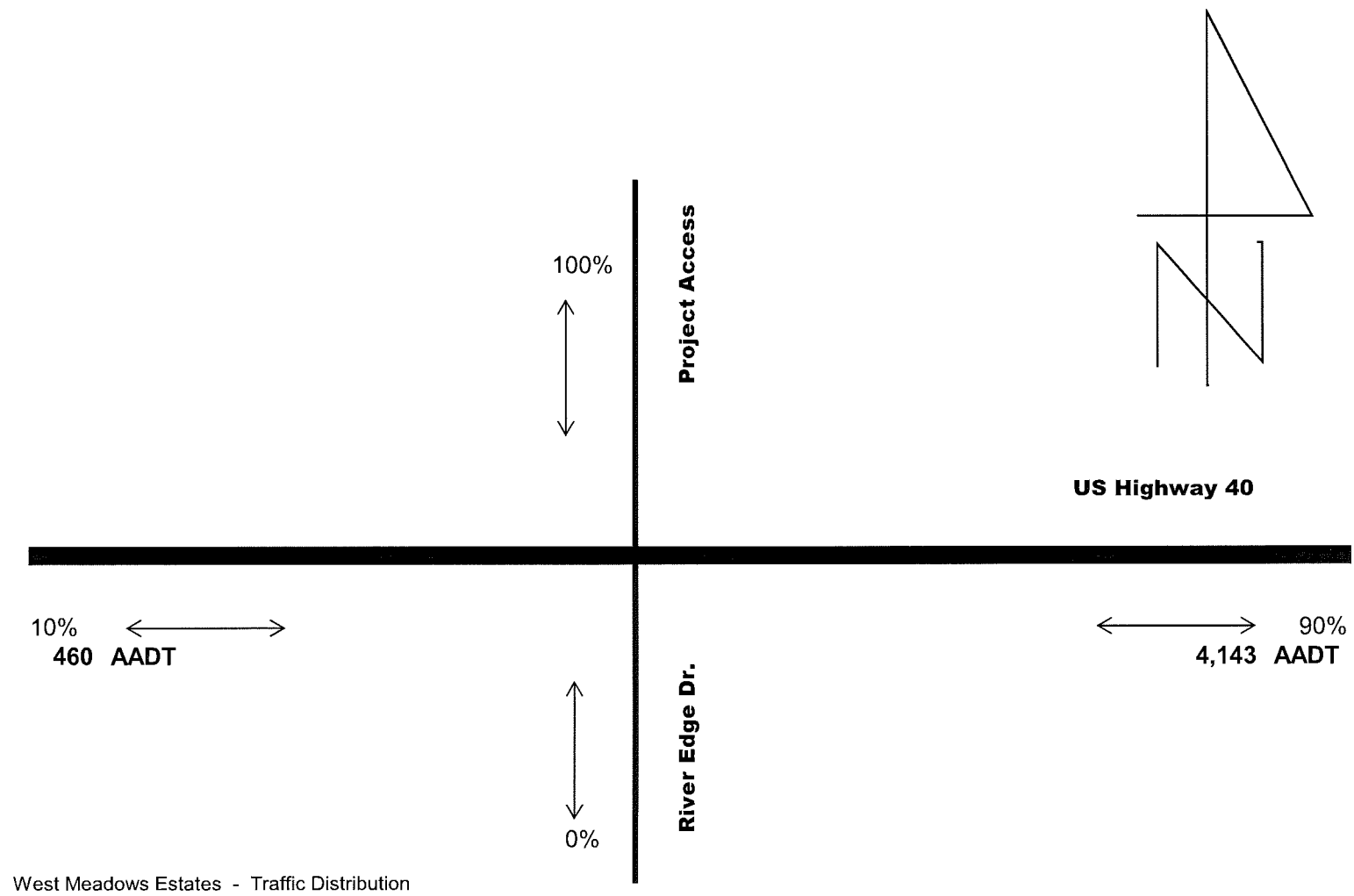
Low Volume Commercial	
0	Acres Neighborhood Commercial
10%	Assumed floor area ratio
-	Maximum commercial area
-	Assumed maximum commercial area

2. Trip Generation/Distribution

Trip Generation - Revised August 2014

WEST MEADOWS ESTATES	Quantity	Type	ADT		AM Peak				PM Peak			
			Rate	Volume	Rate	Volume	Enter	Exit	Rate	Volume	Enter	Exit
1. ITE Land Use Code 820 for Retail	35.000 (000's)	Sq. Ft.	42.94	1,503	1.03	36	22 61%	14 39%	3.75	131	63 48%	68 52%
2. ITE Land Use Code 812 for Building Materials Store	0.000 (000's)	Sq. Ft.	45.16	0	2.60	0	0 67%	0 33%	4.49	0	0 47%	0 53%
3. Single Family Residential	324	Homes	9.57	3,101	0.75	243	61 25%	182 75%	1.01	327	206 63%	121 37%
Total Driveway Trips				4,604		279	83	196		458	269	189
Pass By Reduction Factor for Commercial {Ln(T) = -1.29 X Ln(T) + 5.00} {T = 000's of sq. ft. of commercial}		53%								-69	-33	-36
Total New Trips										389	236	153

PROJECT TRIP GENERATION
(Revised 08/20/14)

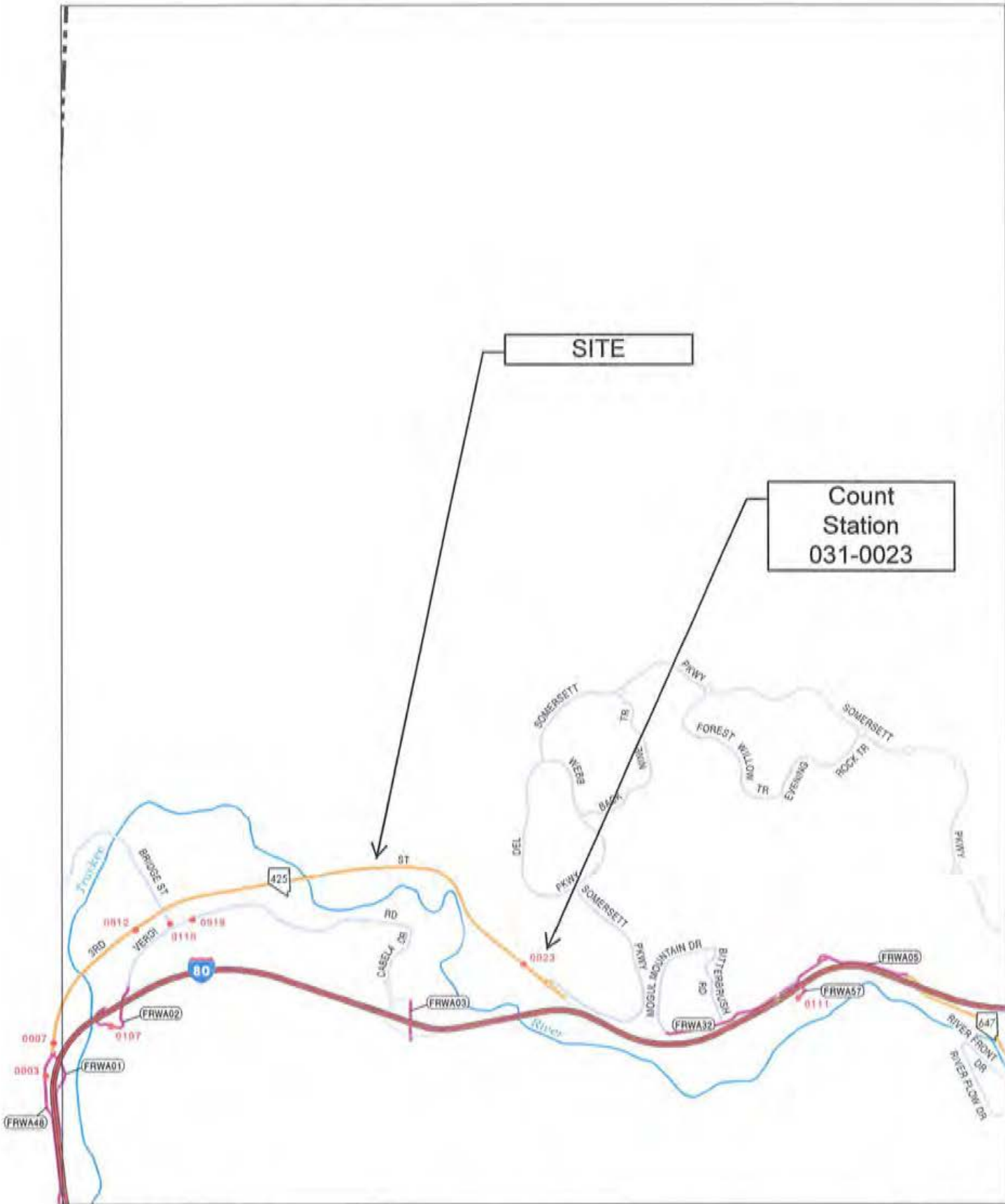


West Meadows Estates - Traffic Distribution

Distribution

Fig 1

3. NDOT AADT's



Date: 04-JUN-13

State of Nevada Department of Transportation
Annual Average Daily Traffic Count Stations

County Name WASHOE

Station	Route / Location	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
		AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT	AADT
0310001	IR80, W/B on-ramp of the W Verdi Intch 'Exit 2'	2,400	2,550	2,150	2,100	2,200	1,700	1,700	1,700	1,500	1,900*
0310002	IR80, W/B off-ramp of the W Verdi Intch 'Exit 1'	60	80	60	70	50	50	50	40	40	40*
0310003	SR425, .1 mi E of the W/B off-ramp 'Exit 2'	3,500*	3,150	3,100	2,850	3,000	2,800	2,500	3,800	3,600	3,200
0310004	IR80, W/B off-ramp of the W Verdi Intch 'Exit 2'.	2,280*	3,350	2,800	2,500	2,800	2,200	2,000	2,100	2,300	1,900
0310007	SR425, .2 mi W of Tenaya Ln	1,300	1,400	1,500	1,550	1,400	1,400	1,600	1,500	1,100	1,500*
0310008	IR580, S/B off-ramp of the S Virginia St Intch 'Exit 57'	16,300	16,800	16,900	18,200	20,000	18,000*	18,000	18,000*	15,000	18,000*
0310009	IR80, E/B on-ramp of the W Verdi Intch 'Exit 2'	1,300*	1,250	1,200	1,050	1,200	1,000	1,100	1,200	1,100*	1,200
0310010	IR80, E/B off-ramp of the W Verdi Intch 'Exit 2'	890	930	790	810	900*	720*	780	780	770*	800
0310011	IR80, W/B off-ramp of the Verdi Intch 'Exit 3' .	240	220	330	300	300	350	280	240	250	300*
0310012	SR425, .2 mi W of Bridge St	1,650	1,700	1,750	1,900	1,700	1,700	1,900	1,700	1,700	1,700*
0310014	IR580, S/B off-ramp of the Mt Rose Intch 'Exit 56' (to W/B SR-431)	7,600	8,050	8,050	8,800	8,400	8,000	7,600	8,000*	6,100	7,500
0310015	IR580, S/B off-ramp of the Mt Rose Intch 'Exit 56' (to E/B SR-431)	620	1,250	580	790	800	690	660	640*	470	350
0310016	IR80, E/B on-ramp of the Verdi Intch 'Exit 3'	210	200	310	290	300*	310	280	230	250	300*
0310017	IR80, E/B off-ramp of the Garson Intch 'Exit 4'.	1,300*	1,000	1,150	1,150	760	980	930	770	760	900*
0310018	IR80, E/B on-ramp of the Garson Intch 'Exit 4'	2,300	2,300	2,300	2,350	2,200*	2,300	2,200	2,200	2,300*	2,400*
0310019	SR431, Mt Rose Hw, .3 mi W of the Mt Rose Intch 'Exit 56'	16,400	16,000*	15,600	17,100	17,000	17,000*	17,000	17,000*	16,000*	16,000
0310020	IR80, W/B off-ramp of the Garson Intch 'Exit 4'	2,800	2,950	3,100	3,050	2,800	2,800	2,600	2,800	2,800*	2,700*
0310021	IR80, W/B on-ramp of the Garson Intch 'Exit 4'	2,400*	1,700	1,750	1,750	1,300	2,200*	1,200	940	1,100	1,500*
0310022	IR80, W/B off-ramp of the E Verdi Intch 'Exit 5'	2,200	2,200	1,850	1,900	1,800	2,200	2,200	2,400	2,400	2,400*
0310023	SR425, 0.4 mi W of W/B off-ramp of the E Verdi Intch 'Exit 5'.	4,400*	4,400*	3,350	3,350	3,300	3,200	3,200	3,500*	3,400	3,300*
0310024	IR80, E/B on-ramp of the E Verdi Intch 'Exit 5'	2,200	2,200	1,850	2,000	1,900	2,300	2,300	2,500	2,500	2,500*
0310025	IR580, N/B on-ramp of the Mt Rose Intch 'Exit 56'	8,250	9,050	8,750	8,700	8,700	7,900	9,300	7,300*	7,200*	7,100*
0310026	IR580, N/B on-ramp of the Mt Rose Intch 'Exit 56'	80	70	120	490	1,800	2,200	2,600	2,000*	2,300	2,200*
0310027	IR80, E/B off-ramp of the Mogul Intch 'Exit 7'.	250	280	290	300	260	270	270	260	250*	250*

* Data Adjusted or Estimated

4. Site Photo



© 2013 Google
© SPOT ON
© 2013 Google



feet
meters

Google earth

10

6

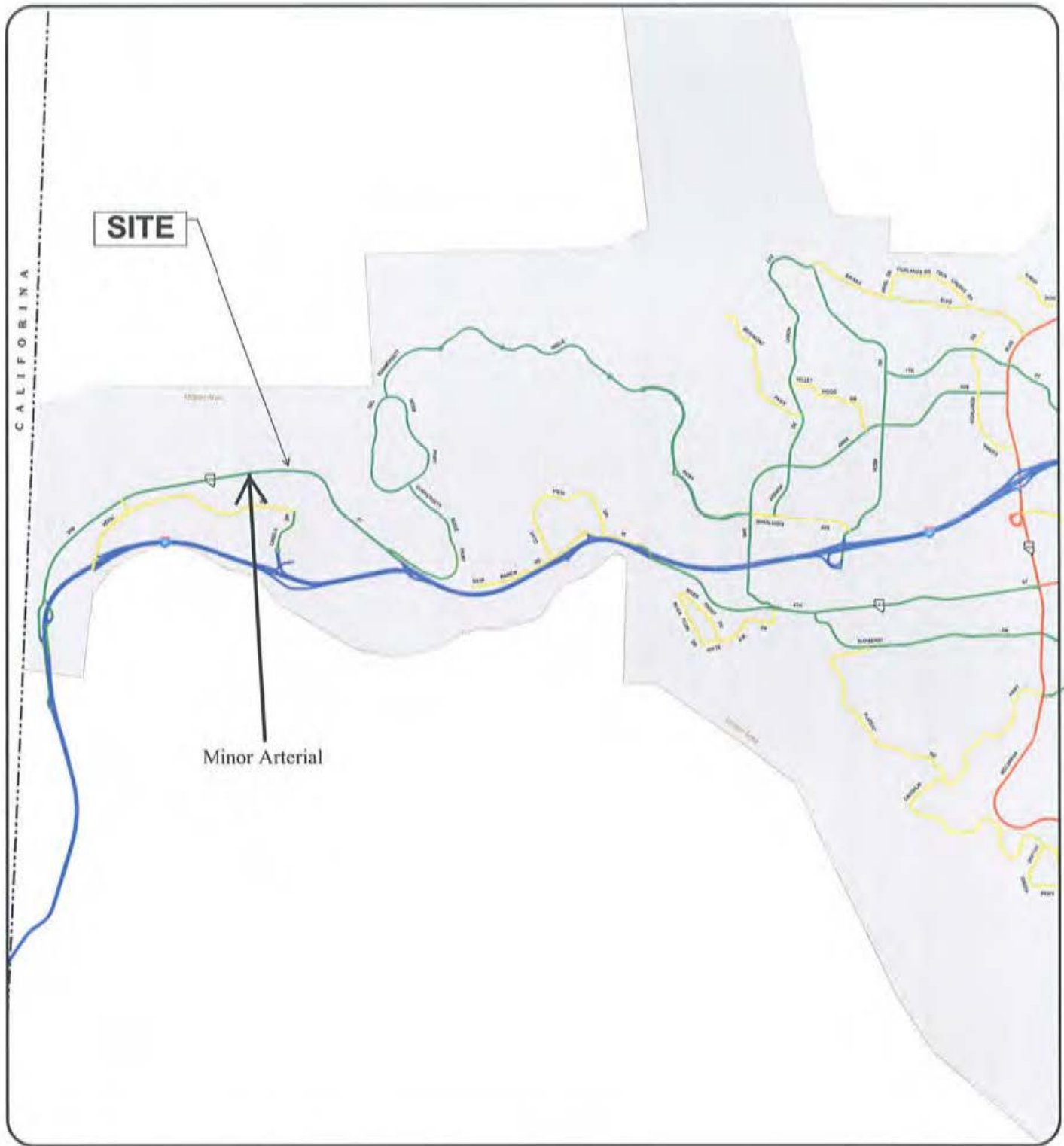


5. RTC Functional Classification

RTC Functional Classification

Street Name	From	To	Functional Class	Policy Access
South Meadows Pkwy	S Virginia St	Rio Wrangler Pkwy	Arterial	MAC
SouthEast Connector	South Meadows Pkwy	Greg St	Arterial	HAC
Sparks Blvd	Greg St	Pyramid Hwy	Arterial	MAC
State St	S Virginia St	Holcomb Ave	Arterial	MAC
Stead Blvd	N Virginia St	Echo Ave	Arterial	MAC
Steamboat Pkwy	Damonte Ranch Pkwy	Rio Wrangler Pkwy	Arterial	MAC
Stoker Ave	4 th St	7 th St	Collector	LAC
Stonebrook Pkwy	Lazy 5 Pkwy	La Posada Dr	Arterial	MAC
Sullivan Ln	Prater Way	El Rancho Dr	Collector	LAC
Summit Ridge Rd	McCarran Blvd	W 4 th St	Collector	LAC
Sun Valley Blvd	Dandini Blvd	Highland Ranch Pkwy	Arterial	MAC
Susileen Dr	Armstrong Ln	Marthiam Ave	Collector	LAC
Sutro St	Kuenzli St	Sunvilla Blvd	Arterial	MAC
Sutro St Ext	Sunvilla Blvd	Clear Acre Ln	Arterial	MAC
Talbot Ln	Sierra Rose Dr	Redfield Pkwy	Arterial	MAC
Terminal Way	Gentry Way	Mill St	Arterial	MAC
Thomas Creek Rd	Mt Rose Hwy	Zolezzi Ln	Collector	LAC
Toll Rd	Geiger Grade	Comstock Estates Dr	Collector	LAC
University Terrace	Vine St	Sierra St	Collector	LAC
US Hwy 40 (Verdi)	Bridge St	I-80 (east)	Arterial	MAC
Valley Rd	4 th St	Enterprise Rd	Arterial	MAC
Vassar St	S Virginia St	Kietzke Ln	Arterial	LAC
Vassar St	Kietzke Ln	Terminal Way	Arterial	MAC
Veterans Pkwy	Geiger Grade	South Meadows Pkwy	Arterial	HAC
Victorian Ave	Prater Way	McCarran Blvd	Arterial	LAC
Village Pkwy	N Virginia St	North Terminus	Arterial	MAC
Villanova Dr	Harvard Way	US 395	Collector	LAC
Villanova Dr	US 395	Terminal Way	Arterial	LAC
Vine St	2 nd St	University Terrace	Collector	LAC
Vista Blvd	I-80	Wingfield Pkwy	Arterial	MAC
Vista Blvd	Wingfield Pkwy	Campello Dr	Collector	LAC

6. NDOT Functional Classification



NEVADA
JULY 2013

PREPARED BY THE NEVADA DEPARTMENT OF TRANSPORTATION

- | Existing | Proposed | |
|----------|----------|---|
| | | 1 Interstate Highway |
| | | 2 Principal Arterial & Other Freeways and Expressways |
| | | 3 Other Principal Arterial |
| | | 4 Minor Arterial |
| | | 5 Major Collector |
| | | 6 Minor Collector |
| | | 7 Local |
| | | County Line |
| | | State Line |
| | | Urban Area |



ROADWAY FUNCTIONAL
CLASSIFICATION
RENO SECTION C URBANIZED AREA
WASHOE COUNTY, NEVADA

7. RTC Capital Improvement Plan Exhibits (Includes Exhibit B)

REGIONAL ROAD IMPACT FEE SYSTEM

CAPITAL IMPROVEMENTS PLAN

**4TH EDITION
AMENDMENT NO. 1**



JANUARY 19, 2009

REVISED January 25, 2010

FIGURE 3
RRIF CAPITAL IMPROVEMENTS PLAN



EXHIBIT A ACCESS MANAGEMENT STANDARDS FOR THE REGIONAL ROAD NETWORK

See the latest version of the Regional Transportation Plan for a complete listing of the Regional Road Network.

Page 2-4, Chapter 2 – Goals and Policies
Washoe County 2030 Regional Transportation Plan
November 18, 2004

Table 2-1

Access Management Standards – Arterials ¹ , Collectors, Rural Highways							
Access Management Control	Posted Speeds	Signals per Mile	Median Type	Left From Major Street? (Spacing from Signal)	Left From Minor Street or Driveway?	Right Decel Lanes at Driveways?	Driveway Spacing
High Access Control	45-55 Mph	2 or less	Raised w/ Channelized turn pockets	Yes 750' Minimum	Only at Signalized Locations	Yes ⁴	250'/500'
Moderate Access Control	40-45 Mph	3 or less	Raised or painted w/turn pockets	Yes 500' Minimum	No, on 6 or 8 lane Roadways w/o Signal	Yes ⁵	200'/300'
Low Access Control	35-40 Mph	5 or less	Raised or painted w/ turn pockets or undivided w/painted turn pockets or two way, left turn lane	Yes 350' Minimum	Yes	No	150'/200'
Ultra-Low Access Control	30-35 Mph	8 or less	Raised or painted w/ turn pockets or undivided w/painted turn pockets or two way left turn lane	Yes 350' Minimum	Yes	No	150'/200' 100'/100' ³

¹ On-street parking shall not be allowed on any new arterials per Policy 7 of the Congestion Management Systems (Chapter 9). Elimination of existing on-street parking shall be considered a priority for major and minor arterials operating at or below the policy level of service.

² Minimum spacing from signalized intersection/spacing from other driveways.

³ Minimum spacing on collectors.

⁴ If there are more than 30 inbound right-turn movements during peak-hour.

⁵ If there are more than 60 inbound right-turn movements during peak-hour.

EXHIBIT B MAXIMUM SERVICE VOLUMES

Page 2-6, Chapter 2 – Goals and Policies
Washoe County 2030 Regional Transportation Plan
November 18, 2004

Table 2-3

Average Daily Traffic Level of Service Thresholds By Facility Type for Roadway Planning					
Facility Type	Maximum Service Flow Rate (daily for Given Service Level)				
Number of Lanes	LOS A	LOS B	LOS C	LOS D	LOS E
Freeway					
4	≤ 28,600	42,700	63,500	80,000	90,200
6	≤ 38,300	61,100	91,100	114,000	135,300
8	51,100	81,500	121,400	153,200	180,400
10	63,800	101,900	151,800	191,500	225,500
Arterial-High Access Control					
2	n/a	9,400	17,300	19,200	20,300
4	n/a	20,400	36,100	38,400	40,600
6	n/a	31,600	54,700	57,600	60,900
8	n/a	42,500	73,200	76,800	81,300
Arterial-Moderate Access Control					
2	n/a	5,500	14,800	17,500	18,600
4	n/a	12,000	32,200	35,200	36,900
6	n/a	18,800	49,600	52,900	55,400
8	n/a	25,600	66,800	70,600	73,900
Arterial-Low Access Control					
2	n/a	n/a	6,900	13,400	15,100
4	n/a	n/a	15,700	28,400	30,200
6	n/a	n/a	24,800	43,100	45,400
8	n/a	n/a	34,000	57,600	60,600
Arterial-Ultra-Low Access Control					
2	n/a	n/a	6,500	13,300	14,200
4	n/a	n/a	15,300	27,300	28,600
6	n/a	n/a	24,100	41,200	43,000
8	n/a	n/a	33,300	55,200	57,400
Collector-Ultra-Low Access Control¹					
2	n/a	n/a	7,300	8,500	9,100
Rural Highway-Ultra-Low Access Control¹					
2	2,100	4,200	6,800	10,800	17,300

¹ Contact the RTC Planning Department for LOS thresholds for collector and rural highway facility types with access controls other than ultra-low access control.

8. NDOT Access Management System and Standards publication

Access Management System and Standards



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SECTION FOUR
DESIGN STANDARDS AND SPECIFICATIONS

4.1 Purpose

The Department has developed the following design and construction standards and specifications to provide standards for the design, development, and construction of accesses onto state highways.

All installations, within the Department's right-of-way, shall conform to the current editions of the Department's *Standard Specifications for Road and Bridge Construction* and *Standard Plans for Road and Bridge Construction*.

The elements of an intersection are shown in Figure 4.3 on page 31.

Table 4.1 gives a brief synopsis of the Roadway Categories and Classifications. Refer to Section Three for a full explanation

Table 4.1

Roadway Category and Classification			
Category	Roadway Classification	Function	General Design Features
1	Freeway	Interstate and Interregional Traffic Movements	Multi-Lane with Medians, Interchange access
2	Expressway	Interstate, Intrastate, Interregional, Intraregional, Intercity and Intra-city Traffic Movements	Multi-Lane with Median and Widely Spaced Public Access Points
3	Regional Highway	Primary: Interregional, Intra-regional, and Intercommunity Traffic Movements Secondary: Land Access	May be Two or Multi-Lane Facilities
4	Rural Highway	Balances Rural Travel Needs with Land Access	Generally Two Lanes
5	Principal Arterial	Primary: Inter- and Intra-city and Inter- and Intra-regional Traffic movement Secondary: Land Access	Multi-Lane with Median
6	Minor Arterial	Primary: Intercommunity and Intracity Traffic Movement Secondary: Land Access	May be Two or Four Lanes, may have Median
7	Collector	Balances Traffic Movement with Land Access.	Generally Two Lanes, May be Four Lanes
8	Frontage or Service Road	Land Access	Two Lanes

4.2 Access Spacing

Access spacing is an important aspect of access management. Spacing standards vary by roadway category, with the higher (lower numerically) category of roadways being more restrictive.

These minimum spacing standards take into consideration the safety of the traveling public, as well as access to the street and highway system by private land owners. If reasonable access is not available by the use of these standards, sub-section 2.7 outlines the procedures for applying for a design waiver.

The speeds used for determining spacing are based on the 85th percentile speed of the traffic at the access location.

Sub-sections 4.3, 4.4 and 4.5, and their accompanying tables, should also be reviewed for further information and spacing requirements.

Table 4.2 presents a synopsis of access spacing requirements. For full details, refer to the appropriate section of Section Three.

Table 4.2

Access Spacing (Minimum)						
Roadway Category	Location	Public Road Spacing	Private Direct Access	Private Access Spacing	Private Access Geometries	Private Access Remarks
1 Freeways	Urban	1 mile	No	N/A	N/A	All interchanges must meet public road spacing and comply with FHWA Policy
	Suburban	2 miles				
	Rural	3 miles				
2 Expressways	45 mph	0.5 mile	No	N/A	See Section 3.3	Allowed only when no other access is available
	50-60 mph	0.75 mile				
	65+ mph	1 mile				
3 Regional Highways	35-45 mph	0.25 mile	Limited	See Tables 4.3, 4.4, and 4.5	See Section 3.4	Allowed only when no other access is available
	50-60 mph	0.50 mile	Limited			
	65+ mph	1 mile	Limited			
4 Rural Highways	35-45 mph	660 feet	Allowed	250 feet minimum	Right turns allowed, turn lanes may be required. See section 3.5 for left turns.	One access per parcel, two for large development when spacing standards can be met.
	50-60 mph	0.25 mile	Allowed	450 feet minimum		
	65+ mph	0.50 mile	Allowed	1000 feet minimum		
5 Principal Arterials	35-45 mph	0.25 mile	Limited	250 feet minimum	Right turns only allowed, turn lanes may be required	Allowed only when no other access is available
	50-55 mph	0.50 mile	Limited	450 feet minimum		
	60-70 mph	1 mile	Limited	800 feet minimum		
6 Minor Arterials	35-45 mph	0.25 mile	Limited	250 feet minimum	Right turns allowed, turn lanes may be required. See section 3.7, 2c for left turns.	One access per parcel, two for large development when spacing standards can be met.
	50-55 mph	0.50 mile	Limited	450 feet minimum		
7 Collector Roads	25-35 mph	660 feet	Allowed	150 feet minimum	Right turns allowed, turn lanes may be required. See section 3.8, 2e for left turns.	One per parcel
	40-45 mph	0.25 mile	Allowed	300 feet minimum		
8 Service Roads	25-35 mph	660 feet	Allowed	150 feet minimum	Left and right turns, turn lanes may be required.	One per parcel

4.3 Street and Driveway Classification

Breaking street and driveway intersections down into classifications allows spacing standards to be assigned to driveways based on volume of traffic generated and speeds of through traffic. Table 4.3 presents a brief synopsis of driveway classifications. For a complete detailed description refer to sections 3.10 to 3.13.

Table 4.3

Access Classification - Street and Driveway Classification		
Classification	Type of Connection	Driveway Use
Class I	Non-commercial	For access to single family dwellings Multiple family dwellings of three or less dwelling units Agricultural land and field access
Class II	Minor Commercial	Medium volume generator (less than 500 trips per day) Access to property other than Class I or Class III Driveways
Class III	Major Commercial	High volume generators (500 or more trips per day) Shopping centers, industrial parks, office parks, colleges, residential complexes and subdivisions and etcetera
Class IV	Public or Private Roads	New public or private roads or streets

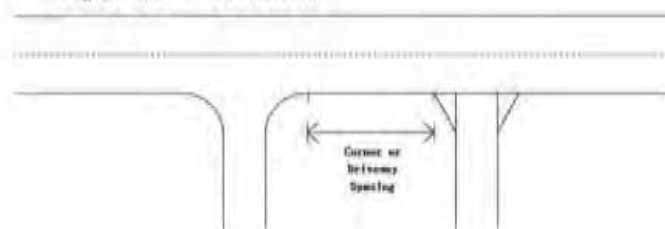
4.4 Driveway Clearances

The driveway clearances establishes the minimum distance that the various class of driveways may be placed from the nearest intersection. The distance from the intersection is measured from the point of curvature of the radius of the intersection to the point of curvature of the radius for the driveway. In the case of a depressed curb driveway the distance is measured to the beginning of the depressed curb.

Table 4.4

Minimum Corner Clearances by Driveway Classification		
Classification	From Corner (Intersection)	Comments
Class I	150 feet	One per lot
Class II	Use Spacings in Table 4.5	Depending on Roadway Category, one per lot, two for contiguous parcels
Class III	Use Spacings in Table 4.5	Depends on Roadway Category
Class IV	660 feet min.	Depends on Roadway Category

Figure 4.1 Clearances



4.5 Non-Signalized Driveway Spacing

Driveway spacings are based on speed to reduce collision potential due to right-turn conflict overlaps, as well as providing reasonable egress capacity. The spacing for signalized driveways must meet the spacing requirements of signalized intersections, see subsection 4.6. Class III driveways which meet the M.U.T.C.D. warrants for signalization, but do not meet the spacing requirements of subsection 4.6 shall be right in and right out driveways, only.

Streets or roads that are required by local authorities through street spacing standards or a master street and highway plan will not be considered to be one of the driveways for contiguous parcels, but will be considered a public thoroughfare.

Table 4.5 spacing criteria is to be use for determining the driveway spacing from public intersections and from other driveways.

Table 4.5

Spacing for Non-Signalized Driveways	
85th Percentile Speed (mph)	Minimum Separation (feet)
25	150
30	200
35	250
40	300
45	350
50	450
55	600
60	800
65	1000
70	1200

4.6 Signalized Intersection Spacing

The values in Table 4.6 lists the optimum signalized intersection spacing for signal progression timing. All signalized intersections will require separate left turn lanes. Accesses which cannot meet these spacing requirements shall be right in and right out driveways, only. One-half mile spacing may be used for all spacing greater than 2640 feet if signal progression can be maintained.

Table 4.6

Optimum Signalized Intersection Spacing										
Cycle Length (seconds)	Operating Speed (mph)									
	20	25	30	35	40	45	50	55	60	65
	Distances in Feet									
60	880	1100	1320	1540	1760	1980	2200	2430	2640	2860
70	1020	1280	1540	1800	2050	2310	2560	2830	3080	3340
80	1160	1460	1760	2050	2350	2640	2930	3230	3520	3815
90	1310	1640	1980	2310	2640	2970	3300	3630	3960	4290
100	1460	1820	2200	2570	2930	3300	3670	4030	4400	4765
110	1610	2010	2420	2830	3220	3630	4040	4430	4840	5245
120	1760	2200	2640	3080	3520	3960	4400	4840	5280	5720
150	2200	2750	3300	3850	4400	4950	5500	6050	6600	7150
180	2640	3300	3960	4620	5280	5940	6600	7260	7920	8580

Table 4.6a lists the minimum acceptable bandwidths which will be used when evaluating signal locations. These values will give acceptable signal progression timing.

Table 4.6a

Minimum Through Bandwidths for Signal Locations			
Roadway Category	Classification	Speed (mph)	Minimum Bandwidth
2	Expressways	45-65	50%
3	Regional Highway	35-65	45%
4	Rural Highway	35-65	40%
5	Principal Arterial	45-65	45%
6	Minor Arterial	35-55	40%
7	Collector	25-45	30%
8	Frontage Road	25-35	Not Required

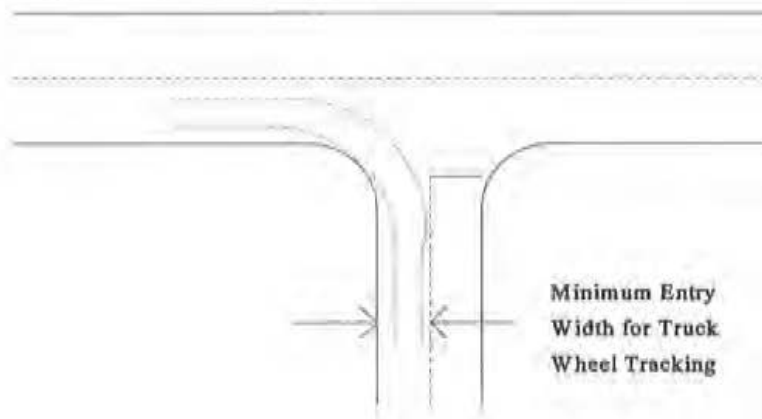
4.7 Minimum Entry Widths

1. Class I, Single Family Residential access, where curb and gutter is present, shall have a minimum "Residential Driveway" width of 12 feet and a maximum width of 24 feet. Access along roadways without curb and gutter shall have a minimum "Type 5 Approach" width of 16 feet and a maximum width of 24 feet. Multiple family dwellings, with three or less units, shall have a minimum "Commercial Driveway" width of 24 feet and curb return radii of 15 feet and minimum "Type 5 Approach" widths of 24 feet and a maximum width of 32 feet.
2. Class II, Minor Commercial access, shall have minimum "Commercial Driveway" widths of 32 feet and minimum curb return radii of 25 feet. Minimum approach widths with a "Type 5 Approach" shall be 24 feet (passenger cars only) and "Type 4 Approaches" shall have a minimum width of 32 feet. Refer to table 4.7 for minimum entry widths and curb return radii. The maximum access width shall be minimum entry width plus 16 feet for the egress.
3. Class III, Major Commercial, shall have minimum "Commercial Driveway" and "Type 4 Approach" widths of 32 feet, with wider widths and curb return radii based on type of vehicle usage in Table 4.7. The maximum width shall be based on the lane requirements as per the Traffic Impact Report. The minimum design vehicle shall be a single unit truck or bus (SU).
4. Table 4.7 shows the minimum entry widths required for SU and WB-50 vehicles at various curb return radii. These values are for one way, the exiting vehicle lane width, minimum 16 feet, must be added to these figures for the total driveway width. The listed values are for driveways which intersect the highway at 90° and require a minimum two feet shoulder width on the highway.

Table 4.7

Minimum Entry Widths For Commercial Access		
Curb Radius (Feet)	SU Single Unit Truck or Bus	WB-50 Semi-Trailer Truck
25	22	
30	18	
35	16	26
40		22
45		18
50		16

Figure 4.2 Minimum Entry Width



4.8 Left Turn Lane Requirements, Two Lane Unsignalized Roads

Table 4.8 lists the projected 20 year design hour volumes and the operating speeds of traffic which necessitate the installation of left turn lanes. The traffic volumes to be considered in making this determination are the opposing (oncoming) traffic volumes, the advancing traffic volumes and the percent of advancing traffic which is turning left. Turn lanes may be required at lower volumes, by a traffic impact study or by the Department, to protect the traveling public.

Table 4.8

Left Turn Lane Requirements For Two Lane Roads (unsignalized)				
	Advancing Volume (ddhv) with			
Opposing Volume (ddhv)	5% Left Turns	10% Left Turns	20 % Left Turns	30% Left Turns
40 mph (or less) Operating Speed				
800	330	240	180	160
600	410	305	225	200
400	510	380	275	245
200	640	470	350	305
100	720	515	390	340
50 mph Operating Speed				
800	280	210	165	135
600	350	260	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295
60 mph Operating Speed				
800	230	170	125	115
600	290	210	160	140
400	365	270	200	175
200	450	330	250	215
100	505	370	275	240
70 mph Operating Speed				
800	180	140	100	95
600	230	165	125	110
400	290	210	160	140
200	355	260	200	170
100	400	300	220	190

Treatments for right turning traffic movements are based on the classification of the access and the speed. The appropriate treatment will reduce the exposure and accident potential created by right turning vehicles. These are the minimum requirements and turn lanes may be required at lower speeds and classifications, by a traffic study or by the Department, to protect the traveling public.

Table 4.11

Right Turn Lane Requirements, All Roads		
Access Classification	Speed (mph)	Treatment
I	25 - 35	Radius (none with curb and gutter)
	45 - 55	50 foot Taper, 25 foot Radius
	55+	100 foot Taper, 60 foot Radius
II	25 - 35	100 foot Taper, 60 foot Radius
	45+	Taper, Deceleration Lane (see Table 4.12), Radius based on Table 4.7
III	25	150 foot Taper, 60 foot Radius, Add Deceleration Lane for >750 vpd (see Table 4.12)
	35+	Taper, Deceleration Lane (see Table 4.12), Radius based on Table 4.7

4.12 Deceleration Lanes

Deceleration lanes allow vehicles, which are turning into an intersection, a safe area in which to slow prior to making the turn, thereby reducing the accident potential with through traffic.

Minimum storage lengths to be added for all left turns and non-free right turns is 100 feet. Longer storage lengths will be installed as required in the Traffic Impact Report for the development.

Deceleration lengths are based on a 10 mph speed differential with a six feet per second² deceleration rate for desirable lengths and nine feet per second² deceleration rate for minimum lengths. The taper lengths must also be added to the deceleration distances and storage lengths.

A symmetrical reversed curve taper, 300 foot radii, 120 feet in length, may be required, by the District Engineer, in lieu of a straight line taper, however the distances calculated for the taper length, using the taper ratio shown in Table 4.12 should still be used. In some situations the symmetrical reversed curve taper may encourage people to exit the through lanes sooner.

The desirable taper ratio and deceleration lengths shown in Table 4.12 shall be the standard taper ratio and deceleration lengths. The minimum taper ratio and deceleration lengths may only be used if the desirable lengths cannot be obtained.

Table 4.12

Deceleration Lane Table				
Length of Left and Right Turn Deceleration Lanes (To which Taper Length and Storage Length must be added)				
Speed (mph)	Desirable		Minimum	
	Taper Ratio	Length (feet)	Taper Ratio	Length (feet)
25	10:1	40	10:1	30
30	10:1	75	10:1	50
35	15:1	115	15:1	75
40	15:1	160	15:1	110
45	15:1	220	15:1	145
50	15:1	290	15:1	190
55	20:1	365	15:1	245
60	20:1	450	15:1	300
65	20:1	545	15:1	365
70	20:1	645	15:1	430
Multipliers for Grades other than 0-2% (To be Multiplied by Deceleration Lane Lengths)				
3 to 4 %	Upgrade = 0.9		Downgrade = 1.2	
5 to 6 %	Upgrade = 0.8		Downgrade = 1.3	

4.13 Redirect Tapers

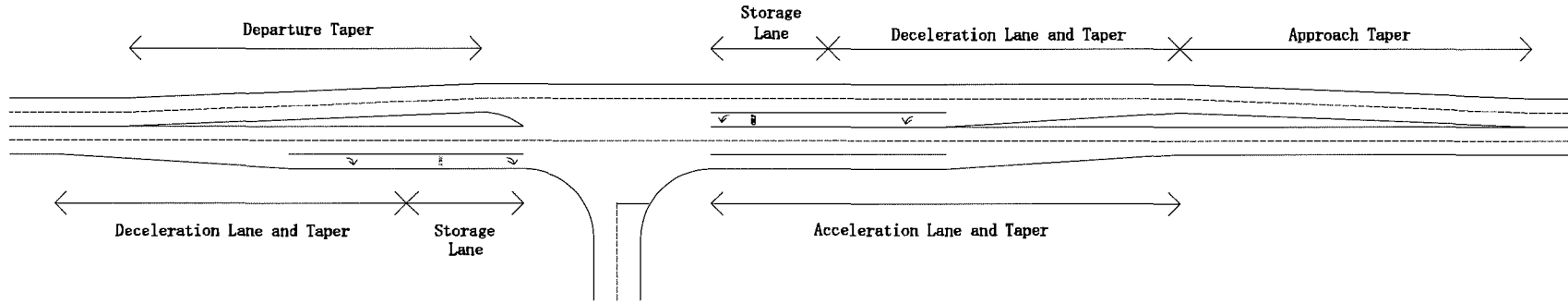
Redirect tapers are necessary to redirect through traffic when the highway is widened to accommodate left turn (median) lanes. The following table shall be used when redirect lanes are necessary.

Table 4.13

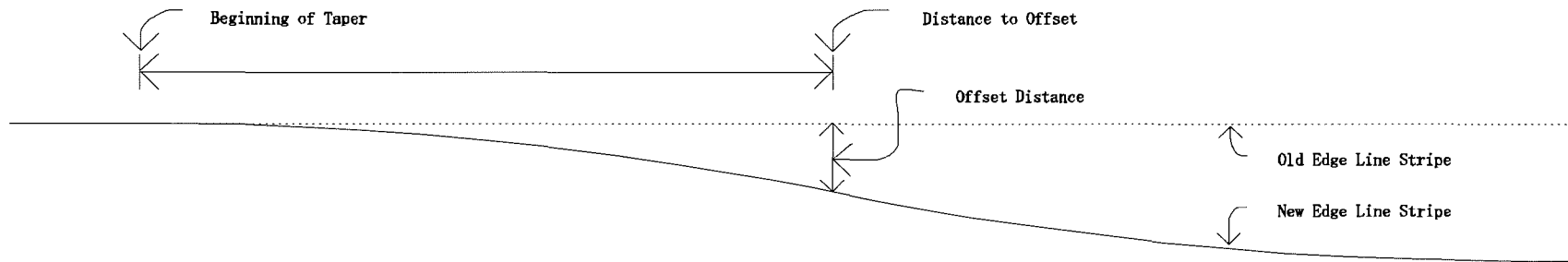
Redirect Tapers for Left Turn Lane Widening	
Speed (mph)	Taper Ratio
25	10:1
30	15:1
35	20:1
40	30:1
45	45:1
50	50:1
55	55:1
60	60:1
65	65:1
70	70:1

Figure 4.3

Elements of an Intersection



Symmetrical Reverse Curve Taper



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Table of Radii		Table of Offset Distances for Symmetrical Reverse Curve Tapers (in feet)																										
Taper Ratio	Radius (ft.)	Ratio	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240		
10:1	300	10:1	0.2	0.7	1.5	2.7	4.2	6.0	7.8	9.3	10.5	11.3	11.8	12.0														
15:1	675	15:1	0.1	0.3	0.7	1.2	1.9	2.7	3.6	4.8	6.0	7.2	8.4	9.3	10.1	10.8	11.3	11.7	11.9	12.0								
20:1	1200	20:1	0.1	0.2	0.4	0.7	1.0	1.5	2.0	2.7	3.4	4.2	5.1	6.0	6.9	7.8	8.6	9.3	10.0	10.5	11.0	11.3	11.6	11.8	11.9	12.0		

4.14 Median Design

1. Median lanes are necessary for the installation of left turn lanes, providing a lane for deceleration and storage of vehicles making left turns from the roadway. Acceleration lanes for vehicles turning left onto the roadway may utilize the median, also. The minimum width for a painted or raised median (edge of gutter pan to edge of gutter pan) is four feet. The minimum widths required for left turn lanes are shown in Table 4.14.
2. If an existing median is of sufficient width to accommodate the proposed left turn lane(s) the existing median may be used without further widening. When it is necessary to widen the roadway to accommodate left turn lanes the roadway will be widened symmetrically on both sides of the roadway.

Table 4.14

Minimum Median Widths for Left Turn Lanes	
Single Left Turn Lane	16 feet
Dual Left turn Lanes	28 feet
Triple Left Turn Lanes	40 feet
Two Way Left Turn Lanes	14 feet (max)

4.15 Median Openings

1. Median openings are necessary to accommodate left turning and cross traffic. A semicircular median end may be used on medians of less than ten feet in width. All medians that are ten feet or wider in width must use a bullet nose median end for a median opening at a cross road, or a parabolic curve at a "T" intersection.
2. The following table gives the minimum length of median openings, based on a single unit truck (SU) and occasional semi-trailer/trucks (WB-50) and perpendicular intersections. The length must be increased for skewed intersections and predominant semi-trailer/truck usage in accordance with Chapter IX, At Grade Intersections, of the current edition of *A Policy on Geometric Design of Highways and Streets*.

Table 4.15

Lengths of Minimum Median Openings (feet)		
Median Width	Semicircular	Bullet Nose
4	96	96
6	94	76
8	92	68
10	N/A	62
12	N/A	58
14	N/A	53
16	N/A	50
20	N/A	44
24	N/A	40 (min.)
>24	N/A	40 (min.)

4.16 Intersection Sight Distance

The drivers of vehicles which are preparing to enter a highway from a driveway or intersection must be able to see in both directions. This will enable them to have time to pull into the through lane and accelerate. This will also allow approaching traffic enough time to recognize the situation and slow to avoid a collision. This is called the entering sight distance.

If Entering Sight Distances are not obtainable, Stopping Sight Distances must be achieved as an absolute minimum.

Sight distances are calculated from driver's 'eye' height of 3.50 feet, 20 feet from edge of the nearest travel lane, to an approaching vehicle 4.25 feet above the pavement. These sight distances are for perpendicular intersections with entering vehicle stopped and are for passenger cars.

Stopping sight distance is the distance required to stop, after recognizing the need to stop, including the distance traveled during a reaction time of 2½ seconds and then braking to a stop.

If neither intersection sight distance is obtainable, an acceleration lane may be considered.

Table 4.16

Intersection Sight Distance								
Speed (mph)	Entering Sight Distance (feet)	Stopping Sight Distance (feet)						
		Level	Upgrade			Downgrade		
		0±2%	+3%	+6%	+9%	-3%	-6%	-9%
20	240	125	120	115	115	130	130	130
25	300	150	150	145	140	155	160	165
30	380	200	200	190	180	210	220	230
35	470	250	245	235	225	265	280	300
40	580	325	315	305	295	345	365	395
45	710	400	385	375	370	425	455	510
50	840	475	455	445	-	505	545	-
55	990	550	525	510	-	590	640	-
60	1150	650	620	600	-	700	760	-
65	1350	725	695	665	-	785	855	-
70	1560	850	810	780	-	920	1010	-

4.17 Intersection Sight Triangle.

The sight triangle is the distance which must be kept clear, for visibility of approaching vehicles, from a point 20 feet from the edge of the nearest travel lane to the distance along the travel lane, in Table 4.17. This distance will give stopped passenger cars adequate distance to pull into the travel lanes and accelerate and through traffic time to slow 15%. The distance is based on 12 foot lanes with a 4 foot wide median for four lane roads, and for perpendicular approaches.

Table 4.17

Intersection Sight Triangle			
Speed (mph)	Left (feet)	Right Two Lane Road (feet)	Right, Four Lane Road (feet)
20	185	125	90
25	230	160	110
30	290	200	140
35	360	250	175
40	445	305	215
45	545	375	265
50	645	440	310
55	760	520	365
60	885	605	425
65	1040	710	500
70	1200	820	580

Figure 4.5

Intersection Sight Triangle

