RUBICON
Design Group

May 15, 2019

Roger Pelham, MPA
Washoe County Building and Planning Division
1001 East Ninth Street
Reno, Nevada 89512

Re: Silver Hills Master Plan Amendment and Specific Plan

Dear Roger,

Enclosed are four copies of all updated plans, reports, and studies related to the Silver Hills Master Plan Amendment, Regulatory Zoning Map Amendment, and Specific Plan requests. This includes an updated planning report addressing applicable findings and policies from the Washoe County Master Plan, Specific Plan Development Standards Handbook, Traffic Impact Analysis, and Fiscal Impact Analysis. Included in the appendix of the planning report are the associated checklist items such as the Washoe County application forms, proof of property tax payment, etc. Also included in the appendix are the draft covenants, conditions, and restrictions (CC&R's), preliminary title reports, and a Stormwater Feasibility Analysis completed for the project by Wood Rodgers.

As requested, previously submitted items that have not been updated or amended such as the preliminary geotechnical investigation, digital CAD files, etc. have also been included. The purpose of this is to ensure that you have 100% complete copies of ALL materials submitted in regard to the Silver Hills project. The attached flash drive includes all submitted materials, including this letter, in a digital format.

It is our understanding that the project will be scheduled for presentation to the North Valleys Citizens Advisory Board in June and will then be forwarded to the Washoe County Planning Commission in July. It would be appreciated if you could notify us once those dates are confirmed. In the meantime, please do not hesitate to contact me at mrailey@rubicondesigngroup.com or (775) 250-3455 with any questions, concerns, or if you should require any additional information.

We look forward to working with you as the project moves forward and appreciate your ongoing assistance. Thank you.

Sincerely,

Mike Railey
Partner

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SILVER HILLS

MASTER PLAN AMENDMENT

AND

SPECIFIC PLAN (REGULATORY ZONE AMENDMENT)

Prepared by:

RUBICON
Design Group

Updated: May 2019

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Washoe County Development Application
Owner Affidavit
Master Plan Amendment Application
Regulatory Zone Amendment Application
Property Tax Verification
Preliminary Title Report
Draft Covenants, Conditions, and Restrictions (CC&R's)
Storm Water Feasibility Analysis

Attachments:

Silver Hills Specific Plan Development Standards Handbook
Traffic Impact Analysis
Preliminary Geotechnical Investigation
Fiscal Impact Analysis
Digital Land Use Files

SILVER HILLS
MASTER PLAN AMENDMENT AND SPECIFIC PLAN

INTRODUCTION

This application includes the following requests:

A **Master Plan Amendment** to allow for the following modifications to the North Valleys Area Plan:

- Remove four parcels of land totaling approximately 780.32 acres (the "subject property or properties") from the Silver Knolls Suburban Character Management Area ("SKSCMA")
- Create the "Silver Hills Suburban Character Management Area" ("SHSCMA") and add the subject properties into the SHSCMA
- Amend the North Valley Character Management Area maps to reflect the removal of the subject properties from the SKSCMA and into the SHSCMA
- Create a Character Statement for the SHSCMA with specified references to issues and concerns that were identified at the three community visioning workshops held pursuant to NV.20.2.
- Create a new Land Use Policy: NV. 1.8 to allow the following regulatory zones in the Silver Hills Suburban Character Management Area:
    - Public/Semi-public Facilities (PSI))
    - Low Density Suburban (LDS I — One unit per acre)
    - Low Density Suburban-Two (LDS 2 — Two units per acre)
    - Medium Density Suburban-Three (MDS 3 — Three units per acre)
    - Parks and Recreation (PR)
    - Open Space (OS)
    - Neighborhood Commercial (NC)
    - Specific Plan (SP)
- Create a new "Goal Seven" within the North Valleys Area Plan for the proposed Silver Hills Suburban Character Management Area, to establish a land use pattern, site development guidelines, and architectural guidelines that will implement and preserve the Silver Hills community character as described in the North Valleys Vision and Character Statement, as they are proposed to be amended.
    - Renumber the remainder of the North Valleys Area Plan to allow the insertion of the new Goal Seven.
    - Create Policy NV.7.1. to require that 50% of the residential parcels within Silver Hills East are one acre in size.
    - Create Policy NV.7.2 to require the minimum size of residential parcels located within Silver Hills East is one-half acre and the maximum density of residential parcels located within Silver Hills West is one-third acre.
    - Create Policy NV.7.3 to require subdivisions established within the Silver Hills Character Management Area include a 50 foot open space buffer plus a 200 foot density match between the subdivision and any adjacent residential dwellings existing on the date of final adoption of the Silver Hills Character Management Area.
    - Retain Policies NV.4.6 – NV.4.10 from the SKSCMA, as applicable.

- Incorporate the "Silver Hills Specific Plan Development Standards" as an Appendix to the North Valleys Area Plan with the intent of approving a specific plan allowing the development of 1,872 dwelling units on the subject properties for a total density of 2.5 units per acre (where 1 unit per acre is currently allowed per the SKSCMA).

A **Regulatory Zone Amendment** from Low Density Suburban (LDS) to Specific Plan (SP) on 780.32± acres.

PROJECT LOCATION

Silver Hills consists of 780.32± acres located within the North Valleys Areas Plan, contiguous to the City of Reno on the west. Specifically, Silver Hills (APN #'s 087-390-10, 087-390-13, 086-232-31, and 086-203-05) is located on the east and west sides of Red Rock Road, north of Silver Knolls. The project site is separated from the Cold Springs Valley by a large ridgeline that runs along the western boundary of the project. Figure 1 (below) depicts the project location.

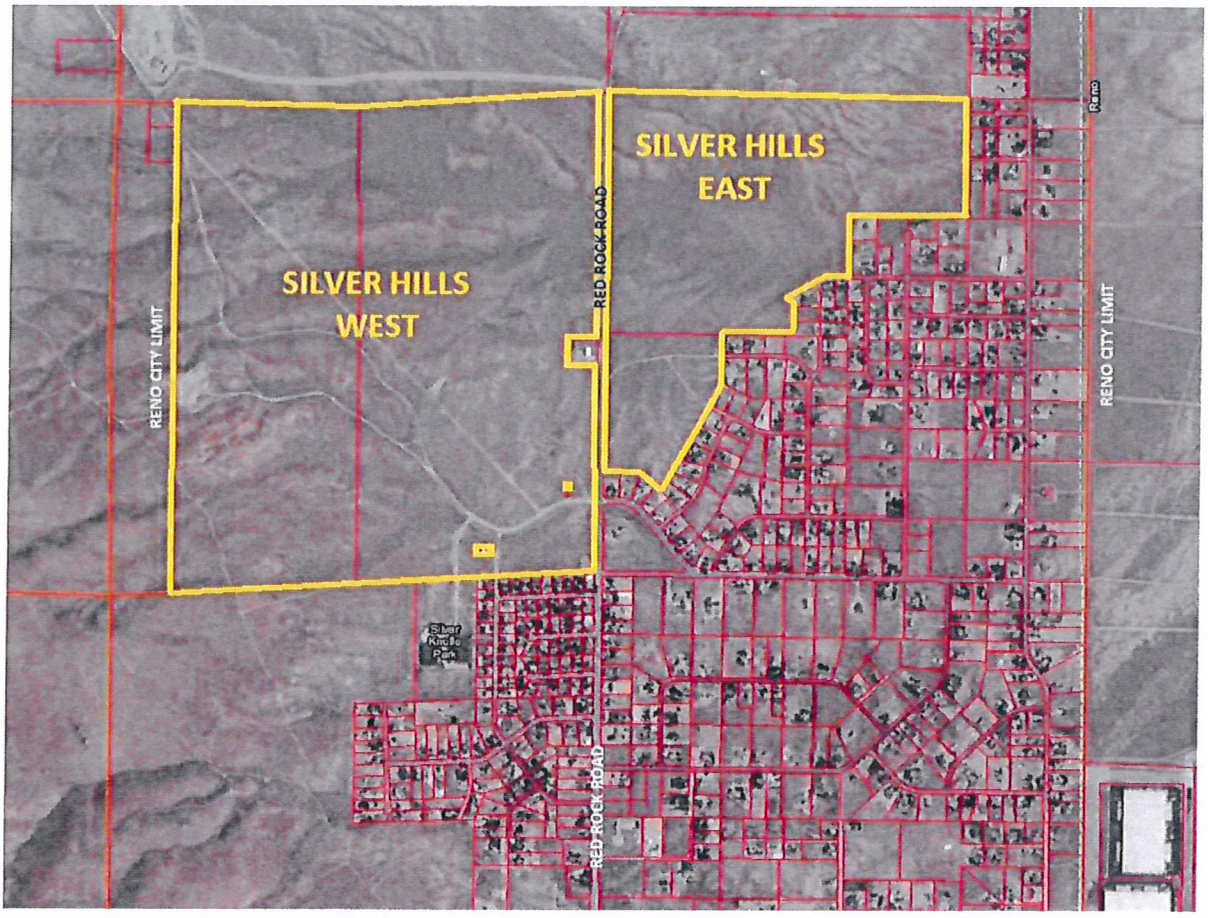


Figure 1 – Vicinity Map

EXISTING CONDITIONS

The Silver Hills site is current vacant and generally slopes from west to east. The majority of the site contains slopes between 0 percent and 15 percent, with pockets of 30+ percent slopes located along drainages that traverse the property. The existing Silver Knolls neighborhood is located to the south and southeast of the project, with vacant land to the east, vacant land within the City of Reno is located to the west, and a large Bureau of Land Management parcel is located to the north of the project. Figures 2 (below and on the following page) includes various site photos depicting existing onsite conditions.

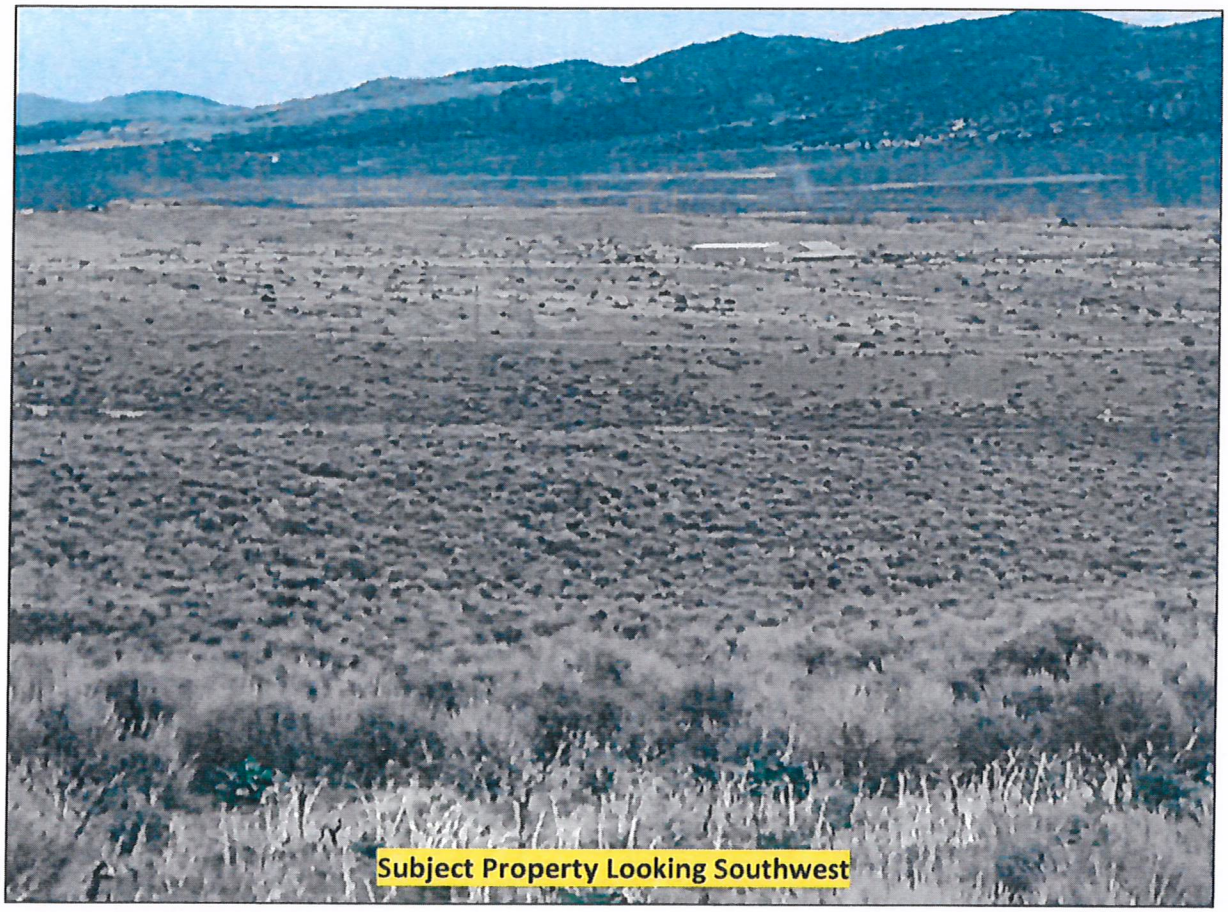
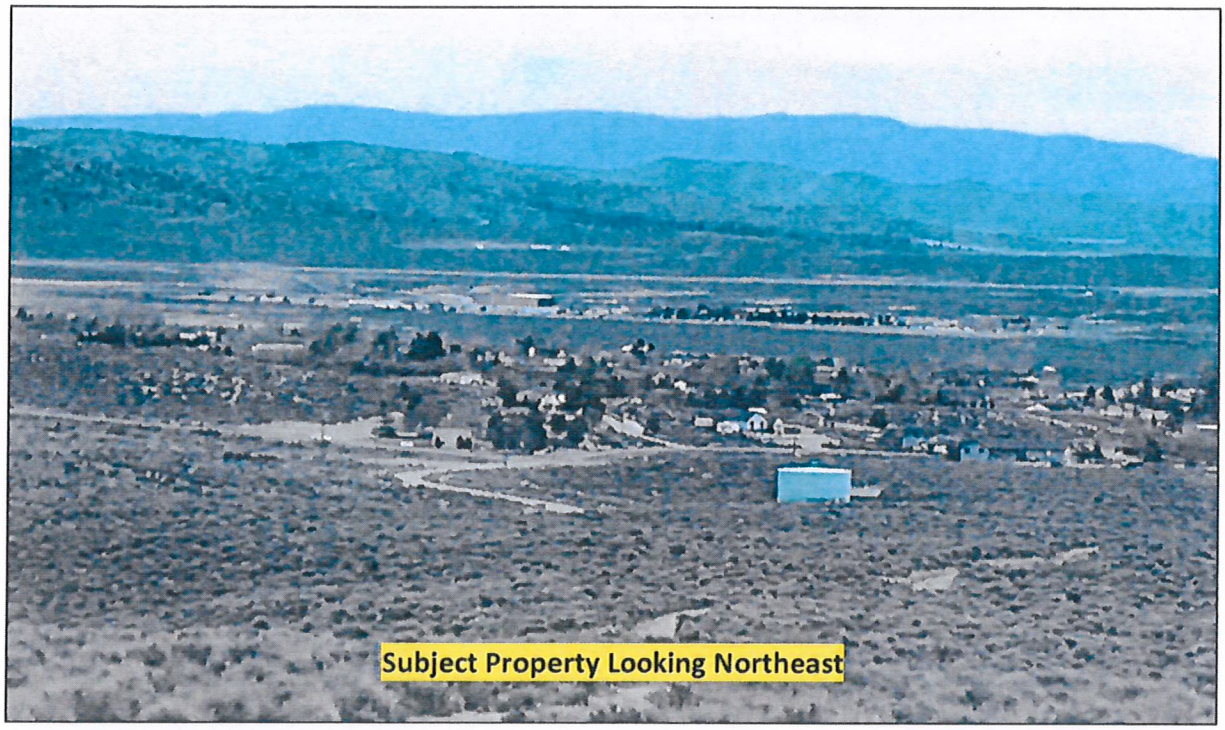


Figure 2 – Existing Conditions



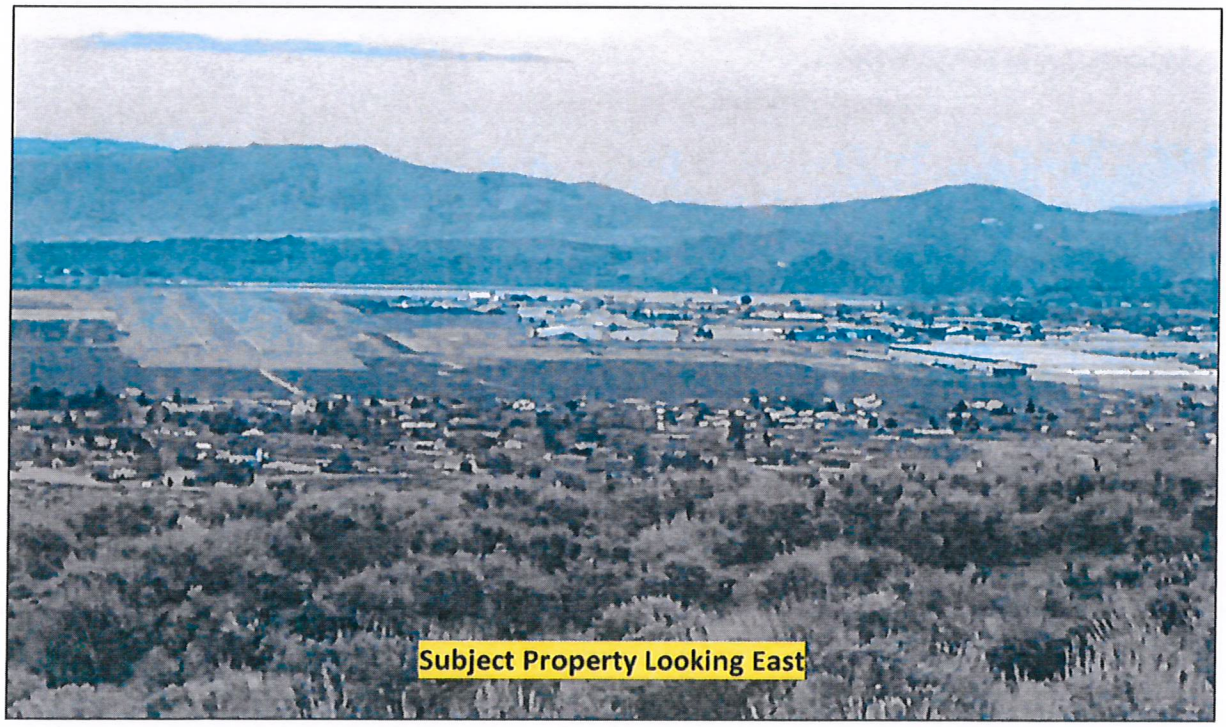


Figure 3 – Existing Conditions

The Silver Hills site has a Master Plan designation of Suburban Residential (SR) within the North Valleys Area Plan. It is also located within the Silver Knolls Character Suburban Character Management area. The project is surrounded by Suburban Residential land uses to the east and south, and by Open Space to the north. The parcel within the City of Reno jurisdiction to the west is classified as Open Space and the parcel to the south within the City of Reno jurisdiction is classified as Specific Plan. Figure 4 (below) depicts the adopted Master Plan land use within the North Valleys Area Plan for the project site and surrounding area.

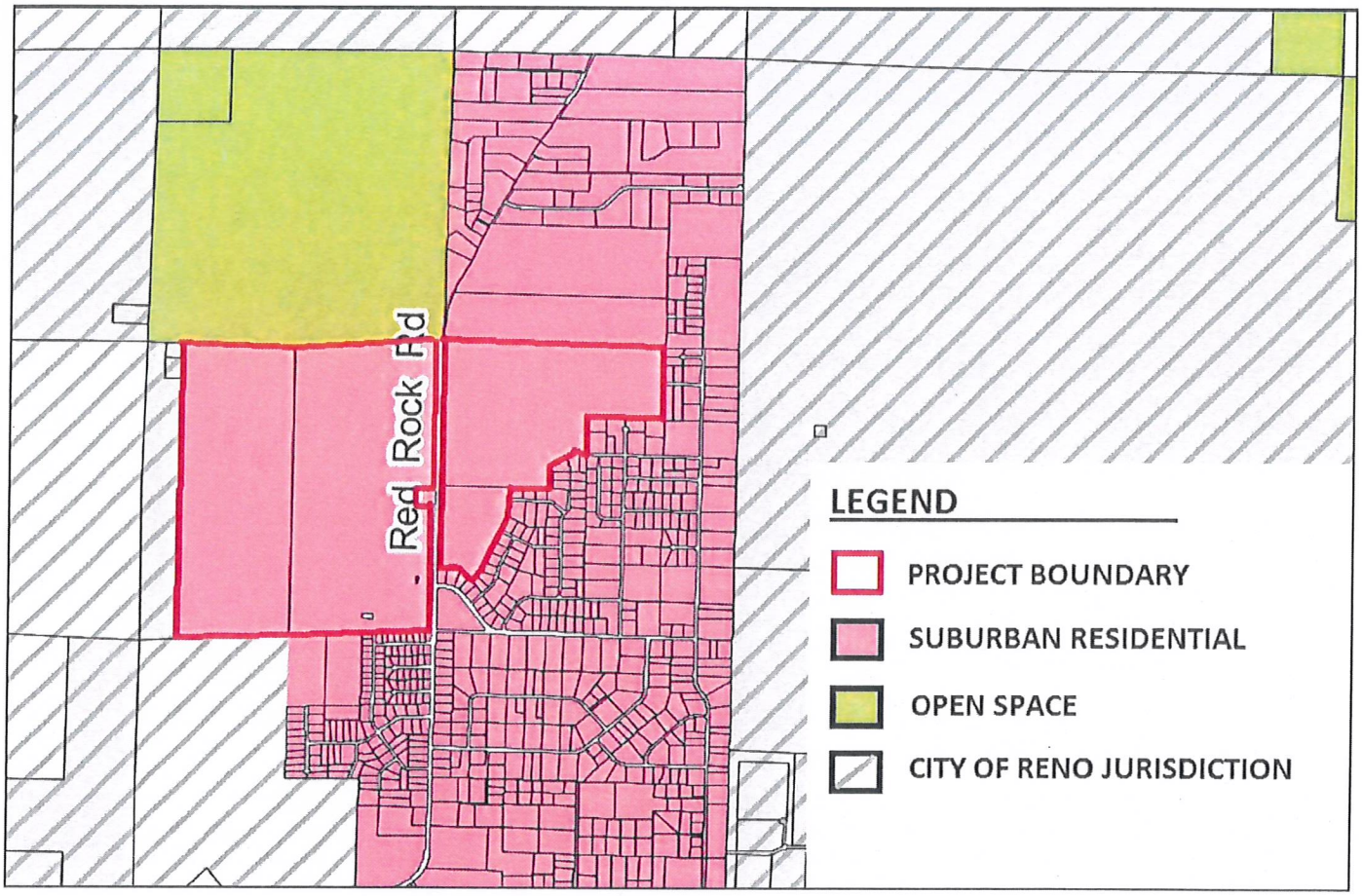
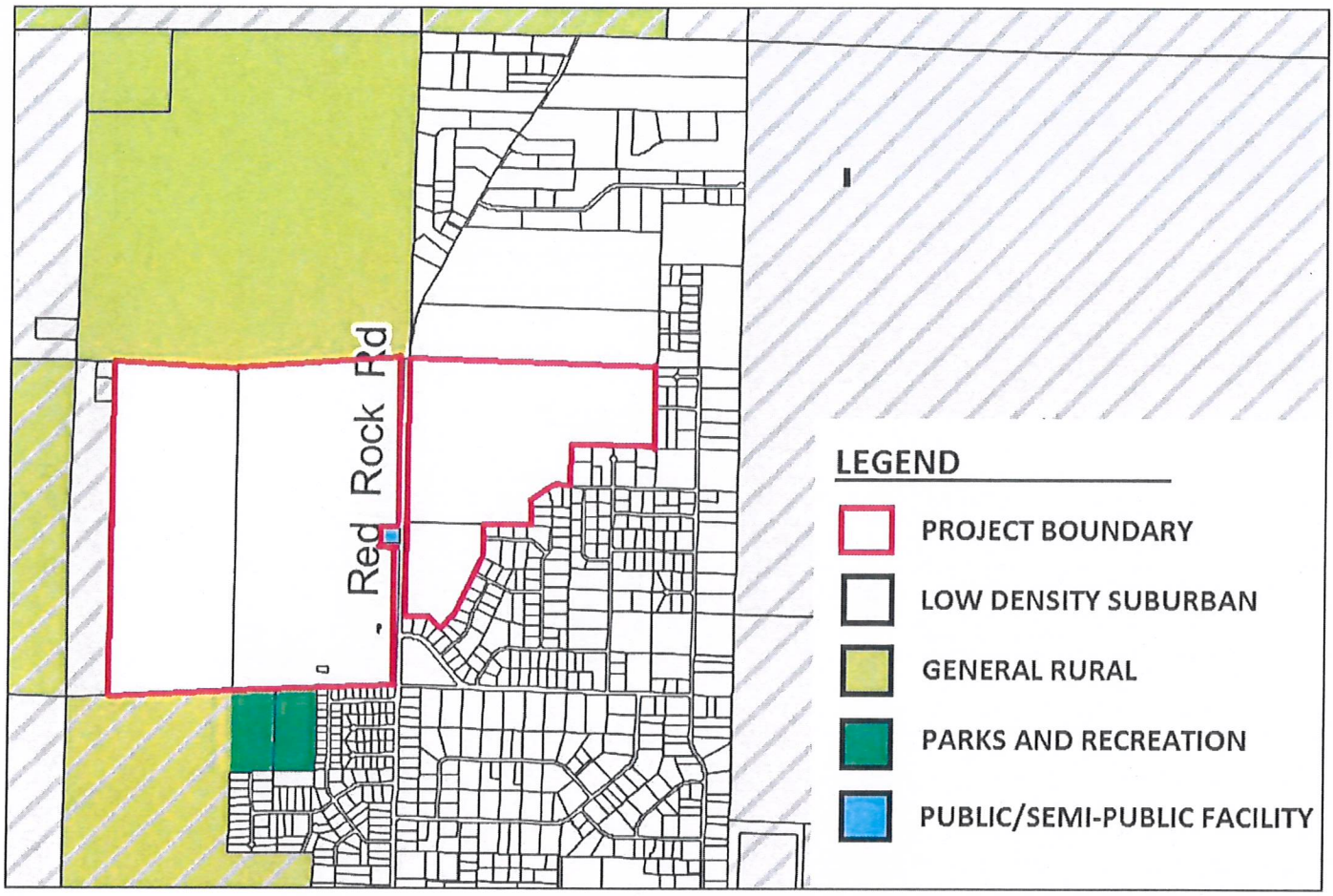


Figure 4 – Master Plan Land Use

The existing regulatory zone for the Silver Hills project is Low Density Suburban (LDS). Properties to the north have regulatory zones of General Rural. Properties to the east have regulatory zones of Low Density Suburban. Properties to the south have regulatory zones of Low Density Suburban, General Rural and Parks and Recreation. Properties to the west are within the City of Reno jurisdiction and are zoned Unincorporated Transition 40. Figure 5 (below) depicts the existing zoning surrounding the Silver Hills plan area.



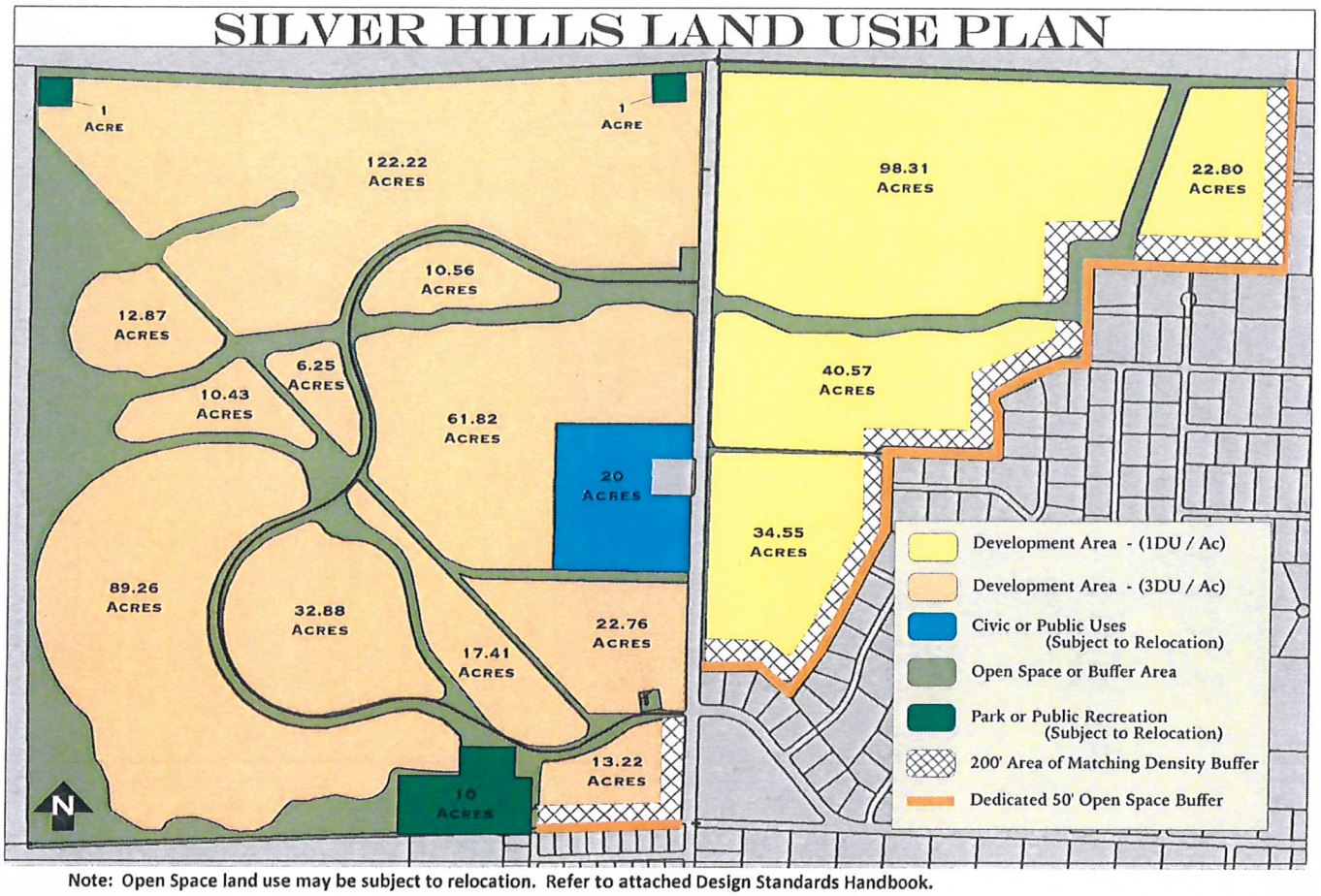
Note: Hatching indicates areas within the City of Reno.

Figure 5 - Zoning

PROJECT DESCRIPTION

The Silver Hills project proposes a Specific Plan that will allow for up to 1,872 single family detached and attached residential dwelling units on 780.32± acres. Densities within the plan area will range from 1 unit per acre to more suburban densities (consistent with Common Open Space Development standards), depending on their location within Silver Hills. However, consistent with the Suburban Residential Master Plan designation, overall gross density within the plan boundaries will not exceed 3 dwelling units per acre west of Red Rock Road and 1 dwelling unit per acre east of Red Rock Road. Thus, overall proposed density within Silver Hills is approximately 2.5 dwelling units per acre.

Residential development areas along with parks, open space, and public facilities have been identified on the Silver Hills Land Use Plan (below). Densities and allowed uses within the land use categories are defined within the Silver Hills Development Standards Handbook. Additionally, buffering and lot-matching standards are included to ensure proper land use transitions.



Note: Open Space land use may be subject to relocation. Refer to attached Design Standards Handbook.

Figure 6 – Silver Hills Land Use Plan

Table 1 (below) outlines the areas of acreage allocated to residential land use areas. In addition, the table identifies non-residential uses that are proposed for inclusion in the Silver Hills Specific Plan. These non-residential regulatory zones include Public Facility/Civic Use for an anticipated elementary or middle school and other potential public facilities, Open Space for identified open space and trails within the Silver Hills Specific Plan, and Park for 12-acres (minimum) of planned park facilities within the community.

TABLE 1: LAND USE SUMMARY

LAND USE	GROSS AREA
RESIDENTIAL	
Residential Development Area[1]	595.91± acres
NONRESIDENTIAL	
Public Facility/Civic Use (PFC)	20± acres[2]
Park (P)	12± acres
Open Space (OS)	152.41± acres
TOTAL	**780.32±acres**

1 – Note: Limited Neighborhood Commercial uses shall be permitted within Residential Development Areas. Refer to Section 2.3 of Development Standards Handbook.

2 – If no public use is planned or established at the 80% build out stage of the Specific Plan, this area shall automatically revert to residential (refer to Development Standards Handbook).

Included with the Silver Hills Specific Plan is a Development Standards Handbook that proposes design standards for allowed uses, setback and height requirements, site design, landscaping, architecture and open space. These standards provide zoning framework for the Silver Hills project and will help to guide development within the community. The Development Standards Handbook also outlines proposed phasing and infrastructure to support the development. For more detailed information, please refer to the Silver Hills Specific Plan Development Standards Handbook included with this application.

Per Washoe County Code sections 110.102.25 and 110.812.00 – 35, this application will be reviewed for conformance with the Regional Plan, due to its status as a project of regional significance. The material provided in this application is sufficient to complete the conformance review.

MASTER PLAN AMENDMENT

The Silver Hills property is designated Suburban Residential (SR), which allows for residential density ranging from 1-3 units per acre, which is consistent with the proposed maximum density of 3 units per acre within the Silver Hills project (2.5 dwelling units per acre overall). Silver Hills is also located within the North Valleys Area Plan and, more specifically, within the Silver Knolls Suburban Character Management Area, which envisions a low density suburban residential community generally consistent with area growth patterns at the time of adoption in 2010.

However, with the approval of large-scale housing developments within the City of Reno to the north of Silver Hills along Red Rock Road such as Evans Ranch (5,679 residential units) and Silver Star Ranch (1,600 residential units); and with the planned expansion of Red Rock Road from two lanes to four lanes between 2022 and 2026, the character of Silver Knolls the area is quickly changing.

A tremendous amount of public outreach has occurred as part of the Silver Hills review process. This has included meetings with the Silver Knolls Homeowners Association, a community open house meeting, the North Valleys Citizens Advisory Board, a series of community visioning workshops pursuant to NV.20.2, and numerous individual meetings with interested parties. As a result of these meetings, the Silver Hills plan has evolved in various forms to what is being proposed today. A key change is the removal of Silver Hills from the Silver Knolls Suburban Character Management Area (SCMA) and the development of the Silver Hills SCMA. The benefit of this approach is that with the creation of the new SCMA, specific Area Plan policies can be adopted to directly address the input that has been received. This is reflected in the proposed Silver Hills SCMA and further solidified in the Specific Plan Development Standards.

The Silver Hills SCMA is very similar to that of the Silver Knolls SCMA. In fact, the proposed Silver Hills SCMA was directly modeled after the Silver Knolls SCMA and includes many of the same policies and provisions. The purpose of this was to ensure that the character of Silver Knolls is respected and preserved. This is accomplished with the policy provisions that require larger lots east of Red Rock Road, density matching, etc.

The proposed Silver Hills SCMA is included below:

Silver Hills Community Suburban Character Management Area

Character Statement

Identifiable communities in the North Valleys include:

The **Silver Hills Community** is characterized by a medium density residential land use pattern that will (i) provide for a variety of housing options to meet the needs of a broad range of the area's population, and (ii) preserve the area's character and quality of life with design standards such a density matches, open space buffers and maintaining natural open spaces. The existing ridgelines and rolling terrain provide for a "mountain ranch" themed residential development that accentuates the views and natural topography and incorporates site features that promote farm-to-table living in a cooperative environment. A portion of the community was removed from the City of Reno and is still bounded by the City of Reno to its west. Limited commercial land use designations that are community-serving are desired if within a Specific Plan (with a special use permit). The North Valleys area has rapidly become one of the largest employment centers in the region and the Silver Hills community intends to (i) improve the housing/jobs balance to the area, (ii) improve fire and police protection to the area, (iii) provide support to the Silver Knolls Mutual Water Company customers, (iv) design the sanitary sewer and storm water systems to maintain levels that are at or below pre-development flows into Swan and Silver Lakes; (v) designate a school site for the Washoe County School District, and (vi) create a vibrant, balanced community.

Vision and Character Management

Land Use

NV.1.8 The following Regulatory Zones are permitted within the Silver Hills Suburban Character Management Area:

a. Public/Semi-public Facilities (PSP)
b. Low Density Suburban (LDS 1 – One unit per acre)
c. Low Density Suburban-Two (LDS 2 – Two units per acre)
d. Medium Density Suburban-Three (MDS 3 – Three units per acre)
e. Parks and Recreation (PR)
f. Open Space (OS)
g. Neighborhood Commercial (NC)
h. Specific Plan (SP)

Goal Seven: Silver Hills Suburban Character Management Area. Establish a land use pattern, site development guidelines, and architectural guidelines that will implement and preserve the Silver Hills community character as described in the North Valleys Vision and Character Statement.

Policies

NV.7.1 A minimum of 50% of the residential parcels located within Silver Hills East must be at least one acre in size.

NV.7.2 The minimum size of residential parcels located within Silver Hills East is one-half acre. The maximum density of residential parcels located within Silver Hills West is one-third acre. These minimums may be modified pursuant to Washoe County Development Code, Article 408, Common Open Space Development.

NV.7.3 Subdivisions established within the Silver Hills Character Management Area shall include a 50 foot open space buffer plus a 200 foot density match between the subdivision and any adjacent residential dwellings existing on the date of final adoption of the Silver Hills Character Management Area.

NV.7.4 Subdivisions established within the Silver Hills Character Management Area will vary setbacks and driveway design.

NV.7.5 Subdivisions established within the Silver Hills Character Management Area will construct no more than 10% of the total residential units located within the entire Silver Hills Character Management Area in the same architectural elevation.

NV.7.6 In subdivisions established within the Silver Hills Character Management Area, perimeter fencing on individual parcels adjacent to common open space is optional. Perimeter fencing adjacent to common open space must be consistent with an "open fencing" concept and the use of block, concrete, or similar materials should be limited to posts, pillars and similar uses and not panel or wall sections. Plans for the maintenance of perimeter fences adjacent to common open space will be submitted with tentative map applications.

NV.7.7 In subdivisions established within Silver Hills East, residential garages will, at a minimum, be sized for two vehicles.

NV.7.8 In subdivisions established within the Silver Hills Character Management Area, the use of streetlights will be minimized. Any lighting proposed must show how it is consistent with current best practice "dark-sky" standards.

NV.7.9 All dwellings located within the Silver Hills Character Management Area that are adjacent to existing residential dwellings (existing on the date of final adoption of the Silver Hills Character Management Area) must be single story. Existing residential dwellings are considered adjacent if separated by the minimum 50 foot open space buffer area. Existing residential dwellings are not considered adjacent if separated by a road.

NV.7.10 In subdivisions established within the Silver Hills Character Management Area, landscape designs will emphasize the use of native vegetation, with non-native and atypical vegetation integrated sparingly into any landscaped area. Homebuilders must offer at least two separate xeriscape options.

NV.7.11 The standards established in policies NV.7.1-NV.7.10 will be implemented through tentative map conditions, improvements plans, CC&Rs, or deed restrictions as appropriate. Washoe County staff shall establish the implementation measures as conditions of tentative map approval.

Master Plan Amendment Findings

Goal 20 and, more specifically, Policy NV.20.1 of the North Valleys Area Plan, as well as Sections 110.208.45 and 110.820.15(d) of the Washoe County Code, identify findings that must be made to support a Master Plan Amendment. These findings are listed below and are addressed in **bold face** type.

- Goal Twenty: Amendments to the North Valleys Area Plan will be for the purposes of further implementing the Vision and Character Statement, or to respond to new or changing circumstances. Amendments will conform to the North Valleys Vision and Character Statement. Amendments will be reviewed against a set of criteria and thresholds that are measures of the impact on, or progress toward, the Vision and Character Statement.

  The proposed amendment to North Valleys Area Plan and applicable goals and policies is in response to changing circumstances for the Silver Knolls area as well as the North Valleys region as a whole. Significant job growth in the region has resulted in a high demand for new housing opportunities. Furthermore, diversification in single family housing types is desperately needed to allow housing access to a wider cross-section of the population, including the "missing middle." In addition, the planned expansion of Red Rock Road from two lanes to four in the 2022 to 2026 timeframe supports better utilization of the land that it will serve, as transportation capacity will be significantly increased. This is supported by a comprehensive fiscal impact analysis, as included as an attachment to this report.

- Policy NV.20.1 In order for the Washoe County Planning Commission to recommend the approval of ANY amendment to the North Valleys Area Plan, the following findings must be made:

  a. The amendment will further implement and preserve the Vision and Character Statement.

  As detailed previously, a new Suburban Character Management Area (SCMA) is proposed for Silver Hills. However, the proposed SCMA is very similar to the Silver Knolls SCMA and is designed to protect the character of Silver Knolls through provision of larger lots east of Red Rock Road, and the new SCMA Character Statement was drafted in response to community visioning workshops. The proposed Specific Plan Development Standards have strict requirements related to buffering, density matching, screening, etc. in order to ensure proper land use relationships and protect the character of the area. With the implementation of the Specific Plan Development Standards, the overall character of the area is preserved while directly responding to the need for additional housing and diversification within the North Valleys region. As such, the proposed plan is consistent with the Vision and Character Statements as well as goals and policies of the Area Plan, Master Plan, and Truckee Meadows Regional Plan.

  b. The amendment conforms to all applicable policies of the North Valleys Area Plan and the Washoe County Master Plan, and the Regional Water Management Plan.

  The proposed amendment creates a new Suburban Character Management Area (SCMA) that includes specific policies that ensure compliance with the North Valleys Area Plan, Master Plan, and Regional Water Management Plan. This is further reinforced with the Silver Hills Specific Plan Development Standards. Once adopted, the proposed development standards will guide new development within Silver Hills. The standards proposed far exceed standard Washoe County Development Code requirements and are intended to fully implement the policies included in the SCMA and thus ensuring compliance with the Area Plan.

  c. The amendment will not conflict with the public's health, safety or welfare.

  The proposed amendment to the North Valleys Area Plan will support needed diversification in the housing market while protecting the integrity and character of the adjoining neighborhoods through strict and specific development standards. Standards to ensure concurrency of infrastructure and services are included within the Specific Plan in order to ensure that the surrounding area and general public are not negatively impacted and that all potential impacts are properly and completely mitigated.

- Section 110.208.45, Master Plan Amendment Findings. In addition to the findings identified in Article 820, Amendment of Master Plan, applications to amend the North Valleys Area Plan shall include a finding demonstrating adequate future infrastructure capacity to serve the additional projected demand for the requested land use designation (i.e. regulatory zone).

  A Specific Plan Area is proposed for 780.32± acres within the Silver Knolls area in conjunction with the proposed amendment to the North Valleys Area Plan (creation of the Silver Hills SCMA). The Silver Hills Specific Plan proposes single family development with varying densities depending upon location within the plan area. Some areas will include clustering, consistent with the standards off Article 408. The maximum overall density of the Silver Hills project will be maintained at 2.5 units per acre, consistent with the existing Master Plan land use designation of Suburban Residential.

  The Silver Hills Specific Plan Development Standards Handbook submitted as a part of this application outlines in greater detail future infrastructure capacity to serve the project but generally includes the following:

  - **Roadway Infrastructure: Red Rock Road is planned to be widening from two lanes to four in the timeframe of 2022 to 2026. The added capacity of this expanded roadway, along with contributions and improvements made by Silver Hills, will serve adequately serve the proposed development of the Silver Hills property, along with improvements identified in the Silver Hills Traffic Impact Analysis (attached).**

  - **Sewer Infrastructure: Sewer mains will be provided from the Silver Hills project to connect with existing mains extending to the Reno-Stead Water Reclamation Facility. The exact alignment and connection point for the sewer mains will be reviewed at time of tentative map(s). Two alternatives are provided as a part of the Silver Hills Specific Plan Area and are detailed in the Design Standards Handbook.**

  - **Water Infrastructure: The Silver Hills project is proposed for annexation into the Truckee Meadows Water Authority service territory. A main from the project site will be constructed to connect to the nearest Truckee Meadows Water Authority main, which is adjacent to the Army Aviation well.**

  - **Stormwater Infrastructure: An on-site storm drainage system will be constructed to collect and convey runoff in accordance with Washoe County standards. Infrastructure will be designed to maintain the rate of runoff leaving the Silver Hills site to a level that is at or below pre-development conditions. A detailed stormwater analysis is included as an appendix to this report.**

  - **Private Utility Infrastructure: Power, gas, telephone and cable facilities are located within close proximity of the Silver Hills project and can be connected to serve the proposed development.**

- Section 110.820.15(d), Master Plan Amendment Findings. When adopting an amendment, the Commission shall make all required findings contained in the Area Plan for the planning area in which the property that is the subject of the Master Plan amendment is located and, at a minimum, make at least three of the following findings of fact:

  (1) Consistency with Master Plan. The proposed amendment is in substantial compliance with the policies and action programs of the Master Plan.

  Proposed changes to the North Valleys Area Plan will support the desperate need for additional housing in the region and provides for a mix of single family uses that will allow a wider range of the population access to housing. The proposed amendment is consistent with the existing Suburban Residential Master Plan designation and the proposed Silver Knolls Suburban Character Management Area includes specific goals and polices that protect the integrity and character of existing neighborhoods within Silver Knolls. As a result, consistency is provided with the overall Character Management Statement and the project can implement numerous goals of the Master Plan as noted in the supplemental policy analysis included within this application.

  (2) Compatible Land Uses. The proposed amendment will provide for land uses compatible with (existing or planned) adjacent land uses, and will not adversely impact the public health, safety or welfare.

  The existing Master Plan land use is not proposed for modification and will remain at a maximum density of 3 units per acre within the west side Specific Plan Area. Overall density within Silver Hills will be capped at 2.5 dwelling units per acre. The policies included within the proposed Silver Hills SCMA, coupled with the strict and specific development standards proposed in the Specific Plan will fully ensure a proper transition between existing neighborhoods and Silver Hills. This includes proper density transitions and serves to protect the character and integrity of existing neighborhoods and the Silver Knolls area as a whole. The Specific Plan also includes standards/requirements for concurrency of infrastructure and services to ensure that adequate capacity exists prior to development and includes a comprehensive trail, open space, and park system that will provide all residents of the area with amenities and access to public lands. The Specific Plan also includes a school site which will serve the entire community, not just Silver Hills and also provides a 10 acre addition to Silver Knolls Park which can serve to bring a regional park facility to the area, a long-term goal of the community.

(3) Response to Change Conditions. The proposed amendment responds to changed conditions or further studies that have occurred since the plan was adopted by the Board of County Commissioners, and the requested amendment represents a more desirable utilization of land.

Significant changes have occurred in the area and region since the adoption of the North Valleys Area plan nearly 10 years ago. For example, development within the City of Reno has created a large employment center in the immediate vicinity which is continuing to expand at a rapid rate. This new job growth has created a region wide housing crisis and driven the cost of new homes out of reach for many residents. Silver Hills has the unique opportunity to provide a mix of housing types in direct proximity to employment centers while allowing for units that are attainable to wider cross-section of the population.

Planned infrastructure improvements, as well as those implemented by Silver Hills (with future development) ensure concurrency of infrastructure and services. This is also reinforced with the adoption of the Silver Hills Development Standards Handbook which includes requirements that exceed standard Washoe County code. The overall site location and topography is ideal for the type of development proposed and is a better utilization of the land from what is currently permitted. A detailed fiscal impact analysis (attached) has been completed and demonstrates that the project will also result in fiscal benefit to the County as the project builds out over a 15 to 20 year timeframe.

(4) Availability of Facilities. There are or are planned to be adequate transportation, recreation, utility and other facilities to accommodate the uses and densities permitted by the proposed Master Plan designation.

Transportation facilities on Red Rock Road are planned for expansion from two lanes to four to accommodate anticipated growth in the North Valleys area. These improvements are already included in RTC's Capital Improvement Plan and can be enhanced with additional contributions from Silver Hills. Water, sewer, storm drainage and dry utility facilities will be extended as a part of the Silver Hills Specific Plan that is proposed as a part of this application. Strict standards for concurrency are included to ensure adequate levels of service and all new development will be subject to additional review and analysis prior to the commencement of any construction activities. Recreation facilities including parks, agrihood, extensive open space, and trail network (including equestrian trails) are also proposed as a part of the Silver Hills Specific Plan that accompanies the Master Plan Amendment request. A school site is also reserved within Silver Hills and will be coordinated in conjunction with the Washoe County School District.

(5) Desired Pattern of Growth. The proposed amendment will promote the desired pattern for the orderly physical growth of the County and guides development of the County based on the projected population growth with the least amount of natural resource impairment and the efficient expenditure of funds for public services.

The proposed amendment serve to address the current housing crisis by diversifying the current single family options in the area and providing a mix of unit types that appeal to all levels of the population from young singles and families to the elderly. More importantly, Silver Hills will take aim at the "missing middle" and focuses on providing single family housing that is attainable for area residents based on wages and employment opportunities in the area. With an overall density of 2.5 units per acre, the project will provide significant open space and represents a much more efficient and environmentally friendly utilization of the land. Current zoning and regulations encourage sprawl and does not offer the level of amenities and facilities that can occur with a Specific Plan approach to development.

(6) Effect on a Military Installation. The proposed amendment will not affect the location, purpose and mission of the military installation.

Not applicable for the proposed amendment.

REGULATORY ZONE AMENDMENT – SPECIFIC PLAN

As previously outlined in the Project Description section of this report, the Silver Hills project proposes a Specific Plan for the development of up to 1,872 single family detached and attached residential dwelling units on 780.32± acres. The use of a Specific Plan will allow for creativity and flexibility in lot sizes and development standards through the use of clustering, open space provisions and quality architectural, landscape and site design requirements. As a recap of the Project Description in this report, the densities within the Silver Hills Specific Plan will include clustering and various densities, depending on their location within Silver Hills. However, consistent with the Suburban Residential Master Plan designation, overall density within the plan boundaries will not exceed 3 residential dwelling units per acre west of Red Rock Road and 1 dwelling unit per acre east of Red Rock Road, with an overall density of 2.5 dwelling units per acre.

As a result of numerous community meetings and visioning workshops, the plan as well as the proposed Suburban Character Management Area now include strict policies, density restrictions, density matching, buffering, and landscaping requirements that will ensure the character and integrity of existing neighborhoods is maintained and that Silver Hills properly relates to and transitions from Silver Knolls.

The development standards developed for the Silver Hills Specific Plan will be implemented through the adoption of a Development Standards Handbook as required by the Washoe County Development Code. The Silver Hills Specific Plan and Development Standards Handbook have been designed to meet the ever-growing need for housing within the North Valleys. Specifically, the plan provides for a wider mix of housing opportunities to meet the needs of a broad range of the area's population. The North Valleys is, and is planned to be, one of the largest employment centers in the region. As such, Silver Hills will serve to provide a jobs/housing balance within the North Valleys. While the plan serves to meet the needs of the "new North Valleys" it provides standards to ensure that the character and integrity of existing neighborhoods are maintained. The benefits to this planning approach are numerous and include:

- The opportunity to reduce commute times and commuter trips.
- The ability to live in close proximity to jobs, schools, parks, and open space.
- Creating a sense of community through common design elements.
- Provision of low intensity neighborhood serving commercial uses to serve the everyday needs of residents.
- The ability to provide housing for multiple segments of the market.
- Preservation of key natural features.
- Provision of parks, open space, public facilities, and community amenities that can be enjoyed by all residents.
- Implementation of "smart growth" concepts and standards.
- Ensuring that new development properly relates to existing uses.
- Providing a high-quality community that residents and Washoe County can be proud of.

The Silver Hills Development Standards Handbook is attached to and submitted concurrently with this report and includes all components outlined in Washoe County Development Code, Section 110.442.30, Specific Plan Development Standards Manual.

Specific Plan Findings

The sections of the Washoe County Development Code listed below identify findings that must be made to support a Regulatory Zone Amendment for a Specific Plan. Each finding section is outlined in the following pages with each required finding addressed in **bold face** type.

- Section 110.442.50 – Specific Plan Evaluation Criteria and Conditions of Approval
- Section 110.442.55(10) – Findings for Specific Plan
- Section 110.821.15(d) – Findings for Amendment of Regulatory Zone

Section 110.442.50 Specific Plan Evaluation Criteria and Conditions of Approval. Based on the best planning practices available at the time of a Specific Plan regulatory zone amendment submission, the Commission will make the initial determination of the suitability and appropriateness of the proposed Specific Plan, and make an appropriate recommendation to the Board. The BCC will make the final determination of suitability and appropriateness for the Specific Plan proposal as provided in NRS Chapter 278A and this article. A proposed Specific Plan will be evaluated by the Commission and the Board against the specific minimum standards enumerated in this Article, the factors set forth in NRS Chapter 278A including those in 278A.470 as applicable, as well as the following review criteria:

1. Consistent with Master Plan. The Specific Plan advances Washoe County's Master Plan goals and policies, including both county wide and area plan specific language.

   This application contains a request to amend portions of the North Valleys Area Plan to align the proposed Silver Hills Specific Plan with all goals and policies outlined within Area Plan and Master Plan. Refer to the previous Master Plan Amendment section that outlines specific amendment requests, as well as Master Plan Amendment findings. In addition, the proposed Silver Hills Specific Plan is consistent with the existing Master Plan Land Use designation of Suburban Residential. While several goals and policies from the overall Washoe County Master Plan are advanced with the proposed project, the key goals and policies are addressed below (*goals and policies in italics*):

   Goal Two: Standards ensure that land use patterns are compatible with suburban development and incorporate mixed-use.
   LUT.2.2: Allow flexibility in development proposals to vary lot sizes, cluster dwelling units, and use innovative approaches to site planning providing that the resulting design is compatible with adjacent development and consistent with the purposes and intent of the policies of the Area Plan.

   The Silver Hills Specific Plan provides for flexibility in land use in the Silver Knolls area by clustering dwelling units to provide a variety of lot sizes, while preserving open space and connections to adjacent public lands.

Goal Four: Land use patterns allow for a range of housing choices and interconnected streets.
LUT.4.1: Maintain a balanced distribution of land use patterns to:

a. *Provide opportunities for a variety of land uses, facilities and services that serve present and future population.*
b. *Promote integrated communities with opportunities for employment, housing, schools, park civic facilities and services essential to the daily life of the residents; and*
c. Allow housing opportunities for a broad socio-economic population.

A broad mix of housing opportunities will be provided with the Silver Hills Specific Plan, ranging from large lots at 1 unit per acre, to smaller, attached housing such as townhomes. The higher density portions of the project are proposed internally, with density matching and buffering at the boundaries of the project (where applicable) to provide transition to and compatibility with existing adjacent residential development. The mix of housing types will serve a large range of the socio-economic population, and will provide a more diverse base to support existing and anticipated employment growth in the North Valleys area.

Goal Six: Land use and transportation decisions support and healthy economic base.
LUT.6.1: Acknowledge the importance of Washoe County (including the incorporated cities of Reno and Sparks) in the continued development of Northern Nevada's regional economic base.

a. *Strengthen and support the identity of the region by encouraging land uses that both contribute to the character of the community and enable the area to sustain a viable economic base.*
b. *Encourage land uses that preserve a quality of life that define a sense of place within the region.*

LUT.6.2: Promote development projects that direct resources to promote business attraction, retention and expansion.

The North Valleys area is, and is planned to be, one of the largest employment centers in the region. As such, the Silver Hills project will serve to provide a jobs/housing balance within the North Valleys for a wide range of the population. Diverse housing is essential to attract businesses to this growth center of Washoe County, as adequate housing levels at affordable prices is a concern to businesses considering northern Nevada for relocation and/or expansion.

2. Integrated with Surrounding Uses. The Specific Plan is planned and designed to be compatible with existing or proposed development in the areas nearby and adjacent to the Specific Plan.

   The Silver Hills Specific Plan will allow the clustering of smaller lot sizes to provide a diverse mix of housing types, while also preserving large portions of the property as usable open space with connections to adjacent public lands. Buffering and density matching will be provided adjacent to existing residential development to ensure appropriate compatibility and transition. This is taken a step further on the east side of Silver Hills where 1 acre lots and an open space buffer will be developed around the project periphery. Furthermore, overall density on the east side is capped at 1 dwelling unit per acre, directly matching that of neighborhoods to the south. Overall, the Specific Plan will not exceed a density of 2.5 units per acre, which is consistent with the allowed density of the Suburban Residential Master Plan designation.

3. Protects and Unifies Natural Systems. The Specific Plan creates an effective and unified treatment of the development and preservation possibilities within its area. The Specific Plan must preserve or create unique amenities such as natural streams, stream banks, rough terrain, man-made landforms or landscaping, and similar areas, as appropriate.

   The Silver Hills Specific Plan clusters higher density development within the flatter, more usable areas of land within the property area. Steeper topography with rough terrain is proposed to be preserved as open space.

4. Single Ownership. The land within the Specific Plan is under single ownership or control.

   The land within the proposed Silver Hills Specific Plan is under the ownership and control of a single entity, Lifestyle Homes TND, LLC.

5. Health, Safety and Welfare. The Specific Plan is not detrimental to the health, safety and welfare of the surrounding neighborhoods and community.

   The proposed Silver Hills Specific Plan is not detrimental to the health safety and welfare of the surrounding neighborhoods and community. The overall density will not exceed 2.5 units per acre, which is consistent with the existing Master Plan designation of Suburban Residential that exists on the property. In addition, the implementation of a Specific Plan will allow for the adoption of development standards that exceed the minimum requirements of Washoe County Development Code for the area. This will enhance the quality of life for residents by ensuring development that will provisions open space, trails and parks that might not otherwise occur with standard development in the area and also requires the concurrency of infrastructure and services.

6. Master Plan Implementation. The Specific Plan more closely meets Master Plan goals, and policies than would occur if the general standards and development regulations of the development code were applied for the area.

   As outlined in the findings response to Section 110.442.50(1) above, the proposed Silver Hills Specific Plan more closely meets the goals and policies of the Master Plan.

7. Adapts to Physical Setting. The Specific Plan better adapts to the physical and aesthetic setting of the area within the Specific Plan and with the surrounding land uses than could otherwise be achieved or developed using the general standards of and development regulations of the development code.

   The Silver Hills Specific Plan better adapts to the physical and aesthetic setting of the area and with the surrounding land uses by providing more compact development with provisions for open space and trails, rather than large lots spread across the entire property area, with no distinct community amenities. This represents a more efficient and environmentally friendly approach to development and discourages sprawl.

8. Area-wide Benefit. The Specific Plan benefits the surrounding neighborhoods and community to a greater degree than development allowed within another regulatory zone, including improved pedestrian or transit access to jobs, goods and services.

   The Silver Hills Specific Plan benefits the surrounding neighborhoods and community with the additional of amenities such as parks, trails, open space, and future school that are accessible to all residents. It benefits the community as a whole by diversifying housing options and providing opportunity for homeownership to a wider range of the population. Additionally, by providing a large range of housing types, at varying clustered densities, Silver Hills can help to attract and retain a larger employment base to the North Valleys. The Specific Plan also provides provisions for small neighborhood commercial areas that are lacking in this part of the North Valleys and serves to provide a balanced community, reducing vehicle trips and encouraging residents to walk or bike. Finally, it will provide sidewalks and trails to promote improved pedestrian access and connectivity within the community, as well as access to public lands.

9. Higher Quality of Development. The Specific Plan provides mixed land uses and/or site design flexibilities while enhancing the area within the Specific Plan or building aesthetics to achieve an overall, workable higher quality of development than would otherwise occur using the general standards and development regulations of the development code.

   The Silver Hills Specific Plan provides a mix of land uses including single family detached and attached residential with varying clustered densities, an extensive open space network, parks and trails, and land designated for public facilities including, but not limited to, an elementary school. In addition, provisions have been outlined in the Silver Hills Development Standards Handbook that allow for limited neighborhood retail commercial facilities to serve the community. The adoption of a Specific Plan with associated Development Standards Handbook for Silver Hills will provide for enhancement of the area through high quality standards for site design, architecture and landscaping.

10. Appropriate Use of Common Open Space. The Specific Plan ensures the concentration of open space into more workable or usable areas, and better preserves the area's natural resources than would otherwise occur using the general standards and development regulations of the development code.

    While portions of open space encompass steeper terrain areas, none of this terrain is steep to the point where it is unusable. The open space will provide for passive recreational opportunities such as hiking and equestrian uses along with opportunities for orchards and agrihood facilities. In addition, trails, large landscape areas and parks are also provided within the flatter portions of the Silver Hills Specific Plan to ensure that all proposed open space is accessible to a wide variety of users.

11. No Undue and Adverse Impact. The Specific Plan will not have an undue and adverse impact on the reasonable enjoyment of neighboring properties and will not be detrimental to existing surrounding uses.

    The proposed Silver Hills Specific Plan will not have an undue and adverse impact on the enjoyment of neighboring properties and will not be detrimental to existing surrounding uses. This has been a primary focus of the various community meetings and strict and specific standards and policies have been added to ensure that the character and integrity of existing neighborhoods is retained. The overall density within Silver Hills will not exceed 2.5 units per acre, which is consistent with the existing Master Plan designation of Suburban Residential that exists on the property. In addition, the implementation of a Specific Plan will allow for the adoption of development standards that exceed the minimum requirements of Washoe County Development Code. This will enhance the quality of life for residents by ensuring development that will provisions open space, trails and parks that might not otherwise occur with standard development in the area.

12. Impact on Public Facilities. The Specific Plan will not create an excessive burden on parks, schools, streets and other public facilities which serve, or are proposed to serve, the area within the Specific Plan.

    The Silver Hills Specific Plan will not create an excessive burden on parks, schools, streets or other public facilities which will serve the area within the Specific Plan. As a part of the proposed Specific Plan, a 20-acre public facility site has been designated to provide for an elementary school per the needs of the Washoe County School District. In addition, a large park facility approximately 10 acres in size is proposed to serve not only the Silver Hills community but also the Silver Knolls area as a whole. This park is proposed adjacent to the existing Silver Knolls park facilities and is intended to expand the park facilities that are currently located there. Red Rock Road is proposed to be widened from two lanes to four lanes within the 2022 to 2026 timeframe, ensuring adequate transportation to serve the development. Finally, water and sewer facilities will be constructed as a part of the Silver Hills development to connect to existing infrastructure elsewhere in the North Valleys. Standards requiring the concurrency of infrastructure and services with development are included to provide further assurance that burdens do not result.

13. Internal Consistency. The Specific Plan is designed in such a manner as to form a desirable and unified environment within its own boundaries.

    The Silver Hills Specific Plan is designed to promote clustering of higher density residential uses near the center of the property, while lower density residential, open space uses and buffering will occur around the perimeter of the project. This will allow compatibility and seamless integration into the existing community that surrounds the project, while addressing a range of key housing needs. Open space areas will be connected by an extensive trail network that will circulate through the property, while each internal community will be connected with appropriate bike and pedestrian facilities. These factors, along with the adoption of a unified theme, with specific guidelines for architectural and site design standards, will provide a unified environment for Silver Hills.

14. Whole Phases. Each phase of the Specific Plan is of sufficient size, composition and arrangement that it's construction, marketing and operation are feasible in the context of the Specific Plan in its entirety, and that provision and construction on non-residential uses, residential units and common open space are balanced and coordinated. Each phase shall be identified and approved as part of the DSM.

    As outlined in the proposed Silver Hills Specific Plan, final phasing will be determined based on market demands, but 20 individual phases of up to 150 residential units each are anticipated. The first tentative map is proposed to be filed in 2020 with initial infrastructure improvements commencing in 2019. Phasing will begin along the Red Rock Road frontage, moving east and west into the Specific Plan areas on both sides of Red Rock Road. Each individual phase will be of sufficient size, composition and arrangement that it's construction, marketing and operation are feasible in compliance with this finding.

Section 110.442.55(10) Findings. Consistent with NRS 278A.500 and in addition to making all the findings required by Section 110.821.15 of this code for regulatory zone amendments, the commissioners shall consider and set forth in the minutes of the meeting (either as part of the motion or by individual comments) with particularity in what respects the Plan would or would not be in the public interest, including, but not limited to findings on the following:

a. Consistency with Specific Plan Standards. In what respects the plan is or is not consistent with the state of objectives of a Specific Plan set forth in this Article;

Consistent with the purpose of a Specific Plan outlined in Section 110.442.00 of the Washoe County Development Code, the use of a Specific Plan for Silver Hills allows for creativity and flexibility in lot sizes and development standards through the use of clustering, open space provisions and quality architectural, landscape and site design requirements. The Silver Hills Specific Plan Development Standards Handbook provides land use and development standards that meet or exceed all requirements for a Specific Plan required by the Washoe County Development Code.

b. Departures from regulatory zone requirements are in the public interest. The extent to which the plan departs from regulatory zone and subdivision regulations otherwise applicable to the property, including but not limited to density, bulk and use, and the reasons why these departures are or are not deemed to be in the public interest.

Departures from regulatory zone requirements are in the public interest for the Silver Hills project because they will allow for the clustering of development to meet growing demand for a variety of housing types in the North Valleys. The current regulatory zone of Low Density Suburban allows for 1 unit per acre, which does not address current housing needs in the community and does not support the employment centers emerging in the North Valleys. The diverse unit offerings will also make homeownership much more attainable for a wider cross-section of our resident population.

c. Residential/non-residential ratio. The ratio of residential to nonresidential use in the planned development;

While most of the Silver Hills Specific Plan anticipates residential development, there are provisions to allow small neighborhood commercial centers to serve the community. These centers may be provided within the central portions of the Silver Hills Specific Plan, but may not be more than 45,000 cumulative square of support retail services.

d. Adequacy of common open space. The purpose, location and amount of the common open space in the development and the adequacy or inadequacy of the amount and purpose of common open space as related to the proposed density and type of residential development.

Of the 780.32± acres that make up the Silver Hills project, 152.41± acres are proposed to be open space. This is approximately 20 percent of the overall project and does not include the proposed park facilities. With the inclusion of the park and trailhead facilities, a minimum of 164.41± acres or 21 percent of common open space is proposed with the Silver Hills Specific Plan.

e. Maintenance of Common Open Space. The reliability of the proposals for the maintenance and conservation of the open space.

Common open space will be conserved through the adoption of the Specific Plan for Silver Hills and will be maintained by a homeowners' association, or other maintenance entity acceptable to Washoe County.

f. Adequacy of public services, traffic and amenities. The physical design of the plan and the manner in which design does or does not make adequate provision for public services, provide adequate control over vehicular traffic, and further the amenities of light and air, recreation and visual enjoyment.

The physical design of the Silver Hills plan makes adequate provisions for public services such as an elementary school, fire station, library or other public service facility that is deemed necessary for the area. The expansion of Red Rock Road from two lanes to four lanes will provide adequate control over vehicular traffic to and from the site, while internal collectors constructed to Washoe County standards will provide for vehicular control within the development. The clustering of densities central to the site (west side) serves to preserve open space and further the goal of maintaining amenities of light and air, will provide for recreation, and enhance visual enjoyment by ensuring development does not occur in the higher elevations of the project site.

g. Schedule sufficiency. If the development is to be built over a period of years, the sufficiency of the terms and conditions in the plan intended to protect the interested of the public, residents and owners of the development in the integrity of the plan.

Silver Hills is anticipated to be built over a period of 15 to 20 years. Phasing will be determined by market conditions but currently the Silver Hills development is planned to occur in 20 phases of up to 150 residential units each (not to exceed 1,872 total units). Phasing and construction will generally begin along the Red Rock Road frontage, and extend east and west into the Specific Plan areas as the market demands.

Section 110.821.15(d) Findings for Amendment of Regulatory Zone. To make a recommendation for approval, all of the following findings must be made by the Commission:

(1) Consistency with Master Plan. The proposed amendment is in substantial compliance with the policies and action programs of the Master Plan.

The proposed regulatory zone amendment is in substantial compliance with the policies and action programs of the Master Plan as identified under the findings response to Section 110.442.50(1) above.

(2) Compatible Land Uses. The proposed amendment will provide for land uses compatible with (existing or planned) adjacent land uses, and will not adversely impact the public health, safety or welfare.

The Silver Hills Specific Plan will allow the clustering of smaller lot sizes to provide a diverse mix of housing types, while also preserving large portions of the property as usable open space with connections to adjacent public lands. Buffering and density matching will be provided adjacent to existing residential development to ensure appropriate compatibility and transition. Overall, the Specific Plan will not exceed a density of 2.5 units per acre, which is consistent with the allowed density of the Suburban Residential Master Plan designation.

(3) Response to Change Conditions; more desirable use. The proposed amendment responds to changed conditions or further studies that have occurred since the plan was adopted by the Board of County Commissioners, and the requested amendment represents a more desirable utilization of land.

The proposed regulatory zone amendment to allow a Specific Plan for the Silver Hills project is in response to changing circumstances for the area. Significant residential and industrial development plans within the City of Reno to the north and east of the site support a shift to a more suburban community. In addition, the planned expansion of Red Rock Road from two lanes to four in the 2022 to 2026 timeframe supports better utilization of the land, coupled with contributions and improvements provided by the project, will ensure that transportation capacity will be significantly increased.

(4) Availability of Facilities. There are or are planned to be adequate transportation, recreation, utility and other facilities to accommodate the uses and densities permitted by the proposed amendment.

Adequate transportation facilities are provided for with the planned expansion of Red Rock Road from two lanes to four lanes in the 2022 to 2026 timeframe. Recreation and public facilities to accommodate the proposed densities will be constructed with the Silver Hills project and include a 10 acre park, two 1-acre trailheads, extensive open space and trails network, and an elementary school and/or other appropriate public service facility. Utility infrastructure will be constructed with the Silver Hills project to connect to existing water, sewer and dry utility networks in the vicinity as outlined in the Silver Hills Development Standards Handbook.

(5) No Adverse Effects. The proposed amendment will not adversely affect the implementation of the policies and action programs of the Washoe County Master Plan.

The proposed amendment will not adversely affect the implementation of the policies and action programs of the Washoe County Master Plan. As a part of the application for a Specific Plan, findings are required to demonstrate that Silver Hills will provide consistency with applicable goals and policies of the Master Plan. Please refer to the findings for Section 110.442.50(1) above for specific findings to support the Master Plan.

(6) Desired Pattern of Growth. The proposed amendment will promote the desired pattern for the orderly physical growth of the County and guides development of the County and guides development of the County based on the projected population growth with the least amount of natural resource impairment and the efficient expenditure of funds for public services.

The Silver Hills Specific Plan will promote the desired pattern for orderly physical growth of the County by maintaining an overall density that is consistent with the character of the surrounding area, while also providing a diverse housing mix that will support employment centers. Clustering of higher density development central to the site will ensure that the County meets the housing needs for projected population growth, while preserving open space and limiting expenditure of funds for public services where growth is not anticipated.

SUPPLEMENTAL POLCIY ANALYSIS AND CONSIDERATIONS

As noted previously, numerous community meetings and workshops have taken place as part of the Silver Hills review process. During this review several policies from the North Valleys Area Plan, Washoe County Master Plan, and Truckee Meadows Regional Plan have been discussed. After discussions with residents and Washoe County staff during these meetings, key policies to address were identified and are addressed in this section. Please note that some of the identified policies have already been addressed as part of the findings (previously included) but are readdressed here with additional detail.

As with previously addressed policies and findings, all policies are addressed in **bold face** type.

Truckee Meadows Regional Plan

Goal 2.2: Local government master plans will be revised to preserve the scenic, natural, public safety and recreational values of sensitive land areas by constraining development on designated water bodies and ridgelines, natural slopes over 30 percent, and certain other lands.

The Silver Hills plan, as presented, does not request any density intensification on slopes greater than 30%. A total of 5.02± acres of the site contains slopes in excess of 30%. This area is currently zoned LDS (1 unit per acre) which yields 5 units. The Silver Hills Specific Plan excluded this area from intensification. Had it been included in the overall intensification request, total units allowed would be 1,882. However, units proposed are 1,872, reflective of the removal of the 5 acres from any further intensification.

The Silver Hills Land Use Plan preserves 20% of the overall site within dedicated open space. These areas include steeper slopes, drainageways, and the ridges that begin forming at the west side of the site. Thus, only areas most suited for development, with gentle slopes, etc. are proposed for development, consistent with Goal 2.2. Furthermore, the North Valleys Area Plan does not identify any development constraints on the Silver Hills site, nor does the Truckee Meadows Regional Plan.

Washoe County Master Plan

Population Element:

Goal Four: Coordinate population growth with the availability of water, sanitary sewer, streets and highways, and other public facilities and services.

Sanitary sewer would have to be extended to serve any additional development at the subject site. The proposed additional dwellings would require Red Rock Road to be widened to four lanes. At the current time, Red Rock Road is two lanes in width, but may be widened to four lanes, according to the Regional Transportation Plan by the year 2030. If approved the ability to construct up to 1,872 dwellings would be immediate, although it may take much longer for development to occur.

POP.4.1 – The Washoe County Department of Community Development will include an analysis of the demands for public services and facilities relative to existing and planned population in staff reports prepared in conjunction with Master Plan Amendments.

The North Valleys Area Plan includes a public services analysis and allows for the addition of up to 2,000 new residential units within the planning area. As proposed, Silver Hills does not exceed this unit cap. Also, the project will provide numerous improvements to area roads, parks, etc. at both the direct expense of the developer as well as through developer-paid impact fees. As the project develops with future tentative maps, etc. the developer will be required to demonstrate that adequate public facilities and services exist to address each individual phase/project and provide for any required upgrades or improvements that are identified.

Conservation Element:

Goal Two: Conduct development so that area's visual features and amenities are preserved.

As noted previously and detailed within the Silver Hills Development Standards, 20% of the project area will be dedicated as open space. These open space areas incorporate significant natural features such as drainageways, steep slopes, ridgelines, etc. ensuring that the scenic character of the area is preserved. The open space areas also allow for public trail connections and access to public lands for all citizens of the community, not just Silver Hills residents. Furthermore, the Development Standards require strict buffering, lot matching, and streetscape standards in order to respect the character of existing neighborhoods and preserve the overall "feel" of the Silver Knolls community along Red Rock Road. More intense single family development will occur internal to the project site and will be screened from the view of existing residents and roadways with intervening open space and lower density development (comparable to that of adjoining neighborhoods).

Land Use and Transportation Element (LUTE);

LUT.I.I Washoe County should define smaller areas where more intense suburban development is permitted (parallel with the Area Plan Suburban Character Management Area, or SCMA), and larger areas outside the suburban areas where development is strictly limited to retain the existing rural character (parallel with the Area Plan Rural Character Management Area, or RCMA).

The applicant proposes to remove the subject properties from the larger SKSCMA and create a smaller area that would collectively allow for 2.5 units per acre (versus 1 per acre). Defining this "smaller area" with more "intense suburban development" to meet the housing needs of Washoe County is in conformance with the LUTE. The subject properties are currently in the Suburban Character Management Area, not the Rural Character Management Area, so the proposed amendment is still "strictly limited to retain the existing rural character." Additionally, the North Valley Area Plan already includes the Lemmon Valley SCMA which allows for Low Density Urban (10 units per acre for single family detached, 14 units per acre for multi-family and 12 units per acre for mobile homes) so the proposed SHSCMA is not the most intense development in the North Valleys Area Plan.

LUT.2.4 – Development reviews shall include a process to ensure that a safe and reasonable walking/biking route exists between all relevant land uses that promote these alternative transportation modes within a community or region.

a. The addition of Class 1 and 2 bicycle lanes will be evaluated where appropriate within new suburban developments. The connection of all existing bikeway systems will help provide an efficient interconnected system.
b. Class 1 bicycle lanes (full grade separation from roadway) are encouraged as much as possible to increase safety and promote cycling and walking as viable and desirable modes of transportation.

The Silver Hills Specific Plan directly implements this policy. The proposed Silver Hills Parkway will serve as the backbone collector through the project and not only includes dedicated bike lanes but a detached pedestrian path as well. Also, the proposed trail network provides pedestrian links between all development areas and land uses, encouraging residents to walk and bicycle to their destinations within the community. In fact, the Specific Plan is designed such that children living within the community can walk to a future school utilizing the system of sidewalks and trails without having to traverse areas of increased vehicle traffic. Additionally, by providing limited neighborhood commercial uses, residents will have the ability to walk to everyday services, reducing vehicle trips and further reinforcing the intent of this policy.

The proposed Silver Hills trail network and sidewalk connections will link the project with surrounding areas, allowing residents access to public lands, trailheads, parks, community amenities, future school(s), etc. This benefits not only Silver Hills but existing residents as well. As widening of Red Rock Road occurs, it will be in accordance with RTC standards which include bike lanes. This will provide a safe bicycle link between Silver Hills and the surrounding area which includes numerous large scale employment centers.

Goal Three: The majority of growth and development occurs in existing or planned communities, utilizing smart growth practices.

Silver Hills is identified as Suburban in the Master Plan and is included within a Suburban Character Management Area (SCMA). This request simply allows for a new SCMA to be created which will allow for a unique and exciting community that will provide a wide range of single family product types for a wide population demographic. This is accomplished through the application of smart growth principles such as clustering, preservation of open space and natural features, community amenities such as the proposed Agrihood, and limiting sprawl. The site is well positioned for this given the existing Suburban designation and its location in close proximity to regional employment centers.

It can be reasonably argued that the current Area Plan and SCMA are in direct conflict with this goal in that the encourage sprawl, increased use of natural resources, etc. The site is identified within the Truckee Meadows Service Area (TMSA) within the Regional Plan which includes areas where infrastructure and services are planned. Additionally, Red Rock Road is included in the Capital Improvements Plan for widening (without the addition of Silver Hills) and more intense development has been approved further north on Red Rock Road (Evans Ranch) than that proposed with Silver Hills.

LUT.3.1 – Require timely, orderly, and fiscally responsible growth that is directed to existing suburban character management areas (SCMAs) within the Area Plans as well as to growth areas delineated within the Truckee Meadows Service Area (TMSA).

Silver Hills is identified within a SCMA. Splitting the property off into a new SCMA will allow Silver Hills to address comments presented by residents at the numerous community meetings and visioning workshops. Primarily, it ensures that existing neighborhoods are fully protected in terms of the vision and standards developed with the Area Plan. The new SCMA carries over the majority of goals, policies and requirements of the Silver Knolls SCMA while allowing for a more diverse mix of single family offerings. Protections for the existing community character are implemented through the proposed design standards and ensure the ongoing integrity of the Silver Knolls SCMA.

Consistent with this policy, Silver Hills is located within the TMSA, an area identified as appropriate for suburban development where infrastructure and services are planned. Included as an attachment to this report is a comprehensive fiscal impact analysis that demonstrates that Silver Hills will provide positive economic impacts to Washoe County and the surrounding community.

LUT.3.2 – In order to provide sufficient supply of developable land to meet the needs of the population, Area Plans shall establish growth policies that provide for a sufficient supply of developable land throughout the planning horizon of the next 20 years, with considerations to phase future growth and development based on the carrying capacity of the infrastructure and environment.

Washoe County and the overall Reno/Sparks region has seen an influx of jobs and population that far exceeds projections that were in place when the Area Plan was developed. The region is in the midst of an unparalleled housing crisis putting home ownership out of reach for many young professionals, families, and seniors. Silver Hills provides a unique opportunity to provide a mix of single family uses and provide quality housing and amenities that appeal to the "missing middle" of the housing market. This is spelled out in detail in the attached Design Standards Handbook. Furthermore, as noted previously, the site is within the TMSA which includes areas with high development suitability and where infrastructure improvements and services are planned.

LUT.4.2 Encourage new developments to provide appropriate design to accommodate the needs of all users, including young, aging, handicapped and special needs populations.

A primary goal and intent of Silver Hills, as presented in Chapter 1 of the Development Standards, is to provide a mix of housing options at appeals to a wide population demographic. Silver Hills directly implements this policy like no other in the region and will provide single family housing types unavailable within the North Valleys and, in some instances, the region. A key goal of the plan is to appeal to the "missing middle" by providing quality housing that is attainable for young families, singles, seniors, etc. that is consistent with area wages, etc. Additionally, the housing mix will provide options for larger lots as well as smaller parcels that require less maintenance, etc. This appeals to a wide range of the population; large lots are appealing to families while low maintenance options are often appealing to singles, seniors, etc.

LUT.4.3 – Encourage suburban developments to provide a mix of residential densities and housing types in close proximity to retail/commercial.

Silver Hills incorporates low intensity neighborhood-serving commercial uses that will provide the residents of the community with everyday needs and services. A balanced community is a key element of good planning and smart growth and serves to build community, reduce vehicle trips, and encourage alternate modes of transportation (walking, biking, etc.). In direct response to community concerns, commercial use is limited in terms of size, allowed uses, hours of operations, etc. to ensure that it is appropriate to the community, will not impact existing residents in terms of noise, traffic, etc. and will be located internal to the Silver Hills community. The plan aims to strike a balance between the needs of Silver Hills residents and the vision of existing Silver Knolls residents while serving to implement this policy overall.

Goal Five: Development occurs where infrastructure is available.
LUT.5.l Recognize the relationship between land use timing and the provision of adequate services and facilities.

a. Provide an adequate facilities plan that meets the requirements described in the Development Guidelines section of the Land Use Groups.
b. Consideration should be given to the long-term inefficiency of development with individual systems as opposed to the possible formation and use of community facilities districts.

NV.20.3 of the North Valleys Area Plan requires that a feasibility study is conducted, commissioned and paid for by the applicant, relative to municipal water, sewer and storm water that clearly identifies the improvements likely to be required to support the intensification, and those improvements have been determined to be in substantial compliance with all applicable existing facilities and resource plans for North Valleys by the Department of Water Resources. This application includes feasibility studies for municipal water, sewer and storm water that each recognizes the relationship between land use timing and the provision of adequate services and facilities. The applicant will comply with the recommendations in the feasibility studies, including constructing the improvements that are required to support the intensification.

The RTC letter dated March 7, 2019 states that the 2040 RTP Amendment No. 1 identifies Red Rock Road from Moya Boulevard to Evans Ranch to be widened from 2 to 4 lanes by 2026. The applicant agrees to dedicate setbacks that are adequate to complete these RTP Improvements. The applicant also agrees to discuss a phasing plan with Washoe County and RTC to ensure the necessary improvements required to maintain the established levels of service are completed pursuant to NV.20.3. In the event the construction of certain road improvements are necessary to maintain the required levels of service prior to the completion of the RTP Improvements, the applicant intends to utilize the option of a RRIF Offset Agreement.

LUT.5.3 New development shall not reduce the quality of service for existing residents and businesses nor reduce the ability of public agencies to provide quality service.

When evaluating Silver Hills, it is very important to consider that the community is envisioned to develop over a long timeframe (10 to 15 years). Thus, as the community develops, infrastructure and services can be expanded on an incremental basis to serve new growth. It is recognized that the project will impact services, including fire and sheriff protection. Similar to the Woodland Village community in Cold Springs, a private patrol service will be implemented within Silver Hills. This has proven to be highly effective in reducing calls for sheriff service. Also, the project applicant is working closely with the Truckee Meadows Fire Protection District to determine possible improvements to the volunteer fire station that directly abuts the Silver Hills site. As this public review process moves forward, conditions for improvements and associated triggers can be solidified within the development standards providing both the County and residents that provisions for services, in the long-term, are provided. It is also important to note that all new development within Silver Hills will require subsequent public review in the form of tentative maps, special use permits, etc. Thus, concurrency of services will also be reviewed on a phase by phase basis.

LUT.5.4 – Locate more intense pedestrian and transit-oriented development along major roads, transit corridors, and in activity centers within village centers.

With an overall density of 2.5 dwelling units per acre, Silver Hills is far from an intense development. However, the project locates more intense uses such as smaller lot single family, commercial use, and public facilities central to the project site. This allows these uses to be connected via the trail and sidewalk network, encouraging pedestrian activity and connectivity. Clustering this type of development central to the site also allows for larger lots and open space at the perimeter of the project, providing for appropriate transitions between Silver Hills and existing neighborhoods. It also will preserve the character and feel within Silver Knolls and along Red Rock Road, a common request voiced at the community meetings and visioning workshops.

LUT.7.1 – Village land use patterns may be developed in limited suburban locations.

a. Villages should create secondary nodes of activity that complement larger city services rather than compete.
b. Higher density urban villages should be located at the center of the village to take advantage of infrastructure and to provide a more efficient means of providing services.
c. An urban village may include mixed-use, higher density community located at the center of a suburban area.

While far from being an urban development, Silver Hills directly implements the principles included in this policy. To address item "a," development areas (villages) within Silver Hills are connected via a comprehensive trail/sidewalk network and are linked with common elements and amenities such as open spaces, agrihoods, landscaping themes, etc. Item "b" is implemented with more intense uses being clustered central/internal to the site allowing for more efficient use of infrastructure while addressing community desires to retain a more rural theme at the project periphery. This also serves to directly implement component "c" of this policy.

Goal Thirty: Transportation systems reduce dependence on automobile.

Unfortunately, the goals and policies of the North Valleys Area Plan essentially encourage sprawl with low density caps. By providing low densities, concentration of population is reduced, rendering public transit obsolete in terms of cost versus benefit. Silver Hills addresses this goal by providing everyday commercial services within the plan area. This encourages residents to walk to everyday needs, services, and events and will reduce overall vehicle trips, consistent with Goal 30.

LUT.30.1 – Promote and create incentives for alternative modes of transportation before expanding the roadway network through the construction of new roads.

One key way to implement this policy is to provide a balance of residential and commercial uses within a community. Silver Hills does exactly that. Currently, no commercial use exists or is permitted within the Silver Knolls SCMA. As a result, residents must leave the area for commercial and personal services. By providing neighborhood commercial uses within Silver Hills, internal capturing of trips will be achieved as residents will not have to travel outside of the planning area for all of their commercial needs.

A secondary consideration is that the widening of Red Rock Road is already planned to occur without the addition of Silver Hills. This project will provide for additional improvements through the payment of traffic impact fees and will ultimately serve to maximize roadway infrastructure, as encouraged throughout the Master Plan and Regional Plan.

LUT.32.1 – The Regional Plan defines the Development Constraints Area (DCA) as an overlay upon the Truckee Meadows Regional Plan.

Silver Hills is not located within an identified DCA.

LUT.32.2 – The DCA consists of playas, significant water bodies, natural slopes over 30%, publicly owned open space, and properties that are deed restricted to prevent development. Constrained lands less than 1/3 acres in size will not be included in the DCA. The DCA overlay takes precedence over otherwise applicable policies describing the desired density and intensity of development within the Truckee Meadows Service Areas and the Rural Development Area.

As noted previously, Silver Hills is not located within an identified DCA. A small portion of the site (less than 1% or 5.02 acres) contains slopes in excess of 30%. These areas were excluded from any density increase when calculating the requested 1,872 units. Furthermore, natural drainageways that traverse the site will remain within dedicated open space. This is clearly spelled out and regulated within the proposed development standards.

Housing Element:

Policy 1.1 – Allow for more flexibility in the zoning, building and land use regulations to enable affordable housing units to be built throughout the community.

As noted throughout Chapter 1 of the proposed development standards, a key goal of Silver Hills is to address the "missing middle" of the region's housing market. Silver Hills will provide quality housing with upscale amenities that is attainable for singles, young professionals, and seniors based on wage trends in the area. It will allow those that have been "priced out" of the current market new and innovative products that can provide home ownership opportunities that are not found elsewhere.

NV. 1.5 The following Regulatory Zones are permitted within the Silver Knolls Suburban Character Management Area:

a. General Rural (GR — One unit per 40 acres).
b. Low Density Rural (LDR — One unit per 10 acres).
c. Medium Density Rural (MDR — One unit per 5 acres).
d. High Density Rural (HDR — One unit per 2.5 acres).
e. Low Density Suburban (LDS — One unit per acre).
f. Public/Semi-public Facilities (PSP).
g. Parks and Recreation (PR).
h. Open Space (OS).

Pursuant to NV.20.2., the applicant attended three community visioning workshops with the North Valleys Citizen Advisory Board. The workshop attendees opposed any changes to the SKSCMA so the applicant amended its application to create the new SHSCMA. The SHSCMA includes a very substantive character management statement, with specific concerns and issues that were raised at the workshops, while also preserving most of the NV.4.1.-NV.4.10 polices. The new SHSCMA allows for a Specific Plan Regulatory Zone. The applicant desires a specific plan since this is the only regulatory zone where the applicant can address the community's specific concerns related to allowed uses, design, lot size, density and intensity and other development standards. This is the exact purpose of a specific plan as described in Washoe County Code Section 110.442.00:

> ***This regulatory zone is a specialized regulatory zone that allows Washoe County to provide greater flexibility in allowed uses, design, lot size, density and intensity and other development standards than may otherwise be allowed in other regulatory zones. This greater flexibility shall be utilized to create a coordinated development that provides public benefits that are not likely to be available through the standard development process. These public benefits are derived from better and more comprehensive implementation of the goals and policies of the Master Plan, particularly as they relate to sustainability, natural resource conservation, desired land use patterns, economic development and community character.***

Goal Four: Silver Knolls Suburban Character Management Area. Establish a land use pattern, site development guidelines, and architectural guidelines that will implement and preserve the Silver Knolls community character as described in the North Valleys Vision and Character Statement.

NV.4.1 A minimum of 50% of the residential parcels in any subdivision established after the date of final adoption of this plan must be at least one acre in size.

The applicant proposes to replace NV 4.1 with the following three policies: NV.7.1. to require that 50% of the residential parcels within Silver Hills East are one acre in size; Policy NV.7.2 to require the minimum size of residential parcels located within Silver Hills East is one-half acre and the minimum size of residential parcels located within Silver Hills West is one-third acre (these minimums may be modified pursuant to Washoe County Development Code, Article 408, Common Open Space Development); and NV.7.3 Subdivisions established within the Silver Hills Character Management Area shall include a 50 foot open space buffer plus a 200 foot density match between the subdivision and any adjacent residential dwellings existing on the date of final adoption of the Silver Hills Character Management Area.

The amended policies are not major deviations from NV 4.1 and mandate a total density cap of 2.5 dwelling units per acre on the subject properties. The increased density in Silver Hills West is also consistent with development patterns given it borders the City of Reno and Red Rock Road. In addition, NV.7.3 was added to require a 50 foot open space buffer and a 200 foot density match between a Silver Hills subdivision and any adjacent residential dwellings. These polices collectively ensure compatibility between new and existing developments.

NV.4.7 In subdivisions established after the date of final adoption of this plan the use of streetlights will be minimized. Any lighting proposed must show how it is consistent with current best practice "dark-sky" standards.

Policy NV.4.7. in the SKSCMA was copied into the SHSCMA as Policy NV.7.8. The applicant will fully comply with all General Development Code standards and included photos that are consistent with NV Energy standards.

The following policies are interrelated and addressed collectively below:

NV.7.1 Washoe County's policy level of service (LOS) for local transportation facilities in the North Valleys planning area is LOS "C." All development proposals must demonstrate how the established level of service on local transportation facilities will be maintained.
NV.7.2 The Washoe County Regional Transportation Commission (RTC) sets levels of service on regional roads. Washoe County will advocate for the RTC to establish policy levels of service "C" for all regional roads in the North Valleys planning area.
NV.7.3 Washoe County will work with the RTC and neighboring jurisdictions to ensure that the mitigation of potential development impacts in neighboring jurisdictions is consistent with the intent of Policies NV.7.1 and NV.7.2.
NV.7.4 The necessary right-of-way and intersection requirements identified in the Regional Transportation Plan will be protected through dedication, setback or other method deemed adequate and appropriate by the Regional Transportation Commission and Washoe County.
NV.7.5 Washoe County will ensure that the details of all new road construction that implement the adopted Regional Transportation Plan will be subject to a comprehensive public review and comment process. NV.7.6 Washoe County will work with the Regional Transportation Commission to ensure that the design of all road improvements identified in the RTC Regional Transportation Plan provide for the safe intersection of any trail or proposed trail identified on the Recreational Opportunities Plan map.
NV.7.7 Washoe County will be an advocate for the establishment of efficient transit services to and within the North Valleys planning area.
NV.7.8 Future development plans in any Commercial District or Residential District of MDS intensity or greater must consider, and be consistent with, future or existing multi-modal opportunities, including transit services in the North Valleys planning area. Applications for site plans and tentative maps in these areas will specify the proposed response to this issue.
NV.7.9 Washoe County will work with the Regional Transportation Commission (RTC) to develop and implement a bikeways plan for the North Valleys planning area that is integrated with the local and regional trails system and provides access to recreational opportunities, and public spaces such as schools and commercial areas (See Recreational Opportunities Plan map).

The applicant is not proposing to amend any of the North Valley Area Plan Transportation Policies NV7.1-NV.7.9, so must comply with these polices when a development proposal is submitted (i.e. a tentative map). For this application, the RTC letter dated March 7, 2019 states that the 2040 RTP Amendment No. 1 identifies Red Rock Road from Moya Boulevard to Evans Ranch to be widened from 2 to 4 lanes by 2026. The applicant agrees to dedicate setbacks that are adequate to complete these RTP Improvements. The applicant also agrees to discuss a phasing plan with Washoe County and RTC to ensure the necessary improvements required to maintain the established levels of service are completed pursuant to NV.20.3. In the event the construction of certain road improvements are necessary to maintain the required levels of service prior to the completion of the RTP Improvements, the applicant intends to utilize the option of a RRIF Offset Agreement.

APPENDICES

Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Building staff at 775.328.6100.

Project Information	**Staff Assigned Case No.:** _____
Project Name: Silver Hills	
Project Description:	A Master Plan Amendment to allow for modification to the North Valleys Area Plan including the removal of 780.32 acres from the Silver Knolls Suburban Character Management Area and creation of the Silver Hills Suburban Character Management Area. Refer to attached report specific details.
Project Address: 11420 Carlsbad Road	
Project Area (acres or square feet): 780.32	
Project Location (with point of reference to major cross streets **AND** area locator): E and W sides of Red Rock Rd., N of Longhorn Dr	

Assessor's Parcel No.(s):	Parcel Acreage:	Assessor's Parcel No.(s):	Parcel Acreage:
087-390-13	243.02	086-203-05	38.67
087-390-10	307.84	086-232-31	192.39

Indicate any previous Washoe County approvals associated with this application:
Case No.(s).

Applicant Information (attach additional sheets if necessary)

Property Owner:		**Professional Consultant:**	
Name: Lifestyle Homes TND, LLC		Name: Rubicon Design Group, LLC	
Address: 4790 Caughlin Pkwy. # 519		Address: 1610 Montclair Ave,, Suite B	
Reno, NV	Zip: 89519	Reno, NV	Zip: 89509
Phone: 775-813-0046	Fax:	Phone: 775-425-4800	Fax:
Email: lshreno@gmail.com		Email: mrailey@rubicondesigngroup.com	
Cell: 775-813-0046	Other:	Cell: 775-250-3455	Other:
Contact Person: Peter Lissner		Contact Person: Mike Railey	
Applicant/Developer:		**Other Persons to be Contacted:**	
Name: Same as Above		Name: Lewis Roca Rothgerber Christie	
Address:		Address: 1 E. Liberty St., Suite 300	
	Zip:	Reno, NV	Zip: 89501
Phone:	Fax:	Phone: 775-321-3420	Fax:
Email:		Email: ggordon@lrrc.com	
Cell:	Other:	Cell: 775-762-6765	Other:
Contact Person:		Contact Person: Garrett Gordon	

For Office Use Only

Date Received:	Initial:	Planning Area:
County Commission District:		Master Plan Designation(s):
CAB(s):		Regulatory Zoning(s):

Property Owner Affidavit

Applicant Name: Lifestyle Homes TND LLC

The receipt of this application at the time of submittal does not guarantee the application complies with all requirements of the Washoe County Development Code, the Washoe County Master Plan or the applicable area plan, the applicable regulatory zoning, or t hat the application is deemed complete and will be processed.

STATE OF NEVADA)
)
COUNTY OF WASHOE)

I, Robert Lissner,
(please print name)

being duly sworn, depose and say that I am the owner* of the property or properties involved in this application as listed below and that the foregoing statements and answers herein contained and the information herewith submitted are in all respects complete, true, and correct to the best of my knowledge and belief. I understand that no assurance or guarantee can be given by members of Planning and Building.

(A separate Affidavit must be provided by each property owner named in the title report.)

Assessor Parcel Number(s): 87-390-10 AND 13, 86-232-31, 86-203-05

Printed Name Robert Lissner

Signed RLissner

Address 4790 Caughlin #519
Reno NV 89519

Subscribed and sworn to before me this 11 day of September, 2017.

(Notary Stamp)

Linda Barnes
Notary Public in and for said county and state

My commission expires: 2/11/2020

LINDA BARNES
Notary Public - State of Nevada
Appointment Recorded in Washoe County
No: 04-86913-2 - Expires February 11, 2020

*Owner refers to the following: (Please mark appropriate box.)

- ☐ Owner
- ☑ Corporate Officer/Partner (Provide copy of record document indicating authority to sign.)
- ☐ Power of Attorney (Provide copy of Power of Attorney.)
- ☐ Owner Agent (Provide notarized letter from property owner giving legal authority to agent.)
- ☐ Property Agent (Provide copy of record document indicating authority to sign.)
- ☐ Letter from Government Agency with Stewardship

Community Services Department

Planning and Building

MASTER PLAN AMENDMENT APPLICATION

Community Services Department
Planning and Building
1001 E. Ninth St., Bldg. A
Reno, NV 89512-2845

Telephone: 775.328.6100

Master Plan Amendment
Supplemental Information

(All required information may be separately attached)

The Washoe County Master Plan describes how the physical character of the County exists today and is planned for the future. The plan is adopted by the community and contains information, policies and a series of land use maps. The Master Plan provides the essential framework for creating a healthy community system and helps guide decisions about growth and development in the County. The following are general types of requests the County receives to amend the Master Plan. Please identify which type of amendment you are requesting:

☑	A request to change a master plan designation(s) from the adopted master plan and/or area plan maps
☐	A request to add, amend, modify or delete any of the adopted policies found in the elements of the Master Plan
☑	A request to add, amend, modify or delete any of the adopted policies in the area plans and/or specific language found in the area plans
☐	Other (please identify): Allow for the creation of the Silver Hills Suburban Character Management Area. Refer to attached report for a detailed description.

Please complete this questionnaire to ensure consistent review of your request to amend the Washoe County Master Plan. Staff will review the application to determine if the amendment request is in conformance with the policies and language within the elements and area plans of the Master Plan or if the information provided supports a change to the plan. Please provide an explanation to all questions; attach additional sheets if necessary.

1. What is the Master Plan amendment being requested at this time?

   Refer to attached report.

2. What conditions have changed and/or new studies have occurred since the adoption of the Washoe County Master Plan that supports the need for the amendment request?

   Refer to attached report for analysis.

3. Please provide the following specific information:

   a. What is the location (address or distance and direction from the nearest intersection of the subject property)? Attach, for map amendments, a legal description. For all other amendments, what is the area subject to the request?

      The properties are located immediately north of the existing Silver Knolls community, on both sides of Red Rock Road, north of the Longhorn/Red Rock Road intersection.

b. Please list the following proposed changes (attach additional sheet if necessary):

Assessor's Parcel Number	Master Plan Designation	Existing Acres	Proposed Master Plan Designation	Proposed Acres
087-390-13	Suburban Residential	243.03	No change	No Change
087-390-10	Suburban Residential	307.84	No Change	No Change
086-203-05	Suburban Residential	38.67	No Change	No Change
086-232-31	Suburban Residential	192.39	No Change	No Change

c. What are the adopted land use designations of adjacent parcels?

North	Suburban Residential and Open Space
South	Suburban Residential and City of Reno
East	Suburban Residential
West	Open Space

4. Describe the existing conditions and uses located at the site or in the vicinity (i.e. vacant land, roadways, buildings, etc.).

The site is currently vacant.

5. Describe the natural resources associated with the site under consideration. Your description should include resource characteristics such as water bodies, vegetation, topography, minerals, soils and wildlife habitat.

Refer to attached site analysis and exhibit (in DSH)

6. Describe whether any of the following natural resources or systems are related to the proposed amendment:

a. Is property located in the 100-year floodplain? (If yes, attach documentation of the extent of the floodplain and any proposed floodplain map revisions in compliance with Washoe County Development Code, Article 416, Flood Hazards, and consultation with the Washoe County Engineering & Capital Projects Division.)

☐ Yes	■ No

Explanation:

The site is entirely within FEMA zone unshaded X

b. Does property contain wetlands? (If yes, attach a preliminary delineation map and describe the impact the proposal will have on the wetlands. Impacts to the wetlands may require a permit issued from the U.S. Army Corps of Engineers.)

☐ Yes	■ No

Explanation:

c. Does the property contain slopes or hillsides in excess of 15 percent and/or significant ridgelines? (If yes, submit the slope analysis requirements as contained in Article 424, Hillside Development of the Washoe County Development Code.)

■ Yes	❑ No

Explanation:

Refer to included slope analysis map.

d. Does the property contain geologic hazards such as active faults, hillside, or mountainous areas? Is it subject to avalanches, landslides, or flash floods? Near a stream or riparian area such as the Truckee River, and/or an area of groundwater recharge? If the answer is yes to any of the above, check yes and provide an explanation.

■ Yes	❑ No

Explanation:

Refer to attached geotechnical investigation and site analysis map

e. Does the property contain prime farmland, within a wildfire hazard area, geothermal or mining area, and/or wildlife mitigation route? If the answer is yes to any of the above, check yes and provide an explanation.

❑ Yes	■ No

Explanation:

7. Are any archaeological, historic, cultural, or scenic resources in the vicinity or associated with the proposed amendment? If the answer is yes to any of the above, check yes and provide an explanation.

❑ Yes	■ No

Explanation:

8. Do you own sufficient water rights to accommodate the proposed amendment? (Amendment requests in some groundwater hydrographic basins [e.g. Cold Springs, Warm Springs, etc.] require proof of water rights be submitted with applications. Provide copies of all water rights documents, including chain of title to the original water right holder.)

❑ Yes	❑ No

If yes, please identify the following quantities and documentation numbers relative to the water rights. Please attach a copy(s) of the water rights title (as filed with the State Engineer in the Division of Water Resources of the Department of Conservation and Natural Resources).

a. Permit #		acre-feet per year	
b. Certificate #		acre-feet per year	
c. Surface Claim #		acre-feet per year	
d. Other #		acre-feet per year	

a. If the proposed amendment involves an intensification of land use, please identify how sufficient water rights will be available to serve the additional development.

To be dedicated with future maps/entitlements.

9. Please describe the source and timing of the water facilities necessary to serve the amendment.

a. System Type:

❑ Individual wells		
❑ Private water	Provider:	
■ Public water	Provider:	TMWA

b. Available:

❑ Now	■ 1-3 years	❑ 3-5 years	❑ 5+ years

c. If a public facility is proposed and is currently not available, please describe the funding mechanism for ensuring availability of water service.

Improvements/upgrades needed to serve the project will be paid for by the developer.

10. What is the nature and timing of sewer services necessary to accommodate the proposed amendment?

a. System Type:

❑ Individual septic		
■ Public system	Provider:	City of Reno

b. Available:

❑ Now	❑ 1-3 years	❑ 3-5 years	❑ 5+ years

c. If a public facility is proposed and is currently not available, please describe the funding mechanism for ensuring availability of sewer service. If a private system is proposed, please describe the system and the recommended location(s) for the proposed facility.

Upgrades to serve the project will be paid by developer

11. Please identify the street names and highways near the proposed amendment that will carry traffic to the regional freeway system.

Red Rock Road.

12. Will the proposed amendment impact existing or planned transportation systems? (If yes, a traffic report will be required.)

■ Yes	❑ No

13. Community Services (provided and nearest facility):

a. Fire Station	Truckee Meadows Fire Station 221
b. Health Care Facility	Saint Mary's North Valleys Urgent Care
c. Elementary School	Silver Lake Elementary
d. Middle School	O'Brien Middle School
e. High School	North Valleys High School
f. Parks	Silver Knolls Park
g. Library	North Valleys Library
h. Citifare Bus Stop	Stead Boulevard

14. Describe how the proposed amendment fosters, promotes, or complies with the policies of the adopted area plans and elements of the Washoe County Master Plan.

a. Population Element:

Request allows for diversification of current housing mix.

b. Conservation Element:

20% of the site will remain as open space.

c. Housing Element:

The plan promotes a variety of single family housing options for a wide demographic range.

d. Land Use and Transportation Element:

The plan will utilize the planned widening of Red Rock while providing funds for additional improvements.

e. Public Services and Facilities Element:

Public services and facilities will be added as the plan develops. Refer to Chapter 2 of Design Standards.

f. Adopted area plan(s):

Refer to attached justification and analysis report.

15. If the area plan includes a Plan Maintenance component, address all policies and attach all studies and analysis required by the Plan Maintenance criteria.

Applicable policies and findings are addressed in attached report.

Applicant Comments

This page can be used by the applicant to support the master plan amendment request and should address, at a minimum, how one or more of the findings for an amendment is satisfied. (Please refer to Article 820 of the Washoe County Development Code for the list of Findings.)

This application form limits the number of characters that can be used for answering MPA criteria. Thus, the attached report, design standards handbook, and technical studies full address and analyze all components of the MPA request, including the criteria/supplemental information from this application form.

Community Services Department

Planning and Building

REGULATORY ZONE AMENDMENT APPLICATION

Community Services Department
Planning and Building
1001 E. Ninth St., Bldg. A
Reno, NV 89512-2845

Telephone: 775.328.6100

Regulatory Zone Amendment
Supplemental Information

(All required information may be separately attached)

Please complete the following supplemental information to ensure consistent review of your request to amend the Washoe County Zoning Map. Please provide a brief explanation to all questions answered in the affirmative.

1. List the Following information regarding the property subject to the Regulatory Zone Amendment.

   a. What is the location (address, distance and direction from nearest intersection)?

   E and W sides of Red Rock Road, north of Longhorn Dr

   b. Please list the following proposed changes (attach additional sheet if necessary).

APN of Parcel	Master Plan Designation	Current Zoning	Existing Acres	Proposed Zoning	Proposed Acres
087-390-13	SR	LDS	243.03	Specific Plan	243.03
087-390-10	SR	LDS	307.84	Specific Plan	307.84
086-203-05	SR	LDS	38.67	Specific Plan	38.67
086-232-31	SR	LDS	192.39	Specific Plan	192.39

   c. What are the regulatory zone designations of adjacent parcels?

	Zoning	Use (residential, vacant, commercial, etc,)
North	LDS and GR	Vacant
South	LDS, PR, and GR	Vacant, Silver Knolls Park, Single Family
East	LDS	Single Family
West	UT 40 (City of Reno)	Vacant

3. Describe the existing conditions and uses located on the site (i.e. vacant land, roadways, easements, buildings, etc.).

   The project site is vacant.

4. Describe the natural resources associated with the site under consideration. Your description should include resource characteristics such as water bodies, vegetation, topography, minerals, soils, and wildlife habitat.

   Refer to attached report for site analysis

5. Does the property contain development constraints such as floodplain or floodways, wetlands, slopes, or hillsides in excess of 15%, geologic hazards such as active faults, significant hydrologic resources, or major drainages or prime farmland?

■ Yes, provide map identifying locations	❑ No

6. Is the site located in an area where there is potentially an archeological, historic, or scenic resource?

❑ Yes	■ No

Explanation:

7. Are there sufficient water rights to accommodate the proposed amendment? Please provide copies of all water rights documents, including chain of title to the original water right holder.)

❑ Yes	❑ No

If yes, please identify the following quantities and documentation numbers relative to the water rights:

a. Permit #		acre-feet per year	
b. Certificate #		acre-feet per year	
c. Surface Claim #		acre-feet per year	
d. Other #		acre-feet per year	

a. Title of those rights (as filed with the State Engineer in the Division of Water Resources of the Department of Conservation and Natural Resources):

Water rights to be dedicated at TM

b. If the proposed amendment involves an intensification of land use, please identify how sufficient water rights will be available to serve the additional development.

The developer will dedicate water rights

8. Please describe the source and timing of the water facilities necessary to serve the amendment.

a. System Type:

❑ Individual wells		
❑ Private water	Provider:	
■ Public water	Provider:	TMWA

b. Available:

❑ Now	■ 1-3 years	❑ 3-5 years	❑ 5+ years

c. Is this part of a Washoe County Capital Improvements Program project?

❑ Yes	■ No

d. If a public facility is proposed and is currently not listed in the Washoe County Capital Improvements Program or not available, please describe the funding mechanism for ensuring availability of water service.

Developer funded.

9. What is the nature and timing of sewer services necessary to accommodate the proposed amendment?

a. System Type:

❑ Individual septic		
■ Public system	Provider:	City of Reno

b. Available:

❑ Now	■ 1-3 years	❑ 3-5 years	❑ 5+ years

c. Is this part of a Washoe County Capital Improvements Program project?

❑ Yes	■ No

d. If a public facility is proposed and is currently not listed in the Washoe County Capital Improvements Program or not available, please describe the funding mechanism for ensuring availability of sewer service. If a private system is proposed, please describe the system and the recommended location(s) for the proposed facility.

Developer Funded

10. Please identify the street names and highways near the proposed amendment that will carry traffic to the regional freeway system.

Red Rock Road

11. Will the proposed amendment impact existing or planned transportation systems? (If yes, a traffic report is required.)

■ Yes	❑ No

12. Community Services (provided name, address and distance to nearest facility).

a. Fire Station	Truckee Meadows Fire Station 221
b. Health Care Facility	Saint Mary's North Valleys Urgent Care
c. Elementary School	Silver Lake Elementary
d. Middle School	O'Brien Middle School
e. High School	North Valleys High School
f. Parks	Silver Knolls Park
g. Library	North Valleys Library
h. Citifare Bus Stop	Stead Boulevard

Projects of Regional Significance Information
For Regulatory Zone Amendments

Nevada Revised Statutes 278.026 defines "Projects of Regional Significance". Regulatory Zone amendment requests for properties within the jurisdiction of the Truckee Meadows Regional Planning Commission (TMRPC) must respond to the following questions. A "Yes" answer to any of the following questions may result in the application being referred first to the Truckee Meadows Regional Planning Agency (TMRPA) for submission as a project of regional significance. Applicants should consult with County or Regional Planning staff if uncertain about the meaning or applicability of these questions.

1. Will the full development potential of the Regulatory Zone amendment increase employment by not less than 938 employees?

☐ Yes	■ No

2. Will the full development potential of the Regulatory Zone amendment increase housing by 625 or more units?

■ Yes	☐ No

3. Will the full development potential of the Regulatory Zone amendment increase hotel accommodations by 625 or more rooms?

☐ Yes	■ No

4. Will the full development potential of the Regulatory Zone amendment increase sewage by 187,500 gallons or more per day?

■ Yes	☐ No

5. Will the full development potential of the Regulatory Zone amendment increase water usage by 625 acre-feet or more per year?

■ Yes	☐ No

6. Will the full development potential of the Regulatory Zone amendment increase traffic by 6,250 or more average daily trips?

■ Yes	☐ No

7. Will the full development potential of the Regulatory Zone amendment increase the student population from kindergarten to 12th grade by 325 students or more?

■ Yes	☐ No

Washoe County Treasurer
Tammi Davis

Washoe County Treasurer
P.O. Box 30039, Reno, NV 89520-3039
ph: (775) 328-2510 fax: (775) 328-2500
Email: tax@washoecounty.us

Account Detail

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CollectionCart

	Items	Total	
Collection Cart	0	$0.00	Checkout View

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No payment due for this account.

Washoe County Parcel Information

Parcel ID	Status	Last Update
08739013	Active	5/14/2019 2:07:44 AM

Current Owner:
LIFESTYLE HOMES TND LLC

4790 CAUGHLIN PKWY 519
RENO, NV 89519

SITUS:
0 SILVER KNOLLS BLVD
WASHOE COUNTY NV

Taxing District
4000

Geo CD:

Legal Description

SubdivisionName _UNSPECIFIED Range 18 Block Lot 1 Township 21 Section

Tax Bill (Click on desired tax year for due dates and further details)

Tax Year	Net Tax	Total Paid	Penalty/Fees	Interest	Balance Due
2018	$1,929.20	$1,929.20	$0.00	$0.00	$0.00
2017	$1,929.20	$1,929.20	$0.00	$0.00	$0.00
2016	$1,929.20	$1,929.20	$0.00	$0.00	$0.00
2015	$1,929.20	$1,929.20	$0.00	$0.00	$0.00
2014	$1,929.20	$1,929.20	$0.00	$0.00	$0.00
				Total	$0.00

Disclaimer

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- For your convenience, online payment is available on this site. E-check payments are accepted without a fee. However, a service fee does apply for online credit card payments. See Payment Information for details.

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
P.O. Box 30039
Reno, NV 89520-3039

Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

Payment Information

Special Assessment District

Installment Date Information

Assessment Information

The Washoe County Treasurer's Office makes every effort to produce and publish the most current and accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use, or its interpretation. If you have any questions, please contact us at (775) 328-2510 or tax@washoecounty.us

This site is best viewed using Google Chrome, Internet Explorer 11, Mozilla Firefox or Safari.

Washoe County Treasurer
Tammi Davis

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Washoe County Parcel Information

Parcel ID	Status	Last Update
08739010	Active	5/14/2019 2:07:44 AM

Current Owner:
LIFESTYLE HOMES TND LLC

4790 CAUGHLIN PKWY 519
RENO, NV 89519

SITUS:
0 SILVER KNOLLS BLVD
WASHOE COUNTY NV

Taxing District
4000

Geo CD:

Legal Description
SubdivisionName _UNSPECIFIED Range 18 Block Lot 1 Township 21 Section

Tax Bill (Click on desired tax year for due dates and further details)

Tax Year	Net Tax	Total Paid	Penalty/Fees	Interest	Balance Due
2018	$2,449.80	$2,449.80	$0.00	$0.00	$0.00
2017	$2,449.80	$2,449.80	$0.00	$0.00	$0.00
2016	$2,449.81	$2,449.81	$0.00	$0.00	$0.00
2015	$2,449.81	$2,449.81	$0.00	$0.00	$0.00
2014	$2,449.80	$2,449.80	$0.00	$0.00	$0.00
				Total	$0.00

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Tammi Davis

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Collection Cart	Items	Total	Checkout	View
	0	$0.00		

Pay Online

No payment due for this account.

Washoe County Parcel Information

Parcel ID	Status	Last Update
08620305	Active	5/14/2019 2:07:44 AM

Current Owner:
LIFESTYLE HOMES TND LLC

4790 CAUGHLIN PKWY 519
RENO, NV 89519

SITUS:
0 LARSON RANCH RD
WCTY NV

Taxing District
4000

Geo CD:

Legal Description

Township 21 Section 24 SubdivisionName _UNSPECIFIED Range 18

Tax Bill (Click on desired tax year for due dates and further details)

Tax Year	Net Tax	Total Paid	Penalty/Fees	Interest	Balance Due
2018	$939.56	$939.56	$0.00	$0.00	$0.00
2017	$901.69	$901.69	$0.00	$0.00	$0.00
2016	$878.84	$878.84	$0.00	$0.00	$0.00
2015	$877.09	$877.09	$0.00	$0.00	$0.00
2014	$877.10	$877.10	$0.00	$0.00	$0.00
				Total	$0.00

Disclaimer

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P.O. Box 30039
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Overnight Address:
1001 E. Ninth St., Ste D140
Reno, NV 89512-2845

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	0	$0.00	Checkout View

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No payment due for this account.

Washoe County Parcel Information

Parcel ID	Status	Last Update
08623231	Active	5/14/2019 2:07:44 AM

Current Owner:
LIFESTYLE HOMES TND LLC

4790 CAUGHLIN PKWY 519
RENO, NV 89519

SITUS:
11420 CARLSBAD RD

Taxing District
4000

Geo CD:

Legal Description

Township 21 Section 24 SubdivisionName _UNSPECIFIED Range 18

Tax Bill (Click on desired tax year for due dates and further details)

Tax Year	Net Tax	Total Paid	Penalty/Fees	Interest	Balance Due
2018	$2,885.71	$2,885.71	$0.00	$0.00	$0.00
2017	$2,769.40	$2,769.40	$0.00	$0.00	$0.00
2016	$2,699.22	$2,699.22	$0.00	$0.00	$0.00
2015	$2,693.83	$2,693.83	$0.00	$0.00	$0.00
2014	$2,693.84	$2,693.84	$0.00	$0.00	$0.00
				Total	$0.00

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This site is best viewed using Google Chrome, Internet Explorer 11, Mozilla Firefox or Safari.

SILVER HILLS DRAFT COVENANTS, CONDITIONS AND RESTRICTIONS (MODELED AFTER APPROVED WOODLAND VILLAGE PROJECT)

COVENANTS, CODES AND RESTRICTIONS

WHEN RECORDED, MAIL TO:

Dave Davis, Esq.
Hale Lane Peek Dennison
Howard and Anderson
100 W. Liberty St., 10th Floor
Reno, Nevada 89501

AMENDED AND RESTATED DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR WOODLAND VILLAGE

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12. Special Rights of VA

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* * *

AMENDED AND RESTATED

DECLARATION OF

COVENANTS, CONDITIONS AND RESTRICTIONS

FOR

WOODLAND VILLAGE

THIS DECLARATION ("Declaration") is made this day of _____, 2000, by **COLD SPRINGS 2000, a Nevada corporation** ("Declarant"), with reference to the following facts and is as follows:

RECITALS:

A. Declarant caused that certain Declaration of Covenants, Conditions and Restrictions for Woodland Village to be recorded in Official Records, Washoe County, Nevada, on September 13, 1999, as Document No. 2379700 (the "Original Declaration").

B. Declarant is the owner of that certain real property situate in County of Washoe, State of Nevada, and described in **Exhibit "A"** hereto and by this reference incorporated herein (together with all other real property comprising the Village from time to time, the "Property").

C. Declarant intends to create a planned, mixed-use community within the Property and to sell and convey Lots (below defined) therein subject to the covenants, conditions, restrictions, equitable servitudes, and charges set forth herein which establish a general plan of improvement for the benefit of all of the Lots. The name of the community is Woodland Village. The Village (below defined) and this Declaration are and shall be subject to the provisions of Chapter 116 of Nevada Revised Statutes (the "Act"), as a planned community under the name of Woodland Village.

D. Declarant is or may become the owner of certain other real property situate in Washoe County, Nevada, which is described in **Exhibit "B"** attached hereto and incorporated herein by this reference, all or a portion of which real property may become Annexed Property (as defined below). In addition, as further provided below in this Declaration, Declarant reserves the right to create a maximum of 3,000 Lots within the Village and to add additional real property to the Village, which real property is not yet identified.

E. Declarant desires to amend and restate the Original Declaration in its entirety and is causing this Declaration to be recorded for such purpose.

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DECLARATION:

NOW, THEREFORE, Declarant hereby declares that the Property shall be held, conveyed, sold, encumbered, leased, rented, used, occupied, improved, or otherwise affected in any manner, subject to the declarations, limitations, easements, covenants, conditions and restrictions set forth in this Declaration, all of which are hereby declared to be in furtherance of a general plan for the development, improvement, and sale of the Property, and are further declared to be for the purpose of enhancing, maintaining and protecting the value and attractiveness

thereof. All provisions hereof shall be deemed to run with the land as covenants running with the land or as equitable servitudes, or as liens, as the case may be, and shall constitute benefits and burdens to the Declarant and its successors and assigns and to all parties hereafter acquiring or owning any interest in the Property in whatever manner such interest may be obtained.

THIS DECLARATION AND EACH OF ITS TERMS AND PROVISIONS SUPERSEDES, AMENDS AND REPLACES, IN ITS ENTIRETY, THE ORIGINAL DECLARATION; AND UPON RECORDATION OF THIS DECLARATION IN OFFICIAL RECORDS, WASHOE COUNTY, NEVADA, THE ORIGINAL DECLARATION SHALL BE OF NO FURTHER FORCE OR EFFECT.

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ARTICLE I

INCORPORATION OF RECITALS; DEFINITIONS

Recitals A through C above are by this reference incorporated into this Declaration. The words, phrases or terms set forth in this **Article I**, when used in this Declaration, shall have the meanings ascribed thereto in this **Article I**. Certain other capitalized terms in this Declaration are defined in the specific sections of this Declaration to which such defined terms pertain, and shall have the meanings ascribed thereto in such sections throughout this Declaration.

1.1 "Annexed Property" means any or all real property which is now owned or hereafter may be acquired by Declarant, with respect to which a Supplemental Declaration is recorded causing an annexation of such property pursuant to the provisions of **Article X** below.

1.2 "Articles" or "Articles of Incorporation" means the Articles of Incorporation of the Association.

1.3 "Association" means the Woodland Village Homeowners Association, a Nevada nonprofit corporation.

1.4 "Association Property" means all real and personal property now or hereafter owned by or leased to the Association or in which the Association has a recognizable legal or equitable present or future interest.

1.5 "Beneficiary" means a beneficiary under a deed of trust or a mortgagee under a mortgage, and/or the assignee of such beneficiary or mortgagee.

1.6 "Board" or "Board of Directors" means the Board of Directors of the Association and is synonymous with "Executive Board" as defined by the Act.

1.7 "Bylaws" means the Bylaws of the Association.

1.8 "Commercial Areas" shall refer collectively to the areas of the Village designated in any Final Map or Supplemental Declaration for use as Commercial Project Types.

1.9 "Commercial Lot" shall mean each Lot designated in any Final Map or Supplemental Declaration for use as a Commercial Project Type.

1.10 "Commercial Project Type" shall mean a Lot or Lots restricted by this Declaration, a Supplemental Declaration or a Final Map to be used for commercial and/or office uses and related uses in accordance with applicable Land Use Ordinances and this Declaration.

1.11 "Common Area" or "Common Areas" means that portion of the Property which is designated as Common Area on a Final Map and which is leased to or owned in fee or some lesser estate or easement interest by the Association, together with all Improvements constructed or to be constructed thereon or therein, including, but not limited to, any recreational facilities and all streets, roadways, utility lines and facilities within the Property

(Exclusive of Lots) which have not been accepted for dedication by the applicable governmental entity having jurisdiction.

1.12 "Common Expenses" shall have the meaning set forth in Section **6.4.1** hereof.

1.13 "County" shall mean the County of Washoe, State of Nevada.

1.14 "Declarant" means the undersigned which has made and executed this Declaration or its successors, assigns, or representatives in the event Declarant assigns its rights and obligations, or in the event Declarant's interest in the Village is sold pursuant to foreclosure or deed in lieu thereof.

1.15 "Declaration" means this instrument and any and all supplements and amendments thereto.

1.16 "Design Committee" means the committee formed pursuant to **Article VIII** hereof.

1.17 "Design Committee Rules" means the rules, if any, adopted by the Design Committee.

1.18 "Development Covenants" shall mean a recorded agreement between Declarant and a Builder or a recorded Declaration executed by a Builder pursuant to an agreement with the Declarant creating covenants running with the land pertaining to the construction of Improvements on a portion of the Property owned by such Builder.

1.19 "Final Map" shall mean a recorded map of any portion of the Property, including, but not limited to, subdivision maps and parcel maps, and any and all amendments thereto, or boundary line adjustments of the Lots created thereby, which is recorded pursuant to statute for the purpose of dividing land into legally created Lots.

1.20 "Improvement" means all structures, and works of improvement and appurtenances thereto of every type and kind, including but not limited to dwellings, buildings, outbuildings, swimming pools (both above and in-ground), garages, carports, basketball goals, roads, driveways, parking areas, fences, screening walls, retaining walls, stairs, decks, landscaping, hedges, windbreaks, planting, planted trees, shrubs, ground cover of every type, poles, signs, exterior air conditioning, water softener, satellite dishes, antennae, fixtures or equipment.

1.21 "Land Use Ordinance" shall mean any zoning law, regional master plan or other ordinance or regulation governing the use of land adopted by the State of Nevada.

1.22 "Lot" or "Parcel" means any portion of the Property designated as a lot or parcel on any recorded final subdivision map or parcel map thereof and intended for improvement with a single family residence or a Commercial Type Project, whether or not the Lot or Parcel is so improved. The Boundaries of each Lot/Parcel and the number identifying the Lot/Parcel are set forth on the Map.

1.23 "Map" means the Final Map of _____ filed for record _____, 19__, in Book ____, at Page ____ of Plats, Book No. _____, Document No. _____, Official Records, Washoe County, Nevada, and any and all amendments thereto; and all other final subdivision and parcel maps which are recorded in Official Records, Washoe County, Nevada, the real property of which is Annexed Property.

1.24 "Member" or "Association Member" means every person or entity including Declarant who holds a membership in the Association pursuant to the provisions of this Declaration, the Articles and the Bylaws.

1.25 "Owner" means any person or entity, including Declarant, holding a fee simple interest in a Lot or Parcel, or who is the buyer of a Lot or Parcel under a recorded contract of sale.

1.26 "Phase" means each portion of the Village created by a Final Map.

1.27 "Plan" means those items set forth in NRS 116.2109(4), including drawings of Improvements which are filed with agencies which issue permits for the Project, and all number and letter designations set forth thereon identifying Lots or Parcels, all of which are by this reference incorporated herein.

1.28 "Residential Lot" shall mean each Lot designated in any Final Map or Supplemental Declaration, which is not a Commercial Lot.

1.29 "Rules and Regulations" means such rules and regulations as the Board from time to time may adopt pursuant to the terms of this Declaration concerning the use of the Village or any part thereof, including, but not limited to, the Rules and Regulations contemplated pursuant to Sections **2.4.1**, **3.1** and **5.1.2**.

1.30 "Special Declarant's Rights" means all rights reserved by Declarant for itself under this Declaration which are personal to Declarant and may be exercised only by Declarant, including, but not limited to, those set forth in **Article X** hereof.

1.31 "Successor Declarant" shall mean any and all successors-in-interest of Declarant which acquire Declarant's entire interest in the Property, and to whom Declarant's rights under this Declaration have been assigned and which assume all of Declarant's obligations hereunder pursuant to a written agreement executed by the transferor Declarant and the transferee Successor Declarant and which is recorded. Declarant and each Successor Declarant who is a transferor Declarant shall cease to be the Declarant hereunder upon recordation of such written assignment.

1.32 "Supplemental Declaration" shall mean a recorded written instrument executed by Declarant, which refers to this Declaration and which annexes real property to the Village as Annexed Property and/or which supplements this Declaration, but is not in conflict with its terms.

1.33 "Village" means the Property, together with all Improvements now or hereafter located thereon, and together with all easements, rights and appurtenances belonging thereto.

1.34 "VA" shall mean the Veterans Administration of the United States of America and any department or agency of the United States government which succeeds to VA's function of issuing guarantees of notes secured by Mortgages on residential real estate.

1.35 The phrase "visible from neighboring property" means, with respect to any given object, that such object is or would be visible to a person six feet (6') tall standing at ground level.

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ARTICLE II

Common Areas

2.1 General Intent. The purpose of this **Article II**, among other things, is to provide for the transfer of title from Declarant to the Association of those portions of the Common Areas which are to become Association Property and to provide for the Association's acceptance of responsibility for the care and maintenance of the Association Property and other real and personal property not owned by the Association, but which the Association will be required to maintain. This Article also establishes easements for the Owners' use and enjoyment of the Common Areas, subject to the restrictions set forth in this Declaration and in the Rules and Regulations.

2.2 Ownership and Adjustment of Common Area. All of the Common Area is or will be owned by the Association. The Common Area shall remain private property of the Association unless dedicated to a public authority pursuant to the provisions hereof, and nothing contained herein shall be construed as a dedication to the public of the Common Area or any portion thereof.

Notwithstanding the foregoing, the Common Area(s) will be owned by Declarant until such time as Declarant transfers, or is required to transfer pursuant to the Act, the Common Area(s) in each Phase to the Association. Declarant will develop the Village with a certain amount of Common Area included as required by the County. However, as the Village is developed over time it may be necessary for Declarant to adjust the configuration or

size of Common Area in a particular Phase or Phases in order to efficiently and effectively configure the various features of the Village in response to changing circumstances over time as the Village is built out. Accordingly, Declarant reserves the right to adjust the common boundary line(s) between the Common Area(s) in various Phases at any time prior to the conveyance of such Common Area(s) to the Association.

2.3 Encumbrances Against Common Area. Title to the Common Area is or may be subject to the following encumbrances included in the Map and each subsequent Phase (in each instance, "Existing Encumbrances"):

(a) The lien of real property taxes and assessments;

(b) The obligations imposed, directly or indirectly, by virtue of any statute, law, ordinance, resolution, or regulation of the United States of America, the State of Nevada, County of Washoe, or any other political subdivision or public organization having jurisdiction over the Property, or by virtue of any organization or political body created pursuant to any such statute, law, ordinance, or regulation;

(c) Any and all easements and other rights shown on the Map or any other Final Map;

(d) All easements and other rights and obligations created by the Master Declaration or this Declaration;

(e) Any and all loans for the construction of Improvements to the Common Area which loans shall be paid by Declarant as the same become due and payable; and

(f) Any other lien, encumbrance, or defect of title of any kind whatsoever (other than of the type that would at any time or from time to time create a lien upon the Common Area to secure an obligation to pay money) that would not materially and actually prejudice Owners in their use and enjoyment of their Lots and the Common Area.

2.4 Owners' Easements of Enjoyment. Except as otherwise expressly provided elsewhere in this Declaration, each Owner shall have, and the Association hereby grants to each Owner, a non-exclusive easement of use and enjoyment in, to, and throughout the Common Area and for ingress, egress, and support over and through the Common Area. Each such easement shall be appurtenant to and pass with title to each Lot, subject to the following rights and restrictions:

2.4.1 The Association shall have the right to adopt, amend, and enforce Rules and Regulations affecting use of the Common Area; provided, however, that such Rules and Regulations shall not be in conflict with the provisions of this Declaration or any ordinances of the County, or of any other governmental entity.

2.4.2 The Association shall have the right to suspend the right to use any recreational facilities within the Common Area by an Owner, his tenants and guests for any period during which any Assessment against such Owner remains unpaid for a period of thirty (30) days by so notifying the Owner of such suspension, provided, however that if such Owner files a written objection with the Board within ten (10) days after such suspension notice is deemed to have been received by Owner pursuant to the provisions hereof, then such Owner shall be given written notice and an opportunity to be heard. Such notice shall be sent to the Owner by certified mail, return receipt requested, and shall be deemed delivered upon the lapse of three (3) days from and after the deposit of such notice in the United States mail, postage prepaid and addressed to such Owner at his Unit or at such other address as may be on record with the Association. The notice shall include a general statement of the proposed action and the date, time and place of the hearing. At the hearing, the affected person shall have the right, personally or by a representative, to give testimony orally, in writing or both (as specified in the notice), subject to reasonable rules of procedure established by the party conducting the meeting to assure a prompt and orderly resolution of the issues. Any evidence shall be duly considered, but is not binding in making the decision. The affected person shall be notified of the decision in the same manner in which notice of the meeting was given.

2.4.3 The Association shall have the right to limit the number of guests of an Owner utilizing the Common Area.

2.4.4 The Association shall have the right to charge reasonable admission and other fees for the use of any recreational facility situate upon the Common Area.

2.4.5 The Association shall have the right to assign, rent, grant licenses, or otherwise designate and control the use of any parking or storage spaces within the Common Area.

2.4.6 The right of the Association to borrow money to improve, repair or maintain the Common Area.

2.5 Use of the Common Areas.

2.5.1 General. Except as otherwise expressly provided in this Declaration, the Common Area shall be used for open space, parks, recreational amenities, landscape areas, drainage facilities, firebreak areas and such other uses as Declarant through a Supplemental Declaration or the Association, through Association action, shall determine. Except as provided otherwise in Section **2.5.2** below, no persons other than the Owners, their family members, guests and invitees or the Owner's tenants, their family members, guests and invitees shall be allowed to in any manner use or occupy the Common Area; and then only in compliance with and subject to the terms and provisions of this Declaration. The foregoing is not intended, nor shall it be construed, to limit in any manner Declarant's rights to use the Common Areas as provided below in Section **2.6** or in **Article X** hereof. Each Owner shall at all times be responsible for any and all activities of his tenants, guests and invitees using the Common Area. No Improvements within the Common Area shall be altered or removed, except at the express direction of the Association.

2.5.2 Community Recreation Building. It is anticipated that Declarant will be constructing a recreation building (the "Recreation Building") as part of the Common Area for use by Owners, their family members, guests and invitees as contemplated pursuant to Section **2.5.1** above with respect to Common Areas in general. At such time as Declarant conveys the Recreation Building to the Association, and at all times thereafter, the Association shall retain the services of a professional manager to manage the operation of the Recreation Building. Such management shall require that the Recreation Building be open and generally available to its users during hours which maximize the use of the Recreation Building consistent with the demand placed on it by its users from time to time. While the manager of the Recreation Building shall be entitled to exercise its discretion concerning the actual hours of operation and the programs, events and activities offered and allowed by the Recreation Building, the Association at all times shall retain the final discretionary authority and decision making as to such matters.

The operation of the Recreation Building through the manager shall be funded by user fees as below provided. However, if such usage fees are insufficient to cover the costs to repair, maintain and operate the recreation Building, then the Association may levy a special assessment from time to time in the manner provided in **Article VI** hereof in order to cover such shortfall. In addition, the Recreation Building shall be open to the general public for its use in the same manner and to the same extent as made available to Owners, their family members, guests and invitees. The Association shall charge a use fee to all users of the Recreation Building. Such fees shall be in such amounts as the Board determines from time to time, and there shall be no distinction made between fees charged to Owners versus those charged to the general public.

2.6 Declarant's Common Area Easement Rights; Dedication of Common Area.

2.6.1 Reservation of Common Area Easements In Favor of Declarant. Declarant hereby reserves unto itself such easements over, through and under the Common Area as may be reasonably necessary to discharge Declarant's obligations or exercise any Special Declarant's Rights, whether arising under the Act or reserved in this Declaration.

2.6.2 Reservation of Right to Grant Additional Common Area Easements and to Dedicate Common Area. Declarant hereby reserves unto itself the right to grant easements and rights of way on, over, through and under the Common Area for the purposes described below and for the benefit of the Owners, the Association, and the

right to offer for dedication any portion of the Common Area to any political subdivision, or any public or quasi-public entity or utility. Such grants of easement or dedications may be for any or all of the following described purposes: constructing, erecting, operating, or maintaining on the Common Area, at any time: (i) roads, streets, trails, walks, driveways, vehicle parking areas, parkways, and park areas; (ii) poles, wires, or conduits for transmission of electricity, telephonic communication or cable or master antenna television for the Village and the necessary apparatus incident thereto; and (iii) public and private sewers, sewage disposal systems, storm drains, storm water retention and re-charge basins, land drains and pipes, water systems, sprinkling systems, water, heating and gas lines or pipes, and any and all equipment and other apparatus relating thereto. The rights reserved by Declarant in this Section **2.6.2** may be exercised at any time that Declarant owns any portion of the Property.

2.7 Rights of Association to Grant Easements Over Common Area and to Dedicate Portions of Common Area. At such time as the rights reserved by Declarant under Section **2.6.2** have expired, the Association shall be entitled to exercise the rights reserved to Declarant under Section **2.6.2**, provided that at least sixty-seven percent (67%) of the voting power of the Association has approved such action.

2.8 Right of Association to Encumber Common Area. The Association may encumber the Common Area in connection with authorized obligations, but only upon the affirmative vote of not less than sixty-seven percent (67%) of the voting power of the Association.

2.9 Declarant's Obligation to Convey. Declarant shall convey fee simple title or such other interest as the Declarant shall hold to the Common Area in each Phase to the Association prior to the first conveyance of a Lot to an Owner other than Declarant in such Phase, free and clear of all encumbrances and liens, except then Existing Encumbrances.

2.10 Maintenance of Common Area. Maintenance of the Common Area in each Phase and any and all Improvements thereon shall be the obligation of the Declarant solely until the Common Area in such Phase is conveyed to the Association and such conveyance is recorded in the official records of the County Recorder of Washoe County, Nevada (each, a "Transfer Date"). From and after each Transfer Date the obligation to maintain the Common Area and the Improvements thereon for the applicable Phase shall be the obligation of the Association. The Association shall maintain and manage the Common Area and all Improvements thereon in a first class and husbandlike manner. The Association shall maintain all utility, water and sewer lines, equipment and other apparatus within the Common Area, unless such item of maintenance is the obligation of a utility company, or the County.

2.11 Association Property on Lots. Some Lots may have placed on them street lights, drinking fountains or other Improvements which are Association Property. In addition, Improvements on Lots abutting Common Areas and public streets or other facilities may have security cameras, monitors or other surveillance equipment installed thereon in connection with security systems maintained by the Association. There is hereby reserved over and across each Lot and the Improvements thereon, an easement for the benefit of Declarant and the Association for the purpose of installing, repairing, maintaining and operating such Association Property, and providing access to and from such Association Property. All costs of the installation, repair, maintenance and operation of such Improvements shall be borne by the Association. In some instances, power or water necessary to operate such Improvements may be accessed or provided by utilizing power or water facilities servicing the affected Lot, and the foregoing easement shall allow such access and use; provided, however, that any additional cost of power or water resulting from such use of the Owner's power or water service shall be paid by the Association.

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ARTICLE III

PROHIBITIVE AND MANDATORY

USE RESTRICTIONS AND OBLIGATIONS

3.1 Forward. The Village, while not officially incorporated or chartered as a municipal corporation, city or town, is in many respects akin to a city or town. Accordingly, this Declaration, in addition to County, State and Federal laws and ordinances, sets forth the rules and methods by which the Village is to be operated, maintained, used and governed. The Association is the local "governing authority," and is intended to conduct itself and undertake its obligations as provided in this Declaration in a manner quite similar to a city or town government. To that end, the Association has elected officials and public meetings, and is empowered by this Declaration to adopt, enact and enforce Rules and Regulations within the parameters set forth in this Declaration.

With the foregoing in mind, the Board is hereby authorized and empowered to adopt, enact and enforce further Rules and Regulations relative to the prohibitive and mandatory use restrictions below set forth in order to protect and enhance value of the Property and the orderly functioning of the Village, and to adapt and respond to changing circumstances and times; provided, however, that no Rule or Regulation adopted or enacted by the Board may be less restrictive or mandatory in its scope or effect without the consent of not less than fifty-one percent (51%) of the voting power of the Association. The power of the Board to enact and adopt such Rules and Regulations shall in no way be limited by the treatment or the specificity of treatment of a subject matter in Sections **3.2**, **3.3** or **3.4** below.

Section **3.2** covers use restrictions which apply to all of the Property, Section **3.3** covers those restrictions which apply only to Lots improved with single family residences, and Section **3.4** covers those restrictions which apply only to Lots upon which Commercial Type Projects may be developed. In the event a Lot is designated as part of a commercial Type Project, but pursuant to this Declaration or a Supplemental Declaration may be used also for single family residential use (below defined) then all of the provisions of Sections **3.2, 3.3** and **3.4** shall apply to such Lot as applicable.

3.2 General Development and Use Restrictions. Subject to the exemptions of Declarant set forth in **Article X** hereof, and other Declarant's rights as set forth in this Declaration, all of the Property shall be held, used and enjoyed subject to, and in accordance with, the following limitations and restrictions:

3.2.1 Single Family Residences and Apartments. Each Lot which is not designated for use as a Commercial Project Type shall be used for "single family residential use" and for no other purpose. An Owner may rent his Lot to a single family provided that the Lot is rented pursuant to a lease in accordance with the requirements set forth in Section **3.2.14** below. The term "single family residential use" shall also be applicable to all apartment living units located on Commercial Project Type Lots, and in all instances shall mean use by one or more persons residing and cooking together as a single housekeeping unit, provided any group of persons either:

(a) is composed exclusively of family members who are related by blood, marriage or legal adoption to each other as grandparents, parents or children, or

(b) contains a maximum number not exceeding two multiplied by the number of bedrooms in the home. The number of bedrooms in any home is the number shown on the plans approved by the County at the time of original construction of the home, not the number of rooms actually used as bedrooms, and not including any bedrooms added by subsequent remodeling or additions.

3.2.2 Parking and Vehicular Restrictions. Parking and vehicular restrictions shall be set forth in the Rules and Regulations, and will limit the number and types of vehicles, the parking of vehicles, and the condition of vehicles in order to maintain an orderly appearance of sufficient parking in the Village. No Owner shall park, store or keep within the Property any inoperable or commercial type vehicle (including, but not limited to, any dump truck, cement mixer truck, oil or gas truck or delivery truck) or vehicles needing significant visible repair (as determined by the Board) unless said inoperable, commercial or damaged vehicle can be, and is, stored in the garage of the Lot. No Owner shall park, store or keep on his Lot any recreational vehicle (including, but not limited to, any camper unit, house/car or motor home, trailer, trailer coach, camp trailer, camper truck, boat, or any other similar vehicle, unless the recreational vehicle is not visible from streets within the Village or if visible from such streets, is visible only to the extent it exceeds a solid fence shielding such vehicle to a height of not

less than six feet (6'), or such vehicle is a truck with a camper unit, and such camper truck is used for everyday-type transportation. In addition, no Owner shall park, store, or keep anywhere within the Property any vehicle or vehicular equipment, mobile or otherwise, deemed to be a nuisance by the Board. The Board shall have the power to enforce all parking and vehicle use restrictions applicable to the Property, including the power to remove violating vehicles from any of the Property to the extent permitted by applicable law.

3.2.3 Nuisances. No rubbish or debris of any kind shall be placed or permitted to accumulate anywhere within the Property, and no odor shall be permitted to arise therefrom so as to render the Property or any portion thereof unsanitary, unsightly, or offensive. No noise or other nuisance shall be permitted to exist or operate upon any portion of a Lot so as to be offensive or detrimental to any other Lot in the Property or to its occupants. Without limiting the generality of any of the foregoing provisions, no speakers, horns, whistles, bells or other sound devices (other than security devices used exclusively for security purposes), noisy or smoky vehicles, large power equipment or large power tools, motorcycles, unlicensed off-road motor vehicles or other items which may unreasonably disturb other Owners or residents or their guests shall be located, used or placed on any portion of the Property or the streets within the Village without the prior written approval of the Board. Alarm devices used exclusively to protect the security of a Lot and its contents shall be permitted, provided that such devices do not produce annoying sounds or conditions as a result of frequently occurring false alarms.

3.2.4 Unsightly Articles. No unsightly articles, including clotheslines, shall be permitted to remain on any Lot so as to be visible from neighboring property. Without limiting the generality of the foregoing, refuse, garbage and trash shall be kept at all times in covered, sanitary containers or enclosed areas designed for such purpose. There shall be no exterior fires whatsoever, except barbecue fires contained within receptacles designed therefor, such that they do not create a fire hazard and except as specifically authorized in writing by the Association (and subject to applicable ordinances and fire regulations). No plastic, aluminum, tin or other metallic window coverings are allowed in or on any windows. Severely damaged or "junk" vehicles, even if otherwise operable, shall be brought to a reasonable state of cosmetic repair and appearance no later than thirty (30) days following written notice from the Board. Reasonable repair and appearance shall be determined by the Board in each instance in a manner which is consistent with providing an environment within the Village which is not so unsightly so as to be offensive to a reasonable person or which is detrimental to property values.

3.2.5 Animals. Animals, fowls, reptiles, fish or insects of any kind ("animals") which are common household pets may be raised, bred or kept within the Property, only in accordance with Rules and Regulations adopted by the Board. Poultry shall not be allowed. At a minimum, however, a reasonable number of dogs, cats or other household pets may be kept within a residence, provided that they are not kept, bred or maintained for any commercial purpose, nor in unreasonable quantities, nor in violation of any applicable local ordinance or any other provision of this Declaration and such limitations as may be set forth in the Rules and Regulations. As used in this Declaration "unreasonable quantities" shall ordinarily mean more than five (5) pets per household; provided, however, that the Board may determine that a reasonable number in any instance may be more or less. The Association, acting through the Board, shall have the right to prohibit maintenance of any animal which constitutes, in the opinion of the Board, a nuisance to other Owners in the Property. Animals belonging to Owners, residents, or their guests within the Property must be either kept within an enclosure or on a leash or other restraint being held by a person capable of controlling the animal, and who then has in his possession a proper or adequate utensil or other means of cleaning up immediately all feces of such animal. Furthermore, to the extent permitted by law, any Owner shall be liable to each and all remaining Owners, residents, their families and guests, for any unreasonable noise or damage to person or property caused by any animals brought or kept upon the Property by an Owner or resident or by members of their family or guests; and it shall be the absolute duty and responsibility of each such Owner to clean up immediately after such animals which have used any portion of the Common Area.

3.2.6 Utility Service; Propane Tanks. No lines, wires, or devices for transmission of electric current or telephone, television, or radio signals shall be constructed, placed, or maintained anywhere within any Lot unless the same shall be contained in conduits or cables placed and maintained underground or concealed in or under buildings or approved structures. Nothing herein shall be deemed to forbid the erection and use of temporary power or

telephone services incidental to the construction of Improvements. Propane tanks may be placed on a Lot, but only if such placement otherwise complies with the terms and provisions of this Section **3.2.6**; and at such time as gas service is made available to service such Lot, such tank must be removed and such gas service hooked-up to such Lot within ninety (90) days of such service being made available for actual use at any physical point along the property lines of such Lot.

3.2.7 Diseases and Insects. No Owner shall permit any thing or condition to exist upon his Lot that shall induce, breed, or harbor infectious plant or tree diseases or noxious insects.

3.2.8 Compliance With Laws. Nothing shall be done or kept in, on or about any portion of the Property, or Improvement thereon, except in compliance with all applicable federal, state and local laws, regulations and ordinances (collectively, "laws") including environmental laws.

3.2.9 Drainage; Storm Drain System. There shall be no interference with the rain gutters, downspouts, or drainage or storm drain systems originally installed by Declarant or any other interference with the established drainage pattern over any portion of the Property, unless an adequate alternative provision, previously approved in writing by the Declarant and the Design Committee is made for proper drainage. For purposes hereof, "established" drainage is defined as the drainage pattern and drainage Improvements which exist at the time such portion of the Property is conveyed by Declarant to an Owner, by the Declarant to the Association, or as modified in accordance with plans approved by the Declarant until Declarant's Control Termination Date or, thereafter, by the Design Committee. There shall be no violation of the drainage requirements of the City, County, U.S. Army Corps of Engineers, or State of Nevada Division of Environmental Protection, notwithstanding any such approval of Declarant or the Design Committee.

3.2.10 Handicapped Rights. Subject to the review and approval process of the Design Committee and applicable law, each Owner shall have the right to modify such Owner's Improvements and the route over the Lot or Common Area (as applicable and necessary) leading to the entrance of such Owner's Improvements, at such Owner's sole cost and expense, in order to facilitate access by persons who are blind, visually handicapped, deaf or physically disabled, to alter conditions which could be hazardous to such persons, or to otherwise comply with the Americans with Disabilities Act.

3.2.11 Lots and the Improvements Thereon. Each Owner shall have the obligation to repair and maintain such Owner's Lot and the Improvements thereon, at such Owner's sole cost and expense. Such repair and maintenance responsibilities shall include, but are not limited to, the following: all plumbing, electrical and gas lines, equipment and facilities, all water and sewer lines and all other utility facilities serving the property to be maintained by the Owner, all Improvements within such property, all exterior walls (including the painting thereof), windows, skylights and roofs, and all other Improvements on such property. Each Owner shall keep all shrubs, trees, grass and plantings within such Owner's Lot neatly trimmed, properly watered and cultivated, and free from trash, weeds, debris and other unsightly material. No approval from the Design Committee shall be necessary for the performance of normal maintenance and repair work.

3.2.12 Owner's Obligation to Rebuild Improvements on a Lot After Damage or Destruction to Improvements. No Owner shall do any act or work that will impair the structural soundness or safety of any Improvement located within such Owner's Lot. Each Owner shall carry casualty insurance insuring the Improvements on such Owner's Lot. Prior to commencement of work to repair or reconstruct a damaged Improvement, the Owner shall submit the plans and specifications for the repair or reconstruction of the Improvement to the Design Committee, and shall have received written approval thereof prior to the commencement of any work of repair or reconstruction. The Owner shall commence repair or reconstruction of a damaged or destroyed Improvement within the longer of one hundred twenty (120) days after the event causing the damage or destruction, or forty-five (45) days after the insurance proceeds are made available for reconstruction purposes; provided, however, that in the event the insurance proceeds available to the Owner are insufficient to complete such repair or reconstruction, or in the event a holder of a Deed of Trust exercises any right of such holder to apply all or substantially all of the insurance proceeds to the indebtedness secured by the Deed of Trust and the Owner elects not to rebuild the

damaged or destroyed Improvements, then within six (6) months after the event causing the damage or destruction the Owner shall remove all debris from the Lot and restore the Lot to a state that is not offensive to the general appearance of the Property, which restoration plan shall be submitted to, and approved by, the Design Committee prior to the commencement of the restoration work. The Owner shall perform all repairs, maintenance and upkeep of such Lot in accordance with this Declaration. The failure of the Owner to repair or reconstruct the damaged or destroyed Improvements, or to restore the Lot to an inoffensive state as required hereby shall be deemed to be a Maintenance Violation as set forth in Section **3.6** below.

3.2.13 Mineral Exploration, Mining or Drilling. No portion of the surface of the Property shall be used for the purpose of mining, quarrying, drilling, boring or exploring for or removing water, oil, gas or other hydrocarbons, geothermal heat, minerals, rocks, stones, gravel or earth, nor shall oil, water or other wells, tanks, tunnels, mineral or geothermal excavations or shafts be permitted upon the surface of any portion of the Property, except any water wells installed by Declarant or any public or private utility company for the exclusive or nonexclusive use and benefit of the Property and such excavations and removal of earth and other substances as may be done by Declarant during and incidental to the development of the Property.

3.2.14 Leasing of Lots. Subject to Declarant's rights to forbid leasing of single family residential Lots for an initial period of six (6) months pursuant to the purchase and sale agreement between Declarant and an Owner for the sale and purchase of such Lot, an Owner shall be permitted to lease all, but not less than all, of such Owner's Lot provided that:

(a) The Owner and all tenants ("Tenant") enter into a written lease which provides that the terms of the lease shall be subject in all respects to the provisions of this Declaration and the Rules and Regulations, and that any failure by the Tenant to comply with the terms of such documents shall be a default under the lease;

(b) The Tenant is furnished with a copy of this Declaration and the Rules and Regulations;

(c) The lease grants to the Association as a third-party beneficiary the right to evict the Tenant for failure to comply with this Declaration or the Rules and Regulations; and

(d) The Secretary of the Association has been furnished with the name(s) and mailing addresses of the Tenant within five (5) business days after execution of the lease.

Each Owner shall be responsible and liable for all activities of such Owner's Tenant which are in violation of this Declaration or the Rules and Regulations.

3.2.15 Subdivision; Rezoning. Commercial Lots may be subdivided in accordance with applicable laws, ordinances, rules and regulations. Except as expressly authorized in this Declaration, or a Supplemental Declaration, no other Lot in the Property may be further subdivided (including division into time-share estates or time-share uses) without the prior written approval of Declarant; provided, however, that nothing in this Section shall be deemed to prevent an Owner from, or require the approval of Declarant or the Board for (a) transferring or selling any Lot to more than one (1) person to be held by them as tenants in common, joint tenants, community property or community property with right of survivorship; or (b) the leasing or renting by any Owner of such Owner's entire Lot, provided that any such lease or rental shall be subject to this Declaration. Except for Commercial Lots, no application for rezoning of any Lot, and no applications for variances or use permits shall be filed with any governmental authority unless the proposed use of the Lot has been approved by Declarant or, from and after the Declarant's Control Termination Date by the Board, and the proposed use otherwise complies with this Declaration. Notwithstanding anything contained herein to the contrary, Declarant, or its successors or assigns, shall have the right to change the location, size or configuration of the Common Areas within the Village after a Final Map thereof has been recorded, so long as such change does not materially and adversely affect any Owners in the use of their Lot.

3.2.16 Signs, Antennae and Similar Devices. Signs, antennae, poles, including, without limitation, flag poles and basketball poles and hoops, satellite dishes and similar devices or apparatus are allowed, if at all, only in

accordance with the Rules and Regulations.

3.2.17 Rules and Regulations and Design Committee Rules. Each Owner shall adhere to the Rules and Regulations and the Design Committee Rules at all times.

3.2.18 Owner's Obligation to Maintain and Replace Trees. Declarant will be planting trees along the streets within the Village and installing irrigation facilities to provide water to such trees. Except as otherwise provided below in this Section **3.2.18**, the Association shall have the responsibility to maintain all such trees and irrigation systems, except for such trees as are located in cul-de-sacs, which must be maintained and replaced by each Owner whose Lot frontage abuts the area where such trees are planted. Except for delays caused by prudent seasonal restrictions or inclement weather, each Owner who has maintenance responsibility for any such street tree shall remove and replace, at its cost, any diseased (unless such disease is curable, in which case such Owner shall commence and complete such cure in a diligent manner), dead or dying tree within sixty (60) days of written notice from the Association to such Owner requiring such removal and replacement. The failure of such Owner to remove and replace such diseased, dead or dying tree as above provided shall be deemed a Maintenance Violation as set forth in Section **3.6** below. Regardless of whose responsibility it is to maintain trees as provided in this Section **3.2.18**, any tree which extends over any street in the Village, public or private, shall be pruned so as to continuously provide not less than thirteen and one-half feet (13.5') of clearance above all street paving.

In addition to the foregoing, each Owner whose Lot abuts a street right-of-way (not in a cul-de-sac), in which a tree (or trees) is planted by Declarant, shall have the responsibility of watering such tree in a manner appropriate for its good health and normal growth. In the event any such tree(s) dies as a result of such Owner's failure to appropriately water such tree(s), the Association may replace such tree with a one inch (1") caliper tree; and such Owner shall be responsible for the payment of the removal of the dead tree and the cost of the replacement tree and the labor and materials required to plant it. Failure to pay such amounts shall be deemed a Maintenance Violation. Except as above provided in this paragraph, the Association shall provide overall maintenance, including trimming, of non-cul-de-sac trees planted in the front of Lots by Declarant.

Each Owner is hereby advised that trees may need to be removed from the street rights of way for the purpose of repairing or installing utilities. Any such removal shall be at no cost to the affected Owners, and the Association shall replace all such trees at no cost to the affected Owners.

3.2.19 Manufactured and Mobile Homes. No manufactured or mobile home (as such homes are defined by applicable law) shall be placed, installed, parked or stored within the Village at any time except for construction trailers placed temporarily on a Lot in connection with the construction of Improvements thereon in compliance with **Article VIII** hereof, and then only during the time of such construction. Under no circumstance shall any such construction trailer be used for residential purposes at any time, including, without limitation, during the time the applicable Improvements are being constructed.

3.2.20 Maintenance of Lateral Sewer Lines Within Lots. There may be instances where two (2) Lots share a lateral sewer line ("Shared Lateral") from the point of its hook-up to the main sewer line to a point where such shared lateral line divides to provide separate service to such Lots. As to each Lot which depends on a Shared Lateral for sewer service to the Lot, by acceptance of a deed to such Lot its Owner agrees as follows:

(a) The County shall have no responsibility whatsoever for the maintenance or repair of a Shared Lateral, and the County is expressly absolved of any such responsibility, which ultimately lies with the Association vis à vis the County.

(b) If a Shared Lateral becomes clogged, inoperable or in need of repair, each affected Owner shall be responsible for the payment of one-half (1/2) of the cost to repair such Shared Lateral, and the failure of an Owner to make such payment within thirty (30) days after written demand from a paying Owner shall entitle the paying Owner to petition the Association for the issuance of a Violation Notice to the non-paying Owner.

(c) If a Shared Lateral becomes clogged, inoperable or in need of repair and the affected Owners either do not remedy such situation themselves or are in dispute as to the cause or responsibility for such situation, then the Association shall have the right to issue a Violation Notice to each Owner and avail itself of all rights and remedies provided for herein with respect to Maintenance Violations.

3.3 Single Family Development and Use Restrictions. Subject to the exemptions of Declarant set forth in **Article X** hereof, and other Declarant's rights as set forth in this Declaration, all of the Lots upon which a single family residence is or is to be constructed shall be held, used and enjoyed subject to, and in accordance with, the following limitations and restrictions:

3.3.1 Business or Commercial Activity. No such Lot shall ever be used for any business, commercial (including auctions or similar events), manufacturing, mercantile, storage, vending or other nonresidential purposes, including without limitation any activity for which the provider is compensated in any way or receives any form of consideration, regardless of whether the activity is engaged in full or part-time, generates or does not generate a profit, or requires or does not require a license; except Declarant, its successors and assigns may use any portion of the Property for a model home site and display and sales offices in accordance with **Article X** hereof. The provisions of this Section **3.3.1** shall not preclude any of the above-described activities which are conducted without external evidence thereof provided that all of the following conditions are fulfilled: (a) such activities are conducted in conformance with all applicable governmental ordinances; (b) the patrons or clientele of such activities do not routinely or in significant numbers visit the Lot or park automobiles or other vehicles within the Village; (c) the existence or operation of such activities is not apparent or detectable by sight, sound or smell from outside of the boundaries of the residence on such Lot; (d) no such activity increases the liability or casualty insurance obligation or premium of the Association; and (e) such activities are consistent with the residential character of the Village and otherwise conform with the provisions of this Declaration. The terms and provisions of this Section **3.3.1** do not apply to those portions of Improvements on Commercial Lots which are designated and intended to be used for commercial purposes. Once initially constructed, the single family residential use and commercial use portions of Improvements on Commercial Lots may be changed to single family or commercial use, as the case may be, only with the consent of the Design Committee.

3.3.2 View Obstructions. No Improvement or other obstruction shall be planted, constructed, or maintained on any Lot in such location or of such height as to unreasonably obstruct the view from any other Lot. Each Owner or resident of a Lot shall be responsible for periodic trimming, pruning and thinning of all hedges, shrubs and trees located on that portion of his Lot which is subject to his control or maintenance, so as to not unreasonably obstruct the view of other Owners or residents. If an Owner or resident fails to perform necessary trimming, pruning or thinning, the Association shall have the right, after ten (10) days prior notice requesting such work be done and the Owner or resident not having done so, to enter upon such Lot for purposes of performing such work. Each Owner, by accepting a deed to a Lot, hereby acknowledges that any construction or installation by Declarant may impair the view of such Owner, and hereby consents to such impairment.

3.3.3 Party Walls/Fences. Each wall/fence which is built as a part of the original construction by Declarant and placed on the property line between Lots shall constitute a "party wall." In the event that any party wall is not constructed exactly on the property line, the Owners affected shall accept the party wall as the property boundary. The cost of reasonable repair and maintenance of party walls shall be shared by the Owners who use such wall in proportion to such use (e.g., if the party wall is the boundary between two Owners, then each such Owner shall bear half of such cost). If a party wall is destroyed or damaged by fire or other casualty, any Owner whose Lot has use of the wall may restore it, and any other Owner whose Lot makes use of the wall shall contribute to the cost of restoration thereof in proportion to such use. The foregoing shall not prejudice the right of any such Owner to call for a larger contribution from another Owner pursuant to any rule of law regarding liability for negligent or willful acts or omissions. Notwithstanding any provision of this Section **3.3.3**, an Owner who by his negligent or willful act causes a party wall to be destroyed or damaged shall bear the entire cost of the necessary repair or reconstruction.

3.3.4 Perimeter Walls. Walls and/or fences around the exterior boundary of the Village ("perimeter walls") constructed or to be constructed by Declarant are Improvements, all portions of which are located, or conclusively deemed to be located, within the boundaries of individual Lots. By acceptance of a deed to his Lot, each Owner on whose Lot a portion of the perimeter wall is located, hereby covenants, at the Owner's sole expense, with regard to said portion of the perimeter wall ("Lot Wall"): to maintain at all times in effect thereon property and casualty insurance, on a current replacement cost; to maintain and keep the Lot Wall at all times in good repair; and, if and when reasonably necessary, to replace the Lot Wall to its condition and appearance as originally constructed by Declarant. No changes or alterations (including, without limitation, temporary alterations, such as removal of the Lot Wall for construction of a swimming pool or other Improvement) shall be made to the perimeter walls, or any portion thereof, without the prior written approval of the Design Committee. If any Owner shall fail to insure, or to maintain, repair or replace his Lot Wall within sixty (60) days when reasonably necessary, in accordance with this Section **3.3.4**, the Association shall be entitled to insure, or to maintain, repair or replace such Lot Wall, and to assess the full cost thereof against the Owner as a Special Assessment, which may be enforced as provided for in this Declaration. The foregoing notwithstanding, the Association, at its sole expense, shall be responsible for removing or painting over any graffiti from or on the exterior sides of the perimeter walls.

3.4 Use Restrictions, Maintenance Obligations and Private Easements Applicable to Commercial Areas. Subject to the exemptions of Declarant set forth in **Article X** below, and the other Declarant's rights set forth in this Declaration, all Commercial Lots shall be held, used and enjoyed subject to the following additional limitations and restrictions.

3.4.1 Prohibited Uses. No portion of a Commercial Lot shall ever be used or caused to be used or allowed or authorized to be used in any way, directly or indirectly, for any manufacturing or industrial purpose, for adult bookstores or other businesses involving the sale, use, distribution or dissemination of pornographic literature, videos, movies or similar materials, for businesses involving the sale, use, distribution or dissemination of drug paraphernalia, for automobile sales, rental, service or repair, for outdoor storage or for unlimited gaming.

3.4.2 Allowed Uses. Commercial Lots upon which Commercial Type Projects are established are intended for the commercial, personal service and public service needs of the residents of the Village and the Cold Springs community at large. Commercial Project Type uses permitted within the Village are not intended to serve regional needs. Only the following uses will be permitted:

- •Single and Multi-family dwellings
- •Professional offices
- •Medical offices
- •Medical clinics
- •Child care facilities
- •Community center
- •Cultural and library services
- •Recreation
- •Postal Services
- •Public parking facilities
- •Grooming and pet stores
- •Veterinary services
- •Neighborhood commercial center
- •Limited gaming (slots only)
- •Eating and drinking establishments
- •Meeting facilities
- •Financial Services
- •Liquor sales (on and off premises)
- •Retail sales

- •Government offices
- •Such other uses as are allowed pursuant to the governmental zoning ordinances and regulations applicable to the Village from time to time, excluding, however, those prohibited uses set forth in Section **3.4.1** above.

3.4.3 Landscape Maintenance. Without limiting the terms and provisions of the Landscape Manual (below defined in **Article VIII**), the Owner of each Commercial Lot shall properly maintain and periodically replace, when necessary, any trees, plants, grass, vegetation or other landscaping Improvements located on such Owner's Lot.

3.4.3 Parking; Vehicular Restrictions. Parking of vehicles of any type shall be restricted to designated parking areas, and no employees, agents, business invitees, tenants or customers of any Owner of a Commercial Lot shall be permitted to park in areas not so designated, or on any street (public or private) within the Property, except for purposes of loading or unloading passengers or emergency repairs. There shall be no employee parking allowed on streets fronting Commercial Lots. All deliveries or loading and unloading of goods or materials shall be restricted to designated loading docks or similar facilities. No repairs or restorations of any motor vehicle, boat, trailer, aircraft or other vehicle or equipment shall be conducted upon any street (public or private), or Lot, except wholly within a facility specifically designated for such purpose or within an enclosed garage. The Board shall determine, in its discretion, whether there is noncompliance with the parking and vehicular restrictions contained herein. These parking and vehicular restrictions shall not be interpreted in such a manner so as to permit any activity which would be contrary to any ordinance of the County. These parking and vehicular restrictions shall not apply to any public or private transportation system providing passenger shuttle service within the Property which has been approved by Declarant or the Board.

3.4.5 Animals. No animals, birds, reptiles, poultry, fish or insects of any kind shall be raised, bred or kept, except in licensed aquariums or retail pet shops operated as a business.

3.4.6 Hours of Operation. Commercial activities may be conducted on Commercial Lots only during the period of 6:00 a.m. to 11:00 p.m.; provided, however, that the Recreation Building may be operated during such additional hours as approved by the Board from time to time.

3.5 Public Streets, Sidewalks, Etc. Each and every provision of Sections **3.2, 3.3** and **3.4**, shall apply to activities conducted on, or conditions existing with respect to, all public streets, sidewalks and other public areas located within the Village, to the extent that any such activity or condition conducted or caused, or suffered to be conducted to caused, by any Owner on such public property shall be deemed to have occurred on or with respect to, such Owner's Lot; and the Association shall be entitled to exercise all powers and remedies against such Owner as though the violation had occurred on such Owner's Lot.

3.6 Violations.

3.6.1 Violation Notice. If any Owner allows, permits, or causes any condition to exist on or within such Owner's Lot or any of the Common Areas, as the case may be, or the Improvements thereon, which violates the provisions of **Article III** of this Declaration or, in the sole reasonable discretion of the Board, is unsightly, unsanitary, or hazardous (including, but not limited to, a condition which causes dust to carry to another Lot) (herein collectively "Violation"), then, except as otherwise provided in Section **3.6.6**, hereof, (in the case of an emergency), the Association shall give the Owner written notice ("Violation Notice"), specifying the nature of the Violation and a reasonable time period within which the Owner(s) must correct such Violation, as the Board determines is reasonably required, which cure period shall be no less than thirty (30) days. In the event that the Board fails to give a Violation Notice to a Owner who has defaulted in its obligation hereunder, then upon the filing with the Board of a meritorious written complaint (herein "Owner Complaint") executed by the Owners of any two (2) Lots within the Village, the Board shall have the obligation to give such Violation Notice.

3.6.2 Owner's Right to File an Objection; Hearing Panel; Arbitration. The Owner to whom a Violation Notice is given shall have the right to file a written objection thereto with the Secretary of the Association within ten (10) days after such Owner is deemed to have received such Violation Notice. In the event such an objection is filed,

and within thirty (30) days after the objection is filed, the Board may elect either (i) to convene a Hearing Panel (defined below), or (ii) submit the matter to binding arbitration pursuant to the provisions of Chapter 38 of the Nevada Revised Statutes. By acceptance of his deed or other instrument of conveyance, each Owner shall be deemed to have agreed to binding arbitration pursuant to the provisions of NRS 38.300, *et seq.*, or any successor statute, if such matter goes to arbitration.

3.6.3 Hearing Panel. In the event the Board elects pursuant to Section **3.6.2** above, to convene a Hearing Panel, then the President of the Association shall appoint, within thirty (30) days after receipt of the Owner's objection, a panel of three (3) Board Members or three (3) members of any committee of the Board established by the Board pursuant to the Bylaws (the "Hearing Panel"), at least one (1) of whom shall be an Owner of a Lot within the same type as the Lot which is the subject of the Violation Notice. The Hearing Panel shall convene no later than fifteen (15) days after its appointment for the purpose of conducting a hearing on the disputed Violation. Notice of such hearing, and time and place thereof, shall be given to the Owner to whom the Violation Notice is given and any other Owners who have filed Owner Complaints at least five (5) business days prior to the date set for such hearing. The Hearing Panel shall give written notice of its decision to the Owner against whom the Violation Notice was given as to whether or not a Violation exists and the nature of such violation. Copies of such decision shall be mailed to all persons who filed an Owner Complaint. The decision of the Hearing Panel shall be nonbinding and appealable as set forth in NRS 38.300, *et seq.*, or any successor statute. Appeals must be initiated within fifteen (15) days after the Hearing Panel renders its decision. The notice period within which a Violation must be cured shall be tolled from the date of filing such objection until the date the Hearing Panel notifies the Owner in writing of its decision and if an appeal is filed, during the pendency of the appeal.

3.6.4 Association's Right to Correct Violation. If an Owner does not appeal a Violation Notice and fails to cure the Violation within the applicable time period, or if a binding decision is rendered that a Violation exists and the Owner fails to correct a Violation within the period specified in such decision, or, if no time is specified, within a reasonable time ("cure period"), then in any such event the Association, acting through the Board, shall have the right, but not the obligation, to correct the Violation in accordance with the procedures set forth below.

3.6.5 Procedure for Association's Correction of Violation.

(a) Bids. In the event the Association elects to correct a Violation, then prior to commencement of work, if any, necessary to correct the Violation and promptly after the expiration of the cure period afforded a defaulting Owner, the Board shall obtain three (3) written bids to perform the required work and shall mail the bids to the Owner. The Owner shall have the right to select the bid by notifying the Board in writing within fourteen (14) days after the bids are mailed by the Board to the Owner. In the event the Owner fails to select a bid within such time period, the Board shall select the bid.

(b) Violation Assessment. When the bid has been selected as set forth in subsection (a), above, the Board shall levy a Violation Assessment pursuant to Section **8.7** hereof against the Owner in the amount of the cost of correcting the Violation and the costs and expenses, including attorneys' fees, incurred by the Association incident thereto.

(c) Performance of Corrective Work By Association. The Board may, at its sole option and discretion, elect to cause the corrective work to be commenced promptly after the Violation Assessment has been levied against the Owner, or elect to postpone the corrective work until after the amount of the Violation Assessment has been collected partially or in full. Neither the Association, the Board, nor any of the Association's agents, or employees shall be liable for any damage which may result from any work performed by the Association to cure a Violation.

3.6.6 Emergencies. In the event any officer of the Association believes, in his or her sole reasonable discretion, that an emergency situation exists within a Lot (including within any Improvement thereon) or within any Common Area and that immediate action or repairs are necessary to prevent or mitigate damages, then such officer or the Association's authorized agent shall have the right to exercise the Association's right of entry without notice. If after gaining entry, any officer or agent of the Association still believes in his or her sole

reasonable discretion, that immediate action or repairs are necessary to prevent or mitigate damages, then the Association shall have the right to take such action or make such repairs without notice to the Owner and without a hearing, and without obtaining competitive bids as provided above. The Association shall levy a Violation Assessment against the Owner in the amount of the cost of the necessary action or the corrective work and all costs and expenses, including attorneys' fees, incurred by the Association incident thereto. Neither the Association, the Board, nor any of the Association's agents or employees, nor any person hired by the Association to perform the necessary action or corrective work, shall be liable for any damage which may result from any work so performed on behalf of the Association.

3.6.7 Entry by Court Order. In the event a Owner prevents an officer of the Association or authorized agent of the Association from gaining access to such Owner's Lot (including within any Improvement thereon) or Common Area for the purpose of correcting a Violation or for the purpose of attending to an emergency situation, then the Owner(s) shall be jointly and severally liable to the Association for attorneys' fees, court costs and incidental expenses incurred by the Association for the purpose of gaining such entry and all other costs and expenses incident thereto (collectively "Entry Costs"), and such Entry Costs shall be assessed to the Owner as a Violation Assessment pursuant to Section **6.7** hereof.

3.6.8 Failure to Appear; Fines. In the event an Owner fails or refuses to cure a Violation as required after having been given a Violation Notice, or fails to attend the hearing on an appeal initiated pursuant to Sections **3.6.2** and **3.6.3** above, then the Board may avail itself, on behalf of the Association, of any available remedy under this Declaration or pursuant to equity or law, including, without limitation, the right to levy fines against such Owner as provided in Section **5.1.3** below. All remedies of the Association shall be cumulative, and the levy of a fine shall not be exclusive as to other remedies.

3.7 Variances. The Board is authorized to grant reasonable variances from the use restrictions set forth in this **Article III** and in the Rules and Regulations, if specific application of the restriction will, in the sole discretion of the Board, either cause an undue hardship to the affected Owner or fail to further or preserve the common plan and scheme of development and property protection intended by this Declaration. The granting of one variance shall not be considered precedent for the granting of subsequent variances. The opinions of adjoining property owners must be considered by the Board prior to approval of a variance.

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ARTICLE IV

THE ASSOCIATION

4.1 Formation. The Association is a nonprofit corporation formed or to be formed under the laws of the State of Nevada. Prior to the conveyance of the first Lot to an Owner other than Declarant, Declarant shall cause the Articles of Incorporation to be filed with the Secretary of State of the State of Nevada. The Association shall be charged with the duties and invested with the powers set forth in the Articles, Bylaws, and this Declaration. The Association is not authorized to have and shall not issue any capital stock.

4.2 Association Action; Board of Directors and Officers; Members' Approval. Except as to matters requiring the approval of members as set forth in the Articles, Bylaws, this Declaration, or Chapter 82 and 116 of the Nevada Revised Statutes, the affairs of the Association shall be conducted by the Board and such officers as the Board may elect or appoint in accordance with this Declaration or the Bylaws, or their amendments. Except for the Member of the Board appointed by Declarant in accordance with this Declaration, the Articles and the Bylaws and the members of the first Board named in the Articles, the Board shall be composed of Members only. All members of the Board must be at least eighteen (18) years of age. The members of the first Board of the Association named in the Articles shall serve until the first meeting of the Members of the Association which is called for the purpose of electing their successors. The annual meeting of the Members of the Association shall be held on the first (1st) day of March of each calendar year, or such other date as is designated by the Board; provided, the Association shall meet at least once in each calendar year, and not more than one (1) full calendar

year shall elapse between each Annual meeting of the Members of the Association. Notwithstanding the foregoing to the contrary, the foregoing requirement to hold at least one (1) Association meeting each year may be satisfied by the Board adopting a resolution for the Association to meet, for example, on the "Second Saturday in the month of February" of each year, even though more than one (1) year may have elapsed between any given second Saturdays in February. Such meeting shall be called, noticed and conducted in accordance with the Articles and the Bylaws. Except as otherwise provided in the Articles, Bylaws, this Declaration, or Chapters 82 or 116 of the Nevada Revised Statutes, all matters requiring the approval of Members shall be deemed approved if Members holding a majority of the total voting power assent to them by written consent as provided in the Bylaws or if approved by a majority vote of a quorum of Members at any regular or special meeting held in accordance with the Bylaws. The Association shall hold not less than one (1) general meeting each calendar year.

4.3 Membership.

4.3.1 Membership Qualifications. The Members of the Association shall be the Owners of the Lots. The Owner(s) of each Lot shall have one (1) membership in the Association. The number of memberships in the Association shall be equal to the number of Lots within the Village at any given time.

4.3.2 Members' Rights and Duties. As used in this Declaration, the term "Member" shall refer to the Owner of a Lot if there is one Owner, or collectively to all of the Owners of a Lot if there is more than one Owner. Each Member shall have the rights, duties, and obligations set forth in this Declaration, the Articles, Bylaws, and Rules and Regulations, as the same may from time to time be amended. Except as otherwise provided in subsections (b) and (c) of Section **4.3.3** below, the respective interests of each of the Members shall be equal.

4.3.3 Voting.

(a) General. Except as otherwise provided in subsections (b) and (c) of this Section **4.3.3**, each Member shall be entitled to one vote for each Residential Lot owned by such Member; and each Member shall be entitled to one (1) vote, plus an additional fractional vote, if applicable, for each Commercial Lot owned by such Member, determined as follows:

(1) Each Commercial Lot shall be entitled to one (1) vote, plus additional one-seventh (1/7th) multiples thereof, based on the gross square footage of the Improvements constructed on such Commercial Lot from time to time. Accordingly, Commercial Lot voting rates will vary according to the square footage of the Improvements on such Lots. For example, (i) if the gross square footage of the Improvements on a Commercial Lot is 1,400, then the Member will be entitled to one (1) vote, or (ii) if the gross square footage of the Improvements is 1,800, then the Member will be entitled to one and two-sevenths (1-2/7ths) votes or (iii) if the gross square footage of the Improvements is 1,940, then the Member will be entitled to one and three-sevenths (1-3/7ths) votes (round to the nearest one-seventh (1/7th));

(2) Voting rates shall remain constant for each fiscal year of the Association and shall be determined as of the first (1st) day of each fiscal year; provided, however, that the initial voting rate for each Commercial Lot which is unimproved shall be one (1) vote and shall be adjusted in accordance with the terms and provisions of subparagraph (1) above in mid-fiscal year only upon the issuance of a final certificate of occupancy for the initial Improvements constructed on such Commercial Lot. Thereafter, adjustments in voting rates for such Commercial Lot shall take place only as of the first day of each fiscal year of the Association. Each Commercial Lot shall be entitled to one (1) vote, regardless of the square footage of, or lack of, Improvements on such Lot.

The Association may not cast any vote otherwise allocated to it for any Lot it may own.

(b) Appointment and Removal of Members of Board and Officers of Association. Subject to the provisions of subsection (d) of this Section **4.3.3**, Declarant reserves the right to appoint and remove all of the members of the Board and all of the officers of the Association until the earlier of the following events:

(i) Sixty (60) days after conveyance of seventy-five percent (75%) of the Lots which may be created in the Property or any Annexed Property to Owners other than Declarant (herein "Purchasers"); or

(ii) Five (5) years after Declarant has ceased to offer for sale in the ordinary course of business any Lots within the Property or any Annexed Property.

Declarant shall have the right to designate a person or persons who are entitled to exercise the rights reserved to Declarant under this subsection (b). The date on which the rights reserved by Declarant under this subsection (b) terminate is herein called "the Declarant's control Termination Date." From and after the Declarant's Control Termination Date, the Board of Directors and the officers of the Association shall be elected and appointed as provided in the Articles and Bylaws.

(c) Composition of Board of Directors. Notwithstanding anything to the contrary set forth herein, not later than sixty (60) days after Declarant's conveyance of Lots equal to twenty-five percent (25%) of the total number of Lots which may be created within the Property to Owners other than Declarant, at least one member and not less than twenty-five percent (25%) of the members of the Board shall be elected by Owners other than the Declarant. Not later than sixty (60) days after conveyance of fifty percent (50%) of the Lots which may be created within the Property or any Annexed Property to Owners other than Declarant, not less than thirty-three and one-third percent (33-1/3%) of the members of the Board shall be elected by Owners other than the Declarant. Not later than on the Declarant's Control Termination Date, the Owners shall elect a Board of at least three (3) members, at least a majority of whom must be Owners.

(d) Persons Entitled to Serve on the Board. Except for the members of the Board appointed by Declarant in accordance with the Declaration, the Articles and the Bylaws, and the members of the first Board named in the Articles, all members of the Board shall be Members of the Association. Each Board member shall meet the eligibility requirements further set forth in the Bylaws. In all events where the person serving or offering to serve as an officer of the Association or member of the Board is not the record Owner, such person shall file proof of his or her authority in the records of the Association.

4.3.4 Exercise of Voting Rights. In the case of a Lot owned by two (2) or more persons or entities, the voting power shall be exercised by only one of them. Such voting member must be designated in writing to the Board by all Owners of such Lot, and the Association may preclude the vote for any such Lot by any Owner other than such designated Owner. If there is no such designation then such Lot shall have no vote until such designation is made. No vote allocated to a Lot owned by the Association may be cast.

4.4 Transfer of Membership. The Association membership of the Owner(s) of a Lot shall be appurtenant to such Lot, and shall not be assigned, transferred, pledged, hypothecated, conveyed, or alienated in any way except on a transfer of title to such Lot, and then only to the transferee. Any attempt to make a prohibited transfer shall be void. Any transfer of title or interest to a Lot shall operate automatically to transfer the appurtenant membership rights in the Association to the new owner(s). Prior to any transfer of title to a Lot (including the sale of a Lot under a recorded contract of sale), either the transferring owner or the acquiring owner shall give notice to the Board of such transfer, including the name and address of the acquiring owner and the anticipated date of transfer. The Association shall have the right to charge a reasonable transfer fee payable to the Association on the date of transfer of title to the Lot, which transfer fee shall be assessed against the Lot as a Violation Assessment if not paid when due.

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ARTICLE V

POWERS AND DUTIES OF THE ASSOCIATION

5.1 Powers. The Association shall have all the powers of a non-profit corporation organized under the laws of the

State of Nevada and the powers conferred upon it pursuant to Chapters 82 and 116 of the Nevada Revised Statutes, subject only to such limitations on the exercise of such powers as are set forth in the Articles, the Bylaws, and this Declaration. It shall have the power to do any lawful thing that may be authorized, required, or permitted to be done by the Association under this Declaration, the Articles, and the Bylaws, and to do and perform any act that may be necessary or proper for or incidental to the exercise of any of the express powers of the Association, including, without limitation, the following:

5.1.1 Assessments. The Association shall have the power to establish, fix, and levy assessments as set forth in **Article VI** hereof (herein collectively "Assessments") and to enforce payment of such Assessments in accordance with the provisions of this Declaration.

5.1.2 Rules and Regulations. Without limiting in any manner the rights of the Board to adopt and enact property usage rules and restrictions as provided in Section **3.1** above, and in addition to such rights, the Board shall have the power to adopt, amend, and repeal the Rules and Regulations regulating the use of the Common Area and for such other purposes as are expressly allowed by this Declaration or allowed pursuant to the Act. A copy of the Rules and Regulations as adopted, amended, or repealed, shall be mailed or otherwise delivered to each Member.

5.1.3 Right of Enforcement.

(a) General. The Association in its own name and on its own behalf, or on behalf of the Owners of two (2) or more Lots who consent, any Member on its own behalf, and Declarant on its own behalf, shall have the power and authority to commence and maintain actions for damages, or to restrain and enjoin any actual or threatened breach of any provision of this Declaration, the Articles, Bylaws, Rules and Regulations, or any resolutions of the Board, to enforce by mandatory injunction, or otherwise, all of these provisions, to intervene in litigation or administrative proceedings on matters affecting the Village. The Court in any such action may award the successful party reasonable expenses in prosecuting such action, including reasonable attorneys' fees.

(b) Suspension of Voting Rights; Fines. The Association shall have the power and authority to suspend the voting rights, suspend an Owner's right to use any recreational amenities comprising the Common Area, and can assess monetary penalties as allowed pursuant to the Act, against any Owner of a Lot or other person entitled to exercise such Owner's rights or privileges for any violation of this Declaration, the Articles, Bylaws or Rules and Regulations. Before invoking any such suspension or fine, the Board shall first proceed in accordance with the applicable requirements of Section **3.6**. The Association does not have the power or authority to cause a forfeiture or abridgment of an Owner's right to the full use and enjoyment of such Owner's Lot if the Owner does not comply with provisions of this Declaration or of the Articles, Bylaws, or Rules and Regulations, except when the loss or forfeiture is the result of a court judgment, arbitration decision, or a foreclosure or sale under a power of sale based on failure of the Owner to pay assessments levied by the Association. If the Association adopts a policy which allows the imposition of fines on an Owner for the violation of the Rules and Regulations and the terms and provisions of **Article III** hereof, the secretary or other officer specified in the Bylaws shall prepare and cause to be hand-delivered or sent prepaid by United States mail to the mailing address of each Lot or to any other mailing address designated in writing by the Lot's Owner, a schedule of the fines that may be imposed for those violations. Notwithstanding any other provision of this Declaration to the contrary, a fine may be assessed against an Owner for a violation of the Rules and Regulations, only if the Owner was given written notice of the applicable Rule or Regulation, and all amendments thereto, at least thirty (30) days before the alleged violation. Each fine must be commensurate with the severity of the violation, but must not exceed $100.00 for each violation or a total amount of $500.00, whichever is less. If a fine is imposed and the violation is not cured within fourteen (14) days or a longer period as may be established by the Board, the violation shall be deemed a continuing violation. Thereafter, the Board may impose an additional fine for the violation for each seven (7) day period or portion thereof that the violation is not cured. Any additional fine may be imposed without notice and an opportunity to be heard.

5.1.4 Delegation of Powers; Professional Management; Other Services. The Association, acting by and through the Board, can delegate its powers, duties, and responsibilities to committees of Members, employees, agents and

independent contractors, including a professional managing agent. The Association may obtain and pay for legal, accounting, and other services necessary and desirable in connection with the operation of the Village and the enforcement of this Declaration.

5.1.5 Personal Property. The Association may acquire and hold for the use and benefit of all the Owners tangible and intangible personal property, and may dispose of the same by sale or otherwise.

5.1.6 Other Services and Properties. The Association shall have the power to obtain or pay for, as the case may be, any other property, services, taxes, or assessments which the Association or the Board is required to secure or pay for pursuant to the terms of this Declaration, the Articles, or Bylaws, including security services for the Village generally, or which, in its opinion, shall be necessary or proper for the operation of the Association, and to incur liabilities and make contracts respecting the same.

5.2 Duties of the Association. In addition to the duties delegated to it by its Articles or the Bylaws, and without limiting their generality, the Association, acting by and through the Board, or persons or entities described in Section **5.1.3**, has the obligation to conduct all business affairs of common interest to all Members and to perform each of the following duties:

5.2.1 Professional Management. The Association may engage the services of a professional manager to manage the Village.

5.2.2 Taxes and Assessments. The Association shall pay all taxes and assessments levied against all Association Property or against the Association. Such taxes and assessments may be contested or compromised by the Association, provided that they are paid or that a bond insuring payment is posted before the sale or the disposition of any property to satisfy the payment of such taxes.

5.2.3 Insurance. The Association shall obtain and maintain, from reputable insurance companies, the insurance described in **Article VII**.

5.2.4 Operation and Maintenance of Association Property. The Association shall operate, maintain, and otherwise manage or provide for the operation, maintenance, and management of any and all Association Property, including, but not limited to, any Common Area in which the Association has a vested present interest, and all its facilities, improvements, and landscaping; including, but not limited to, any and all private streets, Association owned utilities and facilities, including, without limitation, telecommunications conduit and cabling, storm drainage and flood control systems, ditches, ponds and related improvements, and any other property acquired by the Association, including personal property. Without limiting the generality of the foregoing, the Association shall implement and comply with on a continued basis the Maintenance Schedule-Woodland Village Detention Basins set forth as **Exhibit "C"** attached hereto and incorporated herein by this reference. Such operations and management shall be conducted in a first-class manner, and the Association Property shall be maintained in a good state of repair. In this connection, the Association may enter into contracts for services or materials for the benefit of the Association Property including contracts with Declarant. Without limiting the generality of the foregoing, the Association specifically is empowered to utilize treated sewer plant effluent for use in its irrigation system. In addition, the Association may charge fees for the use of Association owned utilities. Such fees shall be charged only to those Owners utilizing such utilities from time to time, and shall be charged at such rates and in such manner as the Association deems appropriate, which may include both flat rate and metered rate methods.

5.2.5 Repair of Damaged Curb and Gutter. Without limiting the obligations of Owners as set forth in Section **3.2.18** above, the Association shall have the obligation to, and shall, repair (and replace where necessary) , all curb and gutter improvements which are damaged by trees planted within County right-of-ways.

5.2.6 Implied Authority; Easements. The Association shall perform such other acts, whether or not expressly authorized by this Declaration, or any Supplemental Declaration that may be reasonably necessary to enforce any of the provisions of this Declaration, the Articles, Bylaws, and Rules and Regulations. There is hereby

reserved to the Association such easements over the Common Areas and the Lots as are necessary to perform its duties and obligations or to exercise its rights as set forth in this Declaration, any Supplemental Declaration, the Bylaws, Articles, and the Rules and Regulations.

5.2.7 Other. The Association shall carry out the other duties of the Association set forth in the Declaration, Articles, and Bylaws.

5.3 Limitations on Authority of Board. Except with the vote or written consent of Members of the Association holding fifty-one percent (51%) of the voting rights and a majority of the voting rights allocated to Lots not owned by Declarant, the Board shall not compensate members of the Board or officers of the Association for services performed in the conduct of the Association's business. However, the Board may cause a member of the Board or an officer to be reimbursed for expenses incurred in carrying on the business of the Association.

5.4 Personal Liability. No member of the Board, or of any committee of the Association, or any officer of the Association, or any Manager, or Declarant, or any agent of Declarant, shall be personally liable to any Member, or to any other party, including the Association, for any damage, loss, or prejudice suffered or claimed on account of any act, omission, error, or negligence of any such person or entity if such person or entity has, on the basis of such information as may be possessed by him or it, acted in good faith without willful or intentional misconduct.

5.5 Meetings of Members. Meetings of Members shall be noticed and held as provided in the Articles, Bylaws, and this Declaration.

5.6 Association Books and Records and Association Property.

5.6.1 Right of Inspection. All membership registers, accounting records, and minutes of meetings of the Members, the Board, and committees of the Board, and all other books, documents and records of the Association, and the physical properties of the Association, shall be made available for inspection by any Member of the Association, or his, her or its duly appointed representative, or any mortgagee, during the regular working hours of the Association, at the office of the Association or at such other place as the Board prescribes. The right of inspection shall include the right to make copies of documents. The Board shall establish by resolution reasonable rules with respect to (a) notice to be given to the custodian of the records of the Association by the Member representative, or mortgagee desiring to make an inspection, and (b) payment of the actual cost (not to exceed .25 cents per page or such higher amount as allowed pursuant to the Act) of reproducing copies of documents requested by a Member or by a representative or mortgagee. The provisions of this Section **5.6.1** do not apply to the personnel records of the Association or the records of the Association relating to another Owner. In addition to the foregoing, the Board shall maintain and make available for review at the business office of the Association or other suitable location:

(a) The financial statement of the Association;

(b) The Budgets of the Association; and

(c) The study of the reserves of the Association required to be conducted pursuant to Section **6.4.2** below.

The Board shall provide a copy of any of the records required to be maintained pursuant to subsections (a), (b) and (c) immediately preceding to an Owner within fourteen (14) days after receiving a written request therefor.

5.6.2 Declarant's Obligation to Deliver Association Property and Records to Board. Within thirty (30) days after the Declarant's Control Termination Date, the Declarant shall deliver to the Association all property of the Owners and of the Association held by or controlled by Declarant, including:

(a) The original or a certified copy of the Declaration, the Articles, the Bylaws, minute books and other books and records of the Association and any Rules and Regulations which may have been adopted;

(b) An accounting for money of the Association and financial statements from the date the Association received money to the Declarant's Control Termination Date. The financial statements shall fairly and accurately report the Association's financial condition prepared in accordance with generally accepted accounting principles;

(c) The Association's money or control thereof;

(d) All of the tangible personal property that has been represented by the Declarant to be Association Property or, all tangible personal property that is necessary for, and has been used exclusively in, the operation and enjoyment of the Common Area, and inventories of those properties; unless Declarant has disclosed in a public offering statement that such personal property will remain the property of Declarant;

(e) A copy of any plans and specifications used in the construction of any Improvements which were completed within two (2) years before the Declaration was recorded;

(f) All insurance policies then in force, in which the Owners, the Association, or its directors or officers are named as insured persons;

(g) Copies of any certificates of occupancy that may have been issued with respect to any Improvements comprising the Village;

(h) Any other permits and approvals issued by governmental bodies applicable to the Village which are in force or which were issued within one (1) year before the Declarant's Control Termination Date;

(i) Written warranties of the contractor, subcontractors, suppliers and manufacturers that are still effective;

(j) A roster of Owners and mortgagees of Lots, if known, and their addresses and telephone numbers, if known, as shown on Declarant's records;

(k) Contracts of employment in which the Association is a contracting party;

(l) Any contract for service in which the Association is a contracting party or in which the Association or the Owners have any obligation to pay a fee to the persons performing the services.

(m) A complete study of the reserves of the Association, conducted by a person qualified by training and experience to conduct such a study;

(n) A reserve account that contains the Declarant's share of the amounts then due, and control of the account; and

(o) A disclosure, in writing, of the amount by which Declarant has subsidized the Annual Assessments on a per Lot basis.

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ARTICLE VI

ASSESSMENTS

6.1 Agreement to Pay. Declarant, for each Lot owned by Declarant, and each Owner for each Lot owned by such Owner (all such Lots owned by Declarant and such Owners collectively, at any given time, the "Assessed Lots"), hereby covenants and agrees to pay to the Association such Assessments as are made pursuant to this **Article VI**.

6.2 Personal Obligations. Each Assessment or installment thereof, together with any late charges, interest,

collection costs, and reasonable attorneys' fees, shall be the personal obligation of the person or entity who is the Owner of the Lot at the time such Assessment (or installment) became due and payable. If more than one person or entity is the Owner of the Lot, the personal obligation to pay such Assessment (or installment) respecting such Lot shall be both joint and several. Subject to the provisions of Section **9.3** hereof, a purchaser of a Lot shall be jointly and severally liable with the seller for all unpaid Assessments against the Lot, up to the time of the grant or conveyance, without prejudice to the purchaser's right to recover from the seller the amount paid by the purchaser for such Assessments. Suit to recover a money judgment for such personal obligation shall be maintainable by the Association without foreclosure or waiver of the lien securing the same. No Owner may avoid or diminish such personal obligation by non-use or abandonment of his Lot.

6.3 Purpose and Amount of Assessments. The Assessments levied by the Association shall be the amount estimated to be required, and shall be used exclusively, to promote the health, safety, and welfare of the Members of the Association, for the performance of the duties of the Association as set forth in this Declaration, and for the repair, maintenance and upkeep of the Common Area and any other Association Property. There shall be a reserve established for the repair and replacement of the major components of the Common Areas, and such reserve may be used only for Common Expenses that involve major repairs, replacements or restoration of such components, and not for daily maintenance.

6.4 Budget and Reserve Requirements.

6.4.1 Definitions. As used herein, "Annual Assessment" shall mean the amount of the Association budget ("Budget") for each fiscal year to pay the Common Expenses (defined below) as established pursuant to the provisions of this Article. The Budget must include, without limitation, the estimated annual revenue and expenditures of the Association and any contributions to be made to the reserve account of the Association. As used herein, "Common Expenses" means the expenditures made by the Association in the performance of its obligations hereunder, and the financial liabilities of the Association during the applicable fiscal year, including the costs and expenses of the daily operation of the Association and an allocation for reserves. Common Expenses include, but are not limited to, expenditures for the following purposes: (i) to operate, manage, maintain and repair the Common Area and other Association Property, and to administer the operation of the Association; (ii) to provide for reasonable reserves consistent with sound business practice for the repair, replacement and restoration of Improvements to the Common Area and any Association Property, and for such other purposes as are consistent with good business practice, and otherwise as required by NRS 116.3115(2)(b) and Section **6.4.2** of this Declaration; and (iii) to provide for the possibility that some Assessments may not be paid on a current basis. Without limiting the generality of the foregoing, Common Expenses shall include: all charges, costs, and expenses whatsoever incurred by the Association for or in connection with the Association administration, including, but not limited to, the maintenance of the Common Area; any taxes and assessments assessed against Association Property, any taxes assessed against the Association itself, insurance premiums, including fire and other casualty insurance, liability insurance, workman's compensation insurance, and other insurance obtained pursuant to this Declaration; payment of any liability of the Association whatsoever for loss or damage arising out of or in connection with the Common Area or any fire, accident, or nuisance occurring within the Common Area; the cost of repair, rebuilding and replacement of the Improvements to the Common Area; the cost of all utility services to the Common Area, including water, electricity, refuse removal, landscape maintenance services, and any other similar service attributable to the Common Area; the unpaid share of any Assessment levied during the previous fiscal year against any Owner who has defaulted in payment thereof to the extent that the same becomes uncollectible; accounting and legal fees, management fees, and cleaning, janitorial and lawn care fees, and other necessary expenses of upkeep, maintenance, management and operation incurred with respect to the Common Area and the Improvements thereon; and a contribution, on an ongoing basis, from the Association to an entity, association, agency or governmental authority chosen by the Board, which is engaged in the preservation and enhancement of mule deer habitat on the Petersen Mountain Range. Such contribution shall be at a rate of not less than $.50 per month, per Lot.

6.4.2 Reserve Requirements. That portion of the Budget specific to the reserve required by NRS 116.3115(2)(b) must include, without limitation:

(a) The current estimated replacement cost, estimated remaining life and estimated useful life of each major component of the Common Areas;

(b) As of the end of the fiscal year for which the Budget is prepared, the current estimate of the amount of cash reserves that are necessary and the current amount of accumulated cash reserves that are set aside, to repair, replace or restore the major components of the Common Areas;

(c) A statement as to whether the Board has determined or anticipates that the levy of one or more special assessments will be required to repair, replace or restore any major component of the Common Areas or to provide adequate reserves for that purpose; and

(d) A general statement describing the procedures used for the estimation and accumulation of cash reserves pursuant to subsection (b) immediately above, including, without limitation, the qualifications of the person responsible for the preparation of the study required below in this Section.

In addition to the foregoing, the Board shall:

(1) Cause to be conducted at least once every five (5) years, a study of the reserves required to repair, replace and restore the major components of the Common Areas;

(2) Review the results of that study at least annually to determine if those reserves are sufficient; and

(3) Make any adjustments it deems necessary to maintain the required reserves.

The study required by subparagraph (1) immediately above must be conducted by a person qualified by training and experience to conduct such a study, including a member of the Board, an Owner or the property manager of the Association who is so qualified. The study must include, without limitation:

(i) A summary of an inspection of the major components of the Common Areas the Association is obligated to repair, replace or restore;

(ii) An identification of the major components of the Common Areas that the Association is obligated to repair, replace or restore which have a remaining useful life of less than thirty (30) years;

(iii) An estimate of the remaining useful life of each major component identified pursuant to item (ii) immediately above;

(iv) An estimate of the cost of repair, replacement or restoration of each major component identified pursuant to item (iii) immediately above during and at the end of its useful life; and

(v) An estimate of the total Annual Assessments that may be required to cover the cost of repairing, replacement or restoration the major components identified pursuant to item (ii) immediately above, after subtracting the reserves of the Association as of the date of the study.

Money in the reserve account required by this Section **6.4.2** may not be withdrawn without the signatures of at least two (2) members of the Board or the signatures of at least one member of the Board and one officer of the Association who is not a member of the Board. The reserve account may be used only for Common Expenses that involve repairs, replacement or restoration of the major components of the Common Areas, including, without limitation, repairing and replacing roofs, roads and sidewalks, and must not be used for daily maintenance.

6.4.3 Allocation of Annual Assessments. The Annual Assessments shall be allocated among the Assessed Lots on the date the Annual Assessment for the applicable fiscal year is deemed approved, on the following basis:

(a) Residential Lots shall be assessed at the rate of one assessment unit per Lot.

(b) Commercial Lots shall be assessed at the rate of one assessment unit, plus one-seventh (1/7th) multiples thereof, based on the gross square footage of the Improvements constructed on such Commercial Lot from time to time.

(c) As used in this Section **6.4.3**, "assessment unit" shall mean 1,400 square feet; provided, however, that Residential Lots, regardless of the square footage of Improvements located thereon, shall be levied with one assessment unit. Commercial Lot assessment rates will vary according to the square footage of the Improvements on such Lots. For example, (i) if the gross square footage of the Improvements on a Commercial Lot is 1,400, then the assessment rate will be one (1) assessment unit, or (ii) if the gross square footage of the Improvements is 1,800, then the assessment rate will be one and two-sevenths (1-2/7ths) or (iii) if the gross square footage of the Improvements is 1,940, then the assessment rate will be one and three-sevenths (1-3/7ths) (round to the nearest one-seventh (1/7th).

(d) Assessment rates shall remain constant for each fiscal year once set. In the absence of another reasonably reliable source for such square footage number, the gross square footage of Improvements shall be determined as the total square footage of improvements disclosed in the Washoe County Tax Assessor's records for such Commercial Lot. Each Commercial Lot shall be levied a minimum of one (1) assessment unit, regardless of the square footage of, or lack of, Improvements on such Lot.

6.4.4 Procedure for Establishing Annual Assessments. Not less than ninety (90) days before the beginning of each fiscal year of the Association, the Board shall meet for the purpose of preparing the proposed Budget for the next succeeding fiscal year and establishing the Annual Assessment for such fiscal year. Not less than thirty (30) nor more than sixty (60) days before the beginning of each fiscal year of the Association, the Board shall adopt a proposed Budget for such fiscal year, provide and distribute a copy of such proposed Budget to each Owner, and set a date for a meeting of the Owners to consider ratification of the Budget, which date shall be not less than fourteen (14) nor more than thirty (30) days after mailing of the proposed Budget. Unless at that meeting sixty-six and two-thirds percent (66-2/3%) of all Owners vote to reject the proposed Budget, the proposed Budget shall be deemed ratified by the Owners, whether or not a quorum is present at such meeting. If the proposed Budget is so rejected, the Budget last ratified by the Owners shall be continued until such time as the Owners ratify a subsequent Budget proposed by the Board.

In lieu of distributing copies of the Budget required by this Section **6.4.4**, the Board may distribute to each Owner a summary of the Budget, accompanied by a written notice that the Budget is available for review at the business office of the Association or other suitable location and that copies of the Budget will be provided upon request.

6.5 Special Assessments. If the Board determines that the estimated total amount of funds necessary to defray the Common Expenses for a given fiscal year is or will become inadequate to meet the Common Expenses for any reason, including, but not limited to, delinquencies in the payment of Assessments, or in the event the Association has insufficient reserves to perform its obligations under this Declaration, then the Board shall determine the approximate amount of such shortfall, shall provide a summary thereof to all of the Owners with the Board's recommendation for a special assessment ("Special Assessment") to meet such shortfall, and shall set a date for a meeting of the Owners which is not less than fourteen (14) nor more than thirty (30) days after the mailing of the summary. Unless at that meeting a majority of all Owners votes to reject the proposed Special Assessment, the proposed Special Assessment shall be deemed ratified by the Owners, whether or not a quorum is present at such meeting, and shall become a Special Assessment against, and allocated equally to, the Owners of the Lots. The Board may, in its discretion, provide for payment of any Special Assessment in any number of installments or provide that it is payable in one (1) installment within such time period as the Board deems reasonable.

6.6 Capital Improvement Assessments.

6.6.1 Association's Power to Levy; Definition. The Association shall have the power to levy assessments for Capital Improvements ("Capital Improvement Assessments") on the terms and conditions set forth below. As used herein "Capital Improvement" means (i) any Improvement upon the Common Area which is not a repair or replacement of an existing Improvement, or (ii) any expenditure relating to the Common Area which is outside the ordinary course of business of the Association.

6.6.2 Petition; Association Approval.

(a) Owners of not less than twenty-five percent (25%) of the Lots comprising the Village from time to time may petition the Association for the construction, installation, or acquisition of, or expenditure for, a Capital Improvement. Such petition shall be in writing and be in such form and shall contain such information as the Board may reasonably require. The Board may, on its own motion, move for the construction, installation, or acquisition of, or expenditure for, a Capital Improvement, in which case such motion shall be treated as if it were a petition duly submitted by Owners of three (3) or more of the Lots.

(b) Upon receipt of a petition for a proposed Capital Improvement or if the Board desires to propose a Capital Improvement, the Board shall obtain three (3) estimates from licensed contractors for the construction of the Capital Improvement.

(c) The Board shall submit the Capital Improvement proposal to the Members at the annual meeting, or a special meeting called for such purpose. Written notice of any meeting during which an assessment for a capital improvement is to be considered shall be delivered to each Owner not less than twenty-one (21) calendar days prior to such meeting and otherwise as required by this Declaration, the Bylaws and the Act. The Capital Improvement Assessment shall be deemed approved upon the affirmative vote of two-thirds (2/3rds) of the voting power of the Association and Declarant unless Declarant owns no Lots within the Property.

6.6.3 Levy of Capital Improvement Assessments. Capital Improvement Assessments shall be levied in equal proportions against the Owners of all of the Lots. The Owners of each Lot shall be assessed a fractional portion of such Assessment, the numerator of which fraction shall be one and the denominator of which shall be the sum of the number of Lots within the Property on the date such Assessment is levied. A Capital Improvement Assessment shall be paid in such installments and during such period or periods as shall be voted upon by the Members at the time such Assessment is approved. If no terms of payment are specified by such vote of the Membership, then the Capital Improvement Assessment shall be due and payable upon terms set by the Board.

6.6.4 Expenditure for Capital Improvement. After the levy of the Capital Improvement Assessment and the collection of the entire Capital Improvement Assessment, or a sufficient portion thereof as the Board deems prudent, then the Board shall cause the Capital Improvement to be constructed, installed, or acquired, or shall contract for the extraordinary expenditure constituting the Capital Improvement.

6.6.5 Deficiency in Capital Improvement Assessment. If at any time and from time to time a Capital Improvement Assessment proves or appears likely to be inadequate for any reason, including nonpayment of any Owner's share thereof, the Board may, subject to the limitations set forth in this Section **6.6.5** levy a further Capital Improvement Assessment in the amount of such actual or estimated inadequacy, which shall be assessed to the Owners of all of the Lots within the Subject Property and any Annexed Property in the ratios defined in Section **6.6.3** hereof. If such additional assessment is in excess of five percent (5%) of the original Capital Improvement Assessment, the affirmative vote or written consent of a majority of the voting power of the Association shall be required for any such further assessment.

6.7 Violation Assessments. The Board shall have the power to levy "Violation Assessments" against Owners as authorized by this Declaration and for the purpose of collecting reasonable fines imposed by the Association or the Board as allowed by the Act and in accordance with the terms and provisions of this Declaration or pursuant to the Rules and Regulations. The Board shall levy a Violation Assessment against the Owners of a Lot: (i) to pay for the cost of curing any Maintenance Violation of such Owners and/or any other work performed by the

Association for such Owners' account pursuant to the provisions of this Declaration, and any costs or expenses incident thereto, including, but not limited to, attorneys' fees and court costs, and (ii) to collect liquidated damages and fines levied by the Association pursuant to the terms of this Declaration and any and all attorneys' fees and court costs.

6.8 Utilities Assessments. Any utility service delivered to the Lots for which the Association is billed shall, in turn, be billed by the Association to such Lots, at a uniform rate, on a monthly basis. Such billings shall be considered an assessment levied against each such Lot, and shall be enforced in accordance with the terms and provisions of this **Article 6**.

6.9 Rate of Assessment. Except as otherwise specifically provided in this Declaration, all Assessments levied by the Association must be fixed at an equal rate for all Lots; and the amount assessed to each Lot shall be determined by dividing the total amount assessed by the total number of Lots then within the Village and subject to assessment.

6.10 Assessment Period. The Annual Assessment period shall coincide with the fiscal year of the Association, which shall commence on January 1 of each year and shall terminate on December 31 of such year. However, the initial Annual Assessment period shall commence on the first day of the calendar month following the earlier of (i) the date the Common Area or any portion thereof is transferred to the Association and (ii) the date on which the sale of the first Lot in the initial phase of the Village is closed and recorded; and the Annual Assessment period as to all Lots in each subsequent phase of the Village, respectively, shall commence on the first day of the calendar month following the date on which the sale of the first Lot to a purchaser in such phase is closed and recorded, and shall terminate on December 31 of the year in which such sale is closed and recorded. The first Annual Assessment and all Special Assessments shall be adjusted according to the number of months remaining in the fiscal year and shall be payable in equal monthly installments unless the Board adopts some other basis for collection.

6.11 Notices of Assessments; Delinquencies. Any Assessment installment hereunder which is not paid within fifteen (15) days following the date it is due shall be deemed delinquent. All delinquent Assessments shall bear interest at the rate of eighteen percent (18%) per annum (or such higher or lower rate as is proscribed by the Act) from the date the Assessment becomes delinquent hereunder until paid, and, in addition, a late charge of TWENTY-FIVE AND NO/100THS DOLLARS ($25.00) shall be due for each delinquent installment. The Association shall give written notice of all Assessments, except Violation Assessments, to the Owners of the Lots, which notice shall specify the amount of the Assessment and the date or dates payment of the same is due and shall be given in the manner provided for notices in this Declaration. Notice of a Violation Assessment is required to be given only to the Owners of the Lot against whom the Violation Assessment is made. Nothing contained herein shall be construed so as to require the Association to give periodic notices of the same Assessment; and one notice of an Assessment shall be sufficient to meet the requirements of this Section, even though the Assessment may be payable in installments. Failure of the Association to give notice of any Assessment shall not affect the liability of the Owners of the Lot for such Assessment; provided, however, that the date when payment of the first installment of such Assessment shall become due in such a case shall be deferred to a date fifteen (15) days after such notice shall have been given, and the first installment of such Assessment shall not be deemed delinquent until fifteen (15) days after such deferred due date.

6.12 Statement of Account. Upon payment of a reasonable fee, not to exceed TWENTY-FIVE AND NO/100THS DOLLARS ($25.00), and upon written request of any Owner or any mortgagee, prospective mortgagee, or prospective purchaser of a Lot, the Association shall issue a written statement setting forth the amount of the unpaid assessments, if any, with respect to such Lot, the amount of the current periodic assessment, and the date that such assessment becomes or became due, and if there is any credit for advance payments. Such statement shall be conclusive upon the Association in favor of persons who rely thereon in good faith. Unless such request for a statement of account shall be complied with within ten (10) business days following receipt of the written request and fee, all unpaid assessments which became due prior to the date of making such request shall be subordinate to the lien of a mortgagee which acquired its interest subsequent to

requesting such statement.

6.13 Collection of Assessments. The right to collect and enforce Assessments is vested in the Board acting for and on behalf of the Association. The Board or its authorized representative can enforce the obligations of the Owners to pay Assessments provided for in this Declaration by commencement and maintenance of a suit at law or in equity; or the Board may enforce by judicial proceedings or, to the extent permitted by applicable law, through the exercise of the power of sale granted to the Board pursuant to applicable statutes and laws, and this Declaration. Suit to recover a money judgment against an Owner for unpaid assessments together with all other amounts due hereunder shall be maintainable without first foreclosing against the Lot which is subject to the lien for such assessment or waiving the lien rights granted hereby.

6.14 Lien for Assessments; Priority. All sums assessed to any Lot pursuant to this Declaration, and all fines imposed by the Association against the Owners of a Lot, together with interest thereon as provided herein, shall be secured by a lien on such Lot in favor of the Association from the date the Assessment or fine becomes due. If an Assessment or fine is payable in installments, the full amount of the Assessment or fine is a lien from the time the first installment thereof becomes due. Such lien shall be prior to all other liens and encumbrances on such Lot, except for: (a) valid tax and special assessment liens in favor of any governmental assessing authority; (b) liens and encumbrances recorded before the recordation of the Declaration; and (c) a First Deed of Trust recorded before the date on which the Assessment or fine sought to be enforced became delinquent. The lien created by this Declaration for unpaid Annual Assessments is also prior to a First Deed of Trust to the extent of the amount of such Annual Assessments which would have become due during the six (6) month period immediately preceding institution of an action to enforce the lien.

6.15 Enforcement of Lien.

6.15.1 Notice of Delinquent Assessment and Notice of Default. Except for liens attributable to an Owner's failure to pay a fine or fines imposed for a violation which does not threaten the health, safety or welfare of the residents of the Village, which lien must be foreclosed judicially, the Association may foreclose all liens by sale pursuant to NRS Chapter 116 after:

(a) The Association has mailed in accordance with NRS 116.31162, or any successor statute, a notice of delinquent assessment (herein "Notice of Delinquent Assessment"), which states the amount of the Assessments or fines which are due together with all interest and late charges thereon in accordance with the provisions of this Declaration, a description of the Lot against which the lien is imposed, and the name of the record Owner of the Lot; and

(b) The Association or other person conducting the sale has executed and caused to be recorded with the County Recorder, a notice of default and election to sell the Lot to satisfy the lien ("Notice of Default"), which shall contain the same information as the Notice of Delinquent Assessment, but which shall also describe the deficiency in payment and the name and address of the person authorized by the Association to enforce the lien by sale; and

(c) The Owners of the Lot or their successors in interest have failed to pay the amount of the lien, including interest and late charges, and costs, fees and expenses incident to its enforcement for a period of sixty (60) days which commences on the first day following the later of:

(i) The day on which the Notice of Default is so recorded; and

(ii) The day on which a copy of the Notice of Default is mailed by certified or registered mail, return receipt requested, to the Owners of the Lot or their successors in interest at their address if known, or otherwise to the address of the Lot.

6.15.2 Notice of Sale. The Association or other person conducting the sale shall, at any time after the expiration of such sixty (60) day period and before selling the Lot, give notice of the time and place of the sale ("Notice of

Sale") in the manner and for a time not less than that required by law for the sale of real property upon execution, except that a copy of the Notice of Sale must be mailed, on or before the date of first publication or posting, by certified or registered mail, return receipt requested, to the Owners of the Lot or their successors in interest at their address if known, or otherwise to the address of the Lot. Such sale shall be conducted in any manner permitted by law. Each Owner who is liable for payment of the Assessment shall be required to pay the costs and expenses of such foreclosure proceeding including, but not limited to, the cost of preparation of all notices (whether or not such notice has been given to the Owners at the time payment is made), reasonable attorneys' fees, and title insurance costs.

All such costs and expenses of the foreclosure shall be secured by the lien being foreclosed. Each Owner who is liable for payment of the Assessment shall be required to pay to the Association any and all Assessments against such Owner which shall become due during the period of foreclosure. The Association shall have the right and power to bid at the foreclosure sale or other legal sale and to acquire, hold, convey, lease, rent, encumber, use, and otherwise deal with the Improved Lot. The Association shall be entitled to bid on credit up to and including the amount secured by the lien being foreclosed.

A further notice stating the satisfaction and release of any such lien shall be executed by the Association and recorded in the Washoe County, Nevada, real estate records, upon payment of all sums secured by such lien.

Any encumbrancer holding a lien on a Lot may, but shall not be required to, pay any amounts secured by a lien for unpaid assessments, and upon such payment, such encumbrancer shall be subrogated to all rights of the Association with respect to such lien, including rights of priority.

6.16 Surplus Funds. Any surplus funds of the Association remaining after payment of or provision for Common Expenses and any prepayment of reserves must be paid to the Owners in proportion to their liabilities for Common Expenses or credited to them to reduce their future assessments for Common Expenses.

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ARTICLE VII

INSURANCE

7.1 Insurance to be Obtained. The Association shall obtain and maintain in full force and effect at all times insurance coverage, provided by companies duly authorized to do business in Nevada, generally as set forth in this Article, and specifically as required by NRS §§ 116.3113 and 116.31133 and the United States Department of Veterans Affairs ("VA") and the United States Department of Housing and Urban Development ("HUD") if the Village has been, or is intended to be, qualified with such entities.

7.2 Casualty Insurance. The Association shall obtain a master policy of insurance equal to full replacement value (i.e., 100% of current "replacement cost" exclusive of land, foundation, excavation, and other items normally excluded from coverage) on all insurable Improvements upon the Common Area and any other Improvements under the control of the Association (including all building service equipment and the like and any fixtures or equipment within such improvements) and all other personal property commonly owned by the Owners. Such insurance shall include fire and extended coverage, vandalism and malicious mischief, and such other risks and hazards against which the Association shall deem it appropriate to provide insurance protection. The Association shall comply with the above requirements by the purchase of a policy containing such coverage with "deductible" provisions as in the Association's opinion are consistent with good business practice, provided that in no event shall such deductible be in an amount greater than the lesser of $10,000.00 or one percent (1%) of the face amount of such policy.

7.3 Liability Insurance. The Association shall purchase broad form comprehensive liability coverage in such amounts and in such forms as it deems advisable to provide adequate protection. Such coverage shall be in an amount generally required by private institutional mortgage investors for projects similar in construction,

location, and use, and in no event shall be less than $1,000,000.00 for bodily injury, including deaths of persons and property damage arising out of a single occurrence. Coverage shall include, without limitation, liability for personal injuries, operation of automobiles on behalf of the Association and activities in connection with the ownership, operation, maintenance, and other use of the Village. The liability insurance shall name as separately protected insured's Declarant, the Association, the Board, and their representatives, members, and employees, with respect to any liability arising out of the maintenance or use of any Association property. Every policy of insurance obtained by the Association shall contain an express waiver, if available, of any and all rights of subrogation against Declarant, the Board, and their representatives, members, and employees. After Declarant has no further interest in any portion of the Village, then the above insurance provisions regarding Declarant shall not apply.

7.4 Workmen's Compensation and Employer's Liability Insurance. The Association shall purchase workmen's compensation and employer's liability insurance and all other similar insurance in respect of employees of the Association in the amounts and in the forms now or hereafter required by law.

7.5 Fidelity Insurance. The Association shall purchase insurance covering officers and employees of the Association and employees of any manager or managing agent, whether or not any such persons are compensated for their services, against dishonest acts on their part, or in lieu thereof, a fidelity bond, naming the Association as obligee, written in an amount equal to at least the estimated maximum of funds, including reserves in the custody of the Association or the management agent at any give time during the term of the fidelity bond. However, the bond shall not be less than a sum equal to three (3) months aggregate assessments on all Lots, plus reserve funds.

7.6 Other Insurance. The Association may obtain insurance against such other risks, of a similar or dissimilar nature, as it shall deem appropriate with respect to the Village, including any personal property of the Association located thereon.

7.7 Premiums and Reviews. Except as provided above, premiums for all of the foregoing insurance carried by the Association shall be a common expense and shall be included in the assessments or charges made by the Association. The Board shall review the limits of all insurance policies of the Association at least once a year and adjust the limits as the Board deems necessary or appropriate.

7.8 Form. Casualty insurance shall be carried in a form or forms naming the Association the insured. Each policy shall also provide that it cannot be canceled by either the insured or the insurance company until after ten (10) days' written notice is first given to the Association and to each first mortgagee. All policies of insurance shall provide for a waiver of subrogation by the insurer as to claims against the Association, the Board, employees, and agents, and against each Owner and each Owner's employees, agents, and guests, and shall provide that the insurance cannot be canceled, invalidated, or suspended on account of the conduct of the Association, the Board, employees, and agents or of any Owner or such Owner's employees, agents, or guests, and shall provide that any "no other insurance" clause in the insurance policy shall exclude any policies of insurance maintained by any Owner or mortgagee and that the insurance policy shall not be brought into contribution with insurance maintained by any Owner or mortgagee.

7.9 Owner's Insurance Responsibilities. The following insurance coverages shall be the responsibility of each respective Owner: insurance on items of personal property placed in an Improvement by Owner; insurance for hazard, casualty and public liability coverage within each Lot, including, without limitation, all structures located therein; and insurance coverage for activities of the Owner, not acting for the Association, with respect to the Common Area.

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ARTICLE VIII

DESIGN COMMITTEE

8.1 Design Committee. There shall be a committee ("Design Committee"). During any time that Declarant retains Special Declarant's or Developmental Rights pursuant to **Article X** hereof, the Design Committee shall be comprised of not less than three (3) members who shall be appointed by Declarant; and such members need not be Members and may be employees, agents or representatives of Declarant. After Declarant no longer retains any Special Declarant's or Developmental Rights, or at any earlier time as Declarant relinquishes its right to appoint the Design Committee by written notice of such relinquishment to the Board, the Design Committee shall be comprised of the Board; provided, however, that the Board may appoint a committee of not less than five (5) members, at least two (2) of whom must be Members, and remainder of whom need not be Members.

8.2 Duties. It shall be the duty of the Design Committee to consider and act upon such proposals or plans submitted to it pursuant to the terms hereof, to adopt Design Committee Rules, to enforce, amend and supplement the Landscape Manual (below defined), to perform other duties delegated to it by the Association, and to carry out all other duties imposed upon it by this Declaration.

8.3 Meetings. The Design Committee shall meet from time to time as necessary to properly perform its duties hereunder. The vote or written consent of any two (2) members shall constitute an act by the Design Committee unless the unanimous decision of its members is otherwise required by this Declaration. The Design Committee may charge a filing fee to be used to pay an architect, who may or may not be a member of the Design Committee, to review the submitted plans and specifications. The Board may reimburse members for reasonable expenses incurred by them in the performance of any Design Committee function.

8.4 Design Committee Rules; Landscape Manual. The Design Committee shall from time to time and in its sole discretion adopt, amend, supplement and repeal by unanimous vote rules and regulations to be known as "Design Committee Rules" interpreting and implementing the provisions of this **Article VII** and setting forth fees to be charged and procedures, and design, and construction criteria to be followed in submitting proposals to the Design Committee. As part of the original Design Committee Rules, Declarant has prepared a landscape manual (the "Landscape Manual") for the Village, a copy of which is attached hereto as Exhibit "D" and incorporated herein by this reference. The Landscape Manual is deemed a part of this Declaration for all purposes and is enforceable in the same manner as the terms and provisions of this Declaration.

The terms and provisions of the Landscape Manual may be amended and supplemented by the Design Committee from time to time as part of its power and authority to enact the Design Committee Rules, provided any such amendment or supplement may not impose any new or additional material burden, economic or otherwise, on any Owner of a Lot which has been sold previously by Declarant; but such amendments or supplements may apply to Lots owned by Declarant and may impose new or additional material landscape requirements and restraints, provided Declarant consents to such retroactive application in writing to the Association. Notwithstanding the foregoing to the contrary, even as to existing Owners changes or addition to the terms and provisions of the Landscape Manual shall be applicable to any replacement of landscaping or portions thereof on a Lot including, without limitation, trees, shrubs, ground cover materials, irrigation facilities and all other matters which are the subject of the Landscape Manual. A copy of the Design Committee Rules and Landscape Manual, as they may from time to time be adopted, amended, or repealed, certified by any member of the Design Committee, shall be maintained by the office of the Association and shall be available for inspection and copying by any Owner at any reasonable time during the business hours of the Association.

8.5 Application for Approval of Plans and Specifications. Any Owner of a Lot proposing to make any Improvements or to perform any other work that requires the prior approval of the Design Committee shall apply to the Design Committee for approval by notifying the Design Committee of the nature of the proposed Improvement(s) and work. Prior to the commencement of construction, the Owner shall submit to the Design Committee for its review and approval such information and materials as the Design Committee in the exercise of its reasonable discretion deems necessary for it to be adequately informed with respect to the Improvement(s) and work to be undertaken by such Owner. The Board, upon request from the Design Committee, may deliver a Violation Notice to any Owner who commences or prosecutes the construction or installation of any

Improvement on a Lot without complying fully with the terms and provisions of this **Article VIII**, or who fails to complete any such Improvement in the time and manner required pursuant to this **Article VIII**, the Design Committee Rules or the Landscape Manual.

8.6 Basis for Approval of Improvements. The Design Committee shall grant the required approval only if:

8.6.1 The Owner shall have strictly complied with the provisions of Section **8.5**; and

8.6.2 The Design Committee finds that the plans and specifications conform to this Declaration, the Design Committee Rules and the Landscape Manual, as applicable, as in effect at the time such plans were submitted to the Design Committee; and

8.6.3 The Design Committee in its reasonable discretion determine that the proposed Improvements would be compatible with the other property in the Village and the purposes of the Declaration as to the quality of workmanship and materials, as to harmony of external design with existing structures, and as to other existing aesthetic characteristics of the Village.

8.7 Basis for Disapproval of Improvements. The Design Committee may disapprove any application on aesthetic grounds, and more specifically: (a) because of the reasonable dissatisfaction of the Design Committee with the Improvement proposed to be erected or installed, because of the materials of which it is to be built or comprised, the harmony thereof with its surroundings, or any additional maintenance, repair or replacement burden such matter would impose upon the Association; or (b) because of non-compliance with any of the specific conditions and restrictions contained in this Declaration, the Design Committee Rules or the Landscape Manual.

8.8 Form of Approval. All approvals or disapprovals given under Sections **8.5** or **8.6** shall be in writing; provided, however, any request for approval which has not been rejected within sixty (60) days from the date of submission thereof to the Design Committee shall be deemed approved. The approval may be conditioned upon the deposit by the Owner of a performance bond, cash deposit, or other undertaking to assure completion of the approved Improvement in accordance with the terms of the approval once construction thereof is commenced.

8.9 Proceeding with Work. Upon receipt of approval from the Design Committee pursuant to Section **8.6**, the Owner shall, as soon as practicable, satisfy all conditions thereof and diligently proceed with the commencement and completion of all construction, reconstruction, installation, refinishing, alterations, and excavations pursuant to the approval. Except as may be required otherwise by the Landscape Manual, construction and installation of the approved Improvements shall commence, in all cases, within one year from the date of such approval. If the Owner shall fail to comply with this Section, any approval given pursuant to Section **8.6** shall be deemed revoked unless the Design Committee, upon written request of the Owner made prior to the expiration of the one-year period, extends the time for such commencement. No such extension shall be granted except upon a finding by the Design Committee that there has been no change in the circumstances upon which the original approval was granted.

8.10 Failure to Complete Work. Except for such shorter period of time as may be provided for in the Landscape Manual, the Owner shall complete the construction, reconstruction, installation, refinishing or alteration of any such Improvement within one year after commencing construction thereof, except and for so long as such completion is rendered impossible or would result in great hardship to the Owner due to strikes, fires, national emergencies, natural calamities, or other supervening forces beyond the control of the Owner or his agents.

8.11 Waiver. The approval by the Design Committee of any plans, drawings, or specifications for any work done or proposed or for any other matter requiring the approval of the Design Committee under this Declaration or any Supplemental Declaration shall not be deemed to constitute a waiver of any right to withhold approval of any similar plan, drawing, specification, or matter subsequently submitted for approval.

8.12 Liability. Provided that the Design Committee or a particular member of the Design Committee has acted in good faith on the basis of the information as may be possessed by the Design Committee or the member, as the

case may be, then neither the Design Committee nor any member thereof shall be liable to the Association, to any Owner, or any other person for any damage, loss, or prejudice suffered or claimed on account of: (a) the approval or disapproval of any plans, drawings, and specifications, whether or not defective, with respect to the construction or performance of any work, whether or not such performance complied with approved plans, drawings, and specifications; (c) the development of any property subject to this Declaration. Without limiting the generality of the foregoing, the Design Committee and any member thereof may, but it is not required to, consult with or hear the views of the Association or any Owner with respect to any plans, drawings, specifications, or any other proposal submitted to the Design Committee.

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ARTICLE IX

PROTECTION OF LENDERS

9.1 Encumbrance of Lots Permitted. Any Owner may encumber such Owner's Lot with a Deed of Trust.

9.2 Subordination. Except as provided otherwise by the Act or **Article VI** hereof, any lien created or claimed under **Article VI** of this Declaration is subject and subordinate to the lien of any First Deed of Trust encumbering any Lot, unless the priority of such First Deed of Trust is expressly subordinated to such assessment lien by a written instrument duly recorded.

9.3 Non-Liability for Unpaid Assessments. Any beneficiary of a First Deed of Trust who acquires title to a Lot pursuant to the judicial or non-judicial foreclosure remedies provided in the Deed of Trust shall take the Lot free of any claims for unpaid assessments or Association charges against the encumbered Lot that accrue greater than six (6) months prior to the time such beneficiary so acquires ownership of the Lot; provided, however, after the foreclosure of any such Deed of Trust, such Lot shall remain subject to the Declaration; and the amount of all regular and special assessments, to the extent they relate to expenses incurred subsequent to such foreclosure sale, shall be assessed hereunder to the grantee or purchaser thereunder.

9.4 Breach of Covenants. A breach by an Owner of any of the provisions of this Declaration, shall not defeat or render invalid the lien of any Deed of Trust made in good faith and for value as to the Village or any portion thereof; provided, however, the provisions of this Declaration shall be binding upon the Owners whose title thereto is acquired under foreclosure, trustee's sale, or otherwise.

9.5 Notice to Eligible Mortgage Holders, Insurers and Guarantors. The holder of any First Deed of Trust shall be entitled to become an "Eligible Mortgage Holder" pursuant to the provisions of this Declaration and any insurer or guarantor of a First Deed of Trust shall be entitled to become an "Eligible Insurer" hereunder by notifying the Association of its name, address and the address of the Lot encumbered by the First Deed of Trust which it holds or insures in the manner provided in Section **11.5** below. Such notification shall be deemed to be a request with respect to such Lot for written notice from the Association of: (i) any default in the payment of Assessments which remains uncured for a period of sixty (60) days; (ii) any condemnation or casualty loss that affects a material portion of the Village or the Lot; (iii) any lapse, cancellation or material modification of any insurance policy or fidelity bond maintained by the Association; and (iv) any proposed action described in Section **9.9** below. The Association shall give written notice to Eligible Mortgage Holders in accordance with the provisions of this Section **9.5** and in the manner prescribed in Section **11.5** below. Any holder of a First Deed of Trust encumbering any Lot or any portion of the Property who does not so request notice, shall not be deemed to be an Eligible Mortgage Holder under the terms of this Declaration. Unless and until notice is given to the Association as provided in this Declaration by a mortgage holder, insurer or guarantor, such mortgage holder, insurer or guarantor shall not be entitled to notice of default, nor to any right, distribution or notice pursuant to this Declaration.

9.6 Insurance Proceeds and Condemnation Awards. No provision of this Declaration or the Articles shall give an Owner, or any other party, priority over any rights of the holders of First Deeds of Trust in the case of a

distribution to Owners of insurance proceeds or condemnation awards.

9.7 Appearance at Meetings. Because of its financial interest in the Village, any beneficiary of a First Deed of Trust may appear (but cannot vote) at meetings of the Members and the Board, and may draw attention to violations of this Declaration that have not been corrected or made the subject of remedial proceedings or Assessments.

9.8 Examination of Records. The holders of First Deeds of Trust shall have the right to examine at reasonable times the books and records of the Association and can require the submission of financial data concerning the Association, including annual audit reports and operating statements as and when furnished to the Owners.

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ARTICLE X

SPECIAL DECLARANT'S AND DEVELOPMENTAL RIGHTS

10.1 General. Declarant and any Successor Declarant may be undertaking the work of constructing Improvements to and upon the Village and adding real property to the Village in accordance with the terms and provisions of this **Article X**. The completion of such construction and the sale or other disposition of Lots within the Village is essential to the establishment and welfare of the Village as a planned community. The covenants contained in this **Article X** are personal to Declarant and any Successor Declarant, and may only be transferred by a written assignment duly recorded from a Declarant to a Successor Declarant, or from a Successor Declarant to another Successor Declarant.

10.2 Special Declarant's Rights. Declarant hereby reserves unto itself the rights to:

10.2.1 Complete all Improvements within the Village, including, but not limited to, those indicated on Plats or Plans or described in this Declaration;

10.2.2 Maintain at least one (1) sales office and management office within the Village which may be relocated from time to time.

10.2.3 Maintain signs advertising the Village, which signs may be maintained anywhere in the Village, excluding Lots owned by Owners other than Declarant;

10.2.4 Use easements through the Common Area for the purpose of making Improvements within the Village; and

10.2.5 Appoint or remove any officer of the Association or any member of the Board at any time and from time to time prior to the Declarant's Control Termination Date.

Nothing in this Article shall give the Declarant the right to damage any Lot or Improvement not owned by Declarant or interfere unreasonably with the Owners' use of the Common Areas; and Declarant's right to so use the Village shall terminate upon final completion of construction of the Village, including all future Phases, except as required for maintenance and repair obligations conducted by Declarant which may continue after such date.

10.3 Declarant's Developmental Rights. Declarant hereby reserves unto itself the right to add real estate to the Village and create Common Areas within such real estate as follows:

10.3.1 Property Subject to Annexation. Declarant hereby reserves unto itself the right to cause to be annexed to this Declaration as part of the Village from time to time all or a portion of the real property described in **Exhibit "B"** to this Declaration, provided that a Final Map shall have been recorded for the real property to be so annexed, and to create within the real property so annexed an additional two thousand nine hundred fifteen

(2,915) Lots and Common Area for a maximum total of three thousand (3,000) Lots. In addition, Declarant reserves the right to add unspecified real property to the Village in the manner provided for in Section 116.2122 of the Act. No assurances are made by Declarant prior to the annexation of any portion of a parcel of such real property as to the size or configuration of such portion, or the order in which any such portion may be annexed. If any portion of a lot of such real property is annexed to the Village, there are no assurances that any other portion or all of such parcel will be annexed.

10.3.2 Manner of Annexation. Such real property shall be annexed by recording in the real estate records of the County Recorder of Washoe County, Nevada, a supplemental declaration ("Supplemental Declaration") executed by Declarant describing the real property to be so annexed and declaring that such property shall thereafter be deemed to be Annexed Property as defined in this Declaration and declaring that such Annexed Property shall be held, conveyed, sold, encumbered, leased, rented, used, occupied, improved or otherwise affected in any manner subject to the provisions of this Declaration. Such Supplemental Declaration may set forth any additional restrictions or covenants which may be applicable to such Annexed Property, provided that such additional restrictions shall not be in any manner materially less restrictive or inconsistent with the provisions of this Declaration. In the event of any inconsistency between the provisions of this Declaration and those of a Supplemental Declaration, the provisions of this Declaration shall control.

10.3.3 Effect of Annexation. Upon recordation of the Supplemental Declaration described in Section **10.3.2** above, the real property described in the Supplemental Declaration shall become Annexed Property as defined herein and shall be subject to all of the provisions of this Declaration.

10.4 Rights and Obligations of Owners. Without limiting the generality and effect of the provisions of Section **10.3.3**, after the required annexation procedures are fulfilled, the following shall have been effected thereby:

10.4.1 all Owners in the Village shall be entitled to use the Common Area in the Annexed Property, subject to the provisions of the Declaration and the Applicable Supplemental Declaration;

10.4.2 Owners of Lots in the Annexed Property shall thereupon become Members of the Association, shall be subject to the provisions of the Declaration and shall be entitled to use the Common Areas of the Village;

10.4.3 all Owners of Lots in the Annexed Property shall have the same membership and voting rights as other Owners. Votes shall not be cast separately by Phase; and

10.4.4 after each annexation, the Association assessments shall be reassessed with Assessed Lots in the Annexed Property being assessed for a proportionate share of the total expenses of the Village on the same basis as the other Assessed Lots in the Village; provided, however, that such reassessment shall not alter the amount of any assessment assessed to a Lot prior to such reassessment.

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ARTICLE XI

MISCELLANEOUS PROVISIONS

11.1 Duration. The provisions of this Declaration shall continue and be effective for a period of fifty (50) years from the date of recordation hereof and shall be automatically extended for successive periods of ten (10) years each until (i) the Owners of at least eighty percent (80%) of the Lots within the Village shall execute a written instrument, which may be executed in counterparts, in recordable form declaring that the provisions of this Declaration shall terminate, and (ii) such written instrument is recorded in the office of the Recorder of Washoe County, Nevada.

11.2 Amendment. Except as otherwise provided in NRS Section 116.2117 and below, this Declaration may be amended by vote or agreement of not less than sixty-seven percent (67%) of the voting power of the

Association. Notwithstanding the foregoing to the contrary, (i) Sections **3.2.18, 3.2.20, 5.2.4, 5.2.5** and **11.3.6** may not be amended without the written consent of the County and (ii) Sections **3.4.1** and **3.4.2** may be amended only by the written vote or agreement of Owners holding not less than eighty percent (80%) of the voting power of the Association. All such amendments must be in writing, and prepared, executed, recorded and certified on behalf of the Association by an officer of the Association designated for such purpose or, by the President of the Association in the absence of such designation. Such amendment shall be recorded in the office of the County Recorder of the County in which the Property is located.

11.3 Enforcement and Waiver.

11.3.1 Owner's Right of Enforcement. In addition to the rights of enforcement granted to the Association pursuant to the provisions of Section **5.1.2** hereof, any Owner shall have the right (but not the duty) to enforce any and all of the covenants, conditions, and restrictions now or hereafter imposed by this Declaration upon the Owners or upon any of the Property. Except as expressly provided otherwise in Section **11.3.6** below, nothing herein shall be construed as creating a third party beneficiary contract in favor of parties who are not Owners or Eligible Mortgage Holders.

11.3.2 Violations and Nuisance. Every act or omission whereby a covenant, condition, or restriction of the Declaration is violated in whole or in part is hereby declared to be a nuisance and may be enjoined or abated, whether or not the relief sought is for negative or affirmative action.

11.3.3 Violation of Law. Any violation of any state, municipal, or local law, ordinance, or regulation pertaining to the ownership, occupation, or use of any portion of the Property is hereby declared to be a violation of this Declaration and subject to any or all of the enforcement procedures herein set forth.

11.3.4 Remedies Cumulative. Each remedy provided by the Declaration is cumulative and not exclusive.

11.3.5 Nonwaiver. The failure to enforce the provisions of any covenant, condition, or restriction contained in the Declaration shall not constitute a waiver of any right to enforce any such provisions or any other provisions of the Declaration.

11.3.6 Enforcement by County. The County is hereby made an intended third party beneficiary as to the tree planting, maintenance and removal obligations of the Association and Owners as provided in Section **3.2.18**, and as to the Association's storm drainage, detention basin and flood control obligations as provided in Sections **5.2.4** and **5.2.5**, with full power and authority to enforce the provisions of such Sections in the same manner as the Association and Owners as provided in this Declaration and otherwise pursuant to applicable law.

11.4 Termination of Former Owner's Liability for Assessments. Upon the conveyance, sale, assignment, or other transfer of a Lot to a new Owner, the transferring Owner shall not be liable for any Assessments levied with respect to such Lot after notification of the Association of such transfer in the manner provided in Sections **4.4** and **11.5** hereof and the payment of a transfer fee as provided in Section **4.4** hereof. No person, after the termination of his status as an Owner and prior to his again becoming an Owner, shall incur any of the obligations or enjoy any of the benefits of an Owner under this Declaration.

11.5 Notices. All notices hereunder to the Association or the Board shall be sent by regular mail, or registered or certified mail, return receipt requested, addressed to the Board at the address of the Manager, or to such other place as the Board may designate from time to time by notice in writing to the Owners of all of the Lots. Until the Owners are notified otherwise, all notices to the Association or to the Board shall be addressed as follows:

Woodland Village Homeowners Association
P.O. Box 7548
Reno, Nevada 89510

All notices given by the Association to any Owner shall be sent by regular mail, or by registered or certified mail,

return receipt requested, to such Owner's Lot address or to such other address as may be designated by such Owner from time to time, in writing, to the Board. All notices to Eligible Mortgage Holders shall be sent by registered or certified mail, return receipt requested, at the address to which such Eligible Mortgage Holder has last requested that notice be sent by notifying the Association in the manner provided in this Section **11.5**. All notices shall be deemed to have been received within seventy-two (72) hours after the mailing thereof, except notices of change of address which shall be deemed to have been given when actually received.

11.6 Approvals. Any consent or approvals by the Board or Design Committee shall be in writing.

11.7 Construction and Severability; Singular and Plural; Titles.

11.7.1 Restrictions and Easements Construed Together. All of the covenants, conditions, restrictions and easements of this Declaration shall be liberally construed together to promote the purposes of this Declaration as set forth herein.

11.7.2 Restrictions and Easements Severable. The covenants, conditions, restrictions and easements contained in this Declaration shall be deemed independent and severable; and the invalidity or partial invalidity of any provision or portion hereof shall not affect the validity or enforceability of any other provision.

11.7.3 Singular Includes Plural. The singular shall include the plural and the plural the singular unless the context requires the contrary; and the masculine, feminine, or neuter shall each include the masculine, feminine, and neuter, as the context requires.

11.7.4 Captions. All captions or titles used in this Declaration are intended solely for convenience of reference and shall not affect that which is set forth in any of the provisions of any Section.

12. Special Rights of VA. So long as Declarant retains Special Declarant's Rights pursuant to NRS 116.3103(4), the following shall require the prior approval of VA: (i) annexation of additional real property to the Village, (ii) de-annexation, (iii) mergers and consolidations, and (iv) all special assessments and amendments to this Declaration. A draft of any amendment to this Declaration should be submitted to the VA for its approval prior to its approval by the Association.

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IN WITNESS WHEREOF, the undersigned have executed this Declaration as of the day and year first above written.

COLD SPRINGS 2000,
a Nevada corporation

By:_____

Its:_____

STATE OF NEVADA)

)ss.

COUNTY OF _____)

This instrument was acknowledged before me on _____, 2000,
by _____,
as _____ of COLD SPRINGS 2000, a Nevada corporation.

_____

Notary Public

My Commission Expires: _____

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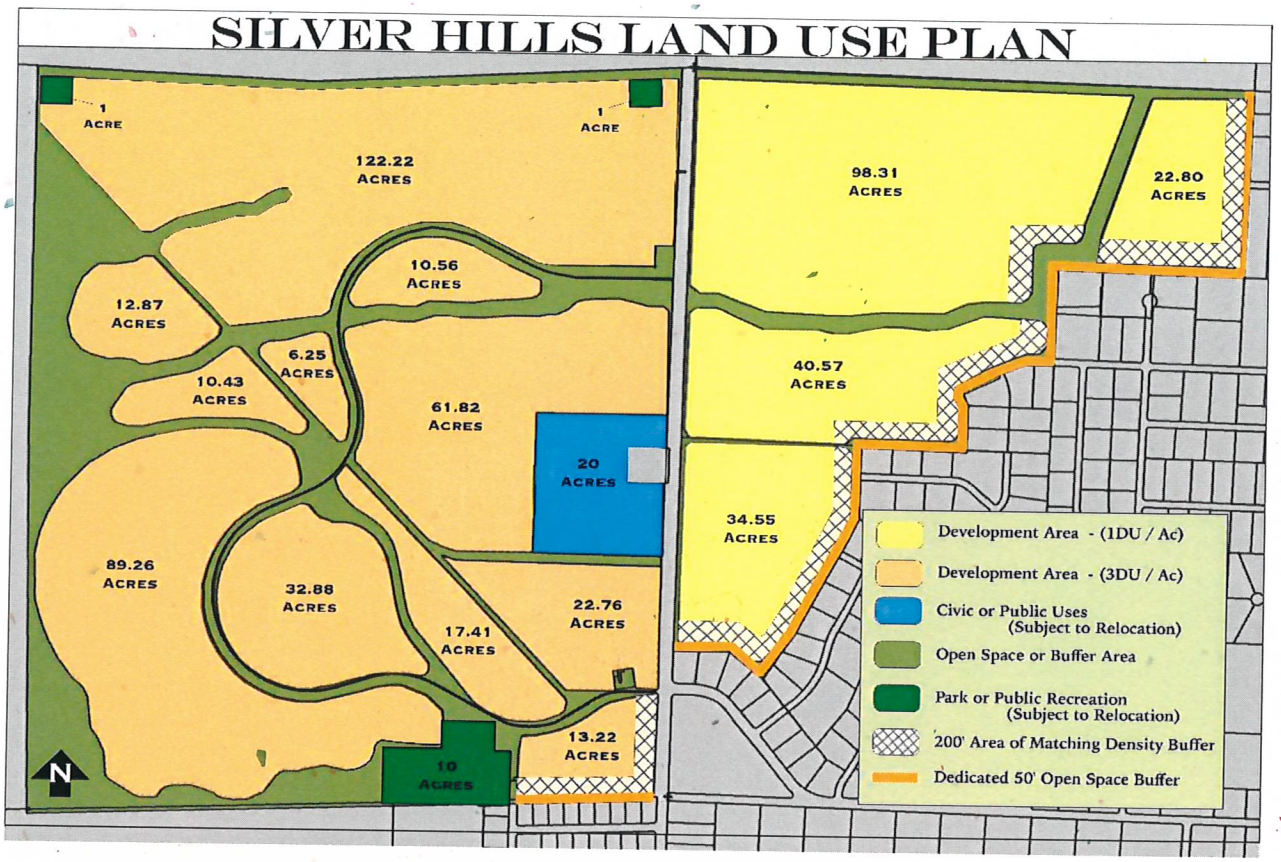
This Site Last Updated On:
Saturday, September 21, 2002
Thank You For Visiting

This Site Maintained and Developed by: Your Neighbor

SILVER HILLS

SPECIFIC PLAN DEVELOPMENT STANDARDS



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SILVER HILLS

DEVELOPMENT STANDARDS HANDBOOK

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CHAPTER 1 – INTRODUCTION

1.1 Specific Plan Area

The Silver Hills Specific Plan area consists of 780.32± acres located within the North Valleys Areas Plan. Specifically, Silver Hills (APN #'s 087-390-10, 087-390-13, 086-232-31, and 086-203-05) is located on the east and west sides of Red Rock Road, north of Silver Knolls. The project site is separated from the Cold Springs Valley by a large ridgeline that runs along the western boundary of the project. Figure 1-1 (below) depicts the Specific Plan Area covered by this Handbook.

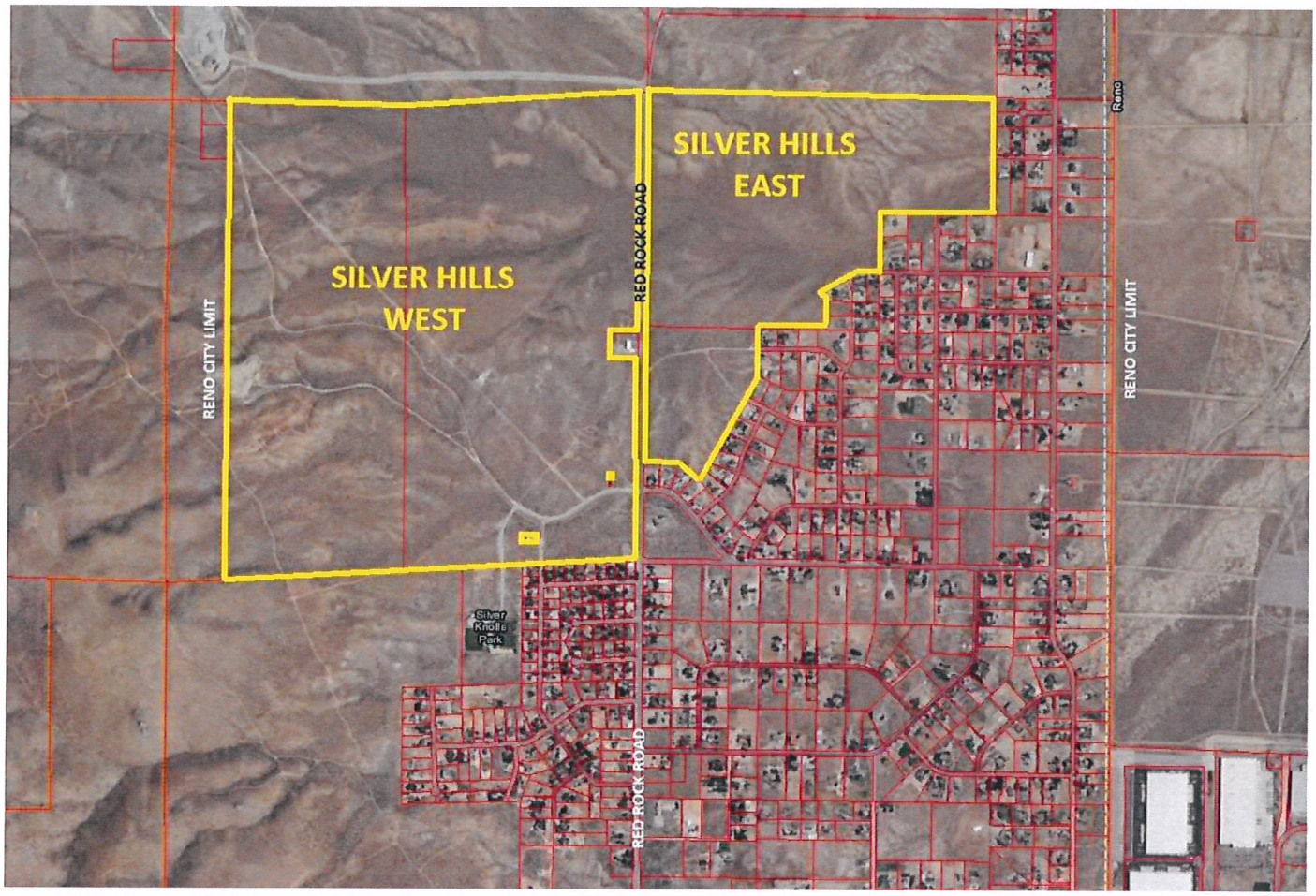


Figure 1-1 – Specific Plan Area

1.2 Statement of Plan and Purpose

The purpose of this Development Standards Handbook (Handbook) is to provide for the orderly development of the Silver Hills Specific Plan Area (Specific Plan) and ensure that the high-quality development contemplated with this Handbook is carried forward through all phases of the project. This is accomplished through the implementation of the uses, design standards, and improvements defined within this Handbook.

Since implementation of public and private improvements will occur in multiple phases, over many years, the standards and guidelines contained herein establish a common framework to guide future tentative maps and improvement plans. Development of Silver Hills is ultimately controlled and restricted by these development standards as well as the applicable policies of the North Valleys Area Plan and requirements of the Washoe County Development Code.

Upon adoption, Washoe County shall review future tentative map and/or development requests in context with the uses and regulations provided herein. The purpose of this Handbook is not intended to limit creativity or prevent variation necessary to respond to unique site conditions, etc. Instead, the Handbook ensures consistency and quality throughout Silver Hills. Additionally, the Handbook includes enforceable standards to ensure that all new development within Silver Hills properly relates to the surrounding uses and existing conditions.

The Silver Hills Specific Plan and this Handbook have been developed to meet the ever-growing need for housing within the North Valleys. Specifically, the plan provides for a wider mix of housing opportunities to meet the needs of a broad range of the area's population. The North Valleys is, and is planned to be, one of the largest employment centers in the region. As such, Silver Hills will serve to provide a jobs/housing balance within the North Valleys. The benefits to this planning approach are numerous and include:

- The opportunity to reduce commute times and commuter trips.
- The ability to live in close proximity to jobs, schools, parks, and open space.
- Creating a sense of community through common design elements.
- The ability to provide housing for multiple segments of the market.
- Preservation of key natural features.
- Provision of parks, open space, public facilities, and community amenities that can be enjoyed by all residents.
- Implementation of "smart growth" concepts and standards.
- Ensuring that new development properly relates to existing uses.
- Providing a high-quality community that residents and Washoe County can be proud of.

Most importantly, the purpose of the Silver Hills Specific Plan is to provide housing that results in a higher quality of life for its residents and those living within the area.

1.3 Community Theme and Vision

This Handbook serves to adopt a general overall theme for the Silver Hills community which includes unique development standards and the opportunity for innovative concepts such as an agrihood, varied single family housing types, etc. The Specific Plan area is characterized by rolling terrain that afford views across the valley, past Reno-Stead Airport. Although the majority of the property is less than 15% slope, topography varies from flat to steep terrain along the western ridgeline, creating the opportunity to incorporate a "mountain ranch" theme. It is planned to incorporate numerous evergreen plantings along with unique landscape and open space treatments that may include fruit orchards, gardens, ponds, and natural open spaces that accentuate the views, natural terrain, and site features. The use of wood/timbers, stone accents, evergreens, craftsman style architecture, and rustic detailings serve to reinforce a mountain feel within the project. Once again, standards are included later in this Handbook that serve to implement the project theme.

1.3.1 Community Benefits

The Silver Hills Specific Plan establishes guidelines that provide opportunity for unique single family housing types and community amenities. As Silver Hills develops in multiple phases over a 15 to 20 year period, the opportunity to incorporate innovative amenities such as community gardens may occur. As the rapidly growing popularity of concepts such as agrihoods demonstrates, families are eager to reimagine these collaborative efforts in a new setting, with a variety of price points to meet the needs of various life stages. This Handbook establishes the ability to remove the pressure of seeking family-oriented activities outside of the community and invest in community lifestyle, through the provision of parks, open space, trails, and various other community amenity options. This creates a sense of place and community and provides a better quality of life for residents.

There are numerous positive "side-effects" of a master-planned community. By providing community amenities and neighborhood retail opportunities, residents are more likely to recreate and socialize within the community which can also reduce traffic impacts. Additionally, this can reduce crime naturally as neighbors feel connected to where they live and invest in caring about their community.

A central feature of the Silver Hills plan is the provision of significant open space and recreational opportunities. The standards contained herein provide opportunity for open spaces that perhaps could be planted with ancient grains which provide good low water use soil cover/stabilization and can be either harvested or cut and left to regrow the following season. This results in a clean, environmentally respectful design that utilizes precious resources with far greater efficiency by encouraging joint use, reducing overall home maintenance, providing pedestrian access to resident needs, and making an adaptable community. Resident lives can be simplified giving then more time to enjoy friends and family.

Open space and landscaping standards are designed to incorporate smart water recycling and responsible development practices in addition to neighborhood-supporting commercial and the potential for mini-farms or orchards, while placing an emphasis on a walkable neighborhood concept. The Silver Hills Specific Plan respects the surrounding environment by creating housing density with less sprawl, where resources are focused around low maintenance yards, passive solar lot placement (as feasible), solar options, and emphasis on activities within the community. The resource emphasis is placed at the center of the community where the benefit is used and enjoyed by all community members.

With full buildout estimated at 10 - 15+ years, Silver Hills will grow as the need of good community- oriented housing is required. Within Silver Hills land design practices will create retention basins that act also as a green environment for residents with high density plantings and places for children to safely explore. Concepts like a tractor park, a bike and skate park, and natural "mini- parks" such as those placed at the end of cul- de-sacs that invite rather than cut off the sense of community are all envisioned for Silver Hills.

Rather than a bedroom community or suburb of disconnected neighborhoods, Silver Hills will embody the desire for residents to feel a sense of place and community pride. Plantings that use recycled water (to the extent possible) will not only impact the question of how to manage waste water but will reduce soil erosion and transpiration by returning the water into trees, shrubs, and ground cover. The Silver Hills Specific Plan emphasizes recycled water use for common area landscape, natural pathways and potentially "micro" orchards, grapes, berries, and beneficial insect habitat plantings.

1.3.2 Sense of Place

Creating a sense of place is one of the key components in creating a vibrant and balanced community. A sense of place will be developed within Silver Hills through the creation of human-scale environments in which residents will feel both comfortable and safe. Open space and trail connections will tie the community together, encouraging residents to get our and explore their community, interacting with their neighbors. Uniform design standards tie the community together and provide for amenities that encourage both active and passive recreation.

1.3.5 Implementation

The vision for Silver Hills will be implemented through the adoption and enforcement of the design standards and requirements included within this Handbook. The Washoe County Department of Planning and Building will use this Handbook as a guide for reviewing projects (i.e. tentative maps, special use permits, etc.) proposed within Silver Hills. All new development shall comply with the standards and requirements listed herein, as applicable. In cases where a specific standard is not addressed, the provisions/requirements of the Washoe County Development Code shall be applied.

1.4 Relationship to Existing Plans

Silver Hills is located within the North Valleys Area Plan, an element of the Washoe County Master Plan. This Handbook and the standards contained herein are designed for compatibility with the goals, policies, and character management statement of the Silver Hills Suburban Character Management Area, as adopted concurrently with this Handbook, and incorporates input from the community as expressed at numerous community meetings and visioning workshops. The Silver Hills land use plan is consistent with both goals and policies of the North Valleys Area Plan and Truckee Meadows Regional Plan in that it provides for a jobs/housing balance within the area and serves to address the housing needs of the community as a whole through diversification in housing size, style, and density.

Consistent with the Area Plan, the overall density within Silver Hills will not exceed 2.5-dwelling units per acre. Clustering of density will occur within the boundaries of the Specific Plan to accommodate a variety of housing styles and products. However, consistent with the provisions of the Washoe County Development Code, no individual project within Silver Hills (i.e. tentative map area) may exceed the maximum dwelling units per acre permitted within the Specific Plan zone. Furthermore, multi-family housing shall not be permitted within Silver Hills. Attached single-family products such as duplexes, town homes, etc. shall be permitted in areas designated for such on the Land Use Plan adopted with this Handbook and are subject to density limitations outlined in the Washoe County Development Code. Consistent with the Truckee Meadows Regional Plan, the Silver Hills Specific Plan does not increase density on areas of slope in excess of 30%.

Silver Hills provides for consistency with the Conservation Element of the North Valleys Area Plan through the conservation and preservation of open space and prominent ridgelines within the Specific Plan boundaries. Additionally, this Handbook includes standards to address any applicable natural hazards that may arise including, but not limited to geologic hazards, flood zones, etc. The plan also preserves and implements provisions related to utility corridors contained in the Washoe County Master Plan, Development Code, and Truckee Meadows Regional Plan.

A complete traffic impact analysis has been completed for Silver Hills. Improvements triggered by new development within the Specific Plan have been identified and standards included to ensure that improvements are made at the appropriate time and that specific triggers for the improvements are defined. This ensures full compliance with transportation plans adopted by Washoe County and the Regional Transportation Commission.

Upon final adoption and recordation, this Handbook and its associated content, standards, and requirements shall be deemed consistent with the North Valleys Area Plan as well as with the Truckee Meadows Regional Plan. The Washoe County Board of Commissioners shall be the authoritative body to determine compliance with conformance review by the Truckee Meadows Regional Planning Agency, as applicable.

1.5 Silver Hills Land Use Plan

Silver Hills includes a land use plan that allows for single family detached and attached housing at various densities. Consistent with the Suburban Master Plan designation of the Specific Plan Area, overall density within the plan boundaries will not exceed 2.5 dwelling units per acre. Thus, **the maximum number of residential units within Silver Hills is capped at 1,872.**

Figure 1-2 (below) depicts the land use plan for Silver Hills. Land use designations and development standards associated with them are fully defined in the following chapter.

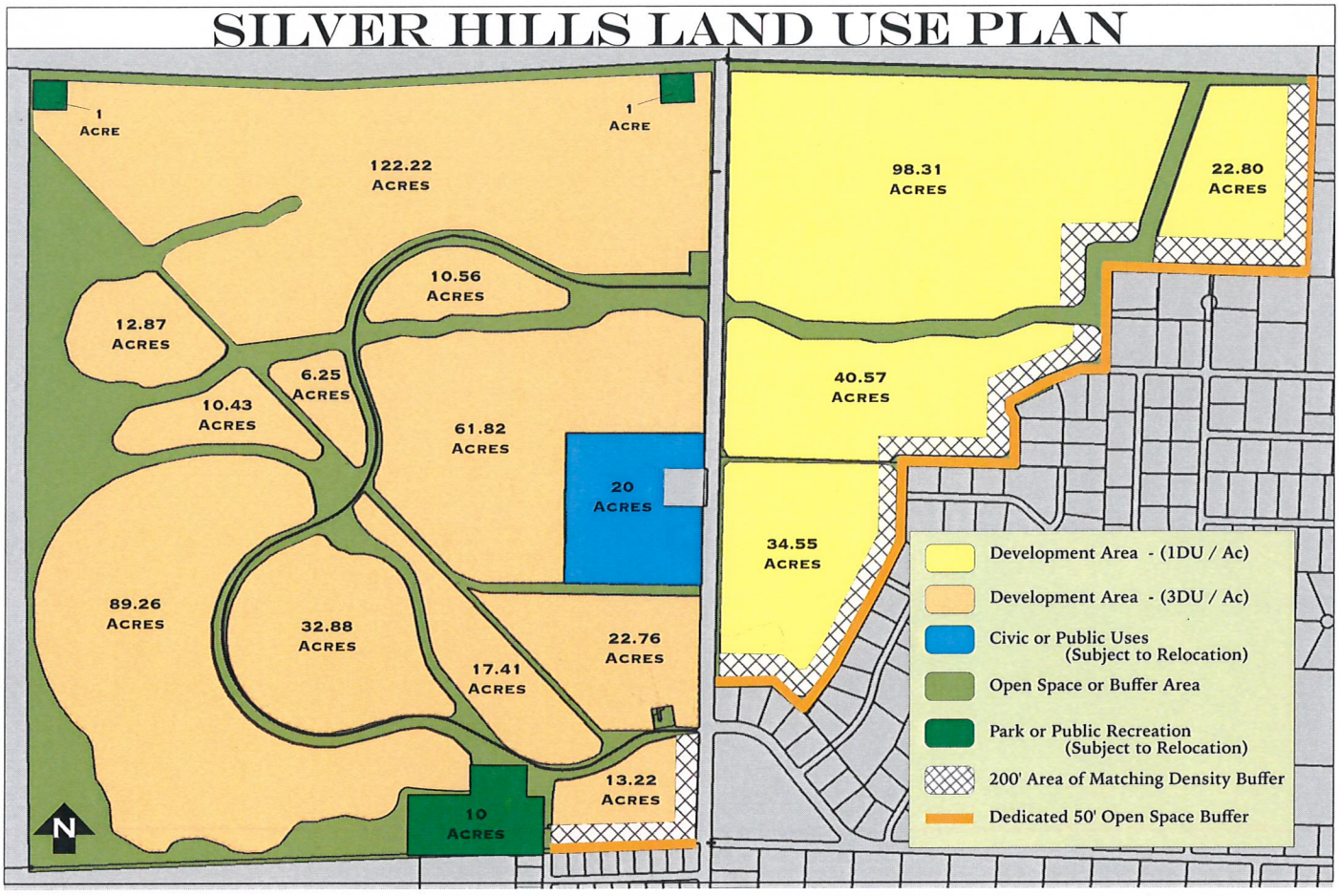


Figure 1-2 – Silver Hills Land Use Plan

The Silver Hills land use plan takes on an uncomplicated approach by identifying development areas based on overall suitability. Rather than creating multiple land use categories for residential areas, simplified categories are created based on community character. Specific densities are not designated for development areas. Instead, individual project densities are regulated through the provisions of the Silver Hills Development Standards as defined in Chapter 2, along with site-specific conditions. An exception to this are areas within the Specific Plan located east of Red Rock Road. This area will maintain an overall density of 1 dwelling unit per acre, subject to the provisions included in Chapter 2.

The Development Standards include specific requirements that were derived based on the development suitability analysis. Overall project density is capped at a maximum of 2.5 dwelling units per acre and total units shall not exceed 1,872. Densities within individual projects (i.e. tentative maps) are subject to the standards of the Washoe County Development Code and the requirements for Common Open Space Development, along with supplemental requirements of this handbook.

Open Space, Public Facility/Civic, and Parks/Recreation use categories are defined on the land use plan as well and are also subject to the development standards included within Chapter 2.

Table 1-1 (below) summarizes the Silver Hills land use plan.

Table 1-1 – Silver Hills Land Use Summary

Land Use Designation	Area (acres)	Land Use Concept
Residential Development Areas	595.91±	Provides for single-family residential uses at varying densities (as allowed per the Common Open Space Standards) along with limited community-oriented commercial uses, as regulated in Chapter 2.
Public Facility/Civic Use	20±	Reserved for public community facilities such as schools, libraries, fire station, etc.
Open Space	152.41±	Dedicated open or common areas. No development shall be permitted with the exception of recreational facilities, utilities, etc. May be public or private.
Park	12±[1]	Reserved for public park facilities.
TOTAL	780.32±	-----

1 – Excludes interior neighborhood parks.

1.6 Site Suitability

The Silver Hills land use plan was developed based on a complete and thorough analysis of site conditions including topography, access, significant site features, availability of utilities, surrounding conditions, etc.

1.6.1 Site Analysis

A comprehensive site analysis was completed utilizing the criteria defined in section 110.442.30(2) of the Washoe County Development Code. This includes a comprehensive slope analysis to determine the base criteria for development suitability. Additionally, an opportunities and constraints analysis was completed to identify significant site features, logical access points, natural hazards/constraints, etc. **Adoption of the Silver Hills Specific Plan does not result in additional density on slopes greater than 30%.**

Figures 1-3 (below) and 1-4 (following page) provide the slope analysis and opportunity and constraints analysis for the Silver Hills Specific Plan area.

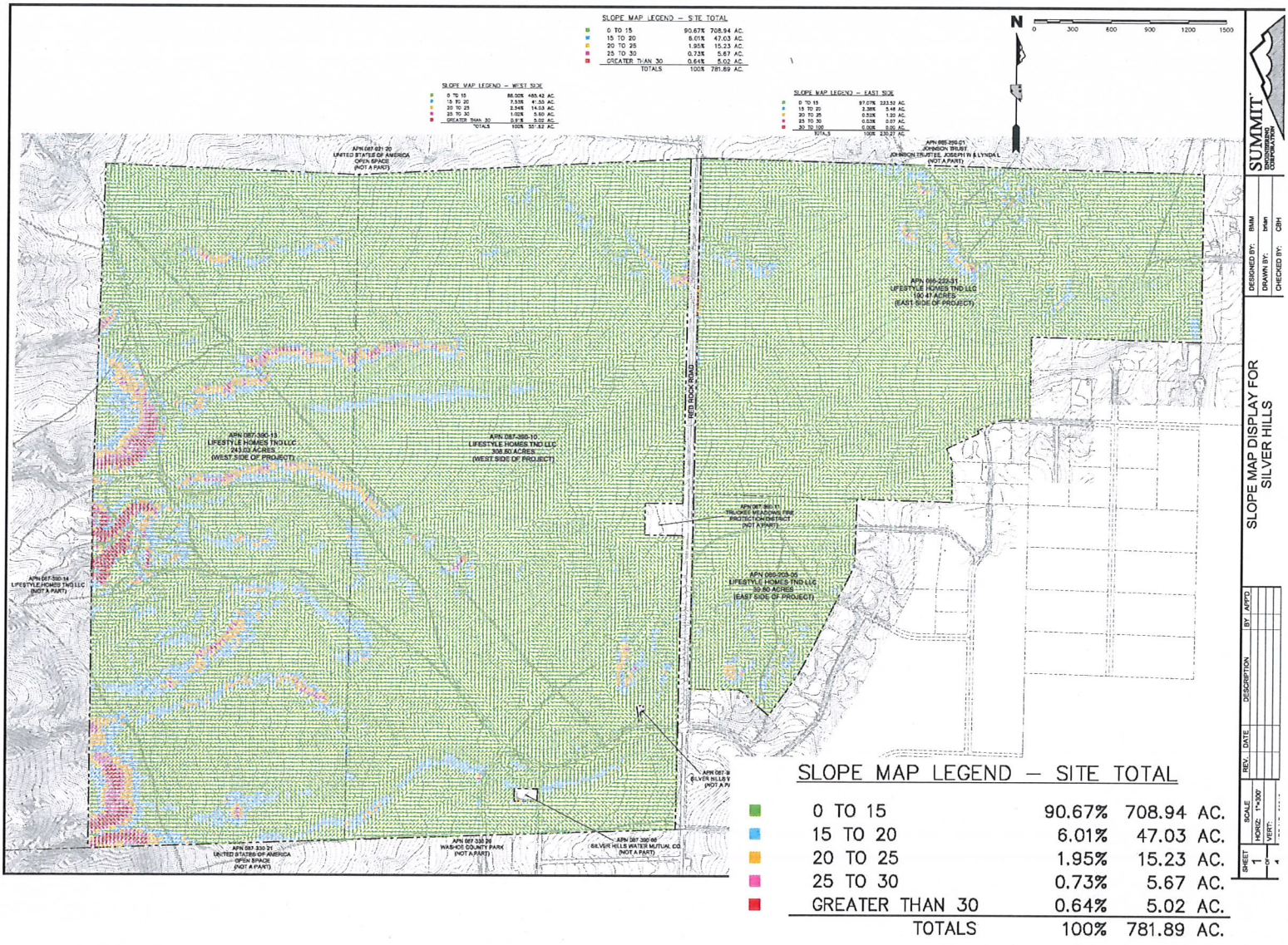


Figure 1-3 – Slope Analysis

Figure 1-4 – Opportunities and Constraints Analysis

1.6.2 Development Code Analysis

Section 110.442.30(2) of the Washoe County Development Code requires a site analysis of the Specific Plan area to determine areas of constraint and common open space, as completed with Figure 1-4. Also, each of the individual considerations from the Development Code is addressed below:

(a) Adjacent Land Use – Adjoining land use includes a mix of vacant, residential, and public facility uses. The Specific Plan area is bordered by public lands to the north and vacant land to the west (within the City of Reno). There is a large BLM parcel to the south along with Silver Knolls Park and approximately 10 developed single-family lots (approximately ½ acre in size) that adjoin the project at the southeast corner of the Specific Plan area. A volunteer fire station also lies adjacent to the plan area along the Red Rock Road frontage. Open space surrounds the entire perimeter of the western Specific Plan area, including a dedicated 50-foot buffer adjacent to existing homes to the south. The east side of the Specific Plan includes vacant land to the north with developed lots to the south and east, averaging approximately one acre in size. As detailed later in this Handbook, density matching standards along with a 50-foot open space buffer are included at the perimeter of Silver Hills in areas that adjoin existing development.

(b) Existing Structures – There are no existing onsite structures. There are two outparcels located internal to the Specific Plan area that include utility infrastructure and structures. However, these parcels are excluded from the Specific Plan.

(c) Existing Vegetation – Existing onsite vegetation is typical of the Nevada high desert and includes a mix of grasses and brush, including sagebrush, rabbit brush, etc. There are no mature trees located within the Specific Plan boundary. There is significant disturbance to native vegetation within Silver Hills that has resulted from off road vehicles, bicyclists, motorcycles, etc. including trails, berms, etc.

(d) Prevailing Winds – Generally, winds blow down the eastern slope of Peavine Mountain and across the site. It is also not uncommon for winds to blow across from the north. Prevailing winds will be a consideration with the design and placement of building envelopes with future tentative map design. As detailed later, there are no uses proposed for the Specific Plan that would generate fumes or foul odors, thus ensuring no downwind impacts. All development must comply with Washoe County District Health Department requirements to ensure proper dust control/mitigation is in place during construction periods.

(e) Topography – As depicted in Figure 1-5, Silver Hills is relatively flat with nearly 91% of the site containing slopes that are 15% or less. Thus, per Washoe County standards, the property is well suited for development. The terrain does rise to the west as it approaches the adjoining ridgeline. The Silver Hills land use plan accounts for the increased slope and incorporates the vast majority of steeper slopes into dedicated open space. Also, no density intensification occurs in areas where slopes are 30% or greater.

(f) Soil – A preliminary geotechnical investigation has been included as an attachment to the Specific Plan and does not identify any soil conditions that would preclude development at the densities permitted within this Handbook.

(g) Natural Drainageways – As a relatively flat site, there are no large defined drainageways within the Specific Plan boundaries that constitute a significant natural feature. There are smaller drainages that convey runoff from the west across the site. The Silver Hills Specific Plan along with the Washoe County Development Code establish standards in terms of providing drainage facilities and onsite detention and/or retention. In fact, as detailed later in this Handbook, Silver Hills includes standards that exceed Washoe County code by requiring a net reduction in runoff from new development within the Specific Plan.

(h) Wetlands and Water Bodies – There are no identified wetlands or water bodies onsite.

(i) Flood Hazards – FEMA has mapped the Silver Hills Specific Plan area as unshaded zone X. Unshaded X is defined by FEMA as an area of minimum flood hazard, outside the Special Flood Hazard Area (SFHA) or 100-year flood (1% annual-chance storm event), and also higher than the elevation of the 500-year flow (0.2% annual-chance flood).

(j) Seismic Hazards – The preliminary geotechnical report identifies a potential fault within the plan area. The fault is included within open space and will also be addressed (per Washoe County code) with future tentative maps. As detailed in the geotechnical investigation, the standards included within this Handbook serve to properly address any new construction that will occur in the immediate vicinity of these areas.

(k) Avalanche and Landslide Hazards – There are no landslide or avalanche hazard areas located within the Specific Plan boundaries.

(l) Sensitive Habitat and Migration Routes – There are no known sensitive habitats located onsite. However, the site does have the potential for wildlife and deer to traverse the property. To ensure this can continue with the development of Silver Hills, open space corridors are provided throughout the Specific Plan area.

(m) Significant Views – Silver Hills enjoys views across the valley to the east towards Reno-Stead Airport along with views of Peavine Mountain to the south and the various ranges that surround the area.

(n) Appropriate Access Points – Access points for Silver Hills were determined based on existing development patterns in the area along with recommendations derived from a comprehensive traffic impact analysis.

1.7 Handbook Provisions

1.7.1 General Provisions

This Silver Hills Development Standards Handbook describes in general terms when, where and how development will occur within the Silver Hills Specific Plan area. It provides ample specificity to establish base qualitative standards for all of phases of the project along with design parameters to which each individual project built within Silver Hills must conform. It is intended to offer design flexibility while at the same time maintaining minimum standards. Chapter 2 of the Handbook contains standards and regulations relative to development, which establish the development standards for Silver Hills. Chapter 3 contains standards and parameters relative to design and architecture which establish the theme and quality of new development within the Specific Plan area.

1.7.2 Binding Effect of Handbook

Pursuant to NRS 278A.520, NRS 278A.570 and the Washoe County Development Code, this Handbook cannot be modified or otherwise impaired by the action of the County without the consent of the Master Developer (Lifestyle Homes TND, LLC) and any required landowner, except as specified in NRS 278A.410. Similarly, pursuant to NRS 278.0201, the ordinances, resolutions or regulations applicable to Silver Hills and governing the permitted uses in it, the density and standards for design, improvements and construction on it are those in effect at the time of adoption of this Specific Plan and Handbook.

The standards set forth in this Handbook shall, in accordance with NRS 278A.570, supersede any zoning and subdivision statutes that may otherwise apply. In case of a conflict, this Handbook and any associated modifications/conditions required by the Washoe County Board of Commissioners at the time of adoption shall control. When not addressed by this Handbook, the provisions of the Washoe County Development Code shall control.

1.7.3 Individual Project Approvals

Individual projects within Silver Hills shall be subject to review and approval as outlined in the Washoe County Development Code. This includes tentative subdivision maps, special use permits, variances, etc. Although new development shall be reviewed in context with the standards and requirements of this Handbook, all statutory public review requirements set forth in NRS and the Washoe County Development Code shall remain in full effect and shall be applied to new development requests within Silver Hills.

1.7.4 Deviations from Handbook Standards

All projects within Silver Hills shall comply with the standards and requirements of this Handbook. However, it is recognized that unusual or unique circumstances may arise from time to time. Therefore, deviations from standards contained herein, not to exceed 20%, may be granted on a case by case basis with the approval of the Director of the Department of Planning and Building. Additionally, any deviation from the standards of this handbook must also be approved by the Silver Hills Design Review Committee (DRC). The Design Review Committee, and its organizational characteristics, shall be established with the Silver Hills covenants, conditions, and restrictions (CC&R's) as proposed by the Master Developer and approved by the Washoe County District Attorney's Office.

1.7.5 Modifications to Handbook

Upon adoption and recordation, the standards and requirements outlined within this handbook shall take full effect. Any modification to these standards, land uses, densities, etc. that exceed 20% (refer to section 1.6.4) shall require the review and approval of the Washoe County Planning Commission and Washoe County Board of Commissioners. Modifications to this Handbook or the Specific Plan boundary shall be subject to the review of a Regulatory Zone Amendment (RZA) and the associated requirements and public review defined within the Washoe County Development Code.

1.7.6 Density

Gross density within the Silver Hills Specific Plan area shall not exceed 2.5 dwelling units per acre. Density within any one planning area may not exceed that allowed with Common Open Space Development, as defined in the Washoe County Development Code Article 408 or as further restricted through provisions/requirements of this handbook. The maximum number of units within the Silver Hills Specific Plan may not exceed 1,872. The Master Developer shall be responsible for providing a running-total of units to be provided with each individual tentative map request in order to demonstrate compliance with this standard.

1.7.7 Permitted Unit Transfers

The Silver Hills land use plan, depicted in Figure 1-2, designates several "bubble" areas for residential uses at varying densities (through Common Open Space Development). The number of dwelling units allowed within any specific land use area is calculated by multiplying the gross acreage for such area by the maximum allowed density for the land use designation for that area.

Permitted units may be transferred from one land use area to another under the following conditions:

(1) Permitted units may be transferred from one land use area to another within the Silver Hills Specific Plan area. No such transfers will be allowed to or from development areas outside of the Specific Plan.

(2) Before and after each transfer, the total permitted units for all land use areas shall not exceed 1,872; densities for residential uses may not be exchanged with or converted to non-residential uses.

(3) Unit transfers that result in more than 228 total units east of Red Rock Road shall be prohibited.

(4) Unit transfers that result in more than 1,644 total units west of Red Rock Road shall be prohibited.

(5) The number of permitted units transferred to any other land use area shall not exceed the maximum density for such area, as defined within the individual land use category (refer to Chapter 2).

(6) Any proposed density transfer shall be subject to the approval of the Master Developer.

CHAPTER 2 – DEVELOPMENT STANDARDS

2.1 Purpose and Compliance

The purpose of Chapter 2 is to set regulatory requirements for the various land uses located within Silver Hills. These requirements include standards for land use, density/intensity, roadway design, landscaping and buffering, trails, fencing, community amenities, etc. All new development within Silver Hills shall comply with the text, policies, standards, and associated tables and exhibits of this Handbook.

The standards contained herein shall supersede those contained within the Washoe County Development Code. However, in instances where this Handbook does not specifically address a standard or remains silent, the requirements of the Washoe County Development Code shall apply.

2.2 Land Use Development Standards

2.2.1 Silver Hills Land Use Plan

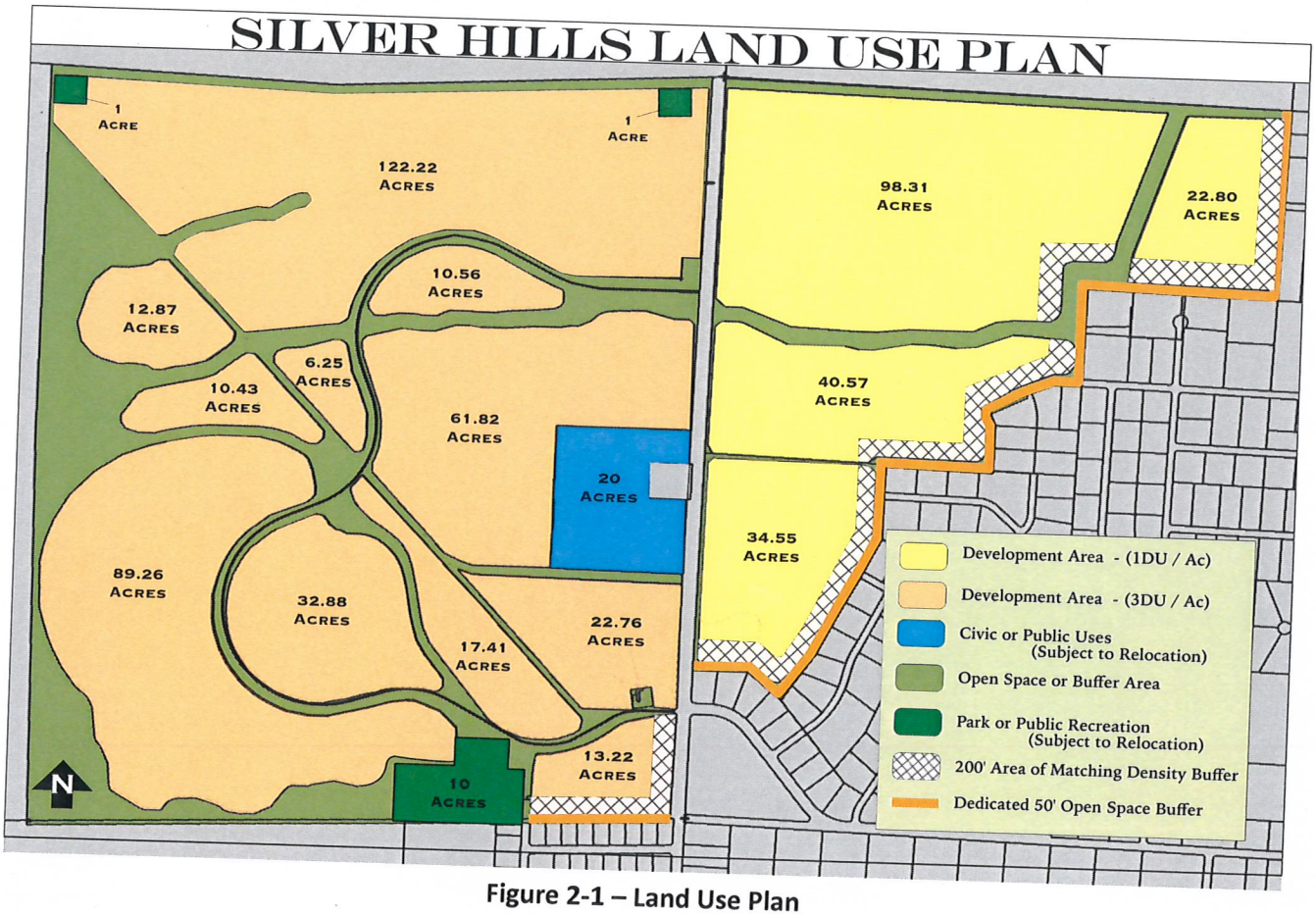


Figure 2-1 – Land Use Plan

2.2.2 Land Use Descriptions

Land uses with Silver Hills are identified based on their development suitability. The development suitability was determined based on natural (i.e. slopes, views, etc.) conditions as well as influencing factors such as relationship with existing homes and facilities. Residential development areas have been identified based on this analysis and are intended to provide for a range of single-family housing types.

Density ranges provide flexibility based on market conditions, housing type, etc. Individual projects may be constructed at densities consistent with those permitted under Article 408 (Common Open Space Development) for the Suburban Master Plan Designation. Lot, setback, and design standards contained herein will essentially regulate density and provide for consistency of the envisioned housing within Silver Hills, as defined within this chapter.

The Silver Hills land use plan is essentially separated into two "sides;" west of Red Rock Road and east of Red Rock Road. The overall gross density on the west side shall not exceed 3 dwelling units per acre while the gross density east of Red Rock Road shall not exceed 1 dwelling unit per acre.

In addition to the residential land use/development category, three nonresidential categories are included within Silver Hills. These include Public Facility/Civic Use, Park, and Open Space. Uses such as orchards, community barns, community gardens, recreational facilities, childcare facilities, schools, libraries, utility structures, churches, etc. that are compatible with and oriented towards the needs of residential neighborhoods, may also be allowed (refer to allowed uses – Table 2-2). The following is a description of each of the land use categories included within Silver Hills:

Residential Development Areas

The Residential Development Areas identified on the Silver Hills Land Use Plan are intended to provide for a wide range of single family housing types. For example, areas adjacent to existing neighborhoods as well as peripheral areas of the project that may include steeper terrain have the potential for larger lots or custom/semi-custom home sites. In peripheral areas less dense neighborhoods can serve to provide a "density transition" between suburban densities and open space areas and/or public lands. The east side of Silver Hills will take on a more rural character and maintains an overall density of 1 dwelling unit per acre. The development areas identified east of Red Rock Road shall include a mix of one-acre and half-acre homesites with half-acre lots not accounting for more than 50% of the total units.

"Mid-range" densities are also permitted within Silver Hills. These areas allow single family detached homes at traditional suburban densities. Lot sizes typically range from 5,000 to 12,000 square feet but may include larger lots in areas adjoining existing development or areas of less intense development. These types of mid-range densities shall generally be located in non-constrained areas with slopes less than 15%.

Smaller lot single family uses are also contemplated within the Specific Plan area and may include cluster development, patio homes, attached single-family, etc. serving to diversify the overall housing mix within the project, provide for new and innovative neighborhood design concepts, and appeal to a wider demographic range of the population.

As noted previously, overall residential density within the Specific Plan Area is capped at 2.5-dwelling units per acre (gross density). This is based on an allowed gross density of 3 units per acre west of Red Rock Road and 1 unit per acre east of Red Rock Road. Individual subdivisions may provide for clustering with higher densities in accordance with the Common Open Space Development regulations included within the Washoe County Development Code. Therefore, this Handbook does not establish minimum/maximum densities for the Residential Development Areas. Instead, density within individual subdivisions will be determined based on market factors and overall development opportunities such as terrain, views, relationship to surrounding areas, etc. An exception to this is the area east of Red Rock Road. Clustering east of Red Rock Road may not result in lot sizes smaller than one-half acre. Furthermore, a minimum of 50% of the total lots on the east side of Silver Hills shall be a minimum of one-acre. This flexibility will allow new housing within Silver Hills to respond to market demands and provide for new and innovative housing options. It also provides a unique ability to internally self-regulate the housing market by meeting actual demands within the marketplace and does not simply provide for a cookie-cutter approach to land development.

The development standards set forth in this Handbook serve to ensure that development within the Residential Development Areas properly relates to both the built and future environments and includes provisions that will "feather" densities from the internal core of the Specific Plan Area to the project periphery. This is achieved through site design standards, provisions for open space, trails, etc.

As mandated by the Washoe County Master Plan, Development Code, and Truckee Meadows Regional Plan, for development areas west of Red Rock Road the minimum lot size within Silver Hills will be 3,700 square feet and the overall unit count may not exceed 3 units per gross acre for a total of 1,644 units. For development areas east of Red Rock Road, the minimum lot size shall be 21,780± square feet and the overall unit count may not exceed 1 dwelling unit per gross area for a total of 228 units. Total units within the Silver Hills Specific Plan shall not exceed 1,872. Multi-family development within the Residential Development Areas shall be prohibited.

Public Facility/Civic Uses

This area consists of 20± acres and generally surrounds the existing volunteer fire station on Red Rock Road. The area is envisioned for public uses that could include an elementary or middle school, expansion of the fire station, a library, etc. There is no residential land use associated with the Public Facility/Civic Use area. However, should no public use be established (or in a formal planning stage) at the 80%-buildout stage of the project, this area may be developed consistent with the Residential Development Area. Additionally, Public Facility/Civic Use areas may be relocated throughout the Specific Plan area in order to address specific community needs, better serve the public, or more properly relate to development patterns, subject to the provisions of this Handbook.

Park

Land designated as Park provides solely for public parks and recreation, including trailheads, and consists of 12± acres. Based on meetings with the Washoe County Department of Parks and Open Space, 10± acres of park land will be provided at the southwest portion of the Specific Plan area in order to allow for the expansion of the existing Silver Knolls Park. Additionally, two public trailheads (approximately 1 acre each) will be provided within the western portion of the Specific Plan, providing staging areas and public access to the Silver Hills trail network and adjoining public lands. The Park designation is depicted on the land use plan in schematic format. Final locations will be influenced based on individual projects within the Specific Plan boundaries, input from the Washoe County Department of Parks and Open Space, and the surrounding community. The 11 acres established is a minimum and may be increased as the project develops over time.

The 10± acres of Park use adjacent to the existing Silver Knolls park at the southwest boundary of the Specific Plan area may include recreational equipment, sports fields, equestrian staging areas, etc. (subject to Washoe County Department of Parks and Open Space input/needs). Trailheads will provide parking and/or staging areas that allow public access to the Silver Hills trail system and adjoining BLM land(s).

As Silver Hills develops, additional park space and developed parks may be provided. Park projects will be presented to the Washoe County Department of Parks and Open Space for review. Smaller park facilities such as neighborhood parks may be dedicated to Washoe County or constructed and maintained by the Silver Hills Master Homeowners Association (dependent upon Washoe County review/negotiation), and shall be available for public use. Thus, Park use is permitted within all land use categories within the Silver Hills Specific Plan.

Open Space

The Open Space area includes no development and serves to provide trail corridors, wildlife corridors, community aesthetic enhancement, passive recreation opportunities, and buffers between land uses. Open Space land use is located throughout the Specific Plan area including a dedicated 50-foot (minimum) open space buffer along the exterior boundary of the Specific Plan that shall include a public trail (except on the far west side where steeper terrain exists), suitable for equestrian use (as defined later in this Handbook). Open Space land use may include public or private ownership and may also include orchards, community gardens and barns, drainage channels, public infrastructure, utility corridors, etc.

Table 2-1 (below) summarizes the land use categories within the Silver Hills Specific Plan:

Table 2-1 – Land Use Summary

LAND USE	GROSS AREA
RESIDENTIAL	
Residential Development Area[1]	595.91± acres
NONRESIDENTIAL	
Public Facility/Civic Use (PFC)	20± acres[2]
Park (P)	12± acres
Open Space (OS)	152.41± acres
TOTAL	**780.32±acres**

1 – Note: Limited Neighborhood Commercial uses shall be permitted within Residential Development Areas. Refer to Section 2.3.

2 – If no public use is planned or established at the 80% build out stage of the Specific Plan, this area shall revert to residential.

2.2.3 Density Matching

In areas where new residential development adjoins an existing neighborhood or platted subdivision density matching shall occur. This shall include comparable lot sizes or increased buffers to ensure that privacy of existing homes and community character is retained. Areas subject to density matching are identified with hatching on the land use plan (refer to Figure 2-1). The required 50-foot exterior open space buffer may not be counted towards density matching requirements. At a minimum, the density match area adjoining existing subdivisions shall extend 150-feet from the open space buffer internal to the Specific Plan area.

Development areas east of Red Rock Road have a more extensive density match requirement. As depicted on the land use plan (Figure 2-1), a 50-foot buffer shall be provided along the perimeter of the Specific Plan boundary. No structures shall be erected within this buffer area. Trails, public facilities such as drainage channels/basins, utility easements, etc. may be located within the buffer area. Additionally, all future residential parcels that abut the 50-foot buffer along the southern and eastern boundary of the Specific Plan area (east of Red Rock Road) shall be a minimum of one-acre in size. All new homes located adjacent to the 50-foot buffer, within the density match area, shall be limited to single story design.

2.2.4 Density/Intensity Standards

Development Density and Intensity standards for each land use suitability area within Silver Hills are defined herein. For residential uses, minimum standards are established based on Washoe County Development Code requirements but are purposely flexible in order to encourage a wide range of single-family home types and promote new and innovative design concepts.

- **Residential Development Areas**

TYPE/DESCRIPTION	Lower Density Neighborhoods	
	Lower density single family neighborhoods provide single family detached homes in areas where comparable densities adjoin and in peripheral areas of Silver Hills. These areas may include custom/semi-custom home sites. Detached accessory dwellings are permitted but shall not exceed 1,200 square feet or 50% of primary residence, whichever is larger.	
	SINGLE FAMILY DETACHED	**NOTES**
BUILDING INTENSITY		
		If clustering of units with lot sizes less than 15,000 square feet, a minimum of 5% common open space shall be provided. Lots 1 acre or larger may include horses.
Typical Lot Sizes	15,000 square feet to 1 acre	
Minimum Lot Width	100 feet	
Building Height	35 feet maximum	
BUILDING SETBACKS		
Front Yard	30 feet	
Side Yard	10 feet	
Rear Yard	30 feet	
BUILDING PROJECTIONS	Refer to Washoe County Development Code (LDS standards)	
ACCESSORY USES		
Accessory uses shall be permitted pursuant to Washoe County Development Code Article 306		
NOTES		
1 – With Common Open Space 2 – Lots east of Red Rock Road shall be a minimum of 21,780 square feet 3 – A minimum of 50% of lots located east of Red Rock Road shall be a minimum of 1 acre in size.		

Figure 2-2 – Typical Low-Density Neighborhood (West of Red Rock Road)

Figure 2-2A – Typical Low-Density Neighborhood (East of Red Rock Road)

- **Mid-Range Single Family Neighborhood**

TYPE/DESCRIPTION	Mid-Range Single Family Neighborhood	
	Mid-range density subdivisions provide single family detached dwellings at typical suburban densities. Densities within these areas shall provide appropriate transitions between adjoining projects. Pedestrian connections (i.e. trails or sidewalks) shall be provided in order to provide community connectivity.	
	SINGLE FAMILY DETACHED	**NOTES**
BUILDING INTENSITY		
Maximum Net Density (du/ac)	Per the Common Open Space Development standards allowed within Article 408	5% of gross project area shall be dedicated to common open space.
Typical Lot Sizes	5,000 to 15,000 square feet	
Minimum Lot Width	50 feet	
Building Height	35 feet maximum	
BUILDING SETBACKS		
Front Yard	15 feet[1]	
To Front Load Garage	20 feet	
To Side Load Garage	15 feet[1]	
To Alley Load Garage	5 feet	
Front Yard	15 feet	
Side Yard	5 feet	
Rear Yard	15 feet	
BUILDING PROJECTIONS	Refer to Washoe County Development Code (HDS standards)	
ACCESSORY USES		
Accessory uses shall be permitted pursuant to Washoe County Development Code Article 306		
NOTES		
1 – Minimum driveway depth shall be 20 feet along public rights-of-way. Setback to dwelling area may be reduced to 15 feet in order to provide building elevations that are not garage dominant.		

Figure 2-3 – Typical Mid-Range Single Family Neighborhood

- **Suburban Single-Family Neighborhoods**

TYPE/DESCRIPTION	Suburban Single-Family Neighborhoods		
	Suburban Single-Family Neighborhoods are intended to provide a range of single family detached and single family attached products and may include small-lot patio homes, the use of alleyways and community greens, townhomes, and/or duplexes. These neighborhoods are located internal to the Silver Hills Parkway loop road.		
	SF – DETACHED	**SF - ATTACHED**	**NOTES**
BUILDING INTENSITY			
Maximum Net Density (du/ac)	Per the Common Open Space Development standards allowed within Article 408	Per the Common Open Space Development standards allowed within Article 408	Single Family attached projects shall include a sub-homeowner's association responsible from common area maintenance, including maintenance of private streets (if any).
Lot Size	4,000 square feet[1]	3,700 square feet	
Minimum Lot Width	30 feet	20 feet	
Building Height	35 feet	40 feet	
LANDSCAPING			
Landscape Requirement		20% of total project area	Landscaped front yard areas maintained by HOA may be included in overall landscape requirement
BUILDING SETBACKS FROM PROPERTY LINES			
FRONT YARD SETBACKS			
To Main Structure w/ Front Entry Garage	10 feet	10 feet	
To Porch	10 feet	10 feet	
To Front Entry Garage (from public ROW)	20 feet	20 feet	
To Side Entry Garage	10 feet	10 feet	

BUILDING SETBACKS FROM PROPERTY LINES			
To Main Structure w/ Alley Loaded Garage	10 feet	10 feet	
SIDE YARD SETBACKS			10ft. min. bldg. separation
Interior Side Yard	0 or 5 feet	0 or 5 feet	
Side yard to Adjacent Street	10 feet	10 feet	
REAR YARD SETBACKS			* 10 feet min for cluster SFD
To Main Structure	15 feet *	10 feet	
To Alley Loaded Garage	5 feet	5 feet	
To Deep Recessed Garage	10 feet	10 feet	
BUILDING PROJECTIONS	Refer to Washoe County Development Code (LDU standards)		
ACCESSORY USES			
Accessory uses shall be permitted pursuant to Washoe County Development Code Article 306			
NOTES			
1 – May be reduced to 3,700 square feet for patio/cluster homes that share common vehicle courts, alleys, etc.			

It is recognized that future innovative concepts may not necessarily fit within the standard "mold" in terms of design/layout. Therefore, the residential development standards included within Section 2.2.4 may be varied by up to 20% subject to approval by the Master Developer. However, minimum lot size (3,700 square feet), maximum density (14 du/ac with Common Open Space) and required open space may not be varied.

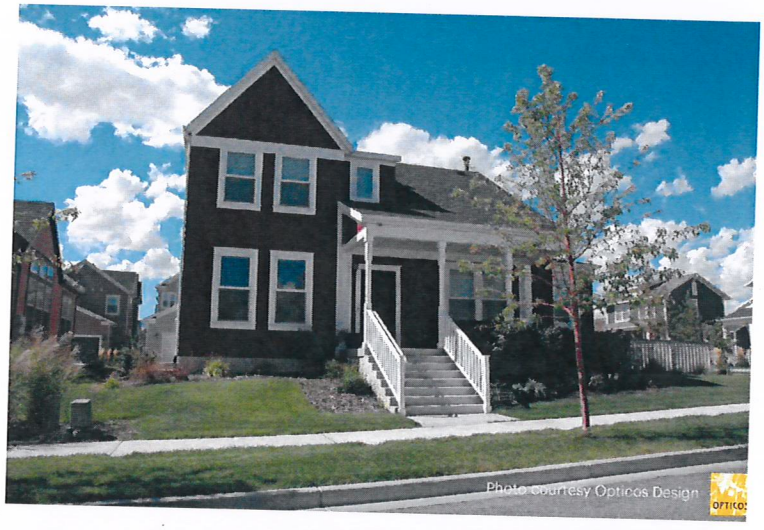


Figure 2-4 – Typical Suburban Single-Family Prototypes

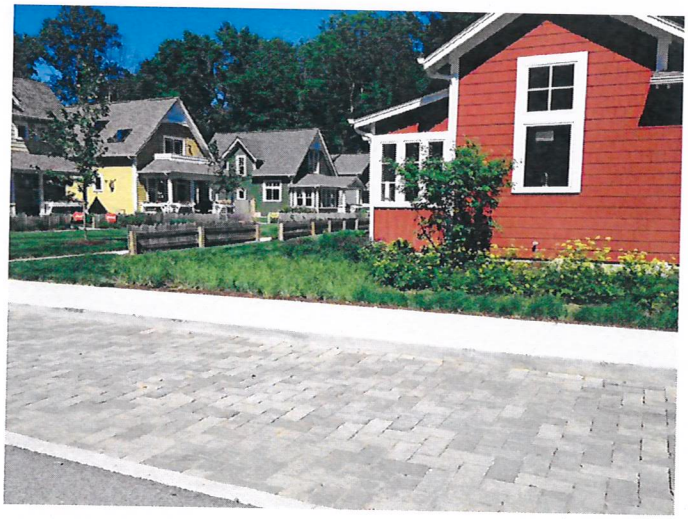
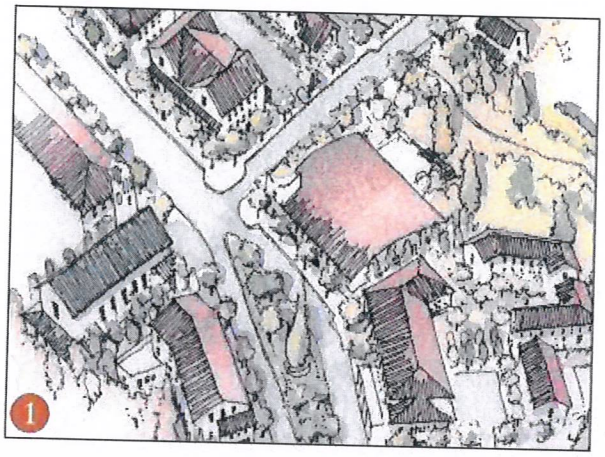
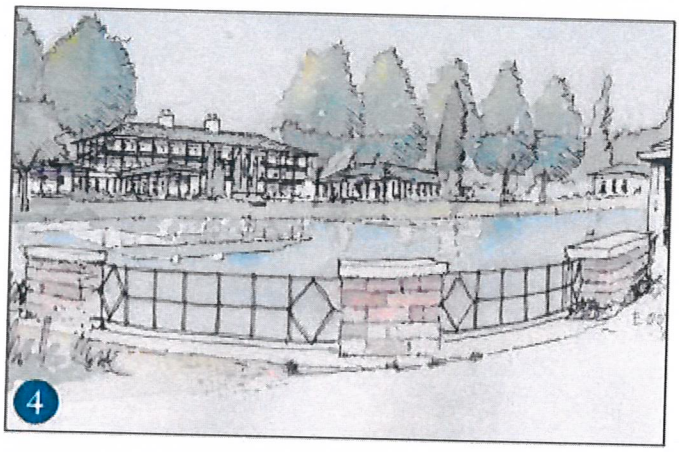
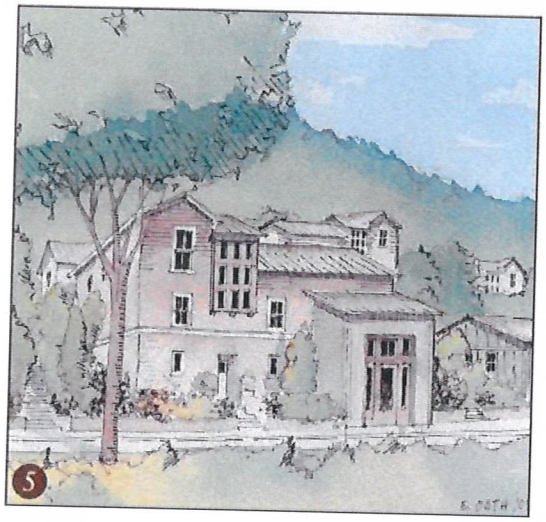


Figure 2-5 – Typical Suburban Single-Family Prototypes







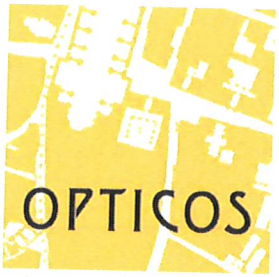


Figure 2-6 - Typical Suburban Single-Family Prototypes

- **Public Facility/Civic Use**

TYPE	Public Facility/Civic Use
DESCRIPTION	The Public Facility/Civic Use designation provides for public facilities such as schools, libraries, utility structures, fire stations, sheriff substations, etc.
BUILDING INTENSITY	
Building/Facility Height	40 feet maximum
Building Separation	0 feet, or 20 feet minimum
LANDSCAPING	
Landscape Requirement	Minimum of 20% development area[1]
BUILDING SETBACKS	
Front	20 feet minimum
Side	15 feet minimum
Rear	20 feet minimum
NOTES	
1 – Requirement may be reduced to 10% for Washoe County School District facilities. 2 – Land use may be relocated/reconfigured at the discretion of the Master Developer.	

- **Park**

TYPE	Park
DESCRIPTION	The Park designation provides for the development of active and passive public recreational facilities.[1]
BUILDING INTENSITY	
Minimum Size	10 acres
Building/Facility Height	35 feet maximum
Building Separation	0 feet, or 20 feet minimum
LANDSCAPING	
Landscape Requirement	Site specific to use.
BUILDING SETBACKS	
Collector Roads	20 feet minimum
Internal Local and Private Roads	15 feet minimum
Property Line[2]	10 feet minimum
NOTES	
1 – Park locations may be relocated as development occurs, subject to approval by the Department of Parks and Open Space. 2 – This includes all property lines within Silver Hills that do not border arterial or collector roads.	

- **Open Space**

TYPE	Open Space
DESCRIPTION	The Open Space designation allows for passive recreation, landscape buffers, trails and trail corridors, wildlife corridors, utility corridors, drainage facilities, infrastructure, and undisturbed areas.
BUILDING INTENSITY[1]	
Building/Facility Height	20 feet maximum
Building Separation	0 feet, or 20 feet minimum
LANDSCAPING	
Landscape Requirement	Site specific to use.
BUILDING SETBACKS	
Collector Roads	20 feet minimum
Internal Private Roads	15 feet minimum
Property Line[1]	10 feet minimum

2.3 Permitted and Conditional Uses

Permitted uses, and those requiring an Administrative Review or Special Use Permit within Silver Hills are provided in Table 2-2 - Allowed Uses table (following page). This table organizes potential uses within the land use categories presented within the Silver Hills Land Use Plan.

The following symbols are used in the matrix to indicate whether a proposed use is permitted, or whether an Administrative Review or Special User Permit may be required.

A – Permitted by right.
AR – Administrative Review required
S – Special Use Permit required
AN – Ancillary Use – Uses only allowed when ancillary to a permitted primary use
Empty Cell – Not permitted

The Washoe County Director of Planning and Building shall be responsible for determining the appropriate review board for uses requiring a Special Use Permit (i.e. Board of Adjustment vs. Planning Commission). Any subdivision of a parcel resulting in the creation of more than 4 lots shall be subject to the review and approval of a Tentative Subdivision Map.

Note: The Washoe County Department of Planning and Zoning shall define which residential land use designation to apply to a specific tentative map based on the lot sizes proposed, as defined in the previous tables.

Uses not listed in Table 2-2 are not permitted within the Specific Plan area. However, in an instance where a proposed use is not listed within Table 2-2 or within Table 110.302.05.01 of the Washoe County Development Code, the Director of Planning and Building may permit such use with the approval of an Administrative Review if such use is found to be complementary to and consistent with the allowed uses and standards contained within this Handbook. Any such use shall also require the consent and approval of the Master Developer and Design Review Committee.

Note: All uses shall be defined per the definitions contained within Article 902 of the Washoe County Development Code. Home-based businesses, as defined and permitted through the Washoe County Business License Division, shall be permitted. Uses noted with an asterisk (*) shall be subject to the supplemental use standards contained in section 2.3.1 of this handbook

Table 2-2 – Allowed Uses

LAND USE DESIGNATIONS	LDSF	MRSF	SFS	PFC	P	OS
RESIDENTIAL USE TYPES						
Single Family Residential Uses						
Attached Accessory Dwelling	A	A	A			
Detached Accessory Dwelling*	A	A				
Detached Accessory Structure	A	A				
Duplex			A			
Group Home	A	A	A			
Model Home Complex	AN	AN	AN			
Single Family, Attached			A			
Single Family, Detached	A	A	A			
CIVIC USE TYPES						
Active Recreation	A	A	A	A	A	A
Administrative Services				AR		
Child Daycare	A	A	A			A
Community Barn	A	A	A	A	A	A
Community Center				AR	AR	AR
Community Farms and Orchards	A	A	A			A
Community Garden	A	A	A	A	A	A
Convalescent Services	AR	AR	AR			
Cultural and Library Services				A		
Education				S		
Family Daycare	AR	AR	AR			
Group Care Facility	AR	AR	AR			
Large-Family Daycare	S	S	S			
Major Public Facilities	S	S	S	S	S	S
Nature Center					A	A
Passive Recreation	A	A	A	A	A	A
Postal Services				S		
Public Service Yard				S		
Religious Assembly	S	S	S			
Safety Services				S		
Utility Services	S	S	S	S	S	S
COMMECIAL USE TYPES						
Administrative Offices				AR		
Commercial Antennas				S	S	S

LAND USE DESIGNATIONS	LDSF	MRSF	SFS	PFC	P	OS
Continuum of Care Facilities - Seniors	S	S	S			
Eating and Drinking Establishments – Convenience*						
Eating and Drinking Establishments – Full Service*			S			
Financial Services			S			
Indoor Sports and Recreation				S	AR	
Neighborhood Centers*			S			
Outdoor Entertainment*				A	A	
Outdoor Sports and Recreation				A	A	A
Personal Storage*			S	S		
Retail Sales – Convenience*			S			
Retail Sales – Specialty Stores*			S			
Satellite Dishes	Refer to Article 324 of WCDC					
Storage of Operable Vehicles*			S			
Wireless Communication Facilities	Refer to Article 324 of WCDC					

2.3.1 Supplemental Use Standards

Several of the uses listed in Table 2-2 include an asterisk (*). These uses, while allowed (subject to applicable entitlements) have additional restrictions defined in this section that are above and beyond the requirements of the Washoe County Development Code. Restrictions on these uses are listed below:

Agrihood Facilities – Agrihood facilities, as described throughout this handbook and including components such as barns, greenhouses, orchards, etc. shall be permitted within all land use categories with the exception of PFC and P but shall require the approval of the Design Review Committee unless included concurrent with a tentative map request approved by Washoe County.

Detached Accessory Dwelling – Detached accessory dwellings constructed as part of the original house floor plan (i.e. detached casitas, mother-in-law quarters) shall be permitted and may not exceed 1,200 square feet.

Eating and Drinking Establishments – Convenience– Coffee shops, delis, or similar, up to 4,000 square feet may be permitted within Neighborhood Centers (see below) with the approval of a Special Use Permit. Establishments operating outside the hours of 6:00 am to 11:00 pm are not permitted.

Eating and Drinking Establishments – Full Service – Restaurants, including restaurants with alcohol service, up to 4,000 square feet may be permitted within Neighborhood Centers (see below) with the approval of a Special Use Permit. Free-standing bars, or establishments operating outside the hours of 6:00 am to 11:00 pm, are not permitted.

Neighborhood Centers – The Silver Hills Specific Plan recognizes that small neighborhood commercial uses can be beneficial and can serve to create a stronger sense of community. For that reason, support retail services, up to 45,000 square feet may be located within the Silver Hills Parkway loop road (defined in Table 2-2 as the SFS zone. Individual commercial uses in excess of 5,000 square feet are prohibited. Neighborhood centers shall incorporate the architectural standards included herein and shall include clustering of smaller buildings rather than a large "strip" building structure (refer to Figure 2-8).

Outdoor Entertainment – Outdoor entertainment such as school events, community concerts and performance, and the like are permitted within the Public Facility and Parks land uses and shall not extend past 10:00 pm. More than 2 events per month at any given facility shall require the approval of a Special Events Permit by Washoe County.

Personal Storage – Personal storage shall be limited to the storage of boats, recreational vehicles, and the like. These areas shall be screened with a 6-foot minimum solid sight obscuring fence. Additionally, a minimum of 15% of the total site area shall be landscaped, including the use of evergreen trees in order to provide year-round screening. Personal storage uses do not count towards the 45,000 square foot limitation on neighborhood commercial/retail use.

Retail Sales - Convenience – Convenience retail is permitted within Neighborhood Centers and may not exceed 5,000 square feet. Additionally, hours shall be limited to 6:00 am to 11:00 pm only. Freestanding convenience stores and service stations are prohibited.

Retail Sales – Specialty Stores – Specialty stores such as boutiques, personal services, salons, and the like shall be permitted within neighborhood centers and shall not exceed 5,000 square feet.

Storage of Operable Vehicles – Storage of operable vehicles shall be limited to the storage of boats, recreational vehicles, and the like and shall be for the exclusive benefit of Silver Hills residents. These areas shall be located behind a minimum 6-foot sight-obscuring solid fence. Storage uses do not count towards the 45,000 square foot limitation on neighborhood commercial/retail use.

Additional Use Restrictions:

Total commercial area may not exceed 45,000 square feet. Refer to Figure 2-7 for typical neighborhood center concept. Live/work residential units and storage facilities shall not count towards the 45,000 square foot limitation.

Standards of the Neighborhood Commercial (NC) zone shall be applied to any commercial use standard not addressed herein.

Figure 2-7 – Typical Neighborhood Center

Figure 2-8 – Typical Retail Concept

2.4 Streetscape Development Standards

2.4.1 Circulation Plan

Silver Hills will be accessed through an extension of Silver Knolls Boulevard that will circle through the west side of the Specific Plan Area, connecting back to Red Rock Road at the northern end of the project boundary. This roadway, known as Silver Hills Parkway, will be constructed to a collector roadway standard and will include two lanes with a center turn lane at intersections. At the two primary entries along Red Rock Road, the center turn lane will include a landscape island that will include evergreen plantings and shrubs.

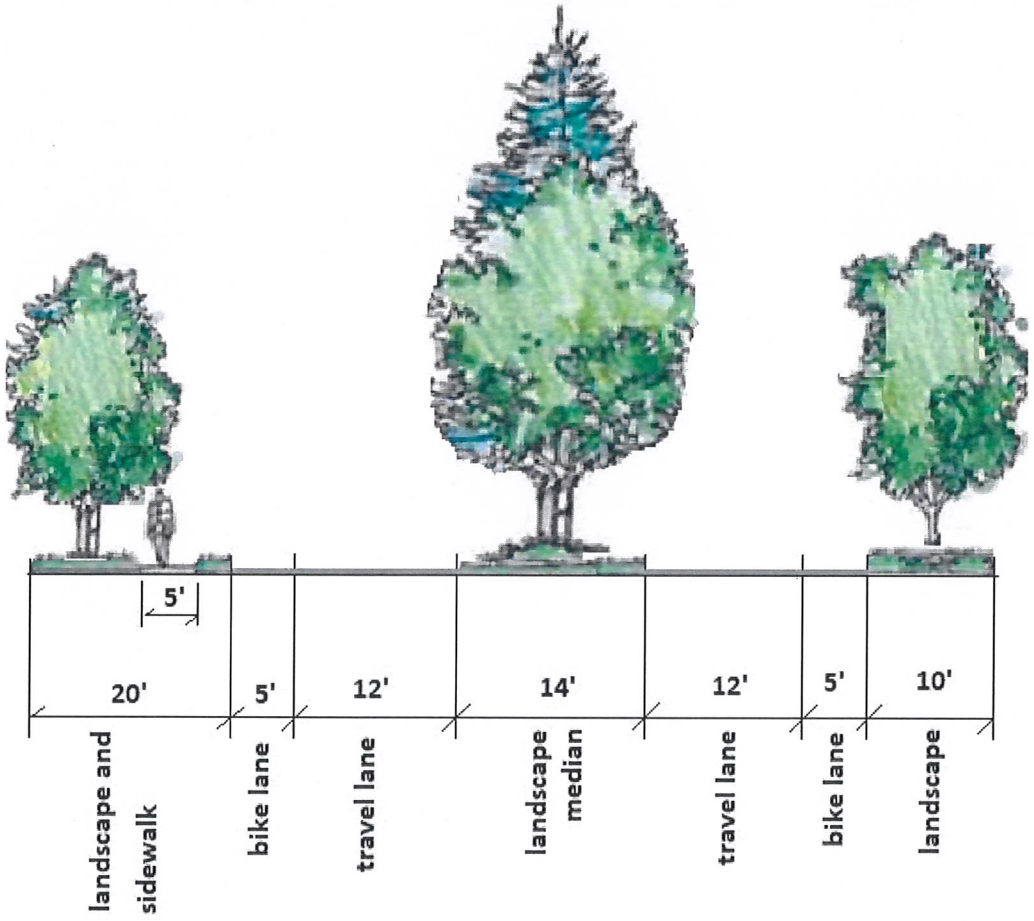
As Silver Hills develops with future tentative maps, local roadways will connect with Silver Hills Parkway, providing access to individual neighborhoods. Neighborhoods within the project may be interconnected with local streets but all residential traffic will be directed towards Silver Hills Parkway for primary access in and out of the Specific Plan area.

2.4.2 Roadway Design

Development of roadways within Silver Hills will generally conform to the standards defined in the Washoe County Development Code. However, as noted previously, Silver Hills Parkway will include a 100-foot landscape median at its two intersections with Red Rock Road, identifying the project to residents and visitors with distinct entry monumentation (as described later). A cross section of the proposed Silver Hills Parkway is depicted in Figure 2-9 on the following page. The right-of-way section includes two 12-foot travel lanes along with a 5-foot bike lane on each side. A 14-foot center turn lane is provided (with the exception of the 100-foot entry landscape median). Additionally, a 10-foot landscaped common area will be included on one side, with 20-feet on the other (this may vary from side to side depending on site conditions). The 20-foot landscape common area shall include a 5-foot (attached or detached) asphalt or concrete pedestrian path. Roadways east of Red Rock Road shall generally conform to standard Washoe County standards/details. In areas of one-acre lots, the requirements for sidewalks may be eliminated in order to provide consistency with the existing Silver Knolls neighborhood to the south.

As an alternative to Washoe County local street standards, individual builders within Silver Hills may choose to incorporate a modified local street section. This section would provide for sidewalk on one side of the street and allow the use of rolled curbs versus sidewalk on both sides of the street and traditional squared curbs. This provides for flexibility in locating driveway cuts which then allows for flexibility in home siting. Additionally, modified local street standards may be incorporated into individual neighborhoods in order to allow for new/innovative community designs subject to the approval of the Washoe County Engineering Division and the Truckee Meadows Fire Protection District.

Landscaping and a 5-foot pedestrian path will be provided along Silver Hills Parkway in its entirety. The pathway shall be paved or constructed of concrete and will be located within the common area that will parallel Silver Hills Parkway. The path may be attached or detached from back of curb and may cross from side to side depending on location and site conditions. A striped pedestrian crosswalk shall be required at all crossing points of the 5-foot pedestrian path.



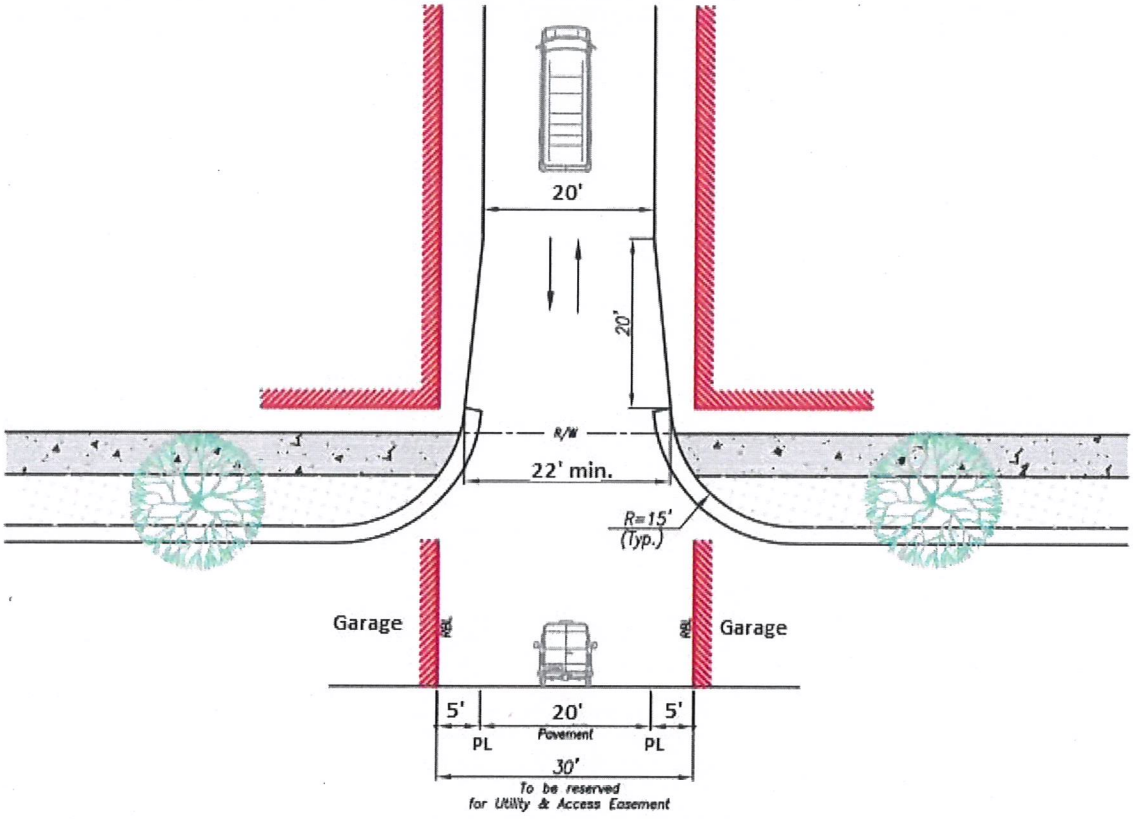
Note: Landscape median length is 100-feet.
Section includes center turn lane for remainder of roadway section.

Figure 2-9 – Silver Hills Parkway Section

2.4.3 Access Standards

RTC access management standards and the Washoe County Public Works design standards shall be used to direct the design of access and layouts for individual projects within Silver Hills at the time of development. Accesses and layouts will be reviewed and approved by the Silver Hills Design Review Committee (DRC) and the Washoe County Department of Planning and Building.

Alleys are an allowed alternative within single-family residential areas of Silver Hills. An alley is a private roadway that is intended to provide access to an abutting property such as a garage or rear yard. Alleys are not intended for general traffic circulation or primary emergency access routes. Alleys shall have a minimum width of 20 feet (Refer to Figure 2-10 for more detail) and shall be maintained by the adjoining property owner (through an easement agreement) or by a sub-association established by an individual builder with the approval of the Silver Hills Master Developer.



Note: Alley design is subject to variation but shall maintain a minimum paved travel lane width of 20'.

Figure 2-10 – Typical Alley Detail

2.4.4 Silver Hills Parkway Streetscape

Silver Hills Parkway shall be designed to promote a sense of community through the incorporation of a landscaped median at the project entries as well as landscaping along both sides of the roadway. Additionally, a 5-foot paved pedestrian path will run adjacent to the roadway, within the landscaped common areas. The path may be detached from the roadway section and may cross over to the opposite side of Silver Hills Parkway where topography or engineering requirements dictate.

A project identifying entry feature may be permitted at the primary access points of the Silver Hill Specific Plan area along Red Rock Road. The entry feature serves to help establish the project theme and is expected to be reminiscent of a historic ranch entry. The entry may utilize a mix of timber and stone accents and will include signage to identify the project. Additional details on project entries are included later in this Handbook. A 100-foot long landscaped median shall be located at each access point along Red Rock Road. The median shall be set back from the intersection to provide proper sight distance for drivers. In areas that the landscape median does not occur, a 14-foot center turn lane shall be provided in areas where turning movements occur.

The pedestrian path along Silver Hills Parkway shall be installed with the construction of the adjacent roadway. This applies to landscaping along Silver Hills Parkway as well. Landscaping located within the right-of-way and the landscape buffer adjacent to Silver Hills Parkway shall be maintained by the Silver Hills master homeowner's association (HOA). Additionally, the HOA shall be responsible for the 5-foot pedestrian path that parallels the Silver Hills Parkway right-of-way. Washoe County shall be responsible for the maintenance of the public right-of-way areas.

The following landscape standards apply to Silver Hills Parkway:

- Landscaped common areas shall occur adjacent to both sides of Silver Hills Parkway. At a minimum, one side shall be 10 feet with the other at 20 feet. The 20-foot landscape common area shall include a 5-foot paved (or concrete) pedestrian path.

- A 100-foot landscape median shall be provided at the primary entries along Red Rock Road. The median shall be setback a minimum of 15-feet from the intersection in order to allow proper site distance for drivers.

- Evergreen trees shall be 6' minimum height with deciduous trees at a minimum 1.5" caliper, at time of planting.

- Landscaped common areas adjacent to Silver Hills Parkway may include a mix of xeriscape materials such as decomposed granite, rock mulch, etc. rather than turf.

- At time of planting, all groundcover and shrub areas must have 100% coverage with organic, rock and/or bark mulch, to protect the soil.

- Slope banks shall utilize native and/or adapted species to reduce maintenance and irrigation requirements. Adapted species refers to non-native or exotic plant species that are non-invasive and well adapted to the local climate and growing conditions.

- Large trees shall be defined as those that exceed 40 feet in height and 40 feet canopy diameter at maturity.

- Medium trees shall be defined as those that range from 20 feet to 40 feet in height and 10 feet to 40 feet in canopy diameter at maturity.

- Small trees shall be defined as those ranging from 8 feet to 20 feet in height and 6 feet to 20 feet in canopy diameter at maturity.

- Formal groupings refer to the linear or patterned arrangement of plants at a regular spacing interval.

- Informal and clustered groupings refer to the random or irregular arrangement of plants in groups of 3 or more and spaced a maximum of 60 feet between clusters.

2.4.5 Red Rock Road Streetscape

A 25-foot landscape buffer will be provided along Red Rock Road as it traverses the project area. This 25-feet will include enhanced native landscape in order to provide an aesthetically pleasing streetscape and will incorporate elements common to the overall project design, reinforcing a project sense of place. While trees will be included within the buffer, much of it may remain natural. The Red Rock Road frontage (west side) will include a 4 to 6-foot–decomposed granite (or similar) path that connects the north and south intersections of Silver Hills Parkway. The path may meander but shall be detached from the right-of-way by a minimum of 5 feet.

The path along Red Rock Road shall be installed with the first phases of development. This applies to landscaping within the Red Rock streetscape as well. The Red Rock Road streetscape/landscape buffer shall be maintained by the Silver Hills master homeowner's association (HOA). Additionally, the HOA shall be responsible for maintenance of the 4-6-foot (west side) and 6-foot multi-purpose path (east side) that lie within the landscaped common area. Washoe County shall be responsible for the maintenance of the public right-of-way areas.

The 25-foot landscape buffer located on the east side of Red Rock Road shall include native vegetation. Formal plantings within the east side buffer are discouraged. Any new trees shall be planted to protect privacy of existing or new homes and shall not include formal clustering of plant material.

The following landscape standards apply to the west side of Red Rock Road:

- Landscaped common areas (minimum of 25-feet in width) shall occur adjacent to Red Rock Road.
- Located within the 25-foot streetscape shall be a detached 4-6-foot decomposed granite or similar path. These facilities shall be setback a minimum of 5-feet from the Red Rock Road right-of-way.
- Evergreen trees shall be 6' minimum height with deciduous trees at a minimum 1.5" caliper, at time of planting.
- Landscaped common areas adjacent to Red Rock Road may include xeriscape materials such as decomposed granite or rock mulch rather than turf.
- At time of planting, all groundcover and shrub areas must have 100% coverage with organic, rock and/or bark mulch, to protect the soil.
- Large trees shall be defined as those that exceed 40 feet in height and 40 feet canopy diameter at maturity.
- Medium trees shall be defined as those that range from 20 feet to 40 feet in height and 10 feet to 40 feet in canopy diameter at maturity.
- Small trees shall be defined as those ranging from 8 feet to 20 feet in height and 6 feet to 20 feet in canopy diameter at maturity.
- Formal groupings refer to the linear or patterned arrangement of plants at a regular spacing interval.
- Informal and clustered groupings refer to the random or irregular arrangement of plants in groups of 3 or more and spaced a maximum of 60 feet between clusters.

Table 2-3- Silver Hills Streetscape Standards

Roadway	Landscape Buffer	Required Landscape	Pedestrian Amenities
Silver Hills Parkway	10 feet/20 feet	**Tree Type:** Mix of Evergreen and Deciduous **Pattern/Spacing:** Average of 50' on Center **Other:** 60% shrub/40% ground cover mix	5-foot attached or detached asphalt or concrete path[1]
Red Rock Road (applies to west side only)	25 feet/25 feet	**Tree Type:** Mix of Evergreen and Deciduous **Pattern/Spacing:** Average of 70' on Center **Other:** Native ground cover mix	4 to 6-foot detached multi-purpose path

1 – Pedestrian path to be located within 20-foot landscape buffer.

2.4.6 Street Lighting

Lighting within Silver Hills is designed to enhance the quality and safety of the streetscape corridors while maintaining dark skies standards. Lighting located within the right-of-way of collector roads, local streets, and other public common areas will be installed by the Master Developer or individual builders and maintained by NV Energy or Washoe County (for standards poles/fixtures). Lighting located within alleys, associated with commercial or privately maintained parking lots, or non-NV Energy standards, shall be the responsibility of the property owner or a sub-homeowner's association (subject to approval by the Master Developer and Design Review Committee).

This section provides lighting standards for collectors and local streets, as well as pedestrian, landscape and sign lighting within Silver Hills.

The goals of the Silver Hills lighting standards are to:

(1) Provide a safe level of illumination for both motorists and pedestrians;
(2) Reinforce the pedestrian scale of the community;
(3) Provide appropriate lighting in context with the surrounding built environment; and
(4) Allow for quality lighting design that reflects the theme of the community

2.4.7 Collectors and Local Streets

The following standards apply to collector and local streets within of Silver Hills:

- Lighting fixture types shall be of a consistent scale, design and color along street corridors
- Street lighting shall be directionally shaded to reduce spill-over and glare and include "dark skies" standards.
- Light fixture height shall not exceed 20 feet.
- Refer to Table 2-4 for additional lighting standards.
- Street lights shall be maintained by NV Energy or Washoe County. Non-NV Energy standard fixtures and lights within private parking lots or alleyways shall be maintained by individual property owners or a sub-HOA (to the approval of the Master Developer and Design Review Committee).
- All street lights shall incorporate dark skies technologies and fixtures.
- All collector and local roadways shall include NV Energy "decorative" light fixtures (refer to Figure 2-11).
- For local streets, individual builders may utilize non-NV Energy standard fixtures. These fixtures shall be maintained by the HOA (or a sub-HOA) and must be approved by the Master Developer/Design Review Committee.
- Individual projects east of Red Rock Road may reduce required street lighting by up to 50% (based on Washoe County code standards) in order to complement existing adjoining neighborhoods.

NV Energy Decorative Head Light Fixture

Figure 2-11 – Typical Light Fixtures

Table 2-4 – Streetscape Lighting Standards

			Standards		
Roadway Designation	**Roadway**	**Location**	**Model (Luminaire, mast arm and pole)**	**Placement**	**Spacing**
Collector	Silver Hills Pkwy.	NV Energy Standards[1]	NV Energy approved decorative fixture (see Figure 2-9)	Alternating[1]	Spaced at regular intervals
Neighborhood Local	All public streets within a parcel or subdivision	NV Energy Standards[1]	NV Energy approved decorative fixture (see Figure 2-9)[2]	Alternating[1]	Spacing Varies

1 – Placement and Spacing of street lighting is subject to approval by NV Energy and Washoe County, as specified in the Washoe County Development Code.

2 – Non-NV Energy fixtures may be used subject to the approval of the Master Developer/Design Review Committee and shall be maintained by the HOA or approved sub-HOA.

2.4.9 Entries

The consistent treatment of neighborhood entries will help establish a consistent community character within Silver Hills. Two primary entries will occur along the west side of Red Rock Road and will include a formal entry feature that spans the roadway, providing project identification. The entry feature is expected to be modeled after a traditional ranch gate entry and shall include the use of timbers with stone base accents.

The following standards shall apply to primary entry monuments:

- Maximum height of any roadway span shall be 20 feet. Roof structures may be incorporated into spans (refer to Figure 2-14) but are not required.
- Decorative lighting such as lanterns or similar may be included on primary entry features.
- Project signage, including the project name and/or logo may be included on the span structure and side base structures.
- All signage shall include internal or indirect illumination. Up-lighting of entries is permitted only when spill-over past the Specific Plan boundary does not occur.
- A formal entry(s) shall not be required for areas east of Red Rock Road.

Figure 2-12 – Primary Entry Concepts

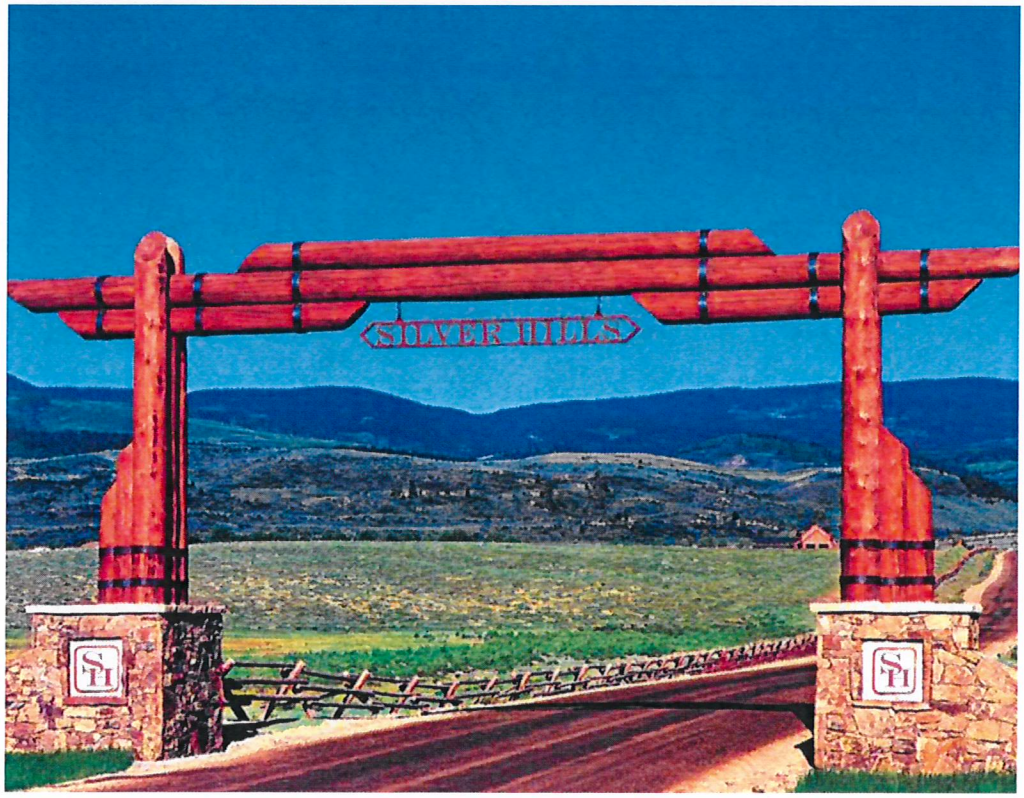
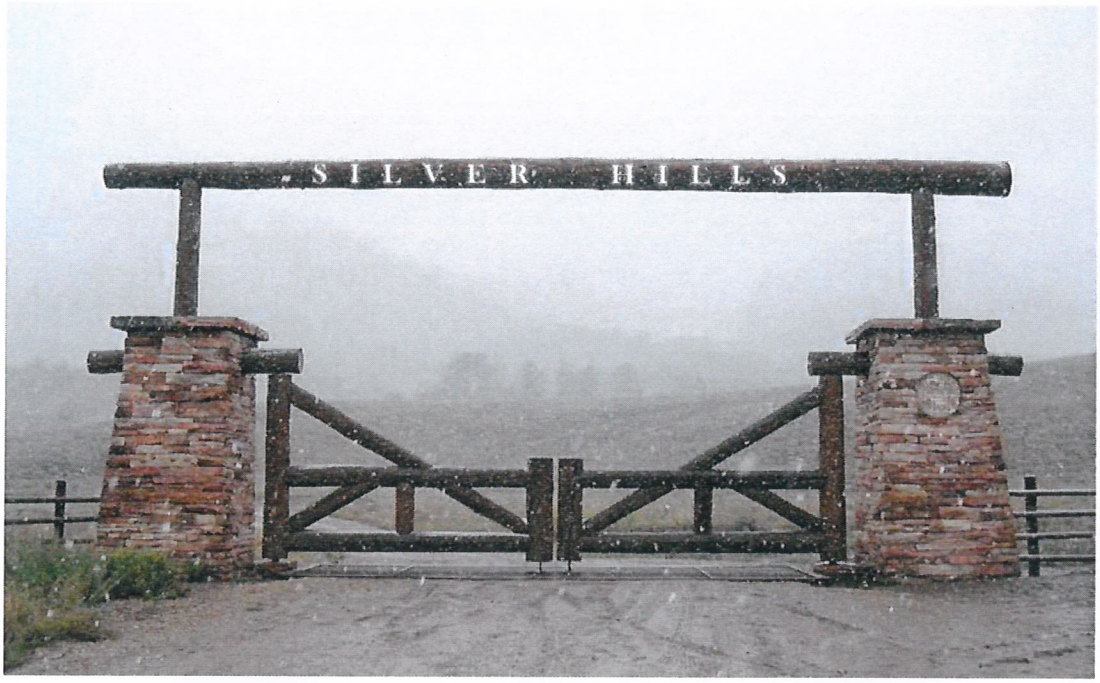
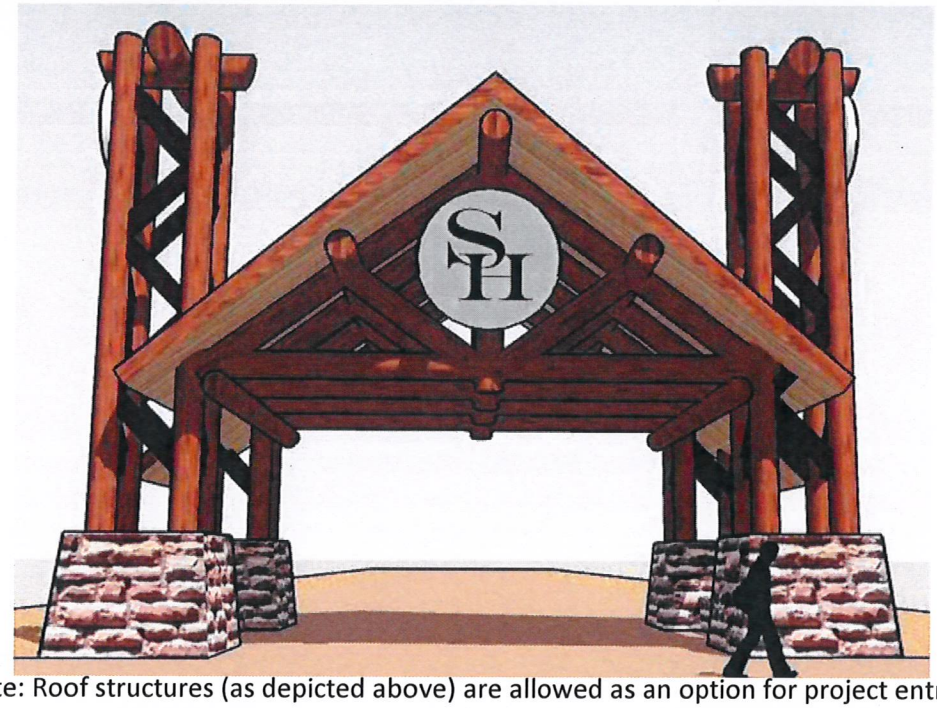


Figure 2-13 – Primary Entry Concepts





Note: Roof structures (as depicted above) are allowed as an option for project entries.

Figure 2-14 – Primary Entry Concepts

2.4.9 Neighborhood Entries

Silver Hills will incorporate entry monumentation for all individual neighborhoods within the Specific Plan area. The following standards shall apply to neighborhood entry signs:

- A neighborhood entry treatment shall be placed at the primary entrance to each neighborhood.
- Entry monuments shall be located outside the sight visibility triangle of the road intersection.
- Neighborhood entry treatments shall be designed with similar characteristics to that of primary entries, but on a smaller scale. Entry monuments may incorporate the use of stone, timbers, barn wood, etc. in order to carry on the Silver Hills theme.
- Entry monuments shall be located within dedicated common area and not within individual lots.
- Landscaping adjacent to neighborhood entries shall incorporate native materials, predominantly designed to look natural and wild, with some manicured ornamental landscaping where necessary.
- Neighborhood entry landscape treatments shall be reviewed and approved by the Design Review Committee as well as Washoe County (with associated tentative map, Special Use Permit, etc.).
- Neighborhood entries shall not exceed 6 feet in height.
- Up-lighting or indirect lighting of monument signs shall be permitted.
- Neighborhood/project entry signs shall have a consistent design within each project.
- Monument signs shall be maintained by the homeowner's association or a sub-homeowner's association (with the approval of the Master Developer).
- Neighborhood entries are optional for neighborhoods east of Red Rock Road.

Figure 2-15 – Neighborhood Entry Concepts

2.5 Signs

Signage within Silver Hills shall be limited to project entries (refer to section 2.4), internal wayfinding signs, and limited commercial signage within the MR zone. The following general standards apply to all signs within the Specific Plan area:

- Signs within Silver Hills shall comply with the regulations governing signs contained within the Washoe County Development Code. Where a conflict exists between these development standards and the Development Code, the standards contained herein shall apply.

- Monument signs shall have a maximum height of six (6) feet. No additional freestanding signs shall be permitted with the exception of directional wayfinding signs or traffic control signs. Pylon or pole signs are specifically prohibited.

- Internally lit signs shall not result in spill-over or glare upon adjoining properties.

- Refer to section 2.5.2 for non-residential sign standards.

2.5.1 Wayfinding Signs

A wayfinding sign is a sign that directs the flow of pedestrians or vehicles to community elements such as neighborhoods, parks, schools, etc. The following standards apply to wayfinding signs within Silver Hills:

- Wayfinding signs shall have a maximum height of 6 feet.

- Wayfinding signs shall not be placed within 100 feet of an intersection or nearer than 50 feet from a required regulatory sign (i.e. traffic control sign) on collector roadways.

- Wayfinding signs will be maintained by the Silver Hills homeowner's association and shall be approved by the Master Developer prior to installation.

- Temporary wayfinding signs may be used to identify individual projects, model home complexes, etc. within Silver Hills.

- Wayfinding signs shall be consistent with the concepts/examples presented in Figure 2-16.

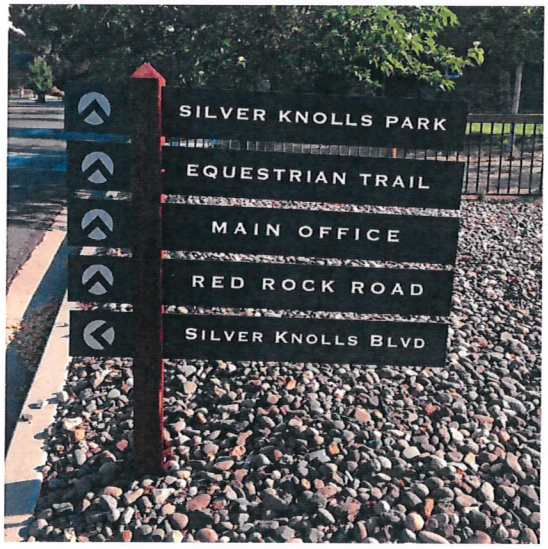


Figure 2-16 – Wayfinding Sign Concepts

2.5.2 Commercial Signs

Limited commercial areas are permitted within residential development areas as detailed previously in this Handbook. It is the intent that commercial areas not be dominated with signage. Rather, signs will be used for business identification and shall be incorporated with building architecture. The following standards apply to commercial uses within Silver Hills:

- Unless specifically addressed within this handbook, signage area shall comply with the standards included in the Washoe County Development Code for the Neighborhood Commercial zone.
- For retail uses, a common monument sign, not to exceed 8 feet in height, shall be permitted with up to 10 individual tenant panels. This sign may be internally illuminated if faced away from residential uses.
- Building signs shall be downlit or indirectly lit. Internal illumination shall be prohibited.
- Roof signs shall be prohibited.
- The use of flashing signs, reader boards, or scrolling message signs shall be prohibited.
- Refer to Figure 2-17 for examples of sign character for limited commercial uses within Silver Hills.

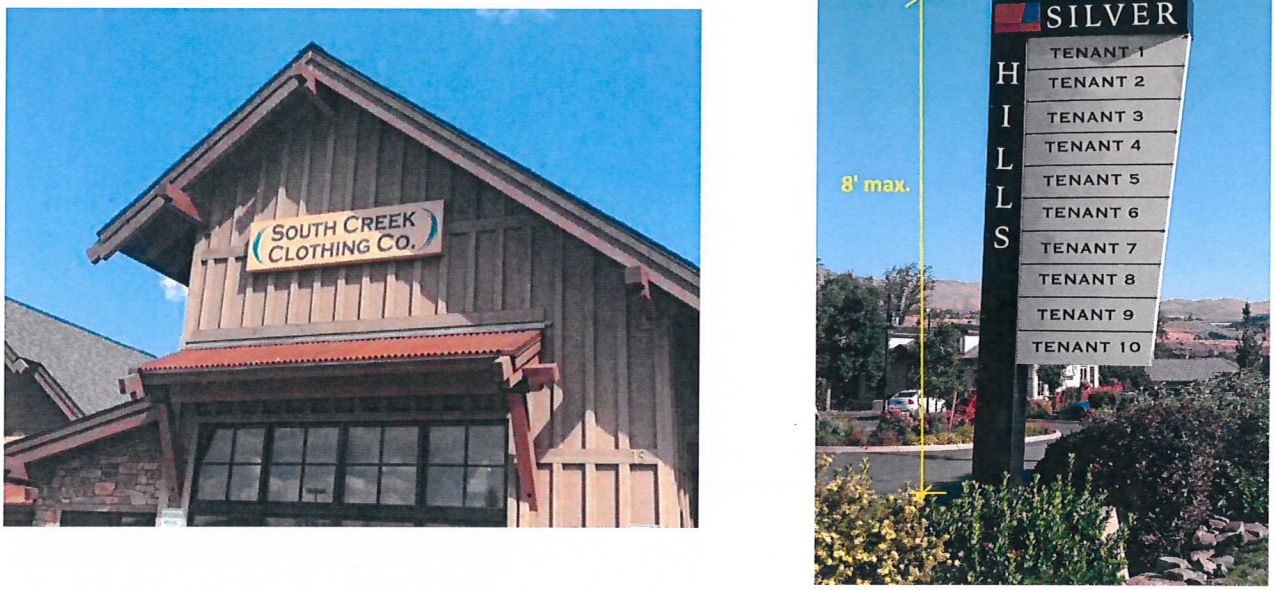


Figure 2-17 – Typical Commercial Signage

2.6 Trails

Trails are provided throughout the Silver Hills Specific Plan area and serve to provide pedestrian and equestrian links within the community. Trails are located within open space areas and shall be constructed in phases as adjoining development occurs. There are two primary trail types within Silver Hills; pedestrian trails and multi-use trails.

Pedestrian trails are intended solely for pedestrian and bicycle use and are located to provide links to neighborhoods and community facilities such as parks and schools. Multi-use trails are located within the perimeter open space buffer and are intended for use by pedestrians/hikers, bicyclists, and equestrian users. Specifically, multi-use trails provide access to public lands that surround Silver Hills and allow for horseback riders to access these lands through the Silver Hills Specific Plan area.

Figure 2-20 provides a backbone trail plan for Silver Hills. It is anticipated that as individual neighborhoods within the Specific Plan develop, links to the primary trail network will be provided within common open space. The intent is to provide pedestrian connections from within individual neighborhoods to the overall trail network, allowing residents to access various parts of the community without interaction with automobiles.

The following trail standards shall apply within the Silver Hills Specific Plan

- A 6-foot multi-use trail (decomposed granite or similar) shall be located within the open space buffer on the northern and southern perimeters of the Specific Plan area. This trail shall allow for both pedestrian and equestrian traffic.

- A minimum of two developed public trailheads (approximately 1-acre in size) shall be located west of Red Rock Road within the Specific Plan boundaries. Final trailhead locations shall be determined with input from the Washoe County Department of Parks and Open Space.

- A 5-foot paved pedestrian trail shall be located within the utility corridor open space, connecting the western and eastern sides of the project. A continuation of this trail shall provide a connection to Silver Knolls Park located south of the Specific Plan area.

- Refer to sections 2.4.4 and 2.4.5 for trail/pathway standards along Silver Hills Parkway and Red Rock Road.

- Trails shall be constructed in phases as development occurs by the Master Developer or individual project builder.

- Trails shall be maintained by the Silver Hills homeowner's association.

- As development occurs, the Washoe County Department of Planning and Building shall require trail connections to the master trail system, as applicable in order to provide for neighborhood connectivity.

- An equestrian route through the Specific Plan area shall be maintained during construction.

- Multi-use trails/paths shall be constructed of decomposed granite (or similar) and utilize either a concrete or solid border to define the limits of the trail. Refer to Figure 2-18 below.

- A minimum of one undercrossing, capable of accommodating equestrian users, shall be provided under Red Rock Road, linking the east and west sides of the Specific Plan Area.

Figure 2-18 – Typical Multi-Use Trail

- Trails occur within areas of natural landscape. However, plantings of evergreen and deciduous trees, at the Master Developer's discretion, shall be permitted.

- Access points to the trail system shall include barriers such as bollards, gates, or similar to prevent motorized vehicles from accessing the trail network. Use of trails within Silver Hills by motorized vehicles shall be prohibited. Vehicles necessary for trail and common area maintenance are exempt from this standard.

- Trailheads may incorporate access for off-highway vehicles to access public lands but shall prohibited motorized access on trails within the Specific Plan boundary (subject to approval by the Washoe County Department of Parks and Open Space).

- Connections to the trail system from future subdivisions including trail access points shall be reviewed and approved by the Master Developer or Design Review Committee.

- All trails shall be located within dedicated common areas.

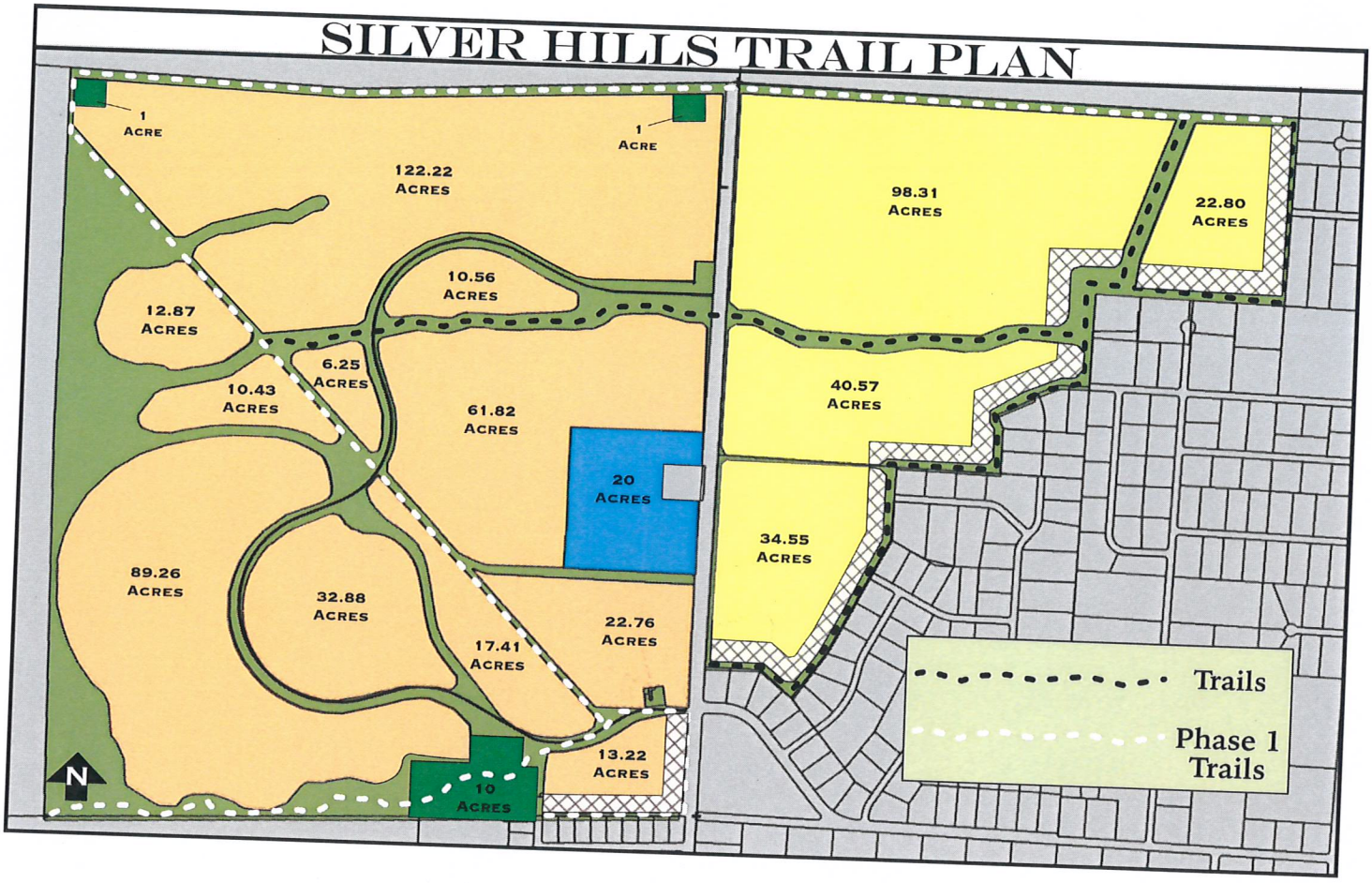
- Bollard lighting may be used to illuminate trail access points, at the discretion of the Master Developer.

- Trails located within park areas dedicated to Washoe County shall be maintained by Washoe County.

- Neighborhoods shall be required to consider trail access in their design and provide efficient links to existing BLM trailheads, where applicable.

- A trail head parking area (site to be determined) shall be provided adjacent to public lands and provide adequate area for parking, trailers, and the loading/unloading of off-road vehicles.

- Refer to Figure 2-19 for a master trail system map.



Trails identified in white (Phase 1 Trails) shall be constructed with initial phase of development for respective development area (i.e. east and west sides).

Note: Trails shown are in addition to pedestrian pathways and multi-use pathways that adjoin major roadways, as detailed in in Table 2-3.

Figure 2-19 – Silver Hills Master Trails Plan

2.7 Parks

Silver Hills will provide new park facilities to the benefit of the whole community. A minimum of 12 acres of developed park facilities shall be provided in Silver Hills. This includes 10± acres at the southwest portion of the Specific Plan area, adjoining Silver Knolls Park, along with two 1-acre trailheads. Final trailhead locations and park configuration shall be determined with input from the Washoe County Department of Parks and Open Space.

2.7.1 Community/Regional Park

A minimum of 10 acres are reserved at the southern portion of the Specific Plan area, immediately adjacent to the existing Silver Knolls Park. It is envisioned that this area will serve as an extension of the existing community park and provides for expansion of the facilities for both active and passive recreation, and possibly allow Washoe County to develop Silver Knolls Park to a regional park standard. Additionally, this area has the potential to provide equestrian staging facilities including horse trailer parking, access to equestrian trail heads, etc.

Final design of the park and its associated facilities will be subject to input and direction from the Washoe County Department of Parks and Recreation. The park facilities will be constructed by the Master Developer with construction of the 500th unit within the Silver Hills Specific Plan and will be reimbursed with park tax funds collected by Washoe County. The community park site will be dedicated to Washoe County for public use and maintained by Washoe County.

2.7.2 Neighborhood Parks

Neighborhood parks may be constructed within the Silver Hills Specific Plan area. Neighborhood Parks shall generally be 2 to 3 acres. Construction of neighborhood parks shall be at the discretion of the Master Developer and will be offered for dedication to the Washoe County Department of Parks and Open Space. If Washoe County does not accept dedication of park facilities, maintenance shall be provided by the Silver Hills Homeowners Association. Park facilities not dedicated to Washoe County may be private and for the use of Silver Hills residents only, at the discretion of the Master Developer.

There is no limit to the amount of neighborhood parks permitted within Silver Hills.

2.7.3 Trailheads

A minimum of two (2) public trailheads shall be constructed within the Silver Hills Specific Plan area, west of Red Rock Road. Trailheads will be constructed by the Master Developer and reimbursed by Washoe County with park tax funds collected from within the Specific Plan area. Trailhead facilities shall be a minimum of 1-acre in size and will be dedicated to the Washoe County Department of Parks and Open Space.

Final location and configuration of trailheads, including amenities (i.e. parking, staging areas, etc.) shall be determined with input from the Washoe County Department of Parks and Open Space. The first trailhead shall be constructed at or prior to the construction of the 150th residential unit west of Red Rock Road, with the second trailhead constructed at or before the 500th residential unit west of Red Rock Road.

2.7.4 Agrihood Farm

The standards contained herein contemplate an agrihood/community farm concept as a possible community amenity within open space and common areas. Should this occur, the following standards shall be applied:

- Membership to the community farm may be offered to non-residents of Silver Hills through a Community Supported Agriculture (CSA) program.
- The farm shall include a designated Farm Manager who shall be responsible for the daily operations, planting of crops, and as an advisor to community/farm members. This position shall be appointed and funded by the Silver Hills homeowner's association.
- The HOA may choose to appoint an Activities Director to work with the Farm Manager to provide classes/activities for community/farm members and to coordinate volunteer activities, events, etc.
- The farm may include a greenhouse(s) for resident farm basket production as well as Community Supported Agriculture (CSA)
- Excess crops shall be donated to local food banks or sold to a coop that benefits reinvestment into agrihood facilities.
- The Agrihood Farm may provide a Children's Farm that shall include a small beginning garden environment that includes raised beds, tools, a shared garden shed, and weekly classes for families (may be subject to fees).
- The Agrihood Farm may include a large fruit orchard along with mini-orchards or mini-gathering parks. These facilities may be located outside of the main farm such as at the end of cul-de-sacs within the Specific Plan Area.

- An edible, low water, and beneficial insect and wildlife habitat emphasis shall be placed in all common area landscaping.

- Orchard production within the Silver Hills Agrihood Farm shall benefit the homeowner's association community improvement fund.

- A central pavilion and/or barn is permitted to be located within the farm and may provide a commercial kitchen, meeting rooms, etc. that can be used or rented by residents.

- The use of alternative energy sources such as solar and wind turbine is highly encouraged.

- A "tractor park" that incorporates farm equipment and play areas for children may be incorporated into the Agrihood Farm.

2.8 Urban/Wildland/Public Lands Interface

The Silver Hills Specific Plan area is located within an urban/wildland interface area subject to wildfires. As such, the following standards shall apply:

- New development that abuts open space and/or natural areas shall provide a minimum of 20-feet of defensible open space consistent with standards adopted by the Truckee Meadows Fire Protection District (TMFPD).

- With individual tentative maps, TMFPD shall have the ability to condition site specific fire mitigation requirements such as increased defensible space, specific plant palettes, etc.

- The Silver Hills Homeowners Association shall be responsible for the maintenance of common areas outside of individual lots to ensure weeds and other combustibles are removed in order to maintain a minimum of 20-feet of defensible space from the property line of an abutting unit.

- With new development, access to open space areas shall be coordinated with TMFPD to allow for fire equipment to access open space/common areas during a wildfire event.

- A fire hydrant shall be located at each trailhead adjacent to public lands.

- A vehicular access, for emergency purposes, shall be provided at each adjacent BLM trailhead. These access points should align with existing trails, to the extent possible and may include gates and/or barriers to prevent non-emergency access.

- A vehicle parking and staging area shall be colocated with a trailhead at the border of Silver Hills with BLM/public lands and shall provide ample area for loading/unloading of off road vehicles. Location shall be determined with input from BLM and Washoe County.

2.9 Mailboxes

Individual mailboxes, if allowed by the United States Postal Service (USPS), shall be paired at driveways to serve adjacent homes. The style of the mailboxes, including address numbers shall be compatible with the architectural styles of the homes and shall be consistent throughout each project within Silver Hills. Mailbox designs shall be approved by the Silver Hills Design Review Committee and the USPS. Mailboxes shall be provided and installed by individual builders prior to the issuance of certificates of occupancy for the individual homes.

When individual mailboxes are not permitted, clustered boxes shall be located in convenient areas conducive to temporary on-street parking. Placement of cluster boxes shall not be near intersections and shall not conflict with individual driveways or utilities. Locations shall be approved by the USPS and the Silver Hills Design Review Committee.

The United States Postal Service (USPS) shall be responsible for the maintenance of mailboxes/mailbox cluster boxes within Silver Hills.

CHAPTER 3 – SITE DESIGN AND ARCHITECTURAL STANDARDS

3.1 Overview

The purpose of this chapter is to establish base standards and design parameters for which future development within Silver Hills shall follow. These standards will guide the development of the Specific Plan area by providing specific design criteria for grading, building orientation, landscaping, lighting, signs, walls and fences, and other design elements that tie the community together, and helping to create the sense of place discussed in Chapter 1.

Architectural standards and guidelines are provided to ensure projects within Silver Hills are attractive, relate to one another, and reinforce the project theme. The pictures contained in this chapter are provided to convey "imagery" of the standards and guidelines but are not intended to require the specific design style depicted. Alternative themes with respect to design and architecture are encouraged in order to promote diversity of housing styles within Silver Hills as a whole.

As new projects (i.e. tentative maps) move ahead within Silver Hills, they shall be reviewed in context with the standards included within this chapter. This includes review by the Silver Hills Design Review Committee (DRC) and Washoe County to determine consistency with site design and architectural standards.

3.2 Site Planning Standards and Guidelines

The purpose of the site planning standards and guidelines is to address general provisions of site development which include building orientation, grading and drainage, parking areas, landscape, lighting, signs, walls and fences, and service areas. Site planning controls the proper placement of buildings and internal roads that service and access the various uses in the community. It addresses the linkages and land use relationships at a human-scale, in order to create a stimulating and visually pleasant community. The goal is to promote pedestrian activity and safety, create visual compatibility with surrounding neighborhoods and minimize negative impacts on the natural environment.

3.2.1 Site Planning and Development Standards

Site planning, architectural design, and landscape design shall be consistent throughout Silver Hills in order to encourage neighborhoods that fully integrate with one another. There are a variety of methods to accomplish this including the use of consistent fencing, landscape treatments, design elements such as neighborhood entries, etc.

Individual neighborhoods within Silver Hills shall promote visual diversity and avoid monotonous development patterns. Methods to achieve this include, but are not limited to: not repeating floor plans/elevations directly next to each other, providing for a minimum of three distinct elevations for each home plan, designing homes so that the garages are integrated into front elevations, varying setbacks within the neighborhood, including design elements such as porches, overhangs, etc.

Site Design

The following standards and guidelines promote visual diversity within individual neighborhoods:

- "Home forward" architecture shall be encouraged in the design of new home elevations. This includes integrating the garage into the elevation or placing home elements such as porches, entries, and windows to the front, as depicted in Figure 3-1.

Figure 3-1 – Typical "Home Forward" Design

- To the extent practical, mirroring of facades shall occur between lots so that garages and entries are adjacent to each other. This creates variations in setback, providing for a more visually diverse streetscape. The pattern shall include breaks so that it creates variation with patterns across the street and does not become overly repetitious. This standard shall not apply to zero lot line products.

- Front elevations that face the street shall integrate garages to the extent possible. Methods to achieve this include off-setting the garage (refer to Figure 3-1), matching the garage architecturally with the primary façade, or incorporating alternatives such as side load or split garages (i.e. two car front load with a separate one car side load garage), alleys, etc. Refer to Figure 3-2.

Figure 3-2 – Garage Integrated Elevations

- Setbacks shall be varied to the extent possible in order to eliminate a monotonous appearance along the street.

- Neighborhoods that border the community trail system shall provide for a point of connection with final neighborhood design. Connection points can occur at the end of cul-de-sacs or within dedicated public access easements located within common open space. Trail connection points shall be a minimum of 8 feet in width and include a 4-foot multi-purpose path (decomposed granite or similar) that provides a link to the community trail.

- Neighborhoods with smaller lot sizes are encouraged to utilize alleys and provide homes that open up on a community green in order to promote walkability and encourage interaction between neighbors. Refer to Figure 3-3.

Figure 3-3 – Mixed Residential Neighborhood Concepts

- Alleys within single-family residential developments shall have a minimum width of 20 feet with no parking. Alleys shall not be used as an emergency access road.

- Alleys shall be maintained by the adjoining property owner through an easement agreement or by a sub-association to be set up by an individual builder with the approval of the Master Developer.

- Single family lots that abut common areas and open space shall utilize open rear yard fencing. This is intended to provide a sense of openness within common areas and avoids a "walled off" appearance. A solid 3-base with open top may be permitted as an alternative to open fencing with approval by the Design Review Committee.

- Cottage Court design (as depicted in Figure 3-4) may be incorporated into areas of smaller homesites. This building type consists of smaller, detached structures, providing multiple units arranged to define a shared court which takes the place of a private rear yard. Units shall front onto and be accessed from the shared court.

Figure 3-4 – Cottage Court Concept

Grading

- Design of residential neighborhoods shall be sensitive to the natural terrain. Structures shall be located in such a manner so as to minimize necessary grading and preserve natural site features including drainageways, rock outcroppings, etc.

- Grading of subdivisions or pad sites shall be designed to blend the edges of development with the adjoining natural terrain. This may be accomplished through the use of rockery walls in order to reduce the length of man-made slopes, etc.

- Landscaping and native revegetation shall be the preferred method of slope stabilization as opposed to rip rap on all manmade slopes.

- Graded slopes shall be rounded resulting in smooth, harmonious transitions between the man-made terrain and the natural terrain.

- Graded slopes shall be revegetated prior to the issuance of a certificate of occupancy for new homes. This standard may be phased with the phased development of individual projects (i.e. slopes shall be revegetated concurrently with development within any given phase). If climatic conditions or other circumstances prevent planting at the time of occupancy, a bond shall be provided for landscaping during the subsequent growing season to the satisfaction of the Washoe County Department of Planning and Building.

- Drought tolerant plant species and native reseeding shall be utilized to help minimize erosion.

- Slopes contained within individual lots as a result of terracing shall be maintained by the property on the down slope side.

Landscaping

- Individual builders or homeowners shall be responsible for landscaping the front yards of new homes within Silver Hills and shall be completed within one year from the issuance of the final certificate of occupancy.

- Homeowners shall be required to submit front yard landscape designs to the Design Review Committee for review and approval.

- Front yard landscaping, shall include an automatic irrigation system.

- At a minimum, each individual front yard shall include one tree per 400 square feet of yard area.

- Neighborhoods with common yards (i.e. community greens) shall provide trees at intervals not to exceed 30 feet.

- Landscape character may vary from neighborhood to neighborhood. Each neighborhood may use a unique plant palette with the approval of the Design Review Committee. Project entries shall retain a common theme, as previously described in Chapter 2.

- As an alternative to turf, natural xeriscaping and low-water plant materials may be used for front yards and common yards with the approval of the Design Review Committee.

Lighting

- Single family residences shall incorporate exterior lighting that is compatible with the architectural design of the home and includes fixtures that eliminate spill-over of light to adjoining parcels.

- Projects with community greens or common yards may choose to include bollard lighting. Bollards shall not exceed 4-feet in height.

- As detailed in Chapter 2, street lights shall include NV Energy approved fixtures and shall be spaced per Washoe County standards. Neighborhoods with community greens, alleyways, etc. may vary fixture standards with the approval of the Design Review Committee. Non-standard light fixtures may be used with Design Review Committee approval and shall be maintained by the Silver Hills homeowner's association or a sub-homeowner's association.

Walls and Fencing

- A 6-foot wood or vinyl fence with decorative pilasters (spaced at an average of 150-feet) shall be located at the rear yards of homes that back to Silver Hills Parkway. Final material and pilaster design shall be approved by the Design Review Committee and shall remain consistent throughout the Specific Plan area. Refer to Figure 3-5.

- Fencing along Silver Hills Parkway shall be placed on the property line and shall be maintained by the homeowner's association (exterior) and the adjoining property owner (interior). Fence replacement shall be the responsibility of the homeowner.

Figure 3-5 – Silver Hills Parkway Fencing Concept

- Wood privacy fencing may be used for individual lots and shall not exceed 6-feet in height. Refer to Figure 3-6.

- Rear yards adjoining open space may utilize open fencing. Open fencing may include split-rail, wrought iron, or similar and shall be consistent within the entire development. A solid 3-foot base with open fencing above may be permitted with Design Review Committee approval. This standard shall not apply to side yards that abut open space/common area in order to protect resident privacy. Refer to Figure 3-7. No rear yard gates are permitted directly abutting public (BLM) lands.

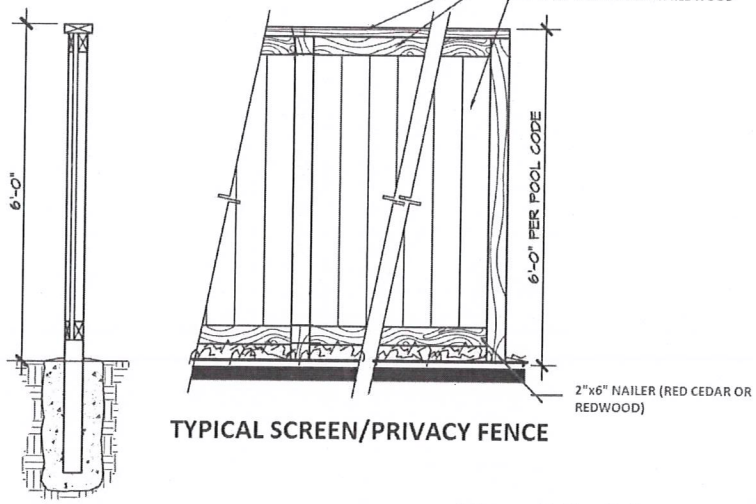
- Projects with common yards or community greens may include privacy walls, such as courtyard or patio walls, and shall not exceed 4 feet in height. These walls shall incorporate materials and colors consistent with the architecture of the homes.

- A 6-foot solid screen wall or fence may be used to separate any non-residential use from single family homes.

- All walls and fences associated with a project shall be installed concurrently with the project. Fences within residential lots shall be maintained by the lot owner.

- Chain link fencing shall only be permitted with temporary construction yards and is prohibited within individual lots.

- No fencing in excess of 3-feet (split-rail or picket) shall occur within the required front yard setback.



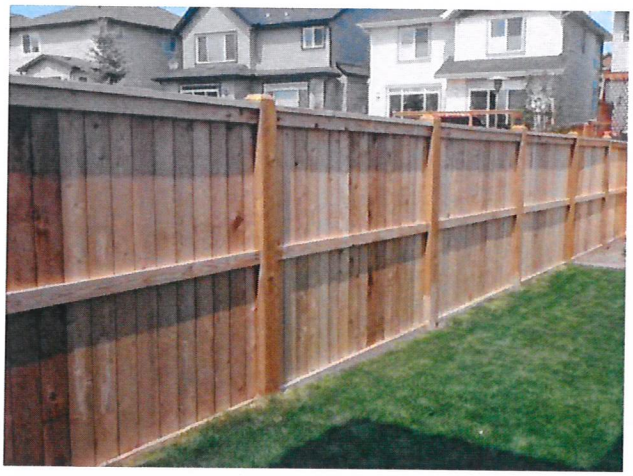
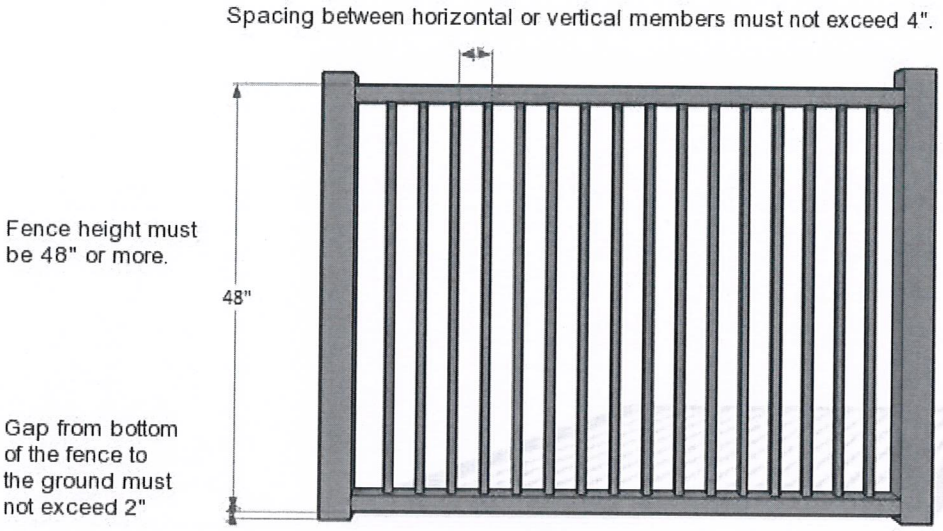


Figure 3-6 – Privacy Fencing Concepts



Typical Wrought Iron Fence

Figure 3-7 – Open Fencing Concepts

- Fencing for non-residential uses including neighborhood commercial, public facility, etc. shall conform with fencing standards contained in the Washoe County Development Code.

- Schools and Washoe County park facilities, may incorporate the use of chain link fencing with the approval of the Design Review Committee.

3.3 Architecture Standards and Guidelines

3.3.1 Background

The purpose of these architectural guidelines is to provide general design criteria and guidance for the development of the neighborhoods within Silver Hills. The guidelines are not intended to be restrictive, but rather promote both visual compatibility and variety within the Specific Plan area by utilizing complementary traditional architectural styles. The intended result is a high level of design direction and quality.

3.3.2 Architectural Theme

As discussed in Chapter 1, Silver Hills evokes an overall mountain ranch theme which is also consistent with the agrihood concept. The theme is reinforced with evergreen plantings that will occur along Silver Hills parkway, etc. Traditional ranch and craftsman architectural styles will reinforce the overall theme and feel of the project and are complementary to the existing environment that surrounds Silver Hills. In order to allow for variety, deviations to the architectural theme, including farmhouse or more eclectic designs, shall be permitted and can complement differing styles through the inclusion of common design elements. The ultimate goal of these standards is to create a high quality, attractive community that provides diverse housing choices to suit the variable tastes and needs of future residents.

The application of these architectural guidelines and standards to individual development projects will be reviewed and approved by the Design Review Committee (DRC) and the Washoe County Design Review Committee. New interpretations of these classic combinations of materials are encouraged as they relate to a general feeling of neighborhood unity. The following sections provide guidelines and standards that will aid in the creation of a community of which residents can be proud to call home.

3.4 Single Family Architectural Standards

A key element of the Silver Hills architectural guidelines is to create a streetscape possessing both function and visual variety. The guidelines are intended to provide variety in appearance as well as a sense of individuality for each structure. Projects where identical buildings line the streets without variation in form and mass are prohibited.

It is recognized that all architectural styles are open to interpretation in design. Therefore, these standards are not intended to limit creativity or prevent certain types of design. Instead, they should be viewed as a baseline for review in terms of quality, general theme, etc. Deviations may be permitted with the review and approval of the Silver Hills Design Review Committee and Washoe County Design Review Committee.

3.4.1 Building Mass and Form

- Facades of buildings styles shall make use of expressive structural elements such as brackets and columns, variable window types, a mixture of materials and distinctive porches.

- A minimum of three (3) distinctive floor plans shall be used within each individual subdivision within Silver Hills. A subdivision with twenty (20) or less lots may have less than three (3) distinctive floor plans.

- The architectural detailing similar to that of the front elevations may be utilized on all sides of the home.

- Any building addition or additional building(s) (over 200 square feet) on a property shall match the main structure in building design, materials, roof pitch and architectural character.

- The exterior mass and form of residential architecture should be varied within neighborhoods to improve the streetscape. This can be accomplished through (but is not limited to) varied setbacks, floorplans, facade detailing, massing and rooflines.

3.4.2 Roof Form

- Roofs shall include variations in plane. This can be achieved with the use of elements such as hipped roofs, gables, dormers, porches, etc. Flat roofs are highly discouraged unless incorporated as an element to the overall architectural scheme of the building. Refer to Figure 3-8.

- Acceptable roof materials include concrete tile or architectural grade asphalt shingles. Metal roofing may be used to accent architectural features but shall not be the prominent roofing material.

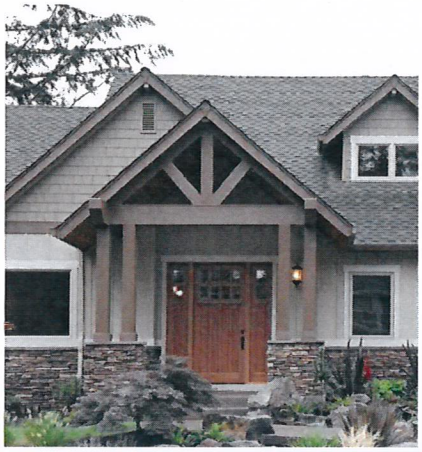


Figure 3-8 – Typical Roofline Variation

3.4.3 Materials and Colors

- Changes in materials and color are encouraged to provide visual interest and shall logically related to one another in order to avoid abrupt changes or conflicting architectural styles.
- Building materials and color schemes shall be consistent with a ranch theme and include the use of wood siding, cement fiber board, and/or stucco with accents such as stone or brick.
- The use of wood beams and/or timbers is encouraged on elevations and is reflective of the overall "upscale rustic" type of ranch style architecture.
- Color palettes for new homes shall include muted earth tones such as browns, beiges, whites, pale yellows, light greens, etc. reflective of a typical ranch style.
- The use of bright and vivid colors is prohibited.

3.4.4 Building Articulation

- Front elevations and those facing streets shall include significant articulation in order to avoid the appearance of flat planes. Methods for providing articulation include porches, dormers, bay windows, building offsets, recessed entryways, etc.

3.4.5 Accessory Structure and Uses

- Rain gutters shall be colored and/or painted to match the roof trip so that they are not visibly obtrusive to the main elevation. This standard may be waived with the approval of the Design Review Committee if the gutters serve as a distinctive architectural element of the home.
- Solar panels located on roofs shall either be architecturally integrated (i.e. solar tiles) or located to not be visibly obtrusive from the street.
- Patio covers and shade structures shall be approved by the Design Review Committee and shall be painted/colored to complement the primary structure. Such structures shall meet the minimum setbacks for the zone in which they are located. Refer to Chapter 2 for setback standards.
- Mounting of satellite dishes and/or antennas on the front elevation of homes shall be prohibited.
- Detached structures (where allowed – refer to Chapter 2) shall be painted to match the primary structure and are subject to the setback standards for that district.

- Sheds that extend above the fence line and are visible from the street shall be prohibited. Sheds extending above the fence line shall be screened from view of adjoining residences and approved by the Design Review Committee.

- Parking of recreational vehicles, boats, and the similar may only be permitted within side yards if fully screened behind a 6-foot minimum fence.

- Accessory dwelling units (as permitted within Chapter 2) shall be integrated with the overall design of the primary structure such as the example included in Figure 3-9.

- Multi-generational single-family housing that includes an attached accessory dwelling shall be permitted per the standards included in Chapter 2. Refer to Figure 3-10.

Figure 3-9 – Typical Accessory Dwelling

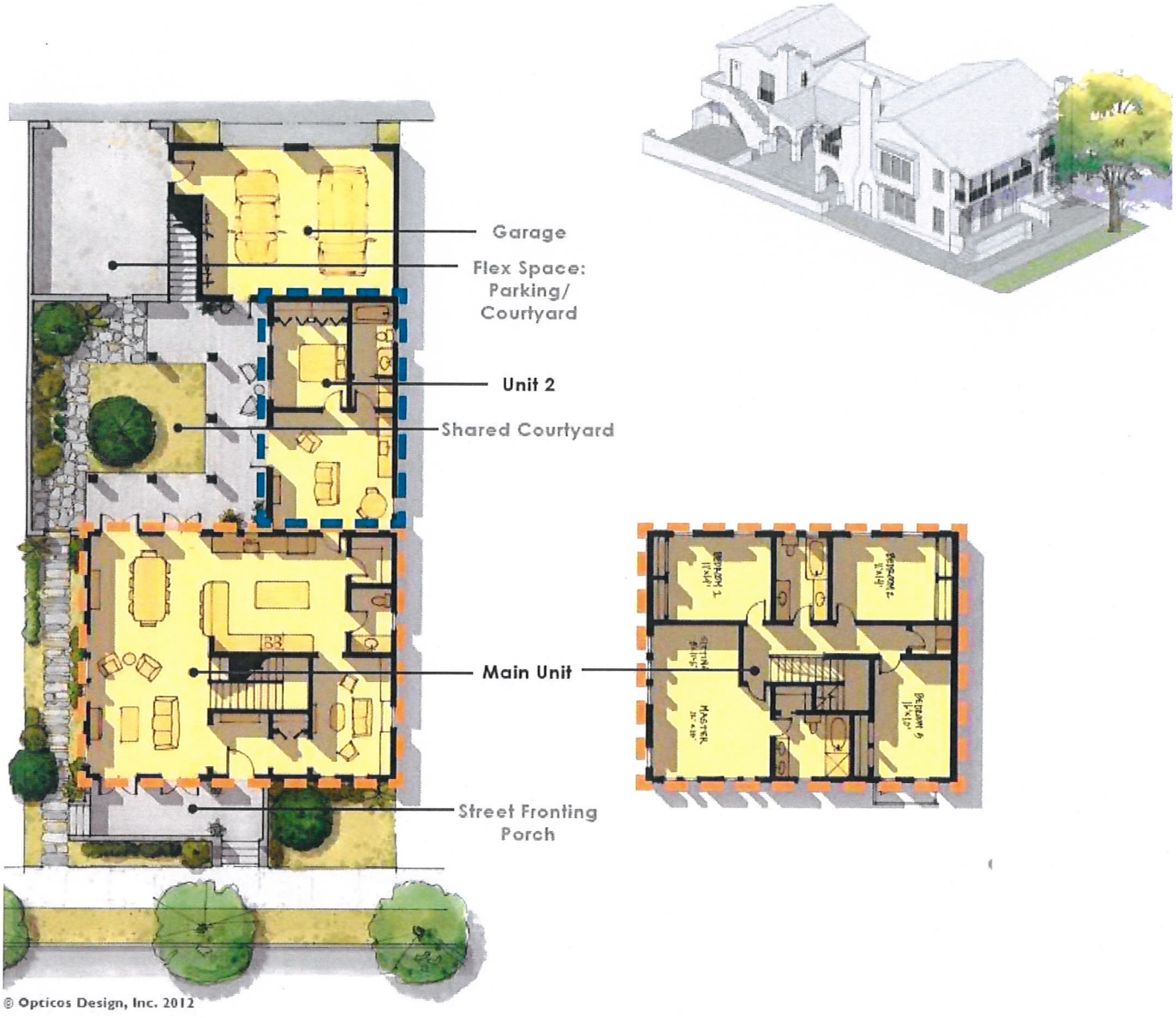


Figure 3-10 – Multi-Generational Housing Concept

3.5 Non-Residential Standards

Non-residential uses within Silver Hills are fairly limited and include limited neighborhood commercial uses, personal storage (intended to benefit residents of the Specific Plan area), schools, and public facilities. In general, the site planning and architectural standards provided in the Washoe County Development Code shall pertain to all non-residential uses within the Specific Plan boundary. However, the following supplemental standards shall also apply.

3.5.1 Non-Residential Supplemental Standards

- Neighborhood commercial uses shall be broken into a series of smaller buildings rather than grouped into larger structures. Refer to Figure 3-11.

- Commercial buildings shall be limited in size based on the supplemental use standards described in section 2.3.1.

- Elevations for commercial buildings shall be residential in nature and incorporate elements as detailed in section 3.2. Refer to Figure 3-11.

- Commercial architecture shall be consistent with the residential standards included in section 3.2.

- In areas where non-residential uses adjoin residential uses, a 6-foot solid wall or fence shall be installed at the property line.

- Personal storage facilities and outdoor storage, subject to the supplemental standards and restrictions called out in section 2.3.1, shall be screened with a solid masonry wall. The wall shall incorporate colors earth tone colors and include decorative pilasters (as approved by the Design Review Committee) approximately every 40 feet for expanses visible from a public right-of-way.

- Agrihood facilities (if incorporated) such as barns shall be incorporated with the overall architectural theme and include common elements such as batt and board siding, rock accents, or similar rustic farm feel. Refer to Figure 3-11 for typical barn/agrihood concepts.

- Greenhouses associated with the agrihood "commons" shall be exempt from the architectural standards bust shall be limited to no more than 5,000 square feet. Refer to Figure 3-13 for greenhouse concepts.

- Metal barn structures may be permitted within agrihood areas subject to approval by the Design Review Committee.

Figure 3-11 – Commercial Architecture/Scale

If agrihood facilities are developed within Silver Hills, Figures 3-12 and 3-13 depict facilities that are consistent with the standards contained herein.

Figure 3-12 – Typical Agrihood Building Concepts

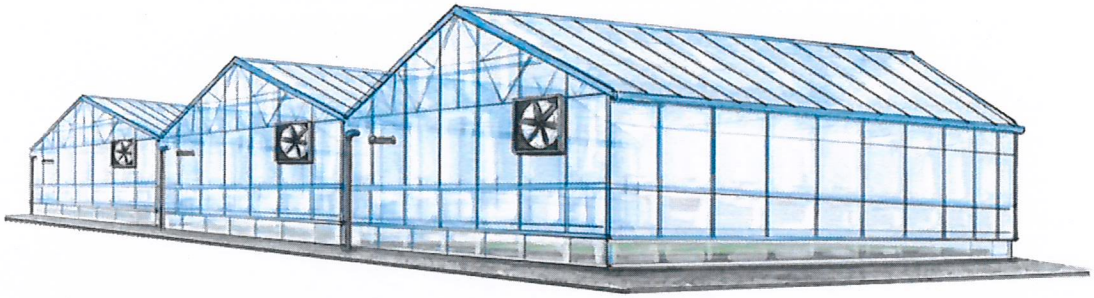


Figure 3-13 – Typical Agrihood Greenhouse Concepts

- All non-residential building elevations must be reviewed and approved by the Silver Hills Design Review Committee.

- School and public park facilities/structures shall be exempt from the architectural guidelines and shall conform with the standards included in the Washoe County Development Code.

- When reviewing public facilities (i.e. schools, libraries, etc.), the Washoe County Design Review Committee shall consider the requirements of this chapter in making recommendations on project architecture.

- Non-reflective metal roofing may be permitted on commercial and agrihood buildings with the approval of the Design Review Committee. Refer to Figure 3-12 for an example of acceptable metal roofing.

- Buildings such as churches and community centers shall incorporate elements of the design guidelines contained herein in order to reinforce the project theme. This includes elements such as earth tone colors, acceptable roofing materials and pitches, use of stone, brick, or similar, etc. Refer to Figure 3-12.

- Facades of non-residential buildings shall include articulation to avoid long monotonous planes. Methods of articulation include, but are not limited to the use of faux windows, overhangs, trellises, awnings, pilasters, columns, etc.

- The use of pre-engineered metal buildings may be permitted with the approval of the Design Review Committee. Any metal building must comply with the roof standards contained within section 3.2 and include at a minimum a brick or stone wainscoting along with non-metal accents such as stucco, EIFS, etc. Refer to Figure 3-14 for example.

- Church steeples shall be subject to the design provisions (i.e. height) of the Washoe County Development Code.

Figure 3-14 – Typical Non-Residential Structure

CHAPTER 4 – PHASING AND INFRASTRUCTURE

4.1 Phasing

It is anticipated that Silver Hills will develop over the course of many years and may take 15 to 20 years for complete buildout. There are a variety of factors that will contribute to the ultimate timing of construction within the Specific Plan area. These include, but are not limited to; market conditions, timing of infrastructure and improvements, subsequent review and entitlements, etc.

Generally, phasing is anticipated to commence along the Red Rock Road frontage, moving east and west into the Specific Plan Area. Final phasing will be determined based on market demands.

Although market conditions will ultimately dictate phasing, it is anticipated that Silver Hills will develop in up to 20 individual phases. Each phase will include up to 150 units with an estimated buildout of 15 to 20 years for the entire project.

4.2 Open Space, Trails and Parks

Much of the open space within the Specific Plan area is natural open space, drainageways, etc. that will remain undisturbed with the exception of areas which will be developed with the Agrihood concept as further outlined in Chapter 2 of this handbook. Improvements such as trails will follow the same development pattern as other infrastructure elements. As development projects are constructed adjacent to areas where trails and/or other improvements are planned/called out, the segments of these improvements adjacent to the development areas will occur.

Silver Hills will provide new park facilities to the benefit of the whole community. A minimum of 12 acres of developed park and trailhead facilities are planned. This includes a 10-acres addition to Silver Knolls Park as well as two 1-acre trail heads west of Red Rock Road. Park areas are subject to relocation based on final community design/layout, input from reviewing agencies, etc.

A minimum of 10 acres are reserved at the southern portion of the Specific Plan area, immediately adjacent to the existing Silver Knolls Park. It is envisioned that this area will serve as an extension of the existing community park and provides for expansion of the facilities for both active and passive recreation. Additionally, this area has the potential to provide equestrian staging facilities including horse trailer parking, access to equestrian trail heads, etc.

Final design of the park and its associated facilities will be subject to input and direction from the Washoe County Department of Parks and Open Space. The park facilities will be constructed by the Master Developer with construction of the 500th unit within the Silver Hills Specific Plan and will be reimbursed with park tax funds collected by Washoe County. The community park site will be dedicated to Washoe County for public use and maintained by Washoe County.

A total of two public trailheads shall be constructed west of Red Rock Road. Trailheads will be a minimum of 1 acre in size and shall be coordinated with the Washoe County Department of Parks and Open Space in terms of amenities and facilities. The first trailhead shall eb constructed at or prior to the 150th residential unit west of Red Rock Road with the second trailhead constructed at or prior to the 500th unit west of Red Rock Road.

4.3 Utilities/Infrastructure

4.3.1 Sanitary Sewer

All new units and uses within the Silver Hills Specific Plan area will require connection to sanitary sewer facilities. Sanitary sewer service for the Silver Hills Specific Plan is somewhat unique in that it will be provided by a mix of future County sewer facilities and existing and future City of Reno sewer facilities. The design peak flow rates for the various development types differ between entities as shown on the attached table of flows (refer to Table 4-1).

The City of Reno, operates and maintains the nearest available public sanitary sewer system to the project. The terminus of these facilities is an existing 12" diameter sanitary sewer trunk line located at the existing western terminus Echo Avenue.

Note that sewer designs are preliminary and will be refined with subsequent tentative maps. The use of pump stations and force mains may be permitted as necessary within the Specific Plan area.

- **Alternative 1**

Future county gravity sewer mains will be constructed from the eastern project limits to the City facilities at two different locations, necessitated by the topography of the site and the future proposed grading.

- Alignment Number 1 - The first alignment will be from the northeast midpoint of the project along Blackhawk Road to Osage thence south along Osage to the extension of Echo Avenue and then east to the point of connection to the existing City of Reno sewer system (refer to Figure 4-1).

  This alignment will consist of approximately 9,000 lineal feet of gravity sewer main. All but the portion within the future extension of Echo Avenue is located in public right of way and the extension of Echo encompasses property owned by the Applicant.

  The peak flow for the first 5,600 lineal feet of this main from the Blackhawk-boundary to the Osage – Silver Hills intersection is estimated at 1.64 MGD. This rate includes both estimates of future development areas on vacant land and anticipated hookups from residences currently served by septic systems adjacent to the alignment. From the Silver Hills intersection to the south the injection of an additional 0.63 MGD will be placed into the main resulting in the last 4,200 feet of the main needing a capacity of approximately 2.27 MGD (peak capacity).

- Alignment Number 2 - The second alignment will commence at the southeast boundary of the project and follow Silver Knolls Boulevard to its intersection with Osage Road where it will intersect with alignment number 1 a length of approximately 4,870 feet (refer to Figure 4-2). The peak flow for this segment is anticipated to be 0.63 MGD. The phasing of the project will determine which of these alignments will be constructed first.

The design of both of these alignments will be required to take into consideration future sewer hookups of adjacent properties shown as outlined areas on attached Figure 4-3. Methods of reimbursement will be left to future negotiations with the affected parties.

- **Alternative 2**

Alternative 2 would require the securing of rights of way from Osage Road to the east along the projection of both Blackhawk Road and Silver Hills Boulevard to the Reno-Stead airport property. This alignment would then parallel the western Airport boundary for which a right of way would have to be obtained. To date, the applicant has been unable to secure these accesses from either the airport or the private property owners.

If these rights of way were to be secured, the major portion of the facility would be constructed within the City of Reno on airport property requiring approximately 9,700 feet of main (refer to Figure 4-3). This portion of the infrastructure would be designed and constructed using City of Reno standards and flow rates. Once again, all sewer facility design can potentially incorporate oversizing based upon future negotiations with the public entities and private property owners.

Future county sewer mains will connect to an existing City of Reno 12" diameter trunk main stubbed off the west end of Echo Avenue. The portion of the existing City of Reno sanitary sewer system that will provide service to the project consists of an 18" sewer interceptor in Moya Blvd. (from Lear Blvd. to Echo Ave.), the existing City of Reno Lear Boulevard Pump Station located at the northeast corner of the intersection of Lear Boulevard and Moya Boulevard, the force main extending from the Lear Pump Station to the east, and existing gravity sewer pipes further to the east. The existing City of Reno sanitary sewer system currently conveys sewer from the west end of the Stead Industrial area in an easterly direction to the existing Reno/Stead Water Reclamation Facility (RSWRF) located at 4250 Norton Street near the intersection of Military Road and Lear Boulevard. An analysis of the existing City facilities including mains, the Lear Pump Station and associated force main may be required in order to ensure capacity for the proposed Silver Hills Development. It is assumed for the purposes of this summary that the Reno/Stead Water Reclamation Facility (RSWRF) will have or will be able to increase its capacity to serve the proposed project.

The proposed on-site sanitary sewer system for the Silver Hills Development will consist of 8" to 12" mains and manholes in accordance with Washoe County standards.

Table 4-1 - Sewer Design Criteria for City of Reno and Washoe County

Design Criteria	City of Reno	Washoe County
Peak Flow in Mains (8"to10")	350 gallons per capita per day	
Peak Flow in Trunks (>10"<18")	250 gallons per capita per day	
Average Daily Residential Flow		270 gallons per day (A)
Peak Flow - Single Family Residential for Mains (8" to 10" pipe)	1,050 gallons per day	810 gallons per day(A)
Peak Flow - Single Family Residential Flow for Trunks (>10"<18")	750 gallons per day	810 gallons per day (A)

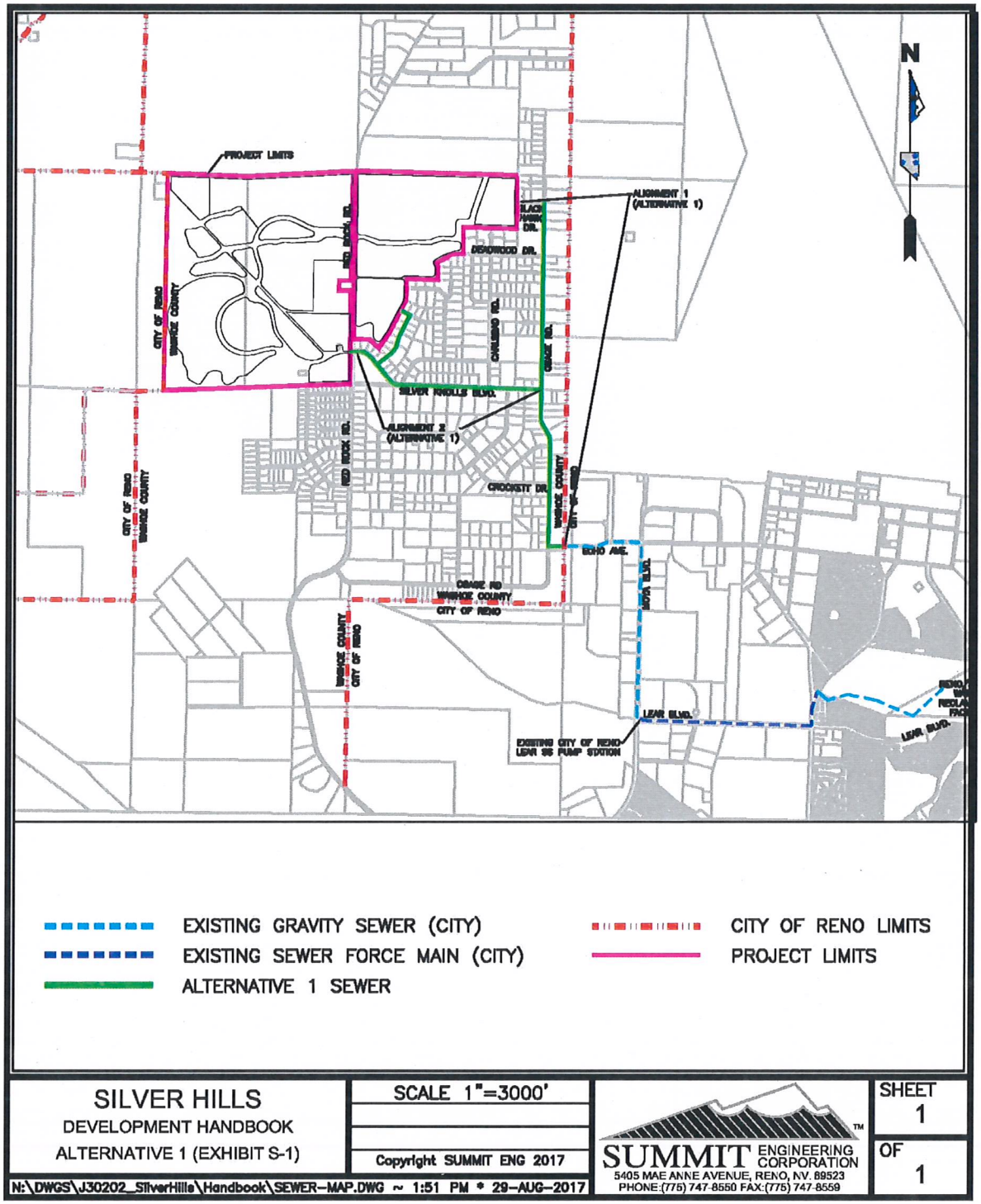


Figure 4-1 – Sewer Alternative 1

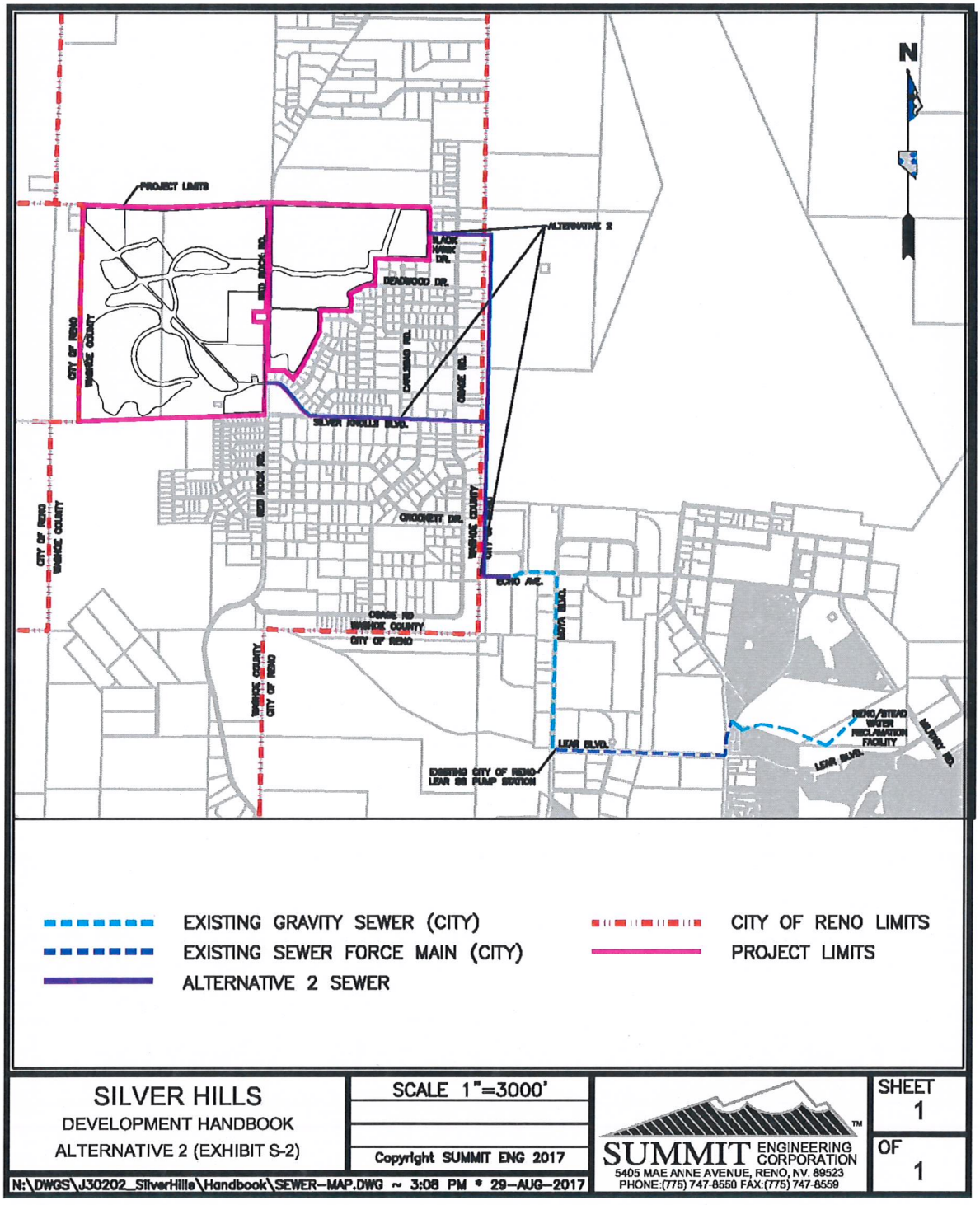


Figure 4-2 – Sewer Alternative 2

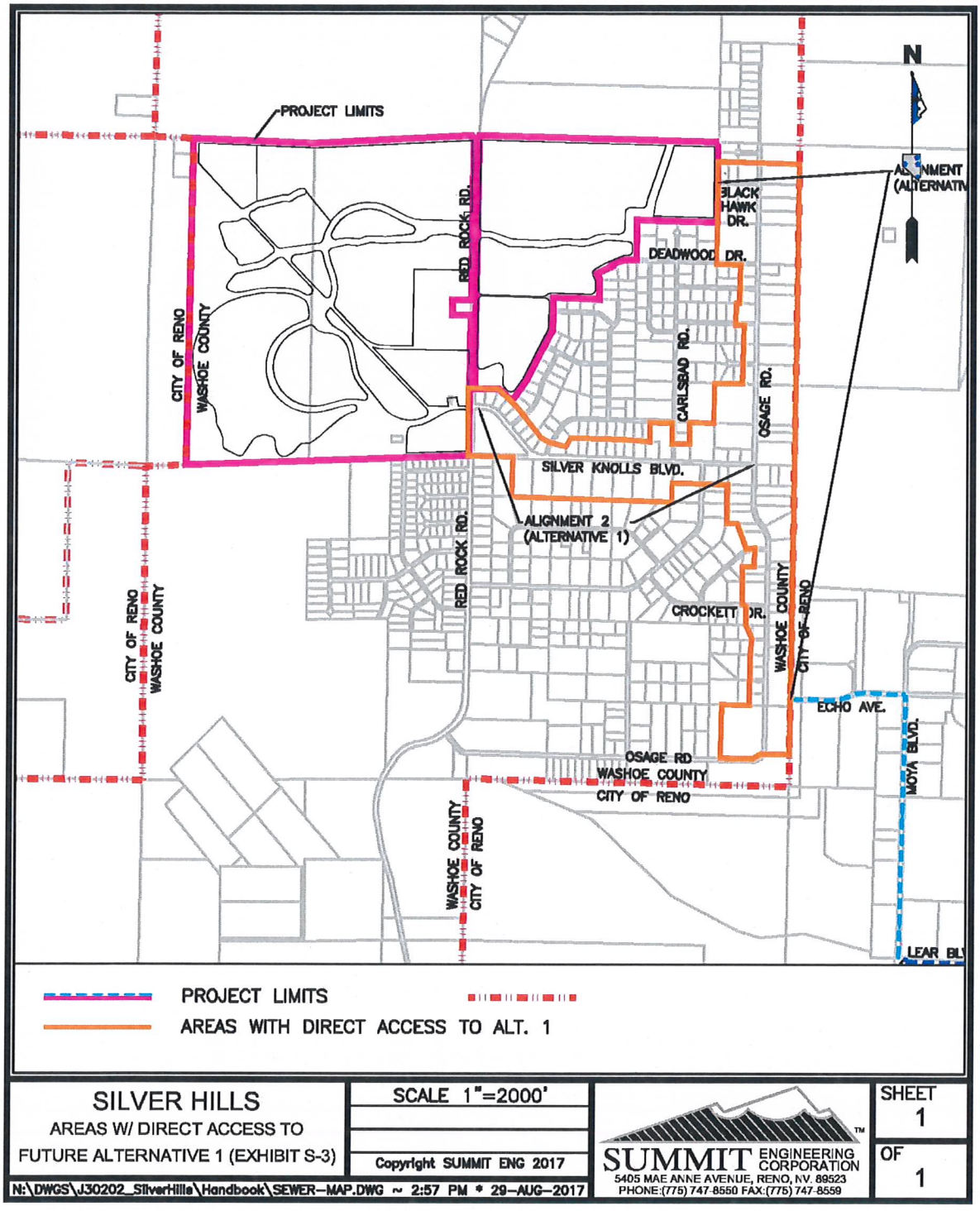


Figure 4-3 – Sewer Future Alternative 1

4.3.2 Water

The nearest existing water facilities to the project site is the Silver Knolls Water Company. There are existing Silver Knolls Water Company facilities within and adjacent to the project limits. However, the Silver Knolls Water Company is a small water system that is not capable of providing service to the Silver Hills project. It is envisioned that the Silver Hills Development will be annexed into the service territory of the Truckee Meadows Water Authority (TMWA) which currently exists to the southeast of the site. A TMWA Discovery will need to be prepared to provide service planning and an initial estimate of the required backbone water facilities necessary to provide service to the project.

In 2015, a TMWA discovery was prepared for a smaller project located on the same property. Although prepared for a different project, it is assumed for this purpose that many of the same requirements with oversizing will be necessary for the current proposal. The nearest TMWA facility to the site is a 12" diameter main located adjacent to the Army Aviation well to the east of the site within the confines of the Reno Stead Airport property (refer to Figure 4-4). From this location, a 3,500-foot main will need to be constructed to the boundary of the property.

An on-site booster pump station will need to be constructed in the northeastern portion of the site along the eastern boundary. From the booster station site and depending on the ultimate layout of the project, a parallel feeder main will need to be constructed to the northwest corner of the site.

A tank (or tanks) will be required and to obtain the elevation necessary will need to be located off-site. A suitable location for the tank (APN 556-120-07) is owned by the Developer and is adjacent to dedicated right of way. Naturally, due to terrain and the elevation of the tank, various pressure reducing stations will need to be incorporated into the ultimate design.

Water rights dedication will be required for the project, the amount of which cannot be anticipated at this time but will be one of the results of a future TMWA discovery application. The dedication rates will be based upon Rule 7 or a modification thereof when final demands are determined.

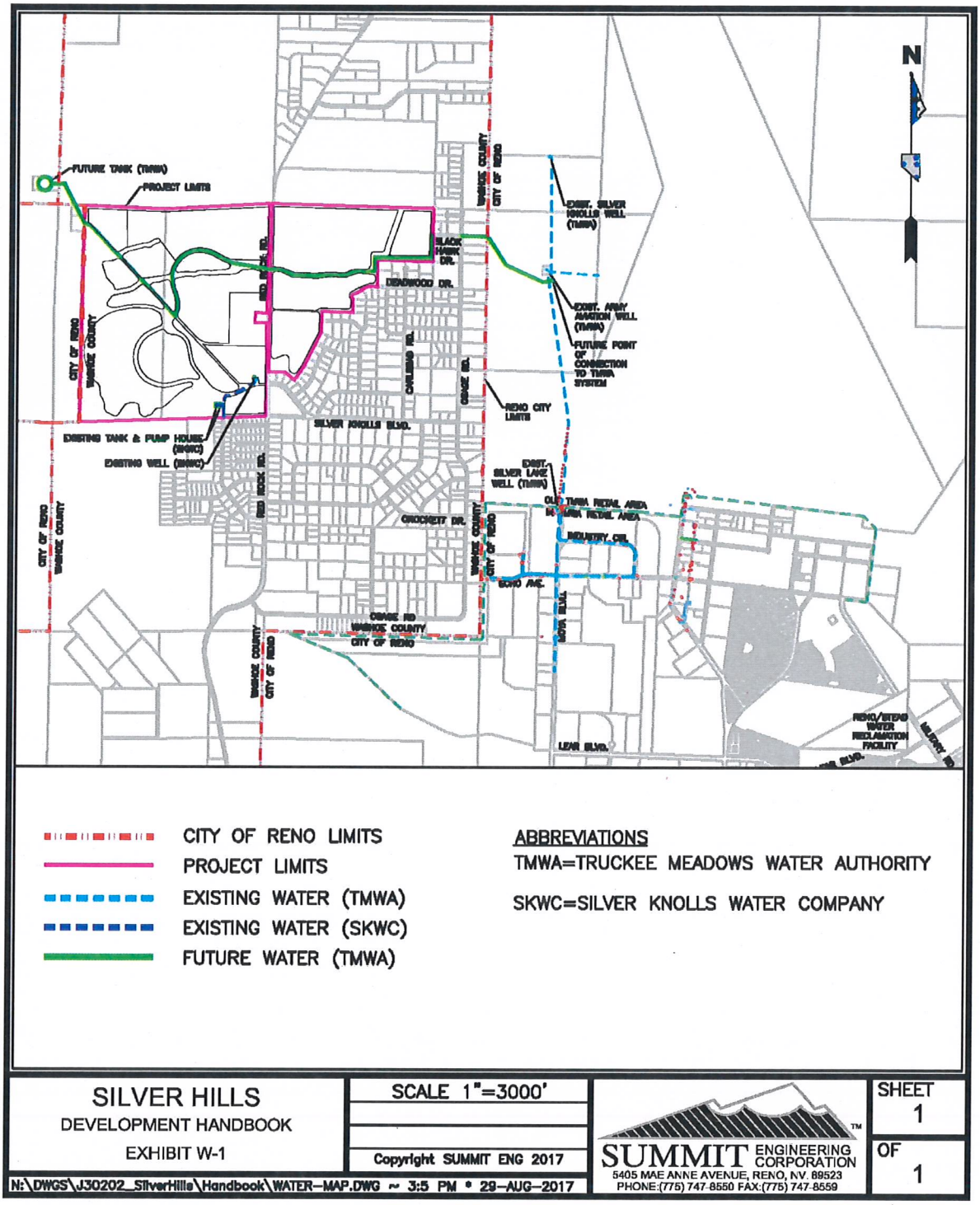


Figure 4-4 – Potable Water

4.3.3 Effluent

The Silver Hills Specific Plan area shall be allowed to utilize treated effluent for watering of common areas, parks, etc. Use of effluent shall be subject to applicable agreements with Washoe County, City of Reno, and the Truckee Meadows Water Authority.

At the time of adoption of this Specific Plan, infrastructure related to effluent use is not in place in the Red Rock/Silver Knolls area. Any use of effluent within the Silver Hills Specific Plan area shall be subject to separate agreements and/or improvements. This Specific Plan shall not limit or restrict the use of effluent for irrigation in any way. The Silver Hills project as well as various adjacent sites intend to use, at a minimum, all effluent generated on a yearly basis. The use of the effluent for allowed irrigation purposes is critical for the development of the parks, open space and Agrihood areas proposed as part of this plan. It is understood by all parties that effluent reuse is part and parcel to the development of a sustainable project. Not only will the use of the effluent reduce the need for storage in the existing surface water storage facilities (therefore reduce future flooding possibilities) but it will reduce the requirement for potable water sources for irrigation.

It must also be understood that the delivery of the effluent will be subject to the construction of a return flow pipeline to the vicinity of the site. Such a facility could very feasibly be constructed to remove excess effluent from the overtaxed storage facilities currently existing in the area. A proposal for a dam to the north of the Silver hills site has been discussed with City staff as a method to reduce flooding concerns currently existing.

4.3.4 Storm Water Management

The Silver Hills Development will include the construction of an on-site storm drain system to collect and convey runoff in accordance with Washoe County standards. A trail system will be incorporated into the open space corridors to provide recreation opportunities and to provide pedestrian connectivity within the project and to the existing adjacent Silver Knolls Park (ref. Trail Plan). The open space corridors will also serve as storm water management areas including adequate area for both conveyance of offsite and on-site runoff through the site as well as adequate areas for both detention and retention to assure that a minimum of 125 percent of the increased stormwater from the site will be either retained or detained onsite thus lessening the current peak discharges at completion of construction.

When a specific phase of the project is being developed, it must incorporate any adjacent trails or open space as indicated on the trail plan which will necessarily include required storm drainage facilities.

The on-site storm drain system will include a combination of the following: drainage channels, detention or retention basis as required, culverts, catch basins, manholes, and pipes. The on-site storm drain system will be designed to maintain the rate of runoff leaving the site to a level that is at or below pre-development conditions.

The site in the pre-development condition, along with a larger watershed to the west of the site, drains in an easterly direction. There are various ephemeral drainages that cross through the project site that convey runoff in an easterly and southeasterly direction. There are no known existing seeps or springs within the limits of the project. Runoff from the Silver Hills Development, and other properties to the west and east of the project, is eventually discharged to Silver Lake. Storm water retention basins will be required in order to maintain runoff rates below pre-development rates.

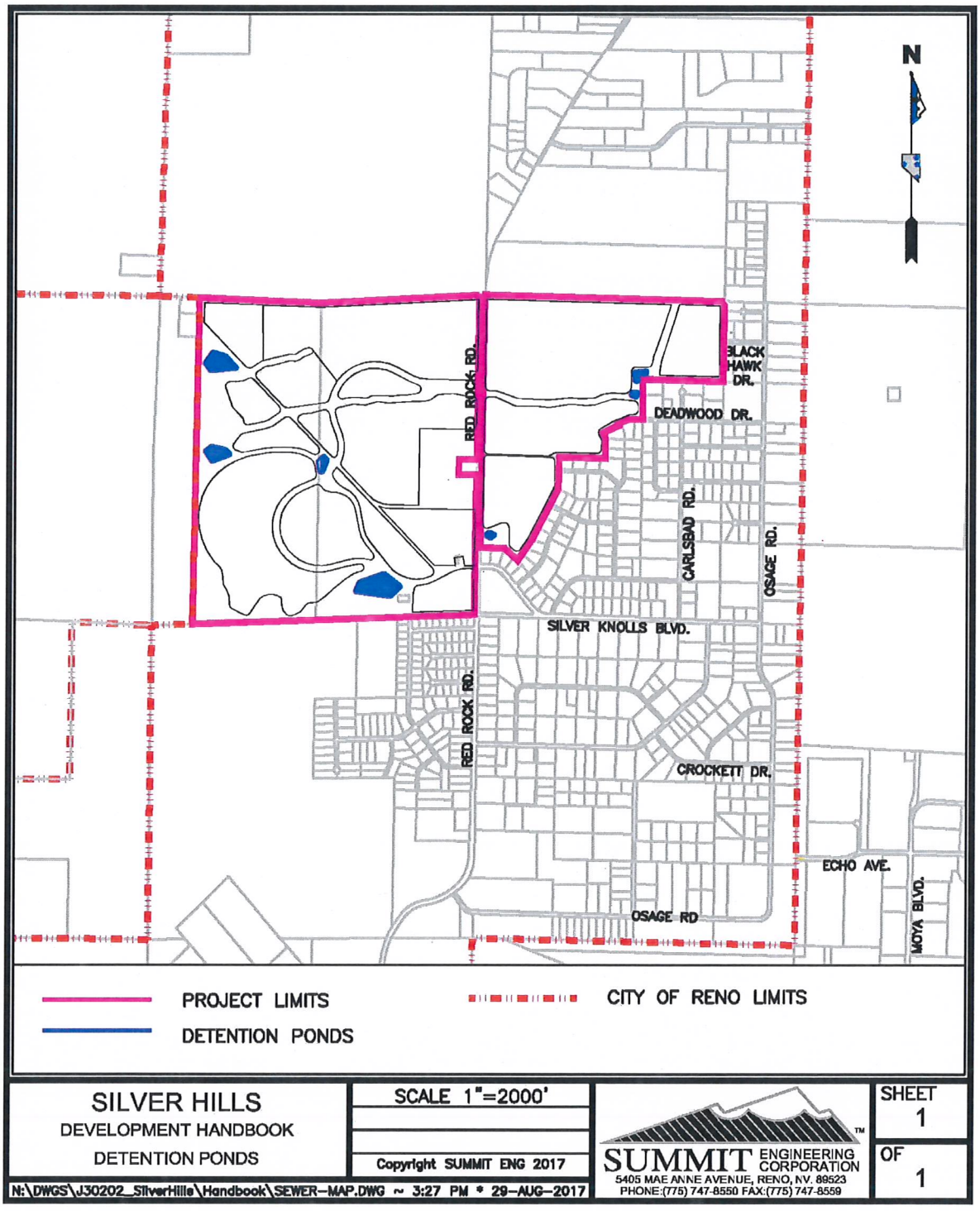


Figure 4-5 – Detention Pond Schematic

4.3.5 Roadways

Silver Hills will include a hierarchy of roadways including arterials (Red Rock Road), Collectors (Silver Hills Parkway), residential collectors, and local streets. Standards for arterials and residential collectors shall follow the adopted road sections specified in the Washoe County Development Code and Public Works Design Manual. Standards for Silver Hills Parkway (collector) are defined in Chapter 2. Similarly, individual builders within Silver Hills may choose to utilize standard Washoe County details for local roadways or utilize the modified standard detailed in Chapter 2.

Regional roadway improvements called out in the Silver Hills Traffic Impact Analysis dated September 15, 2017, along with conditions placed on improvements by the Washoe County Board of Commissioners shall be implemented per the recommendations and stipulations of those documents.

4.3.6 Natural Gas

As shown on the attached Figure 4-6, an existing 8" high pressure gas line currently traverses the entire portion of the site west of Red Rock Road. Although no application for service has been submitted to NV Energy because of the preliminary nature of the development, this line will be able to serve the first phases of the development. During the progression of the phased development, if the line must be upsized or somehow looped, it will be accomplished as required by the utility at that time.

4.3.7 Cable and Telephone

Telephone and cable services will be provided by AT&T. The main supply of the service will be from a fiber optic line which currently runs along Red Rock Road and also traverses the western portion of the project (refer to Figure 4-6). Based upon contact with Mr. Lyles of AT&T the following information was received:

"We (AT&T) will have enough fiber capacity to serve this development, however everything beyond the intersection at Red Rock and Silver Knolls will require new infrastructure. How we go about building this will largely depend on what NVE has existing in the area, where their tie in point is, and how they intend to serve the new development."

Extensions from the existing line which is currently in existence on the west side of Red Rock Road has always been anticipated and will be incorporated into the various phases of the development as they come on line.

Spectrum (Charter) also provides cable and television service within the region and may serve the Specific Plan area in addition to AT&T, allowing residents additional options.

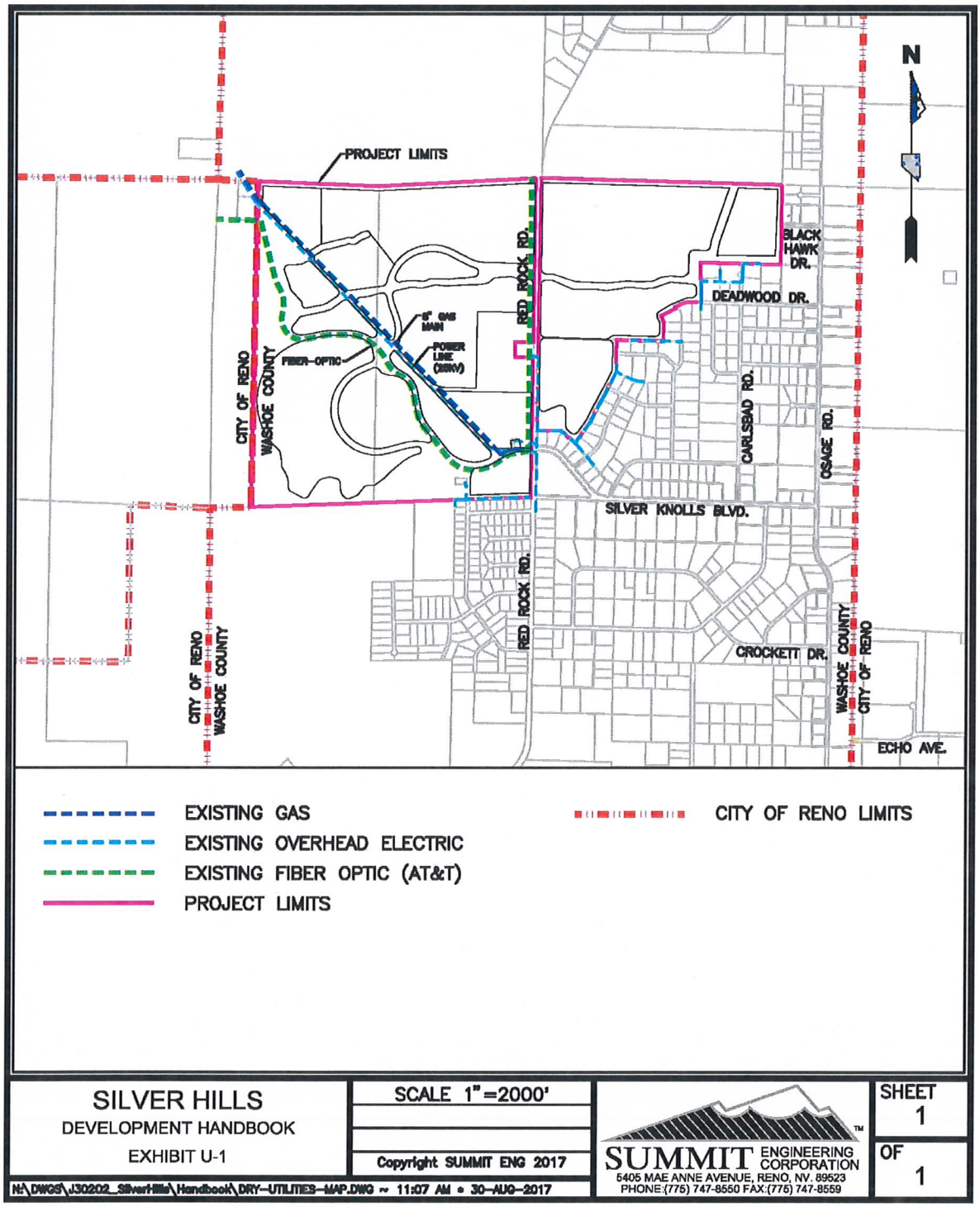


Figure 4-6 – Dry Utilities

4.3.8 Electric

As with other public utilities, no specific plan for electric utilities has been developed. An application for service must be submitted to NV Energy which has not been done. Numerous electrical facilities currently exist both on and surrounding the site as shown on the attached area layout from NV Energy

4.4 Site Grading

As shown on the attached slope map, the site is highly developable with over 90% of the total site having slopes between 0% and 15%. The majority of the areas with slopes over 30% are small pockets located along drainages which will be left as undeveloped open space. There will be no reason to attempt to develop the site outside the grading standards allowed in Washoe County Code 110.438.

Site grading plans for this phased development shall be provided with each Tentative Subdivision Map as required by Washoe County Code. All grading (in combination with landscaping) will be done to accommodate the unit types anticipated and, in a method, as sensitive as possible to the protection the resulting views from the surrounding areas.

4.5 Fire Protection

The Silver Hills Specific Plan area lies close to midway between two existing Truckee Meadows Fire Protection District stations; Cold Springs located at 3680 Diamond Peak Drive and Stead located at 10575 Silver Lake Drive. Additionally, there is an existing volunteer fire station located immediately adjacent and central to the Specific Plan area on the west side of Red Rock Road.

Current response times are consistent with TMFPD policy. Additionally, the Specific Plan dedicates 25 acres of Public Facility land use immediately adjacent to the current volunteer station on Red Rock Road. It is anticipated that up to 5 acres could be dedicated to Washoe County in order to transition the volunteer station to a full-time manned facility. Timing and demand for improvements to the Red Rock volunteer station is dependent on a variety of factors including the phasing of new development within Silver Hills as well as approved projects to the north and south. Therefore, the Master Developer shall work with TMFPD to determine if and when new improvements are required and shall enter into any agreements necessary as a supplement to this Development Standards Handbook.

TMFPD shall have reviewing authority over new development, including tentative maps within the Specific Plan Area. Therefore, if an individual project is not within a satisfactory emergency response time, TMFPD shall have the ability to condition supplemental mitigation measures such as fire sprinklers.

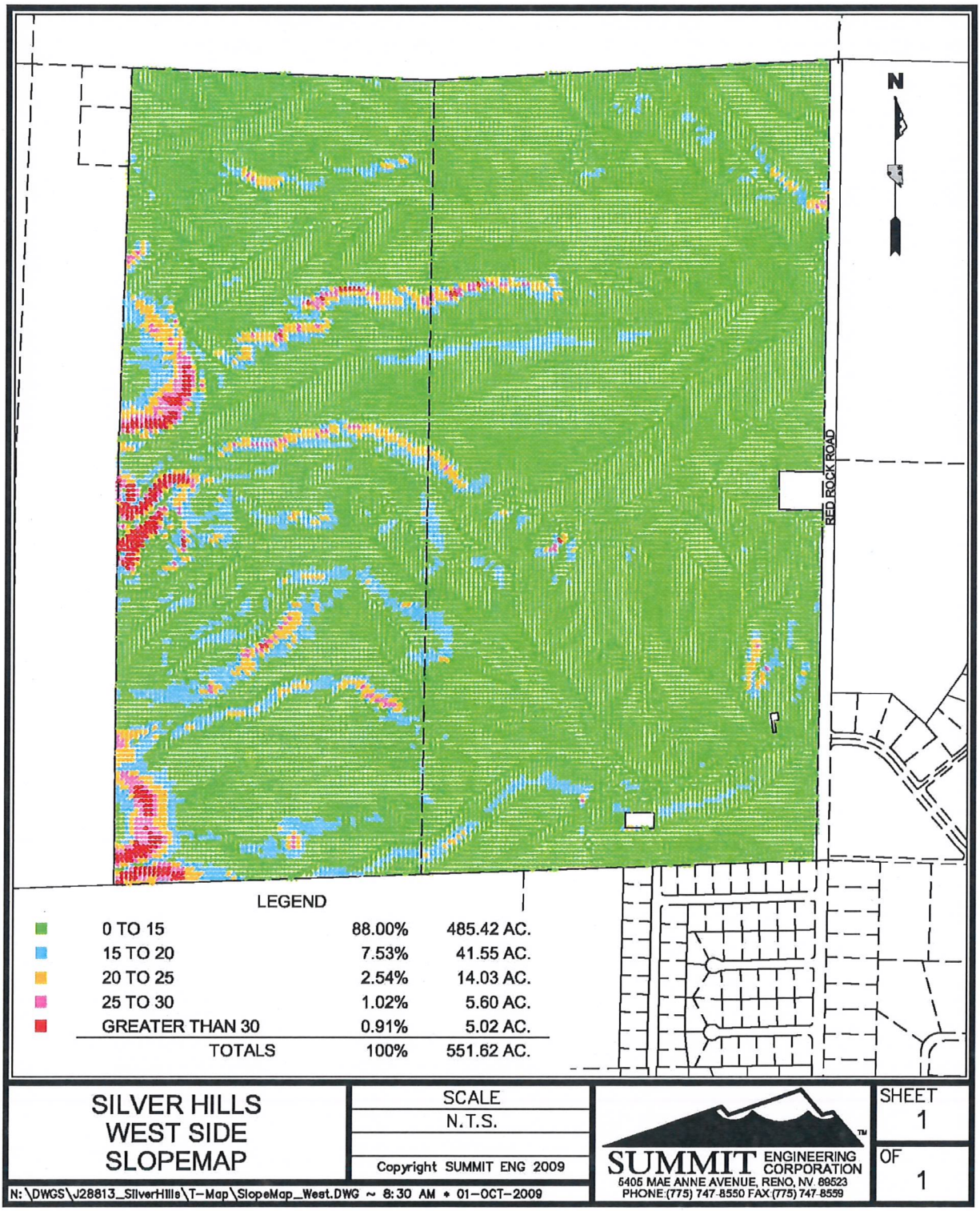


Figure 4-7 – West Side Slope Analysis

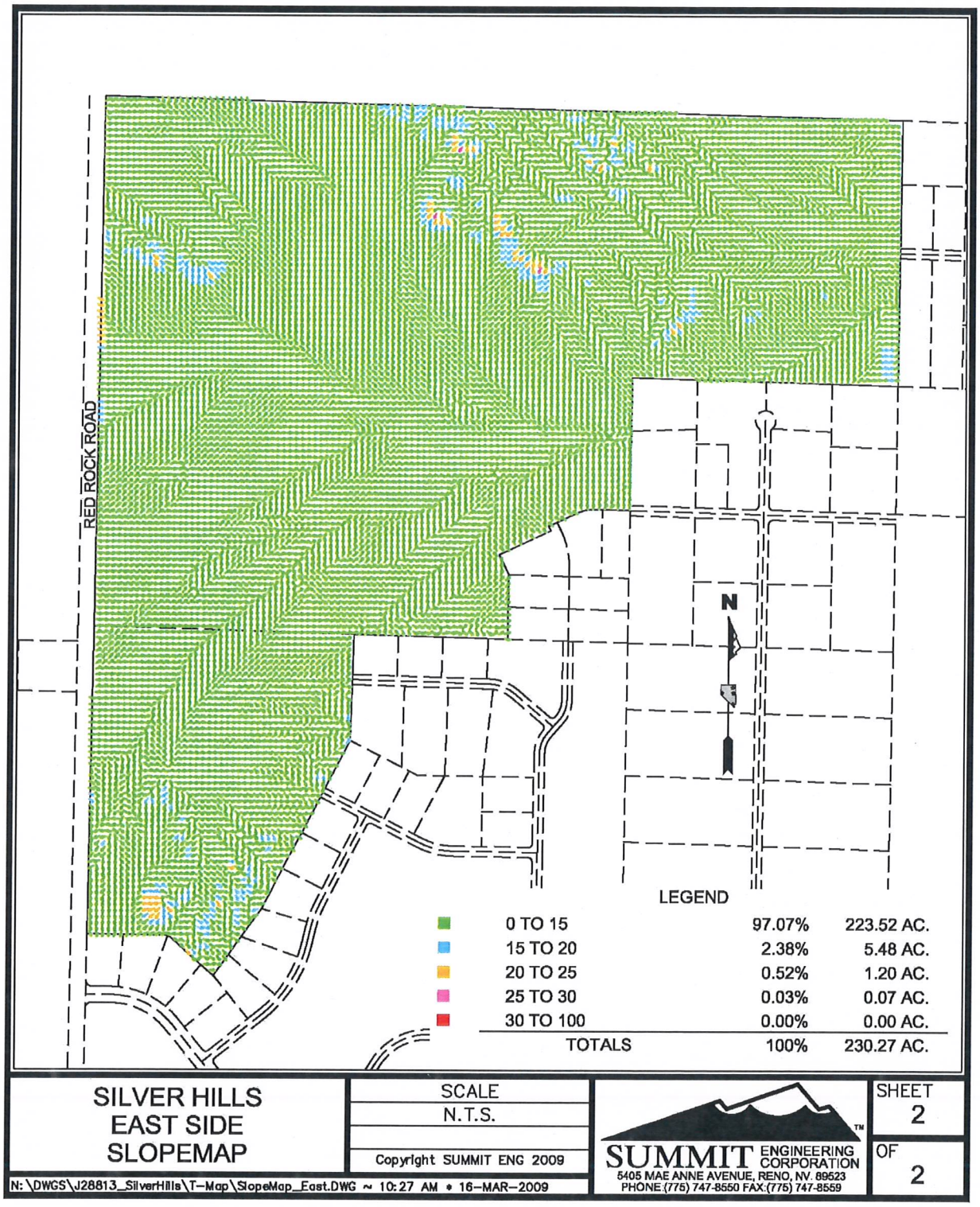


Figure 4-8 – East Side Slope Analysis

4.6 Police Protection

The Washoe County Sheriff's Office provides police services in the area of Silver Hills. Existing patrols are already occurring within the area. As Silver Hills and the surrounding approved projects are constructed, it may be possible to co-locate a Sheriff substation within the Public Facility zone. This would have to be coordinated with other projects of regional significance in the area such as Evans Ranch, Stonegate, etc.

CHAPTER 5 – CONSTRUCTION, OPERATION, AND MAINTENANCE

5.1 Clean Job Site

As construction occurs within Silver Hills, individual developers/builders shall ensure that construction sites, including standing and storage areas, are maintained in a clean and orderly fashion. Any hazardous materials shall (i.e. gasoline, paints, etc.) shall be stored in proper OSHA approved containers and in accordance with all applicable County, State, and Federal standards/permits.

5.2 Protection of Vegetation During Construction

Natural vegetation outside of the limits of grading for any given project within the Silver Hills Specific Plan area shall be protected from damage during construction. Any common or open space areas that are disturbed during construction (i.e. extension of utilities, construction access, etc.) shall be fully restored. This means open space areas will be revegetated with native vegetation and developed/improved common areas shall be returned to their prior (or better) level (i.e. landscaping, irrigation, etc.).

5.3 Temporary Protective Fencing

Construction that is adjacent to any open space areas, areas of public activity (i.e. trails, parks, etc.) or adjacent to significant natural features shall be required to erect temporary protective fencing to ensure that these areas are not disturbed and that public safety is upheld.

5.4 Erosion Control Plan and Storm Water Pollution Prevention Plan (SWPPP)

Per Washoe County Development Code and Nevada Division of Environmental Protection (NDEP) policy/regulation, all construction projects are required to have an Erosion Control Plan and Storm Water Pollution Prevention Plan (SWPPP) in place prior to all grading activities. The Erosion Control Plan(s) shall be reviewed and approved by the Washoe County Department of Planning and Building and the Washoe County District Health Department while, the SWPPP shall be approved by the NDEP. This standard applies for any and all land-disturbing activities that occur within the Specific Plan area.

5.5 Temporary Structures and Signs

Temporary structures such as construction trailers, portable offices, temporary sales offices, etc. shall be reviewed by the Master Developer and/or the Design Review Committee as to their location, hours of operation, etc. To the extent possible, construction trailers shall be located away from public rights-of-way, trails, and active common areas. All temporary structures shall be removed within 30 days of the completion of work or issuance of final certificate of occupancy (as applicable).

Individual projects within Silver Hills shall be permitted two 32 square foot temporary project identification sign. The purpose of this sign is to identify the project and may include builder name, selling price, contact information, phasing announcements, financing source, etc. This sign may not replace the required project entry monument (refer to Chapter 2) and shall be removed concurrently with the sale of the final home within that particular neighborhood. All temporary signs shall be reviewed and approved by the Master Developer or the Silver Hills Design Review Committee.

Security fencing associated with temporary structures and construction is permitted. This includes the use of chain link and barbed wire fencing on a temporary basis. Fencing shall be limited to no more than 6 feet in height and shall be removed concurrently with the temporary structure.

5.6 Model Home Complexes

Model Home Complexes shall comply with the following standards:

- The location of model home complexes and details regarding parking, lighting, landscaping, fencing, signing and hours of operation shall be reviewed and approved by Master Developer and the Washoe County Department of Planning and Building.
- Model home complexes/sales offices shall operate between the hours of 7:00 am to 6:00 pm, 7 days per week.
- Any temporary sales office and/or model home complex shall cease operation with the sale of the final home in the subdivision. Additionally, all temporary signs, etc. shall be removed concurrently.
- Accessible parking shall be provided per Washoe County Development Code standards for all model home complexes.
- Temporary parking lots, subject to ADA standards shall be permitted with new model home complexes and shall be removed concurrently with the sale of the final unit within the subdivision.
- Temporary open view fencing is permitted within the front yard setbacks of model home complexes and shall be removed with the sale of the final unit within the subdivision. Acceptable fencing includes wrought iron or split rail and shall not exceed 4 feet in height.
- Lighting for model home complexes may be provided for safety and security purposes and shall be approved by the Master Developer and/or the Design Review Committee. Temporary security lighting shall be removed with the sale of the final unit within the subdivision.

- Lighting of temporary parking lots, other than bollard lighting limited to 4 feet in height, shall be prohibited.

- Temporary flags and flag poles shall be permitted within model home complexes subject to review and approval of the Master Developer and/or Design Review Committee. All flags and flag poles shall be removed with the sale of the final unit within the subdivision.

5.7 Construction Yards and Hours

As construction commences within Silver Hills, construction yards will be necessary. A construction yard is a temporary area used for the storage of materials, supplies, tools, equipment, etc. The following requirements will apply to all projects within the Silver Hills Specific Plan area:

- Construction hours, including activity within construction yards, shall be limited to 7:00 am to 8:00 pm weekdays and 9:00 am to 6:00 pm on weekends.

- To the greatest extent possible, new construction yards shall be located away from existing residences.

- Construction yard location shall be reviewed and approved by the Master Developer and/or the Design Review Committee.

- Construction yards shall be subject to applicable Washoe County permits, including a Washoe County District Health Department dust control permit.

- Construction yards shall be removed and sites returned to a natural or developed state with issuance of the final certificate of occupancy within the subdivision(s) they serve.

- All construction yards shall be kept in a neat and orderly fashion. All materials, equipment, etc. shall be kept behind a 6-foot minimum fence. Acceptable fencing includes wood or chain link and may include barbed wire.

- Temporary pole lighting is permitted within construction yards for security purposes. All fixtures shall be shielded to ensure spill-over and glare does not occur on adjoining properties.

- An onsite resident may be permitted within temporary living quarters (modular unit or recreational vehicle) within active construction yards for security purposes.

- The project contractor shall be responsible for obtaining applicable permits and enforcement of these standards.

5.8 General Construction Standards

- Construction hours shall be limited to 7:00 am to 8:00 pm weekdays and 9:00 am to 6:00 pm on weekends.
- Individual builders shall be responsible for obtaining all required permits such as dust control, SWPP, etc.
- Roadways within construction areas shall be kept free of debris such as scrap materials, nails, etc. and shall be swept on a regular basis.
- Adequate dumpsters shall be provided within construction areas to ensure debris does not spill over into streets or blow off-site.
- Builders shall designate to the Master Developer and Washoe County a project contact person responsible/authorized to correct problems regarding the project on a 24-hour/7 days a week basis.
- Fencing may be erected around construction sites on a temporary basis. This may include chain link at a maximum of 6-feet.

5.9 Common Area Maintenance

Silver Hills will include a significant amount of common area and open space. This includes both private and public common areas. In general, private common areas will be located within individual subdivisions and may include neighborhood greens, private recreational amenities, private streets, etc. Public common areas include dedicated open space, trails, drainageways, utility corridors, etc.

5.9.1 General Maintenance Standards

- Concurrent with the approval of the first tentative map or development permit (i.e. road construction), the Master Developer shall submit a final Three-Year Maintenance Plan to the Washoe County Department of Planning and Building for review and approval. The plan shall fulfill the requirements of Section 110.442.35(2) of the Washoe County Development Code. The maintenance plans shall be reviewed and updated, as necessary, by the Washoe County Department of Planning and Building every 3 years.
- Prior to or concurrent with the issuance of the first building permit, the Master Developer shall demonstrate that a master homeowner's association has been formed and articles of incorporation are filed with the Nevada Secretary of State.

- The Silver Hills Homeowners Association shall be responsible for the ongoing maintenance of all public common areas within the Specific Plan Area. This includes vegetation, preservation of watersheds, debris and litter removal, trail maintenance, maintenance of community signs and amenities, landscape maintenance, maintaining public access where applicable, noxious weed abatement, etc.

- The Silver Hills Homeowners Association shall be responsible for the permanent maintenance of public common/open spaces.

- As an alternative to a Homeowner's Association, an alternative legal instrument may be formed to provide for the ongoing permanent maintenance of common/open space areas and community amenities. Acceptable instruments include a Landscape Maintenance Association (LMA) or Landscape Maintenance District (LMD) subject to the approval of the Master Developer and Washoe County.

- The Silver Hills Homeowner's Association or any subsequent entity charged with the task of maintenance shall comply with the regulations set forth in NRS 278A.120 through 278A.190.

- Except for dedicated public parks within the Specific Plan area, Washoe County shall not be responsible for common or open space areas within Silver Hills.

5.9.2 Private Open Space and Common Areas

- Private Open Space and common areas such as neighborhood greens, private streets, etc. shall be maintained by a sub-homeowner's association specific to an individual neighborhood.

- Sub-homeowner's associations must comply with all applicable rules and regulations, including any adopted covenants, conditions, and restrictions (CC&R's), included within the Specific Plan and shall require approval from the Master Developer and Washoe County.

- The Silver Hills Homeowners Association may choose to maintain private common areas through an agreement with a sub-HOA or individual builder. This shall be subject to approval of the Master Developer and/or Silver Hills Homeowners Association Board of Directors.

5.9.3 Agrihood Farms and Facilities

- Agrihood facilities (i.e. orchards, barns, greenhouses, etc.) and common areas shall be maintained by the master homeowner's association.

- As an alternative to a typical homeowner's association, Silver Hills may incorporate its own advisory board that will oversee agrihood operations and maintenance.

SILVER HILLS DEVELOPMENT
WASHOE COUNTY, NEVADA

Fiscal Impact, Commercial Space Market, and Resident Income Analyses

FEBRUARY 2019

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SILVER HILLS DEVELOPMENT
WASHOE COUNTY, NEVADA

EXECUTIVE SUMMARY

Ekay Economic Consultants, Inc. (EEC) of Reno, Nevada was retained to conduct fiscal impact analyses for the proposed Silver Hills development in Washoe County, Nevada.

- The analysis compares the fiscal impact of three buildout scenarios and provides a discussion of the demand for commercial space added by the project, as well as income and spending levels of future residents.
- The development, located in unincorporated portion of Washoe County, spans 780.3 acres. Parcels within the project are currently vacant (Scenario 1). The development is currently planned to include 780 single-family residential units (Scenario 2). Developers are proposing to increase the number of residential units to 1,872 and add 45,000 square feet of retail space (Scenario 3).
- Under Scenario 1, the project will not generate any additional costs or revenues for Washoe County or Truckee Meadows Fire Protection District.
- Estimated revenue surplus/(deficit) over the 20-year analysis period for all impacted entities under Scenarios 2 and 3 is summarized below.[1]

Fund	Scenario 2	Scenario 3
Washoe County		
General Fund	$ 3,420,113	$ 7,331,065
Library Expansion Fund	146,017	283,772
Animal Services Fund	80,166	170,066
Indigent Tax Levy Fund	1,276,712	2,394,993
Child Protective Services Fund	(601,295)	(1,076,761)
Senior Services Fund	21,966	47,934
Other Restricted Special Revenue	2,232,062	4,115,941
Roads Special Revenue Fund	1,155,598	2,127,049
Net Total for All Funds	***$ 7,731,338***	***$ 15,394,059***
Truckee Meadows Fire Protection District		
General Fund	$ 439,848	$ 1,266,906

- Analysis shows Scenario 3 will result in the highest revenue surpluses for impacted funds and entities. This is mainly due to the revenues generated by the retail use included in Scenario 3.
- In addition to higher positive impacts on local governments, Scenario 3 provides retail space needed to support the Silver Hills and surrounding residential uses, as well as provide workforce housing much needed in the region.

[1] The table provides a net total amount for all Washoe County funds for comparative purposes only since many funds include restricted revenues which cannot be used outside of the fund.

SILVER HILLS DEVELOPMENT
WASHOE COUNTY, NEVADA

Fiscal Impact, Commercial Space Market, and Resident Income Analyses

Ekay Economic Consultants, Inc. (EEC) of Reno, Nevada was retained to conduct fiscal impact analyses for the proposed Silver Hills development in Washoe County, Nevada. The analysis compares the fiscal impact of three buildout scenarios and provides a discussion of the demand for commercial space added by the project, as well as income and spending levels of future residents.

The development, located in unincorporated portion of Washoe County, spans 780.3 acres. Parcels within the project are currently vacant. Originally, the development was planned to include 780 single-family residential units. Project developers are proposing to increase the number of residential units for the project to 1,872 and add 45,000 square feet of retail space.

EEC estimated the fiscal impact associated with the three potential plans for the project. Scenario 1 assumes the project will remain undeveloped. Scenario 2 uses the existing plan for the project, 780 single-family units. Scenario 3 uses the proposed update to the project, 1,872 single-family units and 45,000 square feet of retail space. This is summarized in Table 1.

Table 1. Silver Hills Development Summary by Scenario

Use	Scenario 1	Scenario 2	Scenario 3
Single Family (units)	-	780	1,872
Retail (square feet)	-	-	45,000

FISCAL IMPACT ANALYSIS

The fiscal impact analysis estimates the financial impact of the proposed Silver Hills development on Washoe County and Truckee Meadows Fire Protection District. It measures the incremental increase in public sector revenue generated by the development, as well as the increase in public sector costs to provide services to the development and its residents.

METHODOLOGY

Buildout assumptions for the development provide the foundation on which the fiscal impact analyses are based. These assumptions are presented in Appendix 1 of Scenarios 2 and 3 and represent information provided by Silver Hills developers based on past experience and existing market data. The buildout for the project spans seven years (2021 to 2027) under Scenario 2 and 15 years (2021 to 2035) under Scenario 3. Appendix 1 shows annually the square feet built, residential units constructed, taxable land and building (improvements) values, and construction materials cost.

The remaining appendices present revenue and cost projections on an annual basis through buildout to 2040 (20-year period) to estimate the long-term impact of the development. Assumptions used in developing these estimates are presented at the end of each appendix. Appendix numberings are the same for Scenarios 2 and 3:

Scenarios 2 and 3

Appendix 1: Buildout Assumptions

Appendix 2: Estimated Number of Residents and Employees (Residents only under Scenario 2)

Appendix 3: Washoe County Comparison of Estimated Revenue to Estimated Costs

Appendix 4A: Washoe County Estimated Real Property Tax Revenue

Appendix 4B: Truckee Meadows Fire Protection District Estimated Real Property Tax Revenue

Appendix 5: Washoe County Estimated Sales Tax Revenue

Appendix 6: Washoe County Sheriff Operations Cost Projections

The following important assumptions were made in this analysis:

1. The analysis estimates 1,889 new residents to Washoe generated by the project's residential units at full buildout under Scenario 2 and 4,534 residents under Scenario 3. Due to low single-family home vacancy rates in the Reno-Sparks area, all residents of the project, with an adjustment for home vacancy, are estimated to be new residents of Washoe County, whether due to development residents moving to Washoe County from outside the County or moving from existing homes, as these homes are expected to become occupied by new residents to the area. See Appendix 2 for population estimates.

   The analysis estimates the project's retail uses under Scenario 3 will provide space for 55 employees. The fiscal impact analysis estimates costs and revenues associated with the development using estimated number of new development residents only. The analysis assumes employees of the development will be existing residents of the region, residents of other regions, or residents of the development. See Appendix 2 of Scenario 3 for employment estimates.

2. Due to the project's location in unincorporated Washoe County, services to the project will be provided by Washoe County and Truckee Meadows Fire Protection District. Impacts of the project on each entity are estimated.

   The fiscal impact analysis for Washoe County and Truckee Meadows Fire Protection District includes all revenue and expenditure sources for the General Fund. This is because the General Fund is expected to provide the majority of services to the project and receive the majority of its revenue. Washoe County's Road Fund is also included as it will provide maintenance and repair service for public roads added by the project, though the information regarding the length of roads added by the project was unavailable as of the date of this report and no road maintenance costs are estimated. This may be updated at a later date, if required.

Other Washoe County funds receiving property tax revenue are also analyzed. This includes Library Expansion Fund, Animal Services Fund, Indigent Tax Levy Fund, Child Protective Services Fund, Senior Services Fund, and Other Restricted Special Revenue Fund.

3. Property tax revenue estimated in this analysis includes real property only. The project, through its retail uses under Scenario 3, and project residents will generate personal property revenues for Washoe County. However, as the value of this property is unknown and difficult to estimate, the analysis is conservative in estimating real property tax revenue only.

   Taxable value of land and improvements for the project is estimated using land values for comparable developments and land uses in the area, with the existing taxable value of project's parcels, which is already generating property tax for the County, subtracted from estimated project-related land values to arrive at incremental property tax revenue only. See Appendices 4A and 4B for details.

4. Fiscal impact revenue and cost estimates are made using three methodologies. The main methodology (direct methodology) utilizes existing tax rates, service levels, national service standards and information from department representatives to estimate direct costs associated with the project. This methodology is used to estimate expenditures associated with law enforcement costs, as well as revenues from sales and property tax sources.

   If detailed information required for this type of analysis is not available or the impact on the revenue or expenditure source is expected to be directly related to population changes, the ACM (average cost method) is used to estimate costs and revenues associated with the project. This method uses per capita revenue and expenditure amounts applied to the estimated residential population of the project.

   Indirect administrative costs, such as costs associated with providing services (human resources, finance, legal, etc.) to the direct service departments are estimated as

percent of additional direct services (law enforcement, judicial, etc.), the third methodology used in the analysis. Appendix 3 provides detailed assumptions and calculations for each of the three methods.

5. Costs and revenues estimated using the direct method are founded on methodology developed based on conversations with local government representatives.

6. Information for the ACM and the indirect cost analyses was obtained from the fiscal year (FY) 2018-19 budget documents for Washoe County and Truckee Meadows Fire Protection District. FY 2017-18 is used as the base year for the analysis, as this is the latest year for which non-budgeted, actual data is available.

7. The project, under Scenarios 2 and 3, will be served by the Silver Lake Volunteer Fire District fire station located at 11525 Red Rock Road. It is EEC's understanding that Silver Hills developers are in discussion with fire officials to expand the fire station to provided career fire services. As a result, the analysis estimates fire service costs associated with the project using average per capita fire service costs for the Truckee Meadows Fire Protection District. See Appendix 3 for detailed calculations.

8. The fiscal impact analysis typically estimates costs associated with maintenance and repair of all roads constructed and dedicated by the project to Washoe County for maintenance. The length of these roads is currently unknown due to the early stage of project planning. As a result, the analysis estimates only the revenue generated for the Roads Fund.

9. Additional information for revenue and cost estimate methodology, sources of data, calculations, and findings is provided in the appendices attached to this report.

It should be noted that information contained in this report is the best information available to the developer and EEC as of the date of the report and may change as the project moves through the approval process and begins development. This fiscal impact analysis may be revised if such changes occur.

FINDINGS

Scenario 1

Scenario 1 assumes the parcels making up the project will remain undeveloped. Table 2 provides a summary of project parcel information.

Table 2. Silver Hills Parcel Summary-Tax Year 2018[2]

APN	Acres	Taxable Land Value	Taxable Improvement Value	WC Property Tax Revenue	TMFPD Property Tax Revenue
087-390-10	308.6	$ 246,880	$ -	$ 1,052	$ 408
087-390-13	243.0	194,416	-	829	322
086-232-31	190.03	1,425,225	-	1,239	481
086-203-05	38.67	386,700	-	404	157
Total	**780.3**	**$ 2,253,221**	**$ -**	**$ 3,524**	**$ 1,367**

Project parcels are currently generating $8,204 per year in property tax revenue for all entities receiving property tax revenue (State of Nevada, Washoe County, Washoe County School District, and Truckee Meadows Fire Protection District). Washoe County received $3,524 in revenue and Truckee Meadows Fire Protection District received $1,367 in the fiscal year 2018. As long as it remains undeveloped, the project is expected to generate a similar level of property tax revenue for the impacted entities. No other revenues or expenditures associated with the project parcels are expected as long as no development occurs on these parcels. As the analysis includes only additional/incremental revenue generated by the project, the fiscal impact of the project under Scenario 1 is estimated at zero.

Scenario 2

Scenario 2 assumes the project is developed with 780 single-family units and no commercial space. Table 3 summarizes the estimated impact of the project on the Washoe County General Fund over the 20-year analysis period. The table shows the

[2] Washoe County Assessor's Office and Treasurer's Office.

project is estimated to generate a revenue surplus for the County's General Fund in the amount of $3.4 million over the 20-year analysis period.

Table 3. Summary of Estimated Washoe County General Fund Impacts, 20-Year Total-Scenario 2

Estimated Revenue		
Property Tax	$	24,293,587
Licenses and Permits		2,578,988
Intergovernmental Revenue		8,538,372
Charges for Services		484,916
Fines and Forfeitures		734,174
Miscellaneous		-
TOTAL	**$**	**36,630,037**
Estimated Costs		
General Government	$	3,863,455
Judicial		7,206,012
Public Safety		18,403,483
Public Works		1,159,965
Welfare		-
Culture and Recreation		1,731,914
Community Support		39,645
Intergovernmental		476,639
Subtotal	**$**	**32,881,113**
Contingency		328,811
TOTAL	**$**	**33,209,924**
Estimated Revenue Surplus/(Deficit)		
Estimated Surplus	$	3,420,113

Detailed information for the estimate of Washoe County General Fund revenues and costs by line item, by year, as well as methodology for estimating these costs and revenues is found in Appendix 3 for Scenario 2.

Table 4 shows estimated revenues and expenditures associated with the project for the General Fund, by year. The table shows an estimated revenue surplus in every year of analysis. The table does show a decline in revenue surplus amounts post project buildout as revenues are inflated by 3% per year, but law enforcement costs are inflated by 4% per year, and resulting indirect costs, by some rate over 3% per year.

Table 4. Summary of Estimated Washoe County General Fund Impacts, by Year-Scenario 2

Year	Estimated Project Revenue	Estimated Project Costs	Ann'l Revenue Surplus/	Cumulative Surplus/ (Deficit)
2021	$ 268,305	$ 613	$ 267,692	$ 267,692
2022	525,582	234,761	290,821	558,513
2023	798,932	506,092	292,841	851,354
2024	1,088,211	759,745	328,466	1,179,820
2025	1,394,127	1,030,385	363,742	1,543,562
2026	1,717,419	1,318,898	398,521	1,942,083
2027	1,807,865	1,625,577	182,288	2,124,371
2028	1,858,752	1,730,599	128,153	2,252,524
2029	1,914,514	1,789,403	125,111	2,377,635
2030	1,971,950	1,850,279	121,670	2,499,306
2031	2,031,108	1,913,302	117,806	2,617,112
2032	2,092,041	1,978,548	113,493	2,730,605
2033	2,154,803	2,046,097	108,706	2,839,311
2034	2,219,447	2,116,032	103,415	2,942,726
2035	2,286,030	2,188,438	97,593	3,040,318
2036	2,354,611	2,263,403	91,208	3,131,526
2037	2,425,249	2,341,020	84,229	3,215,755
2038	2,498,007	2,421,385	76,622	3,292,378
2039	2,572,947	2,504,595	68,353	3,360,730
2040	2,650,136	2,590,753	59,383	3,420,113
TOTAL	**$ 36,630,037**	**$ 33,209,924**	**$ 3,420,113**	

Table 5 shows the estimated impact of the project on other ad-valorem revenue funds, as well as the Roads Special Revenue Fund. Details regarding these calculations can also be found in Appendix 3 for Scenario 2. As noted above, costs for the Roads Fund are not estimated as road information for the project is unavailable.

The table shows the Child Protective Services Fund is estimated to experience a revenue deficit over the 20-year analysis period of $0.6 million. This deficit will be covered by the revenue surplus estimated to be generated by the project for the General Fund. According to budget documents, this fund consistently receives transfers from the General Fund.

Table 5. Summary of Estimated Washoe County Other Funds Impacts, 20-Year Total-Scenario 2

Fund	Estimated Project Revenue	Estimated Project Costs	Revenue Surplus/ (Deficit)
Library Expansion Fund	$ 425,571	$ 279,553	$ 146,017
Animal Services Fund	693,406	613,240	80,166
Indigent Tax Levy Fund	1,276,712	-	1,276,712
Child Protective Services Fund	5,660,025	6,261,321	(601,295)
Senior Services Fund	446,254	424,288	21,966
Other Restricted Special Revenue	2,232,062	-	2,232,062
Roads Special Revenue Fund	1,155,598	-	1,155,598

Table 6 shows the estimated impact of the project on the Truckee Meadows Fire Protection District. Detailed calculations of the amounts shown in the table can also be found in Appendix 3 for Scenario 2. The table shows an estimated revenue surplus for the TMFPD of $0.4 million over the 20-year analysis period. The analysis estimates a positive revenue surplus for the Fire District in every year of analysis.

Table 6. Summary of Estimated Truckee Meadows Fire Protection District General Fund Impacts, 20-Year Total-Scenario 2

Estimated Revenue	
Property Tax	$ 11,490,404
AB 104 Revenue	109,402
C-Tax Revenue	1,023,265
Other Sources	-
Total Revenue	**$ 12,623,072**
Estimated Costs	
Fire Protection	$ 12,183,224
Estimated Revenue Surplus/(Deficit)	
Estimated Surplus	$ 439,848

Scenario 3

Scenario 3 assumes the project is developed with 1,872 single-family units and 45,000 square feet of retail space. Table 7 summarizes the estimated impact of the project on the Washoe County General Fund over the 20-year analysis period. The table shows the project is estimated to generate a revenue surplus for the County's General Fund in the amount of $7.3 million over the 20-year analysis period.

Table 7. Summary of Estimated Washoe County General Fund Impacts, 20-Year Total-Scenario 3

Estimated Revenue		
Property Tax	$	45,572,526
Licenses and Permits		4,747,008
Intergovernmental Revenue		16,375,742
Charges for Services		892,560
Fines and Forfeitures		1,351,355
Miscellaneous		-
TOTAL	**$**	**68,939,191**
Estimated Costs		
General Government	$	7,144,536
Judicial		13,263,726
Public Safety		34,283,426
Public Works		2,151,510
Welfare		-
Culture and Recreation		3,187,842
Community Support		72,972
Intergovernmental		894,131
Subtotal	**$**	**60,998,144**
Contingency		609,981
TOTAL	**$**	**61,608,126**
Estimated Revenue Surplus/(Deficit)		
Estimated Surplus	$	7,331,065

Detailed information for the estimate of Washoe County General Fund revenues and costs by line item, by year, as well as methodology for estimating these costs and revenues is found in Appendix 3 for Scenario 3.

Table 8 shows estimated revenues and expenditures associated with the project for the General Fund, by year. The table shows an estimated revenue surplus in every year of analysis.

Table 8. Summary of Estimated Washoe County General Fund Impacts, by Year-Scenario 3

Year	Estimated Project Revenue	Estimated Project Costs	Ann'l Revenue Surplus/	Cumulative Surplus/ (Deficit)
2021	$ 266,481	$ 577	$ 265,904	$ 265,904
2022	553,659	234,757	318,902	584,807
2023	845,921	539,467	306,454	891,261
2024	1,118,159	793,492	324,666	1,215,927
2025	1,419,720	1,064,117	355,602	1,571,529
2026	1,738,368	1,352,614	385,755	1,957,284
2027	2,074,858	1,659,909	414,949	2,372,234
2028	2,429,973	1,986,975	442,998	2,815,231
2029	2,804,527	2,334,830	469,697	3,284,928
2030	3,199,367	2,704,540	494,827	3,779,755
2031	3,615,373	3,097,220	518,154	4,297,909
2032	4,053,461	3,514,038	539,423	4,837,332
2033	4,514,580	3,956,218	558,362	5,395,694
2034	4,999,718	4,425,039	574,679	5,970,373
2035	5,478,939	4,921,766	557,173	6,527,547
2036	5,617,880	5,418,483	199,397	6,726,943
2037	5,786,416	5,604,786	181,630	6,908,574
2038	5,960,009	5,797,682	162,327	7,070,901
2039	6,138,809	5,997,408	141,401	7,212,302
2040	6,322,973	6,204,210	118,763	7,331,065
TOTAL	**$ 68,939,191**	**$ 61,608,126**	**$ 7,331,065**	

Table 9 shows the estimated impact of the project on other ad-valorem revenue funds, as well as the Roads Special Revenue Fund. Details regarding these calculations can also be found in Appendix 3 for Scenario 3. As noted above, costs for the Roads Fund are not estimated as road information for the project is unavailable.

The table shows the Child Protective Services Fund is estimated to experience a revenue deficit over the 20-year analysis period of $1.1 million. This deficit will be covered by the revenue surplus estimated to be generated by the project for the General Fund. According to budget documents, this fund consistently receives transfers from the General Fund.

Table 9. Summary of Estimated Washoe County Other Funds Impacts, 20-Year Total-Scenario 3

Fund	Estimated Project Revenue	Estimated Project Costs	Revenue Surplus/ (Deficit)
Library Expansion Fund	$ 798,331	$ 514,559	$ 283,772
Animal Services Fund	1,298,825	1,128,759	170,066
Indigent Tax Levy Fund	2,394,993	-	2,394,993
Child Protective Services Fund	10,448,122	11,524,883	(1,076,761)
Senior Services Fund	828,899	780,965	47,934
Other Restricted Special Revenue	4,115,941	-	4,115,941
Roads Special Revenue Fund	2,127,049	-	2,127,049

Table 10 shows the estimated impact of the project on the Truckee Meadows Fire Protection District. Detailed calculations of the amounts shown in the table can also be found in Appendix 3 for Scenario 3. The table shows an estimated revenue surplus for the TMFPD of $1.3 million over the 20-year analysis period. The analysis estimates a positive revenue surplus for the Fire District in every year of analysis.

Table 10. Summary of Estimated Truckee Meadows Fire Protection District General Fund Impacts, 20-Year Total-Scenario 3

Estimated Revenue	
Property Tax	$ 21,554,938
AB 104 Revenue	209,960
C-Tax Revenue	1,927,027
Other Sources	-
Total Revenue	**$ 23,691,925**
Estimated Costs	
Fire Protection	$ 22,425,018
Estimated Revenue Surplus/(Deficit)	
Estimated Surplus	$ 1,266,906

The higher revenue surplus under Scenario 3 is due mainly to the property tax revenue generated by the retail component proposed under this scenario.

COMMERCIAL SPACE MARKET ANALYSIS

Because the Silver Hills development proposes to add commercial space, the development must show the following:

- *For amendments that propose new or intensified commercial land use, the scale of the intended use has been shown to be community serving in nature, and*
- *For proposals to establish or intensify commercial land uses, a market analysis has been conducted that clearly articulates the anticipated trade area, provides convincing evidence of a need to increase the inventory of commercial land use opportunities, and otherwise demonstrates the scale of the intended use to be community serving in nature.*

Silver Hills development proposes to include 45,000 square feet of retail space, along with 1,872 single-family residential units, instead of the 780 residential units and no commercial space as currently planned. The exact layout of the retail space is unknown, but the size of the space at 45,000 square feet puts it in the "Neighborhood Center" classification. According to Table 11, Neighborhood Shopping Centers are convenience oriented with a trade area of approximately 3 miles. The center includes at least one anchor, typically a supermarket, and a total of 5-20 stores on 3-5 acres.[3] The acreage is also consistent with the Silver Hills project, which proposes 4 acres to be dedicated to retail space.

Little retail space exists within the 3-mile trade area of the Silver Hills parcels (driving distance based on Google Maps). The nearest retail space is located slightly over 3 miles south of the center of the project at 8790 N Red Rock Road. The 15,956 square foot[4] center is home to the Pizza Factory, Legends Hair & Nail Salon, Amba Martial Arts, and Red Rock Food Market. Over five miles away from the project are two strip type retail centers. The first, located at 10603 Stead Spur, is a 14,121 square foot building plus a free-standing Taco Bell restaurant. The main building is home to LaBarca Grocery & $0.99 Store, Valley Cleaners, Dominos, Subway, Perfect 4 U Salon, and Hangar Bar.

[3] "U.S. Shopping-Center Classification and Characteristics," ICSC: International Council of Shopping Centers, January 2017.
[4] For this and similar analyses, data from Washoe County Assessor's Office.

Table 11. US Shopping-Center Classification and Characteristics

Type of Shopping Center	Concept	Center Count	Aggregate GLA (Sq. Ft.)	% Share of Industry GLA	Average Size (Sq. Ft.)	Typical GLA Range (Sq. Ft.)	Acres	# of Anchors	% Anchor GLA	Typical Number of Tenants	Typical Type of Anchors	Trade Area Size
General-Purpose Centers		**112,520**										
Super-Regional Mall	Similar in concept to regional malls, but offering more variety and assortment.	620	778,336,548	10.2%	1,255,382	800,000+	60-120	3+	50-70%	NA	Full-line or junior department store, mass merchant, discount department store and/or fashion apparel store.	5-25 miles
Regional Mall	General merchandise or fashion-oriented offerings. Typically, enclosed with inward-facing stores connected by a common walkway. Parking surrounds the outside perimeter.	600	353,795,548	4.7%	589,659	400,000-800,000	40-100	2+	50-70%	40-80 stores	Full-line or junior department store, mass merchant, discount department store and/or fashion apparel store.	5-15 miles
Community Center ("Large Neighborhood Center")	General merchandise or convenience- oriented offerings. Wider range of apparel and other soft goods offerings than neighborhood centers. The center is usually configured in a straight line as a strip, or may be laid out in an L or U shape, depending on the site and design.	9,776	1,930,849,736	25.4%	197,509	125,000-400,000	10-40	2+	40-60%	15-40 stores	Discount store, supermarket, drug, large-specialty discount (toys, books, electronics, home improvement/furnishings or sporting goods, etc.)	3-6 miles
Neighborhood Center	Convenience oriented.	32,588	2,340,711,371	30.8%	71,827	30,000-125,000	3-5	1+	30-50%	5-20 stores	Supermarket	3 miles
Strip/Convenience	Attached row of stores or service outlets managed as a coherent retail entity, with on-site parking usually located in front of the stores. Open canopies may connect the store fronts, but a strip center does not have enclosed walkways linking the stores. A strip center may be configured in a straight line, or have an "L" or "U" shape. A convenience center is among the smallest of the centers, whose tenants provide a narrow mix of goods and personal services to a very limited trade area.	68,936	911,202,922	12.0%	13,218	< 30,000	<3	Anchor-less or a small convenience-store anchor.	NA	NA	Convenience store, such as a mini-mart.	<1 mile
Specialized-Purpose Centers		**3,275**										
Power Center	Category-dominant anchors, including discount department stores, off-price stores, wholesale clubs, with only a few small tenants.	2,258	990,416,667	13.0%	438,626	250,000-600,000	25-80	3+	70-90%	NA	Category killers, such as home improvement, discount department, warehouse club and off-price stores	5-10 miles
Lifestyle	Upscale national-chain specialty stores with dining and entertainment in an outdoor setting.	491	164,903,247	2.2%	335,852	150,000-500,000	10-40	0-2	0-50%	NA	Large format upscale specialty	8-12 miles
Factory Outlet	Manufacturers' and retailers' outlet stores selling brand-name goods at a discount.	367	87,368,113	1.2%	238,060	50,000-400,000	10-50	NA	NA	NA	Manufacturers' and retailers' outlets	25-75 miles
Theme/Festival	Leisure, tourist, retail and service-oriented offerings with entertaiment as a unifying theme. Often located in urban areas, they may be adapted from older--sometimes historic--buildings and can be part of a mixed-use project.	159	23,498,769	0.3%	147,791	80,000-250,000	5-20	Unspecified	NA	NA	Restaurants, entertainment	25-75 miles
Limited-Purpose Property		**62**										
Airport Retail	Consolidation of retail stores located within a commercial airport	62	15,452,860	0.2%	249,240	75,000-300,000	NA	NA	NA	NA	No anchors; retail includes specialty retail and restaurants	NA
Total Industry		**115,857**										
Total Industry	**Traditional + Specialty + Special Purpose**	**115,857**	**7,596,535,781**	**100.0%**	**65,568**							

Sources: ICSC Research and CoStar Realty Information, Inc . (www.costar.com) January 2017

Across Silver Lake Road is a multi-building strip center totaling 40,355 square feet of space. Businesses within this center include a Maverick gas station, Dollar Tree, Fiesta Mexicana, Asian Wok, Lara's Charisma Salon, QuickMart Liquor, Port of Subs, Jackson Hewitt, Movie Gallery, Manpower, Panaderia El Jalisco, Little Caesars, Chevron/Jacksons, and McDonalds. A Dollar General Store is located further north along Stead Boulevard with 9,184 square feet of building space.

The closest supermarkets to the Silver Hills development are located in three major shopping centers off Lemon Drive, over a 7-mile drive from the Silver Hills project. The first center, anchored by Smith's Food and Drug includes 80,582 square feet of space and houses a Dotty's, Papa Murphy's, Paycheck Advance, H&R Block, Great Clips, AT&T, Qdoba, Goodwill, Jack in the Box, and Bank of America.

Across the street is a 109,061 square foot center housing O'Reilly Auto Parts, True Value, CVS Pharmacy, McDonalds, Port of Subs, Eggroll King, Dotty's, J&B Nail Spa, Peg's Glorified Ham and Eggs, Big Lots, Grocery Outlet, Pizza Hut, Sally's Beauty Supply, North Hills Chiropractic, Cost Cutters, The UPS Store, Wells Fargo, Dickey's Barbecue Pit, and Starbucks. Further north is a 160,891 square foot Walmart Supercenter and nearby 19,469 square-foot building holding Super Cuts, Lemon Valley Dental Group, Dollar Loan Center, T-Mobile, and St. Mary's Medical Group.

On the west side of the Silver Hills project, serving Cold Springs and located along White Lake Parkway, is a 2,400 square foot SpringMart convenience store, a 2,400 square foot 7-Eleven, and an 8,000 square foot Family Dollar. A 5.57-acre parcel near Cold Springs Middle School is in the process of being developed, with a recently completed 6,144 square foot Village Grill.

The widely dispersed and limited commercial developments indicate the proposed development has little nearby convenience-type retail, restaurants, and service space. No retail is located within the 3-mile Neighborhood Shopping Center trade area of the Silver Hills project. This is consistent with the report by CBRE which provides an overview of the Reno-Sparks region's retail market as of the 4th Quarter 2018.

Figure 1. CBRE Reno-Sparks Subregions[5]

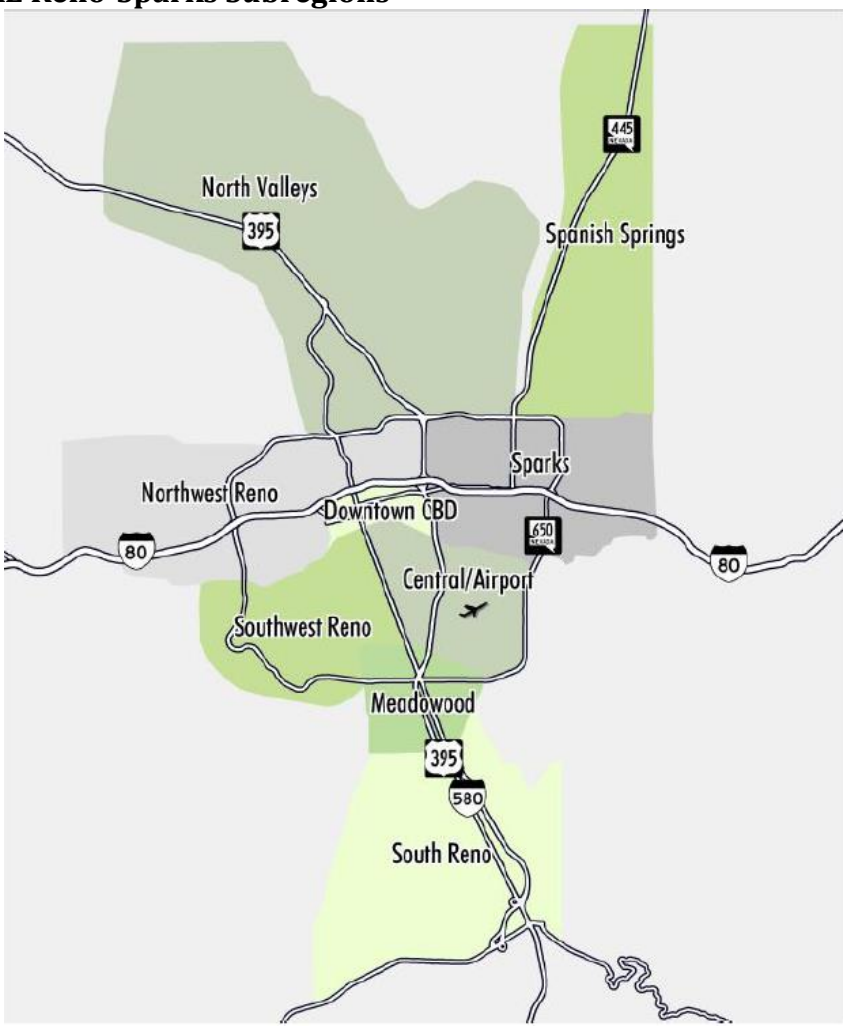


Figure 1 shows the various subregions within the Reno-Sparks region, with the Silver Hills development corresponding to the North Valleys subregion. Table 12 reports retail market performance data for all Reno-Sparks subregions. The table shows at 791,887 leasable square feet, the North Valleys market is the third smallest market of all subregions. At a total vacancy of 3.8% and availability of 4.3%, the subregion has the second lowest vacancy and availability rates,[6] with only the Northwest region showing lower rates.

[5] "Reno Retail, Q4 2018," CBRE.

[6] Availability Rate-all existing space being marketed to potential occupants, either for lease, sublease, or sale. Total Vacancy Rate-direct and sublease vacancy only.

Table 12. CBRE Reno-Sparks Retail Market Statistics

Submarket	Gross Leasable Area	Total Vacancy %	Total Availability %	Q4 Net Absorption	YTD Net Absorption	Average Asking Rate $
Central/Airport	1,757,965	15.9	17.9	19,694	67,839	1.36
Downtown	385,397	20.1	20.1	(1,000)	(2,000)	2.27
Meadowood	3,285,664	6.8	6.8	(1,333)	(54,451)	1.20
North Valleys	791,887	3.8	4.3	1,600	8,117	1.38
Northwest Reno	1,813,641	2.5	2.5	14,704	22,233	1.51
South Reno	2,523,397	7.9	8.1	22,817	55,248	1.53
Southwest Reno	754,844	6.3	8.1	8,419	4,575	1.42
Spanish Springs	1,612,633	7.1	7.9	(4,564)	46,916	1.53
Sparks	3,728,556	5.9	7.0	9,125	73,733	1.44
Market Total	**16,653,984**	**7.4**	**8.1**	**69,462**	**222,210**	**1.45**

Source: CBRE Research, Q4 2018.

The subregion absorbed approximately 1,600 square feet of retail space in the 4th quarter 2018 and a total of 8,117 square feet of space in 2018. Average asking rate for the subregion is the second of all subregions, second only to the Meadowood subregion.

Using above data for gross leasable space by subregion, along with 2018 population estimates[7] for North Valleys and Greater Reno-Sparks region,[8] the analysis estimates region-wide retail square feet per capita compared to the same ratio for North Valleys. The Greater Reno-Sparks region in 2018 had 37.03 square feet of retail space per area resident. This is over three times higher than the ratio for North Valleys of 10.44 square feet per capita.

Even excluding retail square feet in Downtown Reno as these are likely impacted by visitors, as well as square footages for Meadowood, Legends, and Summit malls, as these are large regional centers which are not expected to be present in North Valleys, the Greater Reno-Sparks ratio is reduced to 31.22 square feet per person. This, along with low vacancy rates for the subregion, indicates the North Valleys region currently does not provide sufficient retail space for its existing residents.

[7] ESRI Business Analyst Online, 2018 data.
[8] Defined as Washoe County excluding Incline Village area to correspond to Figure 1.

This is further supported by Table 13 which shows that over the past five years commercial construction in the North Valleys region was significantly lower than overall Washoe County when compared to residential construction.

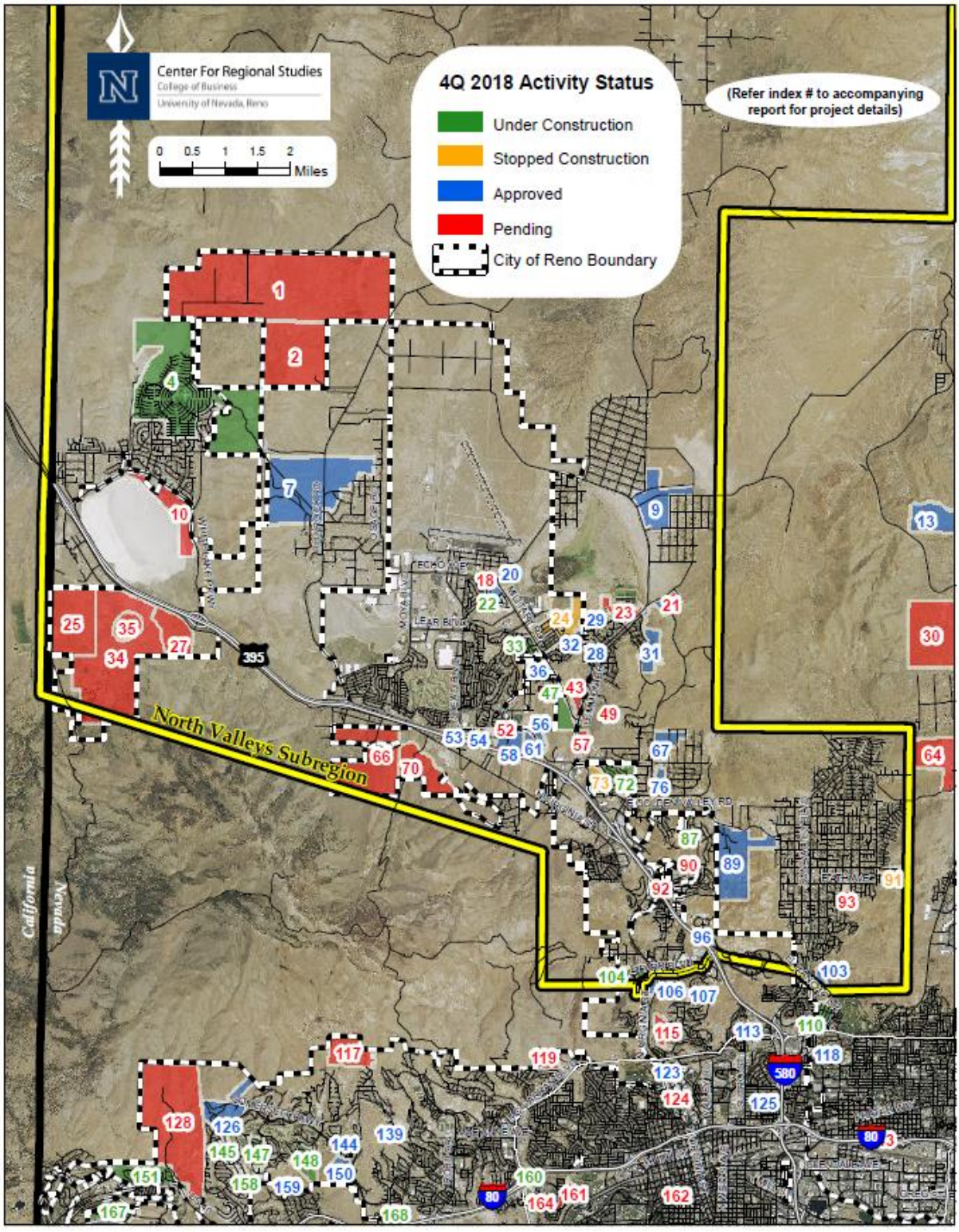
Table 13. New Residential Units[9] per New Commercial Construction[10]-North Valleys[11] v. Washoe County Total[12]

	New Residential Units	New Commercial Construction (sq.ft.)	New Commercial Construction Per New Residential Unit	New Residential Units	New Commercial Construction (sq.ft.)	New Commercial Construction Per New Residential Unit
	NORTH VALLEYS			WASHOE COUNTY		
1999	631		0	5,507	1,545,922	281
2000	628	14,111	22	4,036	947,179	235
2001	984	5,568	6	5,811	1,246,215	214
2002	818		0	5,299	1,498,445	283
2003	632	68,085	108	4,467	1,048,860	235
2004	1,026	8,900	9	5,035	2,315,265	460
2005	923	26,474	29	5,972	3,706,525	621
2006	841	20,128	24	4,735	1,870,475	395
2007	344	19,834	58	2,432	2,059,649	847
2008	162		0	2,227	2,458,398	1,104
2009	121	14,736	122	620	582,692	940
2010	9	4,606	512	433	214,439	495
2011	19	192,500	10,132	629	308,044	490
2012	16	7,360	460	754	248,124	329
2013	19	57,757	3,040	1,301	338,731	260
2014	126		0	1,636	192,372	118
2015	417	5,841	14	2,806	369,822	132
2016	221		0	2,618	293,662	112
2017	215	14,615	68	2,993	583,188	195
2018	239		0	4,264	480,531	113
20-Year Average:	**420**	**32,894**	**730**	**3,179**	**1,115,427**	**393**
10-Year Average:	**140**	**42,488**	**1,435**	**1,805**	**361,161**	**318**
5-Year Average:	**244**	**10,228**	**16**	**2,863**	**383,915**	**134**

Given the population growth projected for the region, additional commercial space will be required to provide community services to new and existing residents.

[9] Includes all residential units (single family, multi family, mobile home, etc.)
[10] Includes all commercial uses with the exception of fire stations, schools, post offices, and storage/mega warehouses.
[11] For the purposes of this analysis North Valleys subregion is defined as including zip codes 89506 and 89508.
[12] Center for Regional Studies at University of Nevada, Reno based on data from Washoe County Assessor's Office.

Figure 2. New Residential Construction Activity, North Valleys Subregion-4Q2018[13]



[13] "New Residential Construction Activity, North Valleys Subregion - Reno, Washoe County, Nevada." Center for Regional Studies, UNR. Data for 4th Quarter 2018.

Table 14. New Residential Construction Activity, North Valleys Subregion-4Q2018[14]

North Valleys Subregion - Washoe County, Nevada

Map Index	Project Name	Developer/Owner	Location	Project Status	# of Units Approved on Tentative Maps	# of Tentative Units Recorded on Final Maps	# of Completed Units Sold & Recorded, or Leased	Total Remaining "Approved/ Unsold" Units	Constructed Units Ready for Sale (Standing Inventory)	Avg Sale Price of New Homes (4Q-18)	No. of New Sales (4Q-18)	# of Finished/Partially Finished Lots
47	North Peak Apartments	EGRS Inc	Lemmon Dr/ Military Rd	Under Construction	328	-	112	216				
61	Lakes at Sky Vista Pkwy	Charles Bluth	Sky Vista & Vista Knoll Pkwys	Approved	768	-	-	768				
96	Spectrum	Corman Leigh Housing, LP	Dandini & Spectrum Blvds	Approved	420	-	-	420				
MULTI-FAMILY				*Approved Multi Family Subtotal:*	1,516	-	112	1,404	-			
53	Stead 40 Phase 2	DR Horton	Stead Blvd & I-580 (NEC)	Approved	68	68	-	68	-	$0	0	68
54	Stead 40 Phase 1	DR Horton	Stead Blvd & I-580 (NEC)	Approved	179	179	-	179	-	$0	0	179
104	Rancho San Rafael Townhomes	Desert Wind Homes	Parr Blvd, 750- W of Virginia	Under Construction	441	439	338	103	13	$291,109	12	88
SINGLE-FAMILY ATTACHED				*Approved Single-Family, Attached Subtotal:*	688	686	338	350	13		12	335
4	Woodland Village	Woodland/Hamilton/Lissner/Placer	N of Reno Park @ Crystal Canyn	Under Construction	2,028	1,818	1,699	329	11	$353,405	11	108
7	Silver Hills	Lifestyle Homes	Red Rock/Silver Knolls	Approved	680	-	-	680	-	$0	0	-
9	Prado Ranch North	North Valleys Investment Group	Lemmon & Chickadee Drives	Approved	490	-	-	490	-	$0	0	-
20	Regency Park II	Regency Park Homes Inc	SEC Stead Blvd & Echo Ave	Approved	204	53	-	204	-	$0	0	-
22	Regency Park I	DR Horton	SEC Stead Blvd & Echo Ave	Under Construction	157	157	157	-	-	$317,610	2	-
24	Stonefield	Lennar Homes	Military/Lear	Stopped Construction	651	400	181	470	-	$0	0	219
28	North Valley Estates Unit I	Townsend Enterprises, LLC	Limber Pine Dr	Approved	45	-	-	45	-	$0	0	-
29	North Valley Estates Unit III	Townsend Enterprises, LLC	Pan American Way	Approved	66	-	-	66	-	$0	0	-
31	Lemmon Valley Heights	JDS Group LLC	Lemmon Dr & Deodar Way SEC	Approved	206	-	-	206	-	$0	0	-
32	North Valley Estates Unit II	Townsend Enterprises, LLC	Pan American Way	Approved	141	-	-	141	-	$0	0	-
33	Silver Vista Village	Paradiso Communities LLC	Military Rd, S of Lear Blvd	Under Construction	194	194	27	167	4	$327,911	10	163
36	Arroyo Crossing	High Valley/HV Arroyo/Brothers Brown	Military/Kelly Ln	Approved	237	-	-	237	-	$0	0	-
56	Vista Enclave	Sky Vista Partners LLC	Sky Vista Pkwy	Approved	130	-	-	130	-	$0	0	-
58	Silver Dollar Estates	DR Horton	Silver Dollar/Trading Post Rd	Approved	619	-	-	619	-	$0	0	-
67	Golden Mesa North	Moonlight Hills Estates LLC	Estates Rd & Indian Ln	Approved	115	-	-	115	-	$0	0	-
72	Cabernet Highlands	Lennar Homes	East of North Hills/Buck	Under Construction	309	309	190	119	4	$426,688	20	115
73	Estancia	Estancia I LLC	East of North Hills/Buck	Stopped Construction	290	108	103	187	-	$0	0	5
76	Golden Mesa South	Moonlight Hills Estates LLC	Estates Rd & Indian Ln	Approved	32	-	-	32	-	$0	0	-
87	Northridge	Jenuane Communities	terminus of Beckwourth Dr	Under Construction	91	91	33	58	5	$428,103	9	53
89	Ladera Ranch	DR Horton	082-473-06	Approved	356	105	-	356	-	$0	0	105
91	Sun Mesa	Landstar Companies, LLC	Terminus of Sun Mesa Dr	Stopped Construction	207	104	104	103	-	$0	0	-
103	Falcon Ridge	Desert Wind Homes	NEC Sun Valley & El Rancho	Approved	142	-	-	142	-	$0	0	-
SINGLE-FAMILY DETACHED				*Approved Single-Family, Detached Subtotal:*	7,390	3,339	2,494	4,896	24		52	768
				Grand Total of Approved Units:	9,594	4,025	2,944	6,650	37		64	1,103

[14] "New Residential Construction Activity, North Valleys Subregion - Reno, Washoe County, Nevada." Center for Regional Studies, UNR. Data for 4th Quarter 2018.

Figure 2 shows a map of residential developments under approved, pending, and under construction in the North Valleys region. Table 14 shows detailed information for developments in Figure 2. According to Table 14, as of the 4th Quarter 2018, the North Valleys region (shown in Figure 2) had 9,594 approved residential units in various stages of development. This includes 1,516 multi-family units, 688 single-family attached units, and 7,390 single-family detached units. Of these, 2,944 units have been constructed and sold, with 6,650 units remaining in various stages of development.

Above estimates include the Silver Hills project (shown in Figure 2 as #7) with 680 approved single-family units. It also includes nearby projects of Woodland Village (#4) currently under construction with a total of 2,028 approved single-family units of which 1,699 units have been completed.

Approximately 17,865 residential units have been planned for the subregion, but have yet to receive necessary approvals (in the form of tentative maps or allowable zoning). In close proximity to the Silver Hills project are a number of these developments, including Evans Ranch (#1 in Figure 2) with 5,679 single-family units, Silver Star Ranch (#2) with 1,600 single-family units, White Lake Vistas (#10) with 324 single-family units, Train Town (#25) with 1,300 single-family units, Stonegate (#27, 34 and 35) with 5,000 single and multi-family units, Echeveria Peavine Property (#60) with 1,866 single-family units, and Stead 240 (#70) with 600 single-family units.

It is unknown when and if all of these pending projects will be approved and constructed and with what portion of proposed units. However, even if a small portion of these developments are built, it will create a significant increase in subregion population and demand for commercial space.

Based on historical home purchasing rates in the region, as well as the number of proposed units discussed above, Center for Region Studies estimates 792 new residents will be added to the North Valleys subregion in 2019, increasing to a high of 2,396 residents added in 2022 and declining to a low of 1,242 residents added in 2028. In total, this results in over 15,000 added to the subregion over the next ren years. This includes

234 residents for the 680-unit Silver Hills project included in the Center for Regional Studies report.[15] The report spans through 2028 resulting in only a small portion of project residents shown.

Overall, Silver Hills' commercial component of 45,000 square feet of retail space is necessary to provide convenience-based neighborhood shopping space for existing residents, as our analysis shows these residents are currently underserved in terms of available retail space, as well as future residents of the Silver Hills development and residents of future developments in the North Valleys region.

WORKFORCE HOUSING AND RESIDENT INCOME ANALYSIS

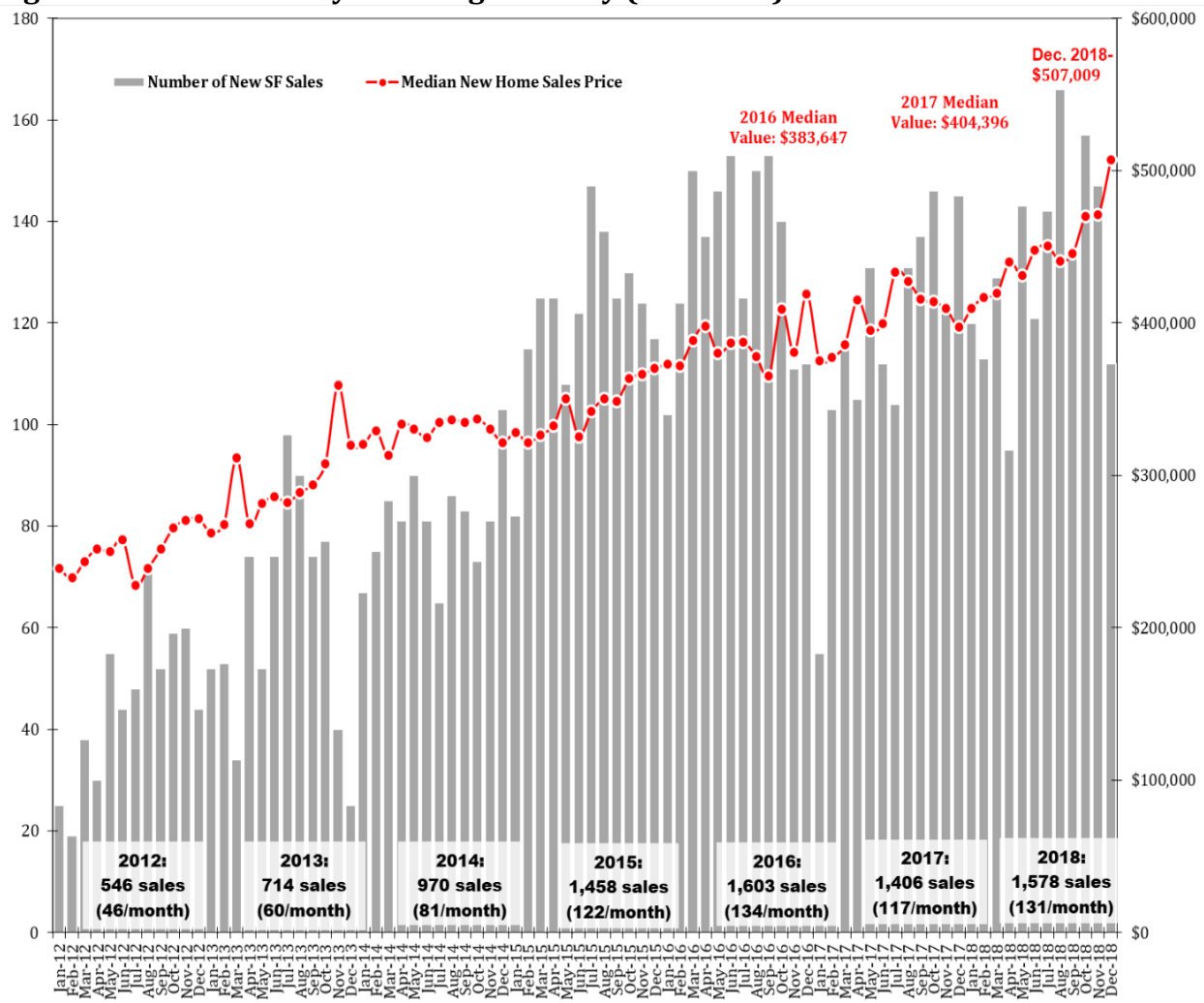
It is well known the Reno-Sparks' housing market experienced high levels of growth in the last few years, especially as measured by housing prices. Figure 3 shows Washoe County new single-family home prices (detached only) appreciated 5.4% between 2016 and 2017. During the same period the number of new single-family sales (detached) decreased by 12.3% compared to 2016.

The decrease in sales began in November 2016 when the median price of homes reached $409,112 in October 2016. By December 2018 sales levels are showing an increasing trend, though still lower than levels experienced in 2016. Prices of new single-family detached homes appreciated 9.1% in 2018, with the median sales prices in December 2018 reaching $507,009, an increase of 27.6% over the December 2017 level.

According to the home affordability calculator[16] designed in partnership with the Center for Regional Studies at the University of Nevada, Reno, a family must have an income of $117,151 to afford a house at the median new single-family home price of $509,007 as of December 2018.

[15] "New Residential Construction Activity, North Valleys Subregion - Reno, Washoe County, Nevada." Center for Regional Studies, UNR. Data for 4th Quarter 2018.
[16] Affordability calculator assumes a 10% down, loan rate of 4.7%, and a 30-year mortgage period. Housing and related costs are estimated at 33% of total income.

Figure 3. Washoe County New Single-Family (Detached) Sales and Median Prices[17]



According to the Federal Financial Institutions Examination Council's (FFIEC), median family income for Washoe County residents in 2018 was $73,500.[18] A family with this median income can afford a home priced at $305,000 or less. According to Northern Nevada MLS website, as of February 9, 2019, there were 255 listings for single-family homes in the Reno-Sparks area priced at $305,000 and less. Of these 115 listings were for single-family attached (condominium and townhouse) properties.[19] The majority of these listings were for existing homes, with many older properties requiring maintenance. In

[17] Washoe County assessor data as analyzed by the Center for Regional Studies, UNR.
[18] "FFIEC Census Reports," Federal Financial Institutions Examination Council.
[19] https://nnrmls.com/.

comparison, at the same time in the same region, there are over 900 listing for homes priced above $305,000.

The Silver Hills project proposes to increase the density of its residential units by building 1,872 units compared to 780 units currently planned. While actual sales prices for the project are currently unknown, smaller lots will make the project comparable to the existing Woodland Village, which is building and selling single-family homes in close proximity to the project under the same developer. The 41 new units sold in Woodland Village in 2018 had an average of 1,900 square feet per home and an average sales price of $178 per square foot, for an average unit price of $339,000.[20]

If the Silver Hills project offers a similar price, a qualifying income for the family to afford homes in the project will be $80,740. This is only slightly higher than the median family income in the region. The price is significantly lower than the median price for new homes in the region of $507,009 and lower even than the price of existing homes at $350,000. This lower price will allow the project to provide housing to many workforce families moving to region.

Table 15 provides employment and mean/median wage data for select occupations in the Reno-Sparks Metropolitan Statistical Area (MSA), which includes Washoe and Storey counties. It is important to include wages from Storey County as it is home to the Tahoe Reno Industrial Center where many Washoe County residents are employed. The table also shows affordable home values for each occupation by type of housing product.

The table shows high earning occupations, such as dentists, physicians, and lawyers can afford homes valued at and above the median homes price of new family homes in Washoe County as of December 2018. Families with primary earners in the Personal Financial Advisors, Veterinarians, Software Developers, Registered Nurses, and Police Officers can afford homes valued at or above the existing single-family home price, as well as all homes below that level.

[20] Center for Regional Studies, UNR.

Table 15. Wages and Housing Affordability by Selected Occupations in Reno-Sparks MSA[21]

Occupation	Number Employed	Mean Wages	Median Wages	Est. Median Family Wage	Estimated Qualifying Home Price	
Dentists, General	260	$ 263,890	$ 263,890	$ 283,085	$ 1,275,000	
Physicians and Surgeons, All Other	470	$ 263,245	$ 263,245	$ 282,440	$ 1,270,000	
Lawyers	700	$ 160,472	$ 140,629	$ 159,824	$ 704,000	New Single-Family
Personal Financial Advisors	250	$ 126,214	$ 87,402	$ 106,597	$ 460,000	Sales Price=$507,009
Veterinarians	130	$ 104,957	$ 87,131	$ 106,327	$ 460,000	
Software Developers, Applications	670	$ 87,069	$ 78,978	$ 98,173	$ 420,000	
Registered Nurses	3,910	$ 78,354	$ 78,000	$ 97,195	$ 415,000	
Police and Sheriff's Patrol Officers	840	$ 64,501	$ 64,522	$ 83,717	$ 350,000	Existing Single-Family
Accountants and Auditors	1,530	$ 70,512	$ 63,253	$ 82,448	$ 345,000	Sales Price=$350,000
Loan Officers	390	$ 83,782	$ 63,045	$ 82,240	$ 345,000	
Librarians	120	$ 64,501	$ 61,610	$ 80,805	$ 339,000	Silver Hills Estimated
Real Estate Sales Agents	110	$ 61,214	$ 59,800	$ 78,995	$ 334,000	Ave. Price=$339,000
Postal Service Clerks	80	$ 49,691	$ 58,552	$ 77,747	$ 325,000	
Police, Fire, and Ambulance Dispatchers	80	$ 56,139	$ 58,323	$ 77,519	$ 325,000	
Educational, Guidance Counselors	390	$ 55,827	$ 56,680	$ 75,875	$ 315,000	New Condominium
Human Resources Specialists	770	$ 56,514	$ 55,349	$ 74,544	$ 310,000	Sales Price=$314,466
Firefighters	270	$ 53,976	$ 54,621	$ 73,816	$ 305,000	
Electricians	1,030	$ 56,472	$ 54,080	$ 73,275	$ 305,000	Affordable Price at
Plumbers, Pipefitters, and Steamfitters	910	$ 55,203	$ 52,874	$ 72,069	$ 300,000	Median Family
Heavy and Tractor-Trailer Truck Drivers	3,960	$ 48,589	$ 47,195	$ 66,391	$ 275,000	Income=$73,500
Automotive Service Technicians & Mechanics	1,210	$ 46,134	$ 44,408	$ 63,603	$ 260,000	
Secretaries & Administrative Assistants	2,690	$ 38,147	$ 37,232	$ 56,427	$ 225,000	
Maintenance and Repair Workers, General	2,700	$ 38,646	$ 37,107	$ 56,303	$ 225,000	
Construction Laborers	1,660	$ 37,835	$ 36,150	$ 55,346	$ 223,000	
Pharmacy Technicians	490	$ 35,818	$ 35,589	$ 54,784	$ 220,000	
Light Truck or Delivery Services Drivers	1,570	$ 38,626	$ 34,528	$ 53,723	$ 215,000	Existing Condominium
Customer Service Representatives	5,210	$ 33,384	$ 32,094	$ 51,290	$ 205,000	Sales Price=$212,000
Laborers & Freight, Stock, & Material Movers	8,680	$ 29,453	$ 28,330	$ 47,525	$ 185,000	
Preschool Teachers, Except Special Education	200	$ 32,656	$ 25,397	$ 44,592	$ 170,000	
Childcare Workers	990	$ 24,232	$ 23,712	$ 42,907	$ 163,000	
Production Workers, All Other	210	$ 27,706	$ 23,150	$ 42,346	$ 162,000	
Retail Salespersons	7,280	$ 26,832	$ 22,298	$ 41,493	$ 160,000	
Hairdressers, Hairstylists, & Cosmetologists	490	$ 21,715	$ 19,947	$ 39,143	$ 157,000	
Waiters and Waitresses	5,310	$ 20,259	$ 18,346	$ 37,541	$ 140,000	
Gaming Dealers	1,580	$ 17,659	$ 17,950	$ 37,146	$ 140,000	

[21] 1. Occupations, number employed, and mean/median wages for Reno Sparks MSA, May 2017 data from Occupational Employment Statistics, Nevada Department of Employment, Training, and Rehabilitation. Occupations selected based on the number of employees and subjective popularity/knowledge of these occupations.

2. Family wage is estimated assuming 1.54 workers per family based on data for Washoe County, Nevada from B23009: PRESENCE OF OWN CHILDREN UNDER 18 YEARS BY FAMILY TYPE BY NUMBER OF WORKERS IN FAMILY IN THE PAST 12 MONTHS - Universe: Families, American FactFinder, US Census Bureau, 2017. It is assumed 1 worker per family will earn wages at the median wage shown for that occupation. The remaining 0.54 workers in the family will earn a median wage for the Reno-Sparks MSA of $35,547. Source: Occupational Employment Statistics, Reno Sparks MSA, May 2017, Nevada Department of Employment, Training, and Rehabilitation.

3. Maximum affordable home price estimated using an affordability calculator created by the Center for Regional Studies, UNR and Ekay Economic Consultants, Inc.

4. Sales prices for new and existing single-family homes in Washoe County as of December 2018 from Center for Regional Studies, UNR.

Estimated average home prices for the Silver Hills project are lower than the median existing single-family home prices, allowing more families to be able to afford homes in this project than in many other locations across the County. In addition to the occupations described above, other primary employee families that can afford to purchase homes in the Silver Hills development include Librarians, Loan Officers, and Accountants/Auditors.

This analysis indicates that the Silver Hills development will provide much needed lower priced housing, with average home prices below the new and existing single-family home prices in the region. These homes will be priced slightly above homes affordable by families earning median wages in the region, attracting the type of workforce employees valuable to the region, such as police officers, nurses, librarians, accountants, and other occupations.

The estimated home price for the project reflects additional density proposed for the Silver Hills project. Should the project be developed at existing lower density (780 versus 1,872 units), an approximately 10% larger lot price increase is expected, resulting in an estimate average price for the project of $372,000. Table 15 shows this price would price out multiple occupations, making the project less affordable to many current and potential residents of the region.

LIMITING CONDITIONS & DISCLOSURES

In the preparation of this report, EEC asserts:

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APPENDIX 1-SCENARIO 2
BUILDOUT ASSUMPTIONS

YEAR	RESIDENTIAL UNITS CONSTRUCTED	SQUARE FEET CONSTRUCTED	USE TYPE	NEW TAXABLE LAND VALUE	NEW TAXABLE IMPROVEMENTS VALUE	TOTAL NEW TAXABLE VALUE	CONSTR. MATERIALS COST
2021	132	250,800	Single Family	$ 8,674,003	$ 36,718,173	$ 45,392,177	$ 18,359,087
	-	-	Open Space	1,323,064	-	1,323,064	-
Subtotal	**132**	**250,800**		**9,997,067**	**36,718,173**	**46,715,241**	**18,359,087**
2022	125	237,500	Single Family	8,460,439	35,814,127	44,274,566	17,907,064
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**8,460,439**	**35,814,127**	**44,274,566**	**17,907,064**
2023	125	237,500	Single Family	8,714,252	36,888,551	45,602,803	18,444,276
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**8,714,252**	**36,888,551**	**45,602,803**	**18,444,276**
2024	125	237,500	Single Family	8,975,680	37,995,208	46,970,887	18,997,604
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**8,975,680**	**37,995,208**	**46,970,887**	**18,997,604**
2025	125	237,500	Single Family	9,244,950	39,135,064	48,380,014	19,567,532
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**9,244,950**	**39,135,064**	**48,380,014**	**19,567,532**
2026	125	237,500	Single Family	9,522,298	40,309,116	49,831,414	20,154,558
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**9,522,298**	**40,309,116**	**49,831,414**	**20,154,558**
2027	23	43,700	Single Family	1,804,666	7,639,384	9,444,050	3,819,692
	-	-	Open Space	-	-	-	-
Subtotal	**23**	**43,700**		**1,804,666**	**7,639,384**	**9,444,050**	**3,819,692**
TOTAL	**780**	**1,482,000**		**$ 56,719,352**	**$ 234,499,623**	**$ 291,218,975**	**$ 117,249,812**

APPENDIX 1, ASSUMPTIONS:

1. The following is project buildout information on which the analysis is based:

	# of Acres	# of Units	Building Square Feet	Taxable Value of Land	Taxable Value of Improvements
Single Family	591.9	780	1,482,000	$ 48,313,200	$ 204,516,000
Public Facilities	31.0	-	-	-	-
Open Space	157.4	-	-	1,247,115	-
Total	**780.3**	**780**	**1,482,000**	**$ 49,560,315**	**$ 204,516,000**

Source: Buildout information and retail square footage from developer, residential square footage, and taxable land and improvement value from Washoe County Assessor's data for similar land uses, as shown in footnote 2 below.

2. Taxable land and improvement values for the residential portion of the project are difficult to determine at this early stage, as a result, the analysis estimates these values using data for comparable developments in the vicinity of the proposed project (Silver Knolls development):

	Land Use Code	Taxable Land Value/Unit	Taxable Improv. Value/Sq.Ft.	
Single Family	200	$ 61,940	$ 138.00	Land value data for units with 0.5 to 1.0 acre lots.

Source: Washoe County Assessor data as of February 2019 for fiscal year 2017-18.

Square footage for project homes based on average size of homes built in nearby Woodland Village in 2018. Data from Silver Knolls is not used as these units were built between 1970 and 1990s and do not reflect current market demand for home size. Source: Center for Regional Studies, UNR.

3. Open Space land values are estimated using existing values of the undeveloped project parcels, which have an average taxable land value of **$ 7,923** per acre. This amount is multiplied by the number of acres dedicated to Open Space for the project. Source. Washoe County Assessor. No taxable land value is assumed for Public Facilities (roads, parks, etc.) as they will be dedicated to Washoe County for maintenance.

4. Construction Materials Cost is estimated at 50% of taxable building value. Source: Discussions with contractors.

APPENDIX 2-SCENARIO 2
WASHOE COUNTY
ESTIMATED NUMBER OF RESIDENTS

YEAR	USE TYPE	CUMULATIVE # OF RESIDENTIAL UNITS	CUMULATIVE # OF OCCUPIED UNITS	CUMULATIVE # OF SQUARE FEET	ESTIMATED # OF RESIDENTS	% OF WASHOE CO RESIDENTS	% OF TMFPD RESIDENTS
2021	Single Family	132	-	250,800	-	0.00%	0.00%
	Open Space	-	-	-	-	-	-
Subtotal		**132**	**-**	**250,800**	**-**	**-**	**-**
2022	Single Family	257	127	488,300	320	0.07%	0.30%
	Open Space	-	-	-	-	-	-
Subtotal		**257**	**127**	**488,300**	**320**	**0.07%**	**0.30%**
2023	Single Family	382	248	725,800	622	0.14%	0.59%
	Open Space	-	-	-	-	-	-
Subtotal		**382**	**248**	**725,800**	**622**	**0.14%**	**0.59%**
2024	Single Family	507	369	963,300	925	0.21%	0.87%
	Open Space	-	-	-	-	-	-
Subtotal		**507**	**369**	**963,300**	**925**	**0.21%**	**0.87%**
2025	Single Family	632	489	1,200,800	1,228	0.27%	1.16%
	Open Space	-	-	-	-	-	-
Subtotal		**632**	**489**	**1,200,800**	**1,228**	**0.27%**	**1.16%**
2026	Single Family	757	610	1,438,300	1,531	0.34%	1.44%
	Open Space	-	-	-	-	-	-
Subtotal		**757**	**610**	**1,438,300**	**1,531**	**0.34%**	**1.44%**
2027	Single Family	780	731	1,482,000	1,834	0.41%	1.73%
	Open Space	-	-	-	-	-	-
Subtotal		**780**	**731**	**1,482,000**	**1,834**	**0.41%**	**1.73%**
2028	Single Family	780	753	1,482,000	1,889	0.42%	1.78%
	Open Space	-	-	-	-	-	-
Subtotal		**780**	**753**	**1,482,000**	**1,889**	**0.42%**	**1.78%**

APPENDIX 2, ASSUMPTIONS:

1. Residents of the development are estimated using **2.51** residents per unit.
Source: "CP04 Comparative Housing Characteristics." 2017 American Community Survey 1-Year Estimates. Data for Washoe County, Nevada.
2. Occupied units are estimated using a vacancy rate of **3.50%** to account for household movement and other timing issues.
Source: Center for Regional Studies, University of Nevada, Reno, based on data from the American Community Survey.
All residents are considered new to the area, whether they relocating from an existing Washoe County home or moving to the area. This is because due to low housing vacancy rates in the area, homes vacated by County residents moving to the project are expected to be filled by out-of-area persons, resulting in a net increase in population in the County. Units are assumed to be occupied the year after construction.
3. Some Washoe County and Truckee Meadows Fire Protection District (TMFPD) revenues and costs shown in Appendix 3 are estimated using the Average Cost Method (ACM) per capita methodology. The ACM estimates residents added to the County by the development and divides this amount by Washoe County and TMFPD FY 2017-18 population.

Population	**FY 2017-2018**
Washoe County	448,316
TMFPD	106,243

Source: Washoe County and Truckee Meadows Fire Protection District budgets, FY 2018-19.

APPENDIX 3-SCENARIO 2
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

GENERAL FUND	Base Year FY 17-18	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-YEAR SUBTOTAL
REVENUE												
Taxes												
Ad Valorem General[1]	Appendix 4A	$ 27,225	$ 186,879	$ 349,036	$ 520,754	$ 702,461	$ 894,602	$ 1,069,502	$ 1,128,445	$ 1,162,299	$ 1,197,167	**$ 7,238,371**
Ad Valorem Detention Facility[1]	Appendix 4A	2,098	14,400	26,894	40,126	54,127	68,932	82,409	86,950	89,559	92,246	**557,740**
Ad Valorem Indigent Insurance[1]	Appendix 4A	407	2,791	5,212	7,776	10,490	13,359	15,971	16,851	17,356	17,877	**108,089**
Ad Valorem AB104[1]	Appendix 4A	493	3,385	6,322	9,433	12,724	16,204	19,372	20,440	21,053	21,685	**131,112**
Ad Valorem China Springs[1]	Appendix 4A	201	1,377	2,571	3,836	5,175	6,590	7,879	8,313	8,562	8,819	**53,324**
Ad Valorem Family Court[1]	Appendix 4A	520	3,572	6,671	9,954	13,427	17,099	20,442	21,569	22,216	22,883	**138,354**
Room Tax[2]	425,000	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**$ 30,944**	**$ 212,403**	**$ 396,707**	**$ 591,879**	**$ 798,404**	**$ 1,016,787**	**$ 1,215,575**	**$ 1,282,569**	**$ 1,321,046**	**$ 1,360,677**	**$ 8,226,990**
Licenses and Permits												
Business Licenses/Permits												
Business Licenses[3]	$ 840,000	$ -	$ 2,083	$ 4,178	$ 6,397	$ 8,744	$ 11,227	$ 13,851	$ 14,701	$ 15,142	$ 15,596	**$ 91,919**
Business Licenses/Elec and Telecom[3]	4,715,000	-	11,695	23,452	35,905	49,084	63,021	77,750	82,515	84,991	87,540	**515,952**
Franchise Fees[3]	1,980,000	-	4,911	9,849	15,078	20,612	26,465	32,650	34,651	35,691	36,761	**216,667**
Liquor Licenses[3]	254,600	-	631	1,266	1,939	2,650	3,403	4,198	4,456	4,589	4,727	**27,860**
Local Gaming Licenses[2]	677,800	-	-	-	-	-	-	-	-	-	-	-
County Gaming Licenses[2]	234,300	-	-	-	-	-	-	-	-	-	-	-
AB104 Gaming Licenses[2]	725,000	-	-	-	-	-	-	-	-	-	-	-
Nonbusiness Licenses and Permits												-
Marriage Affidavits[4]	175,000	-	143	286	438	598	768	948	1,006	1,036	1,067	**6,289**
Mobile Home Permits[2]	200	-	-	-	-	-	-	-	-	-	-	-
Other[2]	300	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**$ -**	**$ 19,463**	**$ 39,031**	**$ 59,756**	**$ 81,689**	**$ 104,884**	**$ 129,397**	**$ 137,329**	**$ 141,448**	**$ 145,692**	**$ 858,689**
Intergovernmental Revenue												
Federal/State Grants and Other[2]	$ 7,233,361	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
BCCRT/SCCRT[5]	Appendix 5	207,196	236,402	276,957	319,733	364,825	412,336	271,193	242,065	249,327	256,807	**2,836,842**
Remainder C-Tax Revenue Sources[6]	16,812,065	-	13,696	27,465	42,048	57,481	73,803	91,052	96,633	99,532	102,517	**604,225**
AB 104 Sales Tax @ .25%[5]	Appendix 5	30,165	34,417	40,322	46,549	53,114	60,031	39,482	35,242	36,299	37,388	**413,009**
Remainder AB 104 Revenue[7]	-	-	-	-	-	-	-	-	-	-	-	-
Other Revenue[2]	253,712	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**$ 237,362**	**$ 284,515**	**$ 344,743**	**$ 408,329**	**$ 475,420**	**$ 546,169**	**$ 401,727**	**$ 373,939**	**$ 385,158**	**$ 396,712**	**$ 3,854,075**
Charges for Services												
General Government-Clerk/Recorder[4]	$ 2,355,500	$ -	$ 1,919	$ 3,848	$ 5,891	$ 8,054	$ 10,340	$ 12,757	$ 13,539	$ 13,945	$ 14,363	**$ 84,657**
General Gov.-PTx/Cent. Billing/Other[2]	9,608,958	-	-	-	-	-	-	-	-	-	-	-
Judicial[4]	1,343,300	-	1,094	2,194	3,360	4,593	5,897	7,275	7,721	7,953	8,191	**48,278**
Public Safety[2]	6,285,731	-	-	-	-	-	-	-	-	-	-	-
Public Works[2]	255,315	-	-	-	-	-	-	-	-	-	-	-
Welfare[2]	2,500	-	-	-	-	-	-	-	-	-	-	-
Cultural and Recreation[4]	793,572	-	646	1,296	1,985	2,713	3,484	4,298	4,561	4,698	4,839	**28,521**
Subtotal		**$ -**	**$ 3,660**	**$ 7,339**	**$ 11,236**	**$ 15,360**	**$ 19,721**	**$ 24,330**	**$ 25,821**	**$ 26,596**	**$ 27,394**	**$ 161,456**

APPENDIX 3-SCENARIO 2
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	Base Year FY 17-18	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-YEAR SUBTOTAL
Fines and Forfeits												
Fines[4]	$ 4,909,550	$ -	$ 3,999	$ 8,020	$ 12,279	$ 16,786	$ 21,552	$ 26,589	$ 28,219	$ 29,066	$ 29,938	$ 176,449
Forfeits[4]	1,892,000	-	1,541	3,091	4,732	6,469	8,306	10,247	10,875	11,201	11,537	67,998
Subtotal		**$ -**	**$ 5,541**	**$ 11,111**	**$ 17,011**	**$ 23,255**	**$ 29,858**	**$ 36,836**	**$ 39,094**	**$ 40,267**	**$ 41,475**	**$ 244,447**
Miscellaneous												
Miscellaneous[2]	$ 3,746,441	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
REVENUE TOTAL		**$ 268,305**	**$ 525,582**	**$ 798,932**	**$ 1,088,211**	**$ 1,394,127**	**$ 1,717,419**	**$ 1,807,865**	**$ 1,858,752**	**$ 1,914,514**	**$ 1,971,950**	**$ 13,345,657**
EXPENDITURES												
General Government												
General Government												
Commissioners[8]	$ 767,569	$ -	$ 1,269	$ 2,545	$ 3,897	$ 5,327	$ 6,840	$ 8,438	$ 8,955	$ 9,224	$ 9,501	$ 55,996
County Manager[9]	4,909,099	-	2,095	4,527	6,797	9,219	11,801	14,552	15,494	16,022	16,568	97,075
Elections[10]	1,700,013	-	1,385	2,777	4,252	5,812	7,463	9,207	9,771	10,064	10,366	61,098
Finance[9]	5,584,348	-	3,177	6,867	10,309	13,983	17,899	22,072	23,501	24,301	25,129	147,237
Human Resources[9]	2,323,128	-	1,322	2,857	4,289	5,817	7,446	9,182	9,777	10,109	10,454	61,252
Technology Services[9]	13,576,480	-	7,725	16,694	25,063	33,994	43,516	53,660	57,134	59,079	61,093	357,959
Accrued Benefits[9]	2,500,000	-	1,422	3,074	4,615	6,260	8,013	9,881	10,521	10,879	11,250	65,915
Centrally Managed Activities[9]	1,431,947	-	815	1,761	2,643	3,585	4,590	5,660	6,026	6,231	6,444	37,755
Assessor[10]	7,084,190	-	5,771	11,573	17,718	24,221	31,099	38,367	40,719	41,940	43,198	254,605
Clerk[10]	1,484,042	-	1,209	2,424	3,712	5,074	6,515	8,037	8,530	8,786	9,049	53,336
Recorder[10]	2,191,862	-	1,786	3,581	5,482	7,494	9,622	11,871	12,598	12,976	13,366	78,775
General Government Total		**$ -**	**$ 27,976**	**$ 58,680**	**$ 88,777**	**$ 120,787**	**$ 154,804**	**$ 190,927**	**$ 203,027**	**$ 209,612**	**$ 216,417**	**$ 1,271,004**
Judicial												
District Courts[10]	$ 20,788,093	$ -	$ 16,935	$ 33,960	$ 51,992	$ 71,075	$ 91,257	$ 112,585	$ 119,486	$ 123,071	$ 126,763	$ 747,123
District Attorney[10]	21,640,780	-	17,629	35,353	54,125	73,991	95,000	117,203	124,387	128,119	131,962	777,769
Public Defender[10]	13,479,521	-	10,981	22,021	33,713	46,087	59,173	73,003	77,478	79,802	82,196	484,453
Justice Courts[10]	10,849,719	-	8,838	17,724	27,136	37,096	47,629	58,760	62,362	64,233	66,160	389,938
Incline Constable[11]	176,362	-	-	-	-	-	-	-	-	-	-	-
Judicial Total		**$ -**	**$ 54,383**	**$ 109,058**	**$ 166,965**	**$ 228,249**	**$ 293,059**	**$ 361,552**	**$ 383,713**	**$ 395,224**	**$ 407,081**	**$ 2,399,283**
Public Safety												
Sheriff and Detention												
Operations and Detention[12]	Appendix 6	$ -	$ 95,270	$ 220,005	$ 324,912	$ 437,710	$ 558,853	$ 688,821	$ 735,504	$ 763,125	$ 791,823	$ 4,616,023
Administration[12]	8,462,617	-	8,984	20,747	30,640	41,276	52,700	64,957	69,359	71,963	74,670	435,296
Subtotal		**$ -**	**$ 104,254**	**$ 240,751**	**$ 355,552**	**$ 478,986**	**$ 611,553**	**$ 753,778**	**$ 804,863**	**$ 835,089**	**$ 866,493**	**$ 5,051,319**
Medical Examiner												
Medical Examiner[10]	$ 3,365,349	$ -	$ 2,742	$ 5,498	$ 8,417	$ 11,506	$ 14,773	$ 18,226	$ 19,343	$ 19,924	$ 20,521	$ 120,950
Other												
Juvenile Services[10]	$ 15,459,393	$ -	$ 12,594	$ 25,255	$ 38,665	$ 52,856	$ 67,865	$ 83,726	$ 88,858	$ 91,523	$ 94,269	$ 555,610
Manager's Office[11]	1,066,438	-	-	-	-	-	-	-	-	-	-	-

APPENDIX 3-SCENARIO 2
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	Base Year FY 17-18	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-YEAR SUBTOTAL
Alternative Sentencing[10]	1,546,108	-	1,259	2,526	3,867	5,286	6,787	8,373	8,887	9,153	9,428	**55,567**
Emergency Management[10]	1,229,999	-	1,002	2,009	3,076	4,205	5,400	6,661	7,070	7,282	7,500	**44,206**
Public Administrator[10]	1,220,419	-	994	1,994	3,052	4,173	5,357	6,610	7,015	7,225	7,442	**43,862**
Public Guardian[10]	1,871,400	-	1,524	3,057	4,680	6,398	8,215	10,135	10,756	11,079	11,412	**67,258**
Subtotal		**$ -**	**$ 17,374**	**$ 34,841**	**$ 53,341**	**$ 72,919**	**$ 93,624**	**$ 115,505**	**$ 122,585**	**$ 126,263**	**$ 130,051**	**$ 766,503**
Public Safety Total		**$ -**	**$ 124,369**	**$ 281,090**	**$ 417,310**	**$ 563,412**	**$ 719,951**	**$ 887,509**	**$ 946,792**	**$ 981,275**	**$ 1,017,065**	**$ 5,938,772**
Public Works												
Public Works												
Community Services[9]	$ 14,360,823	$ -	$ 8,171	$ 17,658	$ 26,511	$ 35,958	$ 46,030	$ 56,760	$ 60,435	$ 62,492	$ 64,622	**$ 378,639**
Public Works Total		**$ -**	**$ 8,171**	**$ 17,658**	**$ 26,511**	**$ 35,958**	**$ 46,030**	**$ 56,760**	**$ 60,435**	**$ 62,492**	**$ 64,622**	**$ 378,639**
Welfare												
Social Services												
Human Services[11]	$ 1,405,950	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Welfare Total		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Culture and Recreation												
Culture and Recreation												
Library[10]	$ 9,488,709	$ -	$ 7,730	$ 15,501	$ 23,732	$ 32,442	$ 41,654	$ 51,389	$ 54,539	$ 56,175	$ 57,861	**$ 341,024**
Regional Parks/Open Space[10]	6,556,129	-	5,341	10,710	16,397	22,416	28,780	35,507	37,683	38,814	39,978	**235,627**
Culture and Recreation Total		**$ -**	**$ 13,071**	**$ 26,211**	**$ 40,129**	**$ 54,858**	**$ 70,435**	**$ 86,896**	**$ 92,223**	**$ 94,989**	**$ 97,839**	**$ 576,651**
Community Support[10]	$ 367,280	$ -	$ 299	$ 600	$ 919	$ 1,256	$ 1,612	$ 1,989	$ 2,111	$ 2,174	$ 2,240	**$ 13,200**
Intergovernmental Expenditures												
Indigent Ins. Program[13]	$ 2,107,357	$ 407	$ 2,791	$ 5,212	$ 7,776	$ 10,490	$ 13,359	$ 15,971	$ 16,851	$ 17,356	$ 17,877	**$ 108,089**
China Springs Youth Facility[13]	1,249,218	201	1,377	2,571	3,836	5,175	6,590	7,879	8,313	8,562	8,819	**53,324**
TM Regional Planning[11]	250,160	-	-	-	-	-	-	-	-	-	-	-
Ethics Commission Assessment[11]	25,342	-	-	-	-	-	-	-	-	-	-	-
Intergovernmental Expenditures		**$ 607**	**$ 4,167**	**$ 7,783**	**$ 11,613**	**$ 15,665**	**$ 19,949**	**$ 23,850**	**$ 25,164**	**$ 25,919**	**$ 26,696**	**$ 161,413**
EXPENDITURES SUBTOTAL		**$ 607**	**$ 232,436**	**$ 501,081**	**$ 752,223**	**$ 1,020,183**	**$ 1,305,839**	**$ 1,609,483**	**$ 1,713,464**	**$ 1,771,686**	**$ 1,831,960**	**$ 10,738,962**
CONTINGENCY @	**1.0%**	**$ 6**	**$ 2,324**	**$ 5,011**	**$ 7,522**	**$ 10,202**	**$ 13,058**	**$ 16,095**	**$ 17,135**	**$ 17,717**	**$ 18,320**	**$ 107,390**
EXPENDITURES TOTAL		**$ 613**	**$ 234,761**	**$ 506,092**	**$ 759,745**	**$ 1,030,385**	**$ 1,318,898**	**$ 1,625,577**	**$ 1,730,599**	**$ 1,789,403**	**$ 1,850,279**	**$ 10,846,352**
GENERAL FUND SURPLUS/DEFICIT		**$ 267,692**	**$ 290,821**	**$ 292,841**	**$ 328,466**	**$ 363,742**	**$ 398,521**	**$ 182,288**	**$ 128,153**	**$ 125,111**	**$ 121,670**	**$ 2,499,306**

APPENDIX 3-SCENARIO 2
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	Base Year FY 17-18	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-YEAR SUBTOTAL
OTHER FUNDS[14]												
LIBRARY EXPANSION FUND												
REVENUE												
Ad Valorem[1]	Appendix 4A	$ 542	$ 3,721	$ 6,949	$ 10,368	$ 13,986	$ 17,812	$ 21,294	$ 22,468	$ 23,142	$ 23,836	**$ 144,119**
Miscellaneous[2]	15,000	-	-	-	-	-	-	-	-	-	-	**-**
Revenue Total		**$ 542**	**$ 3,721**	**$ 6,949**	**$ 10,368**	**$ 13,986**	**$ 17,812**	**$ 21,294**	**$ 22,468**	**$ 23,142**	**$ 23,836**	**$ 144,119**
EXPENDITURES												
Library[10]	$ 2,589,846	$ -	$ 2,110	$ 4,231	$ 6,477	$ 8,855	$ 11,369	$ 14,026	$ 14,886	$ 15,333	$ 15,792	**$ 93,079**
SURPLUS/DEFICIT		**$ 542**	**$ 1,611**	**$ 2,719**	**$ 3,891**	**$ 5,132**	**$ 6,443**	**$ 7,268**	**$ 7,582**	**$ 7,809**	**$ 8,044**	**$ 51,040**
ANIMAL SERVICES FUND												
REVENUE												
Ad Valorem[1]	Appendix 4A	$ 813	$ 5,581	$ 10,424	$ 15,553	$ 20,979	$ 26,718	$ 31,941	$ 33,702	$ 34,713	$ 35,754	**$ 216,178**
Licenses and Permits[4]	307,000	-	250	502	768	1,050	1,348	1,663	1,765	1,818	1,872	**11,034**
Charges for Services[4]	203,000	-	165	332	508	694	891	1,099	1,167	1,202	1,238	**7,296**
Miscellaneous[2]	191,350	-	-	-	-	-	-	-	-	-	-	**-**
Revenue Total		**$ 813**	**$ 5,997**	**$ 11,257**	**$ 16,828**	**$ 22,723**	**$ 28,957**	**$ 34,703**	**$ 36,633**	**$ 37,732**	**$ 38,864**	**$ 234,508**
EXPENDITURES												
Animal Services[10]	$ 5,681,196	$ -	$ 4,628	$ 9,281	$ 14,209	$ 19,424	$ 24,940	$ 30,768	$ 32,654	$ 33,634	$ 34,643	**$ 204,182**
SURPLUS/DEFICIT		**$ 813**	**$ 1,369**	**$ 1,976**	**$ 2,619**	**$ 3,299**	**$ 4,017**	**$ 3,935**	**$ 3,979**	**$ 4,098**	**$ 4,221**	**$ 30,326**
INDIGENT TAX LEVY FUND												
REVENUE												
Ad Valorem[1]	Appendix 4A	$ 1,626	$ 11,163	$ 20,848	$ 31,105	$ 41,959	$ 53,436	$ 63,883	$ 67,403	$ 69,425	$ 71,508	**$ 432,357**
Charges for Services[2]	78,000	-	-	-	-	-	-	-	-	-	-	**-**
Miscellaneous[2]	3,322,000	-	-	-	-	-	-	-	-	-	-	**-**
Revenue Total		**$ 1,626**	**$ 11,163**	**$ 20,848**	**$ 31,105**	**$ 41,959**	**$ 53,436**	**$ 63,883**	**$ 67,403**	**$ 69,425**	**$ 71,508**	**$ 432,357**
EXPENDITURES												
Indigent Assistance[15]	$ 31,886,929	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
SURPLUS/DEFICIT		**$ 1,626**	**$ 11,163**	**$ 20,848**	**$ 31,105**	**$ 41,959**	**$ 53,436**	**$ 63,883**	**$ 67,403**	**$ 69,425**	**$ 71,508**	**$ 432,357**
CHILD PROTECTIVE SERVICES FUND												
REVENUE												
Ad Valorem[1]	Appendix 4A	$ 1,084	$ 7,442	$ 13,899	$ 20,737	$ 27,973	$ 35,624	$ 42,588	$ 44,936	$ 46,284	$ 47,672	**$ 288,238**
Licenses and Permits[4]	22,500	-	18	37	56	77	99	122	129	133	137	**809**
Intergovernmental[4]	41,036,087	-	33,429	67,038	102,633	140,304	180,143	222,245	235,868	242,944	250,232	**1,474,835**
Charges for Services[4]	3,492,000	-	2,845	5,705	8,734	11,939	15,329	18,912	20,071	20,673	21,294	**125,502**
Reimbusements[4]	7,965,822											
Miscellaneous[2]	125,000	-	-	-	-	-	-	-	-	-	-	**-**
Revenue Total		**$ 1,084**	**$ 43,734**	**$ 86,678**	**$ 132,160**	**$ 180,293**	**$ 231,194**	**$ 283,868**	**$ 301,004**	**$ 310,034**	**$ 319,335**	**$ 1,889,384**

APPENDIX 3-SCENARIO 2
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	Base Year FY 17-18	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-YEAR SUBTOTAL
EXPENDITURES												
Child Protective Services[10]	$ 58,006,283	$ -	$ 47,253	$ 94,761	$ 145,077	$ 198,326	$ 254,639	$ 314,153	$ 333,409	$ 343,411	$ 353,714	**$ 2,084,743**
SURPLUS/DEFICIT		**$ 1,084**	**$ (3,520)**	**$ (8,083)**	**$ (12,916)**	**$ (18,033)**	**$ (23,445)**	**$ (30,286)**	**$ (32,405)**	**$ (33,377)**	**$ (34,379)**	**$ (195,359)**
SENIOR SERVICES FUND												
REVENUE												
Ad Valorem[1]	Appendix 4A	$ 271	$ 1,860	$ 3,475	$ 5,184	$ 6,993	$ 8,906	$ 10,647	$ 11,234	$ 11,571	$ 11,918	**$ 72,059**
Intergovernmental[4]	1,695,622	-	1,381	2,770	4,241	5,797	7,444	9,183	9,746	10,038	10,340	**60,941**
Charges for Services[4]	392,834	-	320	642	982	1,343	1,724	2,128	2,258	2,326	2,395	**14,118**
Miscellaneous/Reimbursements[a]	74,450	-	61	122	186	255	327	403	428	441	454	**2,676**
Revenue Total		**$ 271**	**$ 3,622**	**$ 7,008**	**$ 10,594**	**$ 14,388**	**$ 18,401**	**$ 22,361**	**$ 23,666**	**$ 24,376**	**$ 25,107**	**$ 149,794**
EXPENDITURES												
Senior Citizens[16]	$ 5,240,937	$ -	$ 3,202	$ 6,421	$ 9,831	$ 13,439	$ 17,255	$ 21,288	$ 22,593	$ 23,271	$ 23,969	**$ 141,269**
SURPLUS/DEFICIT		**$ 271**	**$ 420**	**$ 587**	**$ 763**	**$ 949**	**$ 1,146**	**$ 1,073**	**$ 1,073**	**$ 1,105**	**$ 1,138**	**$ 8,525**
OTHER RESTRICTED SPECIAL REVENUE FUND												
REVENUE												
Ad Valorem[1]	Appendix 4A	$ 271	$ 1,860	$ 3,475	$ 5,184	$ 6,993	$ 8,906	$ 10,647	$ 11,234	$ 11,571	$ 11,918	**$ 72,059**
Car Rental Fee[2]	2,754,904	-	-	-	-	-	-	-	-	-	-	-
Intergovernmental[4]	12,251,034	-	9,980	20,014	30,640	41,887	53,780	66,350	70,417	72,529	74,705	**440,302**
Charges for Services[4]	3,629,089	-	2,956	5,929	9,077	12,408	15,931	19,655	20,859	21,485	22,130	**130,429**
Fines and Forfeits[4]	2,826,909	-	2,303	4,618	7,070	9,665	12,410	15,310	16,249	16,736	17,238	**101,599**
Miscellaneous[2]	1,036,753	-	-	-	-	-	-	-	-	-	-	-
Revenue Total		**$ 271**	**$ 17,100**	**$ 34,035**	**$ 51,971**	**$ 70,953**	**$ 91,027**	**$ 111,962**	**$ 118,758**	**$ 122,321**	**$ 125,991**	**$ 744,389**
EXPENDITURES												
General Government[17]	$ 6,080,007	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Judicial[17]	16,317,444	-	-	-	-	-	-	-	-	-	-	-
Public Safety[17]	10,887,591	-	-	-	-	-	-	-	-	-	-	-
Public Works[17]	1,002,657	-	-	-	-	-	-	-	-	-	-	-
Welfare[17]	1,417,288	-	-	-	-	-	-	-	-	-	-	-
Culture and Recreation[17]	2,068,711	-	-	-	-	-	-	-	-	-	-	-
Intergovernmental[1/]	1,404,904	-	-	-	-	-	-	-	-	-	-	-
Expenditures Total		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
SURPLUS/DEFICIT		**$ 271**	**$ 17,100**	**$ 34,035**	**$ 51,971**	**$ 70,953**	**$ 91,027**	**$ 111,962**	**$ 118,758**	**$ 122,321**	**$ 125,991**	**$ 744,389**
ROADS SPECIAL REVENUE FUND												
REVENUE												
Motor Vehicle Fuel Tax[4]	$ 9,955,724	$ -	$ 8,110	$ 16,264	$ 24,900	$ 34,039	$ 43,704	$ 53,919	$ 57,224	$ 58,940	$ 60,709	**$ 357,808**
Charges for Services[4]	750,000	-	611	1,225	1,876	2,564	3,292	4,062	4,311	4,440	4,573	**26,955**
Miscellaneous[2]	506,244	-	-	-	-	-	-	-	-	-	-	-
Revenue Total		**$ -**	**$ 8,721**	**$ 17,489**	**$ 26,776**	**$ 36,603**	**$ 46,997**	**$ 57,981**	**$ 61,534**	**$ 63,380**	**$ 65,282**	**$ 384,763**

APPENDIX 3-SCENARIO 2
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	Base Year FY 17-18	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-YEAR SUBTOTAL
EXPENDITURES												
Public Works[18]	$ 20,919,086	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
SURPLUS/DEFICIT		**$ -**	**$ 8,721**	**$ 17,489**	**$ 26,776**	**$ 36,603**	**$ 46,997**	**$ 57,981**	**$ 61,534**	**$ 63,380**	**$ 65,282**	**$ 384,763**
TRUCKEE MEADOWS FIRE PROTECTION DISTRICT												
REVENUE												
Property Tax-AB104[1]	Appendix 4B	$ 43	$ 298	$ 557	$ 831	$ 1,121	$ 1,428	$ 1,707	$ 1,801	$ 1,855	$ 1,911	**$ 11,552**
Property Tax-General[1]	Appendix 4B	14,636	100,463	187,635	279,947	377,630	480,921	574,944	606,631	624,829	643,574	**3,891,210**
Sales Tax-AB104[5]	Appendix 5	2,658	3,033	3,553	4,101	4,680	5,289	3,479	3,105	3,198	3,294	**36,391**
Remainder of AB104[7]	-	-	-	-	-	-	-	-	-	-	-	-
Sales Tax-CCRT[5]	Appendix 5	15,674	17,883	20,951	24,187	27,598	31,192	20,515	18,312	18,861	19,427	**214,599**
Remainder of C-Tax[6]	1,271,785	-	4,372	8,767	13,422	18,349	23,559	29,065	30,846	31,771	32,725	**192,875**
Other Sources[2]	1,117,128	-	-	-	-	-	-	-	-	-	-	-
Revenue Total		**$ 33,011**	**$ 126,048**	**$ 221,463**	**$ 322,489**	**$ 429,377**	**$ 542,389**	**$ 629,709**	**$ 660,694**	**$ 680,515**	**$ 700,931**	**$ 4,346,627**
EXPENDITURES												
Fire Operations[19]	$ 26,747,759	$ -	$ 91,945	$ 184,385	$ 282,289	$ 385,900	$ 495,475	$ 611,276	$ 648,744	$ 668,207	$ 688,253	**$ 4,056,475**
Expenditure Total		**$ -**	**$ 91,945**	**$ 184,385**	**$ 282,289**	**$ 385,900**	**$ 495,475**	**$ 611,276**	**$ 648,744**	**$ 668,207**	**$ 688,253**	**$ 4,056,475**
SURPLUS/DEFICIT		**$ 33,011**	**$ 34,103**	**$ 37,078**	**$ 40,200**	**$ 43,477**	**$ 46,914**	**$ 18,433**	**$ 11,950**	**$ 12,308**	**$ 12,678**	**$ 290,152**

APPENDIX 3-SCENARIO 2
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

GENERAL FUND	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	10-YEAR SUBTOTAL	ANALYSIS TOTAL
REVENUE												
Taxes												
Ad Valorem General[1]	$ 1,233,082	$ 1,270,075	$ 1,308,177	$ 1,347,423	$ 1,387,845	$ 1,429,481	$ 1,472,365	$ 1,516,536	$ 1,562,032	$ 1,608,893	**$ 14,135,909**	**$ 21,374,280**
Ad Valorem Detention Facility[1]	95,013	97,863	100,799	103,823	106,938	110,146	113,451	116,854	120,360	123,970	**1,089,218**	**1,646,958**
Ad Valorem Indigent Insurance[1]	18,413	18,966	19,535	20,121	20,724	21,346	21,987	22,646	23,326	24,025	**211,089**	**319,178**
Ad Valorem AB104[1]	22,335	23,005	23,696	24,406	25,139	25,893	26,670	27,470	28,294	29,143	**256,050**	**387,162**
Ad Valorem China Springs[1]	9,084	9,356	9,637	9,926	10,224	10,531	10,847	11,172	11,507	11,852	**104,137**	**157,461**
Ad Valorem Family Court[1]	23,569	24,276	25,004	25,755	26,527	27,323	28,143	28,987	29,857	30,752	**270,194**	**408,548**
Room Tax[2]	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	**$ 1,401,497**	**$ 1,443,542**	**$ 1,486,849**	**$ 1,531,454**	**$ 1,577,398**	**$ 1,624,720**	**$ 1,673,461**	**$ 1,723,665**	**$ 1,775,375**	**$ 1,828,636**	**$ 16,066,596**	**$ 24,293,587**
Licenses and Permits												
Business Licenses/Permits												
Business Licenses[3]	$ 16,064	$ 16,546	$ 17,042	$ 17,553	$ 18,080	$ 18,622	$ 19,181	$ 19,756	$ 20,349	$ 20,959	**$ 184,152**	**$ 276,071**
Business Licenses/Elec and Telecom[3]	90,167	92,872	95,658	98,528	101,483	104,528	107,664	110,894	114,220	117,647	**1,033,660**	**1,549,613**
Franchise Fees[3]	37,864	39,000	40,170	41,375	42,617	43,895	45,212	46,568	47,965	49,404	**434,072**	**650,739**
Liquor Licenses[3]	4,869	5,015	5,165	5,320	5,480	5,644	5,814	5,988	6,168	6,353	**55,815**	**83,676**
Local Gaming Licenses[2]	-	-	-	-	-	-	-	-	-	-	-	-
County Gaming Licenses[2]	-	-	-	-	-	-	-	-	-	-	-	-
AB104 Gaming Licenses[2]	-	-	-	-	-	-	-	-	-	-	-	-
Nonbusiness Licenses and Permits											-	-
Marriage Affidavits[4]	1,099	1,132	1,166	1,201	1,237	1,274	1,312	1,352	1,392	1,434	**12,600**	**18,890**
Mobile Home Permits[2]	-	-	-	-	-	-	-	-	-	-	-	-
Other[2]	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	**$ 150,063**	**$ 154,564**	**$ 159,201**	**$ 163,977**	**$ 168,897**	**$ 173,964**	**$ 179,183**	**$ 184,558**	**$ 190,095**	**$ 195,798**	**$ 1,720,299**	**$ 2,578,988**
Intergovernmental Revenue												
Federal/State Grants and Other[2]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	**$ -**
BCCRT/SCCRT[5]	264,511	272,446	280,620	289,038	297,710	306,641	315,840	325,315	335,075	345,127	**3,032,324**	**5,869,166**
Remainder C-Tax Revenue Sources[6]	105,593	108,761	112,024	115,384	118,846	122,411	126,084	129,866	133,762	137,775	**1,210,505**	**1,814,730**
AB 104 Sales Tax @ .25%[5]	38,510	39,665	40,855	42,080	43,343	44,643	45,982	47,362	48,783	50,246	**441,468**	**854,477**
Remainder AB 104 Revenue[7]	-	-	-	-	-	-	-	-	-	-	-	-
Other Revenue[2]	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	**$ 408,614**	**$ 420,872**	**$ 433,498**	**$ 446,503**	**$ 459,898**	**$ 473,695**	**$ 487,906**	**$ 502,543**	**$ 517,620**	**$ 533,148**	**$ 4,684,297**	**$ 8,538,372**
Charges for Services												
General Government-Clerk/Recorder[4]	$ 14,794	$ 15,238	$ 15,695	$ 16,166	$ 16,651	$ 17,151	$ 17,665	$ 18,195	$ 18,741	$ 19,303	**$ 169,601**	**$ 254,258**
General Gov.-PTx/Cent. Billing/Other[2]	-	-	-	-	-	-	-	-	-	-	-	-
Judicial[4]	8,437	8,690	8,951	9,219	9,496	9,781	10,074	10,376	10,688	11,008	**96,721**	**144,999**
Public Safety[2]	-	-	-	-	-	-	-	-	-	-	-	-
Public Works[2]	-	-	-	-	-	-	-	-	-	-	-	-
Welfare[2]	-	-	-	-	-	-	-	-	-	-	-	-
Cultural and Recreation[4]	4,984	5,134	5,288	5,446	5,610	5,778	5,951	6,130	6,314	6,503	**57,139**	**85,660**
Subtotal	**$ 28,216**	**$ 29,062**	**$ 29,934**	**$ 30,832**	**$ 31,757**	**$ 32,710**	**$ 33,691**	**$ 34,702**	**$ 35,743**	**$ 36,815**	**$ 323,460**	**$ 484,916**

APPENDIX 3-SCENARIO 2
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	10-YEAR SUBTOTAL	ANALYSIS TOTAL
Fines and Forfeits												
Fines[4]	$ 30,836	$ 31,761	$ 32,714	$ 33,695	$ 34,706	$ 35,747	$ 36,820	$ 37,924	$ 39,062	$ 40,234	**$ 353,498**	**$ 529,947**
Forfeits[4]	11,883	12,240	12,607	12,985	13,375	13,776	14,189	14,615	15,053	15,505	**136,228**	**204,226**
Subtotal	**$ 42,719**	**$ 44,001**	**$ 45,321**	**$ 46,680**	**$ 48,081**	**$ 49,523**	**$ 51,009**	**$ 52,539**	**$ 54,115**	**$ 55,739**	**$ 489,726**	**$ 734,174**
Miscellaneous												
Miscellaneous[2]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
REVENUE TOTAL	**$ 2,031,108**	**$ 2,092,041**	**$ 2,154,803**	**$ 2,219,447**	**$ 2,286,030**	**$ 2,354,611**	**$ 2,425,249**	**$ 2,498,007**	**$ 2,572,947**	**$ 2,650,136**	**$ 23,284,380**	**$ 36,630,037**
EXPENDITURES												
General Government												
General Government												
Commissioners[8]	$ 9,786	$ 10,079	$ 10,382	$ 10,693	$ 11,014	$ 11,344	$ 11,685	$ 12,035	$ 12,396	$ 12,768	**$ 112,182**	**$ 168,177**
County Manager[9]	17,133	17,718	18,324	18,952	19,601	20,274	20,971	21,692	22,439	23,212	**200,316**	**297,392**
Elections[10]	10,677	10,998	11,328	11,668	12,018	12,378	12,749	13,132	13,526	13,932	**122,405**	**183,503**
Finance[9]	25,986	26,874	27,793	28,745	29,730	30,750	31,807	32,901	34,033	35,206	**303,827**	**451,064**
Human Resources[9]	10,811	11,180	11,562	11,958	12,368	12,792	13,232	13,687	14,158	14,646	**126,394**	**187,646**
Technology Services[9]	63,177	65,335	67,570	69,884	72,279	74,760	77,328	79,987	82,741	85,592	**738,653**	**1,096,612**
Accrued Benefits[9]	11,634	12,031	12,442	12,868	13,310	13,766	14,239	14,729	15,236	15,761	**136,017**	**201,932**
Centrally Managed Activities[9]	6,663	6,891	7,127	7,371	7,623	7,885	8,156	8,436	8,727	9,028	**77,908**	**115,662**
Assessor[10]	44,494	45,829	47,204	48,620	50,079	51,581	53,128	54,722	56,364	58,055	**510,077**	**764,682**
Clerk[10]	9,321	9,601	9,889	10,185	10,491	10,806	11,130	11,464	11,807	12,162	**106,854**	**160,191**
Recorder[10]	13,767	14,180	14,605	15,043	15,494	15,959	16,438	16,931	17,439	17,962	**157,819**	**236,594**
General Government Total	**$ 223,449**	**$ 230,716**	**$ 238,226**	**$ 245,987**	**$ 254,007**	**$ 262,296**	**$ 270,863**	**$ 279,716**	**$ 288,867**	**$ 298,324**	**$ 2,592,451**	**$ 3,863,455**
Judicial												
District Courts[10]	$ 130,566	$ 134,483	$ 138,517	$ 142,672	$ 146,953	$ 151,361	$ 155,902	$ 160,579	$ 165,397	$ 170,358	**$ 1,496,788**	**$ 2,243,911**
District Attorney[10]	135,921	139,999	144,199	148,525	152,980	157,570	162,297	167,166	172,181	177,346	**1,558,183**	**2,335,951**
Public Defender[10]	84,662	87,202	89,818	92,512	95,288	98,146	101,091	104,124	107,247	110,465	**970,555**	**1,455,008**
Justice Courts[10]	68,145	70,189	72,295	74,464	76,698	78,998	81,368	83,809	86,324	88,913	**781,203**	**1,171,142**
Incline Constable[11]	-	-	-	-	-	-	-	-	-	-	-	-
Judicial Total	**$ 419,293**	**$ 431,872**	**$ 444,828**	**$ 458,173**	**$ 471,918**	**$ 486,076**	**$ 500,658**	**$ 515,678**	**$ 531,148**	**$ 547,083**	**$ 4,806,728**	**$ 7,206,012**
Public Safety												
Sheriff and Detention												
Operations and Detention[12]	$ 821,640	$ 852,620	$ 884,808	$ 918,251	$ 952,999	$ 989,102	$ 1,026,613	$ 1,065,587	$ 1,106,081	$ 1,148,154	**$ 9,765,856**	**$ 14,381,879**
Administration[12]	77,481	80,403	83,438	86,592	89,869	93,273	96,811	100,486	104,305	108,272	**920,930**	**1,356,226**
Subtotal	**$ 899,121**	**$ 933,023**	**$ 968,246**	**$ 1,004,844**	**$ 1,042,868**	**$ 1,082,376**	**$ 1,123,424**	**$ 1,166,073**	**$ 1,210,385**	**$ 1,256,426**	**$ 10,686,786**	**$ 15,738,105**
Medical Examiner												
Medical Examiner[10]	$ 21,137	$ 21,771	$ 22,424	$ 23,097	$ 23,790	$ 24,504	$ 25,239	$ 25,996	$ 26,776	$ 27,579	**$ 242,312**	**$ 363,263**
Other												
Juvenile Services[10]	$ 97,097	$ 100,010	$ 103,010	$ 106,101	$ 109,284	$ 112,562	$ 115,939	$ 119,417	$ 123,000	$ 126,690	**$ 1,113,110**	**$ 1,668,720**
Manager's Office[11]	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX 3-SCENARIO 2
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	10-YEAR SUBTOTAL	ANALYSIS TOTAL
Alternative Sentencing[10]	9,711	10,002	10,302	10,611	10,930	11,257	11,595	11,943	12,301	12,670	**111,323**	**166,890**
Emergency Management[10]	7,725	7,957	8,196	8,442	8,695	8,956	9,224	9,501	9,786	10,080	**88,563**	**132,769**
Public Administrator[10]	7,665	7,895	8,132	8,376	8,627	8,886	9,153	9,427	9,710	10,001	**87,873**	**131,735**
Public Guardian[10]	11,754	12,106	12,470	12,844	13,229	13,626	14,035	14,456	14,889	15,336	**134,745**	**202,003**
Subtotal	**$ 133,952**	**$ 137,971**	**$ 142,110**	**$ 146,373**	**$ 150,765**	**$ 155,287**	**$ 159,946**	**$ 164,744**	**$ 169,687**	**$ 174,777**	**$ 1,535,613**	**$ 2,302,116**
Public Safety Total	**$ 1,054,211**	**$ 1,092,765**	**$ 1,132,781**	**$ 1,174,314**	**$ 1,217,422**	**$ 1,262,167**	**$ 1,308,609**	**$ 1,356,813**	**$ 1,406,848**	**$ 1,458,782**	**$ 12,464,711**	**$ 18,403,483**
Public Works												
Public Works												
Community Services[9]	$ 66,827	$ 69,110	$ 71,474	$ 73,921	$ 76,455	$ 79,079	$ 81,795	$ 84,608	$ 87,521	$ 90,537	**$ 781,326**	**$ 1,159,965**
Public Works Total	**$ 66,827**	**$ 69,110**	**$ 71,474**	**$ 73,921**	**$ 76,455**	**$ 79,079**	**$ 81,795**	**$ 84,608**	**$ 87,521**	**$ 90,537**	**$ 781,326**	**$ 1,159,965**
Welfare												
Social Services												
Human Services[11]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	**$ -**
Welfare Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Culture and Recreation												
Culture and Recreation												
Library[10]	$ 59,597	$ 61,384	$ 63,226	$ 65,123	$ 67,076	$ 69,089	$ 71,161	$ 73,296	$ 75,495	$ 77,760	**$ 683,208**	**$ 1,024,231**
Regional Parks/Open Space[10]	41,178	42,413	43,685	44,996	46,346	47,736	49,168	50,643	52,163	53,727	**472,055**	**707,682**
Culture and Recreation Total	**$ 100,774**	**$ 103,797**	**$ 106,911**	**$ 110,119**	**$ 113,422**	**$ 116,825**	**$ 120,330**	**$ 123,940**	**$ 127,658**	**$ 131,487**	**$ 1,155,263**	**$ 1,731,914**
Community Support[10]	$ 2,307	$ 2,376	$ 2,447	$ 2,521	$ 2,596	$ 2,674	$ 2,754	$ 2,837	$ 2,922	$ 3,010	**$ 26,445**	**$ 39,645**
Intergovernmental Expenditures												
Indigent Ins. Program[13]	$ 18,413	$ 18,966	$ 19,535	$ 20,121	$ 20,724	$ 21,346	$ 21,987	$ 22,646	$ 23,326	$ 24,025	**$ 211,089**	**$ 319,178**
China Springs Youth Facility[13]	9,084	9,356	9,637	9,926	10,224	10,531	10,847	11,172	11,507	11,852	**104,137**	**157,461**
TM Regional Planning[11]	-	-	-	-	-	-	-	-	-	-	-	-
Ethics Commission Assessment[11]	-	-	-	-	-	-	-	-	-	-	-	-
Intergovernmental Expenditures	**$ 27,497**	**$ 28,322**	**$ 29,172**	**$ 30,047**	**$ 30,948**	**$ 31,877**	**$ 32,833**	**$ 33,818**	**$ 34,833**	**$ 35,878**	**$ 315,226**	**$ 476,639**
EXPENDITURES SUBTOTAL	**$ 1,894,358**	**$ 1,958,959**	**$ 2,025,839**	**$ 2,095,081**	**$ 2,166,770**	**$ 2,240,993**	**$ 2,317,842**	**$ 2,397,411**	**$ 2,479,797**	**$ 2,565,102**	**$ 22,142,151**	**$ 32,881,113**
CONTINGENCY @	**$ 18,944**	**$ 19,590**	**$ 20,258**	**$ 20,951**	**$ 21,668**	**$ 22,410**	**$ 23,178**	**$ 23,974**	**$ 24,798**	**$ 25,651**	**$ 221,422**	**$ 328,811**
EXPENDITURES TOTAL	**$ 1,913,302**	**$ 1,978,548**	**$ 2,046,097**	**$ 2,116,032**	**$ 2,188,438**	**$ 2,263,403**	**$ 2,341,020**	**$ 2,421,385**	**$ 2,504,595**	**$ 2,590,753**	**$ 22,363,572**	**$ 33,209,924**
GENERAL FUND SURPLUS/DEFICIT	**$ 117,806**	**$ 113,493**	**$ 108,706**	**$ 103,415**	**$ 97,593**	**$ 91,208**	**$ 84,229**	**$ 76,622**	**$ 68,353**	**$ 59,383**	**$ 920,808**	**$ 3,420,113**

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WASHOE COUNTY
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OTHER FUNDS[14]	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	10-YEAR SUBTOTAL	ANALYSIS TOTAL
LIBRARY EXPANSION FUND												
REVENUE												
Ad Valorem[1]	$ 24,551	$ 25,288	$ 26,046	$ 26,828	$ 27,633	$ 28,462	$ 29,315	$ 30,195	$ 31,101	$ 32,034	**$ 281,452**	**$ 425,571**
Miscellaneous[2]	-	-	-	-	-	-	-	-	-	-	-	-
Revenue Total	**$ 24,551**	**$ 25,288**	**$ 26,046**	**$ 26,828**	**$ 27,633**	**$ 28,462**	**$ 29,315**	**$ 30,195**	**$ 31,101**	**$ 32,034**	**$ 281,452**	**$ 425,571**
EXPENDITURES												
Library[10]	$ 16,266	$ 16,754	$ 17,257	$ 17,775	$ 18,308	$ 18,857	$ 19,423	$ 20,005	$ 20,606	$ 21,224	**$ 186,475**	**$ 279,553**
SURPLUS/DEFICIT	**$ 8,285**	**$ 8,533**	**$ 8,789**	**$ 9,053**	**$ 9,325**	**$ 9,604**	**$ 9,893**	**$ 10,189**	**$ 10,495**	**$ 10,810**	**$ 94,977**	**$ 146,017**
ANIMAL SERVICES FUND												
REVENUE												
Ad Valorem[1]	$ 36,827	$ 37,932	$ 39,070	$ 40,242	$ 41,449	$ 42,692	$ 43,973	$ 45,292	$ 46,651	$ 48,051	**$ 422,177**	**$ 638,356**
Licenses and Permits[4]	1,928	1,986	2,046	2,107	2,170	2,235	2,302	2,371	2,443	2,516	**22,105**	**33,138**
Charges for Services[4]	1,275	1,313	1,353	1,393	1,435	1,478	1,522	1,568	1,615	1,664	**14,616**	**21,912**
Miscellaneous[2]	-	-	-	-	-	-	-	-	-	-	-	-
Revenue Total	**$ 40,030**	**$ 41,231**	**$ 42,468**	**$ 43,742**	**$ 45,054**	**$ 46,406**	**$ 47,798**	**$ 49,232**	**$ 50,709**	**$ 52,230**	**$ 458,899**	**$ 693,406**
EXPENDITURES												
Animal Services[10]	$ 35,682	$ 36,753	$ 37,855	$ 38,991	$ 40,161	$ 41,366	$ 42,607	$ 43,885	$ 45,201	$ 46,557	**$ 409,058**	**$ 613,240**
SURPLUS/DEFICIT	**$ 4,348**	**$ 4,478**	**$ 4,612**	**$ 4,751**	**$ 4,893**	**$ 5,040**	**$ 5,191**	**$ 5,347**	**$ 5,507**	**$ 5,673**	**$ 49,840**	**$ 80,166**
INDIGENT TAX LEVY FUND												
REVENUE												
Ad Valorem[1]	$ 73,654	$ 75,863	$ 78,139	$ 80,483	$ 82,898	$ 85,385	$ 87,946	$ 90,585	$ 93,302	$ 96,101	**$ 844,355**	**$ 1,276,712**
Charges for Services[2]	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous[2]	-	-	-	-	-	-	-	-	-	-	-	-
Revenue Total	**$ 73,654**	**$ 75,863**	**$ 78,139**	**$ 80,483**	**$ 82,898**	**$ 85,385**	**$ 87,946**	**$ 90,585**	**$ 93,302**	**$ 96,101**	**$ 844,355**	**$ 1,276,712**
EXPENDITURES												
Indigent Assistance[15]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	**$ -**
SURPLUS/DEFICIT	**$ 73,654**	**$ 75,863**	**$ 78,139**	**$ 80,483**	**$ 82,898**	**$ 85,385**	**$ 87,946**	**$ 90,585**	**$ 93,302**	**$ 96,101**	**$ 844,355**	**$ 1,276,712**
CHILD PROTECTIVE SERVICES FUND												
REVENUE												
Ad Valorem[1]	$ 49,102	$ 50,575	$ 52,093	$ 53,655	$ 55,265	$ 56,923	$ 58,631	$ 60,390	$ 62,201	$ 64,067	**$ 562,903**	**$ 851,141**
Licenses and Permits[4]	141	146	150	154	159	164	169	174	179	184	**1,620**	**2,429**
Intergovernmental[4]	257,739	265,471	273,435	281,638	290,087	298,790	307,754	316,986	326,496	336,291	**2,954,687**	**4,429,522**
Charges for Services[4]	21,933	22,590	23,268	23,966	24,685	25,426	26,189	26,974	27,783	28,617	**251,432**	**376,934**
Reimbusements[4]												
Miscellaneous[2]	-	-	-	-	-	-	-	-	-	-	-	-
Revenue Total	**$ 328,915**	**$ 338,782**	**$ 348,946**	**$ 359,414**	**$ 370,197**	**$ 381,303**	**$ 392,742**	**$ 404,524**	**$ 416,660**	**$ 429,159**	**$ 3,770,642**	**$ 5,660,025**

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	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	10-YEAR SUBTOTAL	ANALYSIS TOTAL
EXPENDITURES												
Child Protective Services[10]	$ 364,325	$ 375,255	$ 386,512	$ 398,108	$ 410,051	$ 422,353	$ 435,023	$ 448,074	$ 461,516	$ 475,361	**$ 4,176,578**	**$ 6,261,321**
SURPLUS/DEFICIT	**$ (35,410)**	**$ (36,472)**	**$ (37,566)**	**$ (38,693)**	**$ (39,854)**	**$ (41,050)**	**$ (42,281)**	**$ (43,550)**	**$ (44,856)**	**$ (46,202)**	**$ (405,936)**	**$ (601,295)**
SENIOR SERVICES FUND												
REVENUE												
Ad Valorem[1]	$ 12,276	$ 12,644	$ 13,023	$ 13,414	$ 13,816	$ 14,231	$ 14,658	$ 15,097	$ 15,550	$ 16,017	**$ 140,726**	**$ 212,785**
Intergovernmental[4]	10,650	10,969	11,298	11,637	11,986	12,346	12,716	13,098	13,491	13,896	**122,088**	**183,029**
Charges for Services[4]	2,467	2,541	2,618	2,696	2,777	2,860	2,946	3,034	3,126	3,219	**28,285**	**42,403**
Miscellaneous/Reimbursements[4]	468	482	496	511	526	542	558	575	592	610	**5,361**	**8,036**
Revenue Total	**$ 25,860**	**$ 26,636**	**$ 27,435**	**$ 28,258**	**$ 29,106**	**$ 29,979**	**$ 30,879**	**$ 31,805**	**$ 32,759**	**$ 33,742**	**$ 296,460**	**$ 446,254**
EXPENDITURES												
Senior Citizens[16]	$ 24,688	$ 25,429	$ 26,191	$ 26,977	$ 27,786	$ 28,620	$ 29,479	$ 30,363	$ 31,274	$ 32,212	**$ 283,019**	**$ 424,288**
SURPLUS/DEFICIT	**$ 1,172**	**$ 1,208**	**$ 1,244**	**$ 1,281**	**$ 1,320**	**$ 1,359**	**$ 1,400**	**$ 1,442**	**$ 1,485**	**$ 1,530**	**$ 13,441**	**$ 21,966**
OTHER RESTRICTED SPECIAL REVENUE FUND												
REVENUE												
Ad Valorem[1]	$ 12,276	$ 12,644	$ 13,023	$ 13,414	$ 13,816	$ 14,231	$ 14,658	$ 15,097	$ 15,550	$ 16,017	**$ 140,726**	**$ 212,785**
Car Rental Fee[2]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Intergovernmental[4]	76,946	79,254	81,632	84,081	86,604	89,202	91,878	94,634	97,473	100,397	**882,101**	**1,322,402**
Charges for Services[4]	22,794	23,477	24,182	24,907	25,654	26,424	27,217	28,033	28,874	29,740	**261,302**	**391,732**
Fines and Forfeits[4]	17,755	18,288	18,837	19,402	19,984	20,583	21,201	21,837	22,492	23,167	**203,544**	**305,143**
Miscellaneous[2]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Revenue Total	**$ 129,770**	**$ 133,664**	**$ 137,673**	**$ 141,804**	**$ 146,058**	**$ 150,439**	**$ 154,953**	**$ 159,601**	**$ 164,389**	**$ 169,321**	**$ 1,487,673**	**$ 2,232,062**
EXPENDITURES												
General Government[17]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	**$ -**
Judicial[17]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Public Safety[17]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Public Works[17]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Welfare[17]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Culture and Recreation[17]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Intergovernmental[1/]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Expenditures Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
SURPLUS/DEFICIT	**$ 129,770**	**$ 133,664**	**$ 137,673**	**$ 141,804**	**$ 146,058**	**$ 150,439**	**$ 154,953**	**$ 159,601**	**$ 164,389**	**$ 169,321**	**$ 1,487,673**	**$ 2,232,062**
ROADS SPECIAL REVENUE FUND												
REVENUE												
Motor Vehicle Fuel Tax[4]	$ 62,530	$ 64,406	$ 66,338	$ 68,328	$ 70,378	$ 72,489	$ 74,664	$ 76,904	$ 79,211	$ 81,587	**$ 716,834**	**$ 1,074,642**
Charges for Services[4]	4,711	4,852	4,997	5,147	5,302	5,461	5,625	5,793	5,967	6,146	**54,002**	**80,957**
Miscellaneous[2]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Revenue Total	**$ 67,240**	**$ 69,258**	**$ 71,335**	**$ 73,475**	**$ 75,680**	**$ 77,950**	**$ 80,288**	**$ 82,697**	**$ 85,178**	**$ 87,733**	**$ 770,835**	**$ 1,155,598**

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WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	10-YEAR SUBTOTAL	ANALYSIS TOTAL
EXPENDITURES												
Public Works[18]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	**$ -**
SURPLUS/DEFICIT	**$ 67,240**	**$ 69,258**	**$ 71,335**	**$ 73,475**	**$ 75,680**	**$ 77,950**	**$ 80,288**	**$ 82,697**	**$ 85,178**	**$ 87,733**	**$ 770,835**	**$ 1,155,598**
TRUCKEE MEADOWS FIRE PROTECTION DISTRICT												
REVENUE												
Property Tax-AB104[1]	$ 1,968	$ 2,027	$ 2,088	$ 2,150	$ 2,215	$ 2,281	$ 2,350	$ 2,420	$ 2,493	$ 2,568	**$ 22,561**	**$ 34,113**
Property Tax-General[1]	662,882	682,768	703,251	724,349	746,079	768,461	791,515	815,261	839,719	864,910	**7,599,194**	**11,490,404**
Sales Tax-AB104[5]	3,393	3,495	3,600	3,708	3,819	3,934	4,052	4,173	4,298	4,427	**38,898**	**75,289**
Remainder of AB104[7]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Sales Tax-CCRT[5]	20,010	20,610	21,228	21,865	22,521	23,197	23,892	24,609	25,347	26,108	**229,387**	**443,986**
Remainder of C-Tax[6]	33,706	34,718	35,759	36,832	37,937	39,075	40,247	41,455	42,698	43,979	**386,405**	**579,280**
Other Sources[2]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Revenue Total	**$ 721,959**	**$ 743,617**	**$ 765,926**	**$ 788,904**	**$ 812,571**	**$ 836,948**	**$ 862,056**	**$ 887,918**	**$ 914,555**	**$ 941,992**	**$ 8,276,445**	**$ 12,623,072**
EXPENDITURES												
Fire Operations[19]	$ 708,900	$ 730,167	$ 752,072	$ 774,635	$ 797,874	$ 821,810	$ 846,464	$ 871,858	$ 898,014	$ 924,954	**$ 8,126,749**	**$ 12,183,224**
Expenditure Total	**$ 708,900**	**$ 730,167**	**$ 752,072**	**$ 774,635**	**$ 797,874**	**$ 821,810**	**$ 846,464**	**$ 871,858**	**$ 898,014**	**$ 924,954**	**$ 8,126,749**	**$ 12,183,224**
SURPLUS/DEFICIT	**$ 13,058**	**$ 13,450**	**$ 13,853**	**$ 14,269**	**$ 14,697**	**$ 15,138**	**$ 15,592**	**$ 16,060**	**$ 16,542**	**$ 17,038**	**$ 149,696**	**$ 439,848**

APPENDIX 3-SCENARIO 2
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

APPENDIX 3, ASSUMPTIONS:

Overall Assumption-Base Year

Unless otherwise noted, analysis uses estimated FY 2017-18 revenues and expenditures as the base year to estimate revenues and costs associated with the development. Source: Washoe County Budget, FY 2018-19.

Estimated Revenues

1 See Appendices 4A and 4B for real property tax revenue calculation. In the General Fund, revenue is divided among restricted and unrestricted sources as follows:

General Fund	Property Tax Rate	% of General Fund Revenue
General	1.0045	89.4%
Detention Facility	0.0774	6.9%
Indigent Insurance	0.0150	1.3%
China Springs	0.0074	0.7%
Family Court	0.0192	1.7%
Total	**1.1235**	**100.0%**

Source: Washoe County Budget, FY 2018-19.

2 It is expected that an increase in population will lead to an increase in these revenues. However, it is difficult to estimate how the development will impact these revenue sources as many of the sources are also impacted by other factors, such as area visitors, the analysis conservatively does not estimate revenue generated from these sources.

3 Business license, franchise fee, and liquor license revenues are based on business revenues and expenditures by project residents are expected to increase these revenues. Analysis assumes residents will impact 75% of these sources, with the remainder impacted by businesses and visitors. These revenues/services are also provided by Cities of Reno and Sparks. As a result, the analysis estimates project resident impacts on these revenue sources using the Average Cost Method (ACM) using only the unincorporated population rather than the entire Washoe County population. To use this method, revenues are calculated based on estimated FY 2017-18 Washoe County unincorporated per capita revenue, inflated **3%** annually and applied to estimated annual population generated by the residents of the development. Unincorporated per capita revenue is calculated by dividing estimated FY 2017-18 revenues for each source by Washoe County FY 2017-18 unincorporated population of **110,432** Source: Washoe County, City of Reno, and City of Sparks budgets, FY 2018-19.

4 These revenues are assumed to be directly related to population growth and are generated across the entire County, and are, therefore, estimated using the Average Cost Method (ACM) with total County population: Revenues are based on estimated FY 2017-18 Washoe County per capita revenue, inflated **3%** annually and applied to estimated annual population generated by the residents of the development. Per capita revenue is calculated by dividing estimated FY 2017-18 revenues for each source by Washoe County FY 2017-18 population of **448,316** Source: Washoe County Budget, FY 2018-19.

5 For calculation of BCCRT, SCCRT, and AB 104 sales tax revenue see Appendix 5.

6 In addition to CCRT revenue, Consolidated tax for the County includes revenue from Real Property Transfer Tax, GST (MVPT), Cigarette and Liquor taxes. A per capita methodology as explained in footnote 4 is applied to estimate this revenue. Washoe County revenues from GST, Cigarette and Liquor Tax (analysis conservatively does not include RPTT as it is not a recurring revenue) totaled **$ 32,931,007** in FY 2017-18. The County is estimated to receive **51.05%** of all County C-tax revenue (see Appendix 5). As a result, the County's portion of GST, Cigarette and Liquor Tax revenue is estimated at **$ 16,812,065** which is used to estimate development impacts using the methodology in footnote 4. Source: Nevada Department of Taxation. "Consolidated Tax Distribution FY 2017-18."
The Truckee Meadows Fire District is estimated to receive **3.86%** of all County C-tax revenue. As a result, the Fire District's portion of GST, Cigarette and Liquor Tax revenue is estimated at **$ 1,271,785** used to estimate development impacts using the methodology in footnote 4 using population estimates for the TMFPD instead of Washoe County population. Source: Nevada Department of Taxation, "Consolidated Tax Distribution FY 2017-18."

7 In addition to sales tax revenue, AB 104 revenue for the County includes revenue from property, gaming, and RPTT taxes and interest. Analysis is conservative in not estimating gaming, RPTT, and interest revenue. Property tax revenue is estimated in Appendix 4A and 4B and shown elsewhere in the report.

Estimated Costs

8 Some departments provide services to residents of the unincorporated Washoe County, rather than the geographic County region. Costs associated with these departments are estimated using the Average Cost Method (ACM) using only the unincorporated population rather than the entire Washoe County population. To use this method, costs are based on estimated FY 2017-18 Washoe County unincorporated per capita cost, inflated **3%** annually and applied to estimated annual population generated by the residents of the development. For County Commissioners, costs are estimated to 50% of department budget. Source: Washoe County budget, FY 2018-19.

9 Administration services (indirect) costs assumed to be impacted by the development are calculated at **12.1%** of all direct service costs. Percent indirect costs of direct costs for FY 2017-18. Source: Washoe County Budget, FY 2018-19. County Manager office costs are estimated at 75% of budgeted amount.

10 ACM: Expenditures are calculated based on estimated FY 2017-18 Washoe County per capita expenditures inflated **3%** annually and applied to estimated annual population of the development. Per capita cost is calculated by dividing FY 2017-18 expenditures for each source by Washoe County FY 2017-18 population. Source: Washoe County Budget FY 2018-19.

11 As the impact of the development on these expenditures is difficult to estimate, the analysis does not estimate costs associated with these expenditures. Alternately, no costs associated with the project are expected to occur.

12 See Appendix 6 for calculation of Operations and Detention costs.
Administration costs are estimated at **9.4%** of Operations and Detention costs using the average costs for these activities between FY 2016-17 and FY 2018-19. Source: Washoe County Budget FY 2018-19.

13 The amount of the expenditure is the same as the revenue estimated to be generated by the ad valorem rate for this source.

14 Other Funds: Only operating funds supported by Ad Valorem revenue or directly impacted by the development are included in this analysis. Capital Facilities and Debt Services Funds are not included, as the impact of the

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WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

development on these funds is difficult to estimate, though property tax revenues for these funds are estimated in Appendix 4A.

15 The project is unlikely to generate a significant number of indigent population in the region. As a result, costs for this fund associated with the project are expected to be minimal.

16 Senior Services Fund provides various services, including Nutrition, Adult Day Care, Social Services, and more. Analysis expects project will generate need for service at a reduced rate compared to the overall County, as a result, costs are estimated at 75% of budgeted costs.

17 The impact of the project on these discretionary costs is difficult to estimate.

18 Information about roads added by the project is unavailable at this point of the project and are difficult to estimate.

19 Costs associated with the Truckee Meadows Fire Protection District are estimated using the ACM with FY 2017-18 expenditures for the TMFPD divided by the population with the TMFPD service area, applied to the estimated population of the project. Source: Truckee Meadows Fire Protection District budget, FY 2018-19.

APPENDIX 4A-SCENARIO 2
WASHOE COUNTY
ESTIMATED REAL PROPERTY TAX REVENUE

YEAR	USE TYPE	TAXABLE LAND VALUE	TAXABLE IMPROVE. VALUE	CUMULATIVE ASSESSED LAND VALUE	CUMULATIVE ASSESSED IMPROVE. VALUE	WASHOE COUNTY GENERAL FUND	AB104	LIBRARY EXPANS.	ANIMAL SERVICES	INDIGENT TAX LEVY	CHILD PROTECT.	SENIOR SERVICES	OTHER SPECIAL	CAPITAL FACILITIES	DEBT SERVICE
2021	Single Family	$ 6,420,782	$ 36,718,173	$ 2,247,274	$ 12,851,361	$ 25,248	$ 409	$ 449	$ 674	$ 1,348	$ 899	$ 225	$ 225	$ 1,124	$ 472
	Open Space	1,323,064	-	463,072	-	5,203	84	93	139	278	185	46	46	232	97
Subtotal		**7,743,846**	**36,718,173**	**2,710,346**	**12,851,361**	**30,451**	**493**	**542**	**813**	**1,626**	**1,084**	**271**	**271**	**1,355**	**569**
2022	Single Family	8,460,439	35,814,127	5,275,846	25,771,846	203,659	3,298	3,625	5,438	10,876	7,251	1,813	1,813	9,064	3,807
	Open Space	-	-	476,965	-	5,359	87	95	143	286	191	48	48	238	100
Subtotal		**8,460,439**	**35,814,127**	**5,752,810**	**25,771,846**	**209,018**	**3,385**	**3,721**	**5,581**	**11,163**	**7,442**	**1,860**	**1,860**	**9,302**	**3,907**
2023	Single Family	8,714,252	36,888,551	8,484,109	39,455,994	384,866	6,233	6,851	10,277	20,554	13,702	3,426	3,426	17,128	7,194
	Open Space	-	-	491,273	-	5,519	89	98	147	295	197	49	49	246	103
Subtotal		**8,714,252**	**36,888,551**	**8,975,383**	**39,455,994**	**390,385**	**6,322**	**6,949**	**10,424**	**20,848**	**13,899**	**3,475**	**3,475**	**17,374**	**7,297**
2024	Single Family	8,975,680	37,995,208	11,880,120	53,937,997	576,761	9,341	10,267	15,401	30,802	20,534	5,134	5,134	25,668	10,781
	Open Space	-	-	506,012	-	5,685	92	101	152	304	202	51	51	253	106
Subtotal		**8,975,680**	**37,995,208**	**12,386,132**	**53,937,997**	**582,446**	**9,433**	**10,368**	**15,553**	**31,105**	**20,737**	**5,184**	**5,184**	**25,921**	**10,887**
2025	Single Family	9,244,950	39,135,064	15,472,256	69,253,409	779,824	12,629	13,882	20,823	41,646	27,764	6,941	6,941	34,705	14,576
	Open Space	-	-	521,192	-	5,856	95	104	156	313	208	52	52	261	109
Subtotal		**9,244,950**	**39,135,064**	**15,993,448**	**69,253,409**	**785,680**	**12,724**	**13,986**	**20,979**	**41,959**	**27,973**	**6,993**	**6,993**	**34,966**	**14,686**
2026	Single Family	9,522,298	40,309,116	19,269,228	85,439,202	994,552	16,107	17,705	26,557	53,114	35,409	8,852	8,852	44,261	18,590
	Open Space	-	-	536,828	-	6,031	98	107	161	322	215	54	54	268	113
Subtotal		**9,522,298**	**40,309,116**	**19,806,056**	**85,439,202**	**1,000,583**	**16,204**	**17,812**	**26,718**	**53,436**	**35,624**	**8,906**	**8,906**	**44,530**	**18,702**
2027	Single Family	1,804,666	7,639,384	20,478,938	90,676,162	1,189,990	19,272	21,184	31,775	63,551	42,367	10,592	10,592	52,959	22,243
	Open Space	-	-	552,933	-	6,212	101	111	166	332	221	55	55	276	116
Subtotal		**1,804,666**	**7,639,384**	**21,031,871**	**90,676,162**	**1,196,203**	**19,372**	**21,294**	**31,941**	**63,883**	**42,588**	**10,647**	**10,647**	**53,236**	**22,359**
2028	Single Family	-	-	21,093,307	93,396,447	1,255,730	20,336	22,354	33,531	67,062	44,708	11,177	11,177	55,885	23,472
	Open Space	-	-	569,521	-	6,399	104	114	171	342	228	57	57	285	120
Subtotal		**-**	**-**	**21,662,827**	**93,396,447**	**1,262,129**	**20,440**	**22,468**	**33,702**	**67,403**	**44,936**	**11,234**	**11,234**	**56,169**	**23,591**
2029	Single Family	-	-	21,726,106	96,198,341	1,293,402	20,947	23,025	34,537	69,074	46,049	11,512	11,512	57,561	24,176
	Open Space	-	-	586,606	-	6,591	107	117	176	352	235	59	59	293	123
Subtotal		**-**	**-**	**22,312,712**	**96,198,341**	**1,299,992**	**21,053**	**23,142**	**34,713**	**69,425**	**46,284**	**11,571**	**11,571**	**57,855**	**24,299**
2030	Single Family	-	-	22,377,889	99,084,291	1,332,204	21,575	23,715	35,573	71,146	47,430	11,858	11,858	59,288	24,901
	Open Space	-	-	604,204	-	6,788	110	121	181	363	242	60	60	302	127
Subtotal		**-**	**-**	**22,982,093**	**99,084,291**	**1,338,992**	**21,685**	**23,836**	**35,754**	**71,508**	**47,672**	**11,918**	**11,918**	**59,590**	**25,028**
2031	Single Family	-	-	23,049,226	102,056,820	1,372,170	22,222	24,427	36,640	73,280	48,853	12,213	12,213	61,067	25,648
	Open Space	-	-	622,331	-	6,992	113	124	187	373	249	62	62	311	131
Subtotal		**-**	**-**	**23,671,556**	**102,056,820**	**1,379,162**	**22,335**	**24,551**	**36,827**	**73,654**	**49,102**	**12,276**	**12,276**	**61,378**	**25,779**

APPENDIX 4A-SCENARIO 2
WASHOE COUNTY
ESTIMATED REAL PROPERTY TAX REVENUE

YEAR	USE TYPE	TAXABLE LAND VALUE	TAXABLE IMPROVE. VALUE	CUMULATIVE ASSESSED LAND VALUE	CUMULATIVE ASSESSED IMPROVE. VALUE	WASHOE COUNTY GENERAL FUND	AB104	LIBRARY EXPANS.	ANIMAL SERVICES	INDIGENT TAX LEVY	CHILD PROTECT.	SENIOR SERVICES	OTHER SPECIAL	CAPITAL FACILITIES	DEBT SERVICE
2032	Single Family	-	-	23,740,702	105,118,524	1,413,335	22,889	25,160	37,739	75,479	50,319	12,580	12,580	62,899	26,417
	Open Space	-	-	641,000	-	7,202	117	128	192	385	256	64	64	321	135
Subtotal		**-**	**-**	**24,381,703**	**105,118,524**	**1,420,537**	**23,005**	**25,288**	**37,932**	**75,863**	**50,575**	**12,644**	**12,644**	**63,219**	**26,552**
2033	Single Family	-	-	24,452,923	108,272,080	1,455,735	23,575	25,914	38,871	77,743	51,829	12,957	12,957	64,786	27,210
	Open Space	-	-	660,230	-	7,418	120	132	198	396	264	66	66	330	139
Subtotal		**-**	**-**	**25,113,154**	**108,272,080**	**1,463,153**	**23,696**	**26,046**	**39,070**	**78,139**	**52,093**	**13,023**	**13,023**	**65,116**	**27,349**
2034	Single Family	-	-	25,186,511	111,520,242	1,499,407	24,283	26,692	40,038	80,075	53,383	13,346	13,346	66,729	28,026
	Open Space	-	-	680,037	-	7,640	124	136	204	408	272	68	68	340	143
Subtotal		**-**	**-**	**25,866,549**	**111,520,242**	**1,507,047**	**24,406**	**26,828**	**40,242**	**80,483**	**53,655**	**13,414**	**13,414**	**67,069**	**28,169**
2035	Single Family	-	-	25,942,106	114,865,850	1,544,389	25,011	27,492	41,239	82,477	54,985	13,746	13,746	68,731	28,867
	Open Space	-	-	700,439	-	7,869	127	140	210	420	280	70	70	350	147
Subtotal		**-**	**-**	**26,642,545**	**114,865,850**	**1,552,259**	**25,139**	**27,633**	**41,449**	**82,898**	**55,265**	**13,816**	**13,816**	**69,081**	**29,014**
2036	Single Family	-	-	26,720,370	118,311,825	1,590,721	25,762	28,317	42,476	84,952	56,634	14,159	14,159	70,793	29,733
	Open Space	-	-	721,452	-	8,106	131	144	216	433	289	72	72	361	152
Subtotal		**-**	**-**	**27,441,821**	**118,311,825**	**1,598,827**	**25,893**	**28,462**	**42,692**	**85,385**	**56,923**	**14,231**	**14,231**	**71,154**	**29,885**
2037	Single Family	-	-	27,521,981	121,861,180	1,638,443	26,534	29,167	43,750	87,500	58,334	14,583	14,583	72,917	30,625
	Open Space	-	-	743,095	-	8,349	135	149	223	446	297	74	74	372	156
Subtotal		**-**	**-**	**28,265,076**	**121,861,180**	**1,646,791**	**26,670**	**29,315**	**43,973**	**87,946**	**58,631**	**14,658**	**14,658**	**73,288**	**30,781**
2038	Single Family	-	-	28,347,640	125,517,015	1,687,596	27,330	30,042	45,063	90,125	60,084	15,021	15,021	75,104	31,544
	Open Space	-	-	765,388	-	8,599	139	153	230	459	306	77	77	383	161
Subtotal		**-**	**-**	**29,113,028**	**125,517,015**	**1,696,195**	**27,470**	**30,195**	**45,292**	**90,585**	**60,390**	**15,097**	**15,097**	**75,487**	**31,705**
2039	Single Family	-	-	29,198,069	129,282,526	1,738,224	28,150	30,943	46,415	92,829	61,886	15,472	15,472	77,358	32,490
	Open Space	-	-	788,350	-	8,857	143	158	237	473	315	79	79	394	166
Subtotal		**-**	**-**	**29,986,419**	**129,282,526**	**1,747,081**	**28,294**	**31,101**	**46,651**	**93,302**	**62,201**	**15,550**	**15,550**	**77,752**	**32,656**
2040	Single Family	-	-	30,074,011	133,161,002	1,790,371	28,995	31,871	47,807	95,614	63,743	15,936	15,936	79,678	33,465
	Open Space	-	-	812,000	-	9,123	148	162	244	487	325	81	81	406	171
Subtotal		**-**	**-**	**30,886,012**	**133,161,002**	**1,799,494**	**29,143**	**32,034**	**48,051**	**96,101**	**64,067**	**16,017**	**16,017**	**80,084**	**33,635**
TOTAL		**$ 54,466,131**	**$ 234,499,623**			**$ 23,906,425**	**$ 387,162**	**$ 425,571**	**$ 638,356**	**$ 1,276,712**	**$ 851,141**	**$ 212,785**	**$ 212,785**	**$ 1,063,926**	**$ 446,849**

APPENDIX 4A-B, ASSUMPTIONS:

1. As the project's parcels currently generate property tax revenue for the County, the existing FY 2018-19 taxable value of the parcels in the Project of

Taxable Land	Taxable Improve.	Total
$ 2,253,221	$ -	**$ 2,253,221**

is subtracted from Taxable Land and Improvement Values estimated in Appendix 1 in the first year of the project. Source: Washoe County Assessor.

APPENDIX 4A-SCENARIO 2
WASHOE COUNTY
ESTIMATED REAL PROPERTY TAX REVENUE

YEAR	USE TYPE	TAXABLE LAND VALUE	TAXABLE IMPROVE. VALUE	CUMULATIVE ASSESSED LAND VALUE	CUMULATIVE ASSESSED IMPROVE. VALUE	WASHOE COUNTY GENERAL FUND	AB104	LIBRARY EXPANS.	ANIMAL SERVICES	INDIGENT TAX LEVY	CHILD PROTECT.	SENIOR SERVICES	OTHER SPECIAL	CAPITAL FACILITIES	DEBT SERVICE

2. Assessed land and improvement values are estimating by adjusting taxable values by 35%.
3. Cumulative assessed value for previous year's construction is increased by **3.0%** per year.
4. Improvement values are estimated to generate property tax revenue starting the year following construction to account for work in progress.
5. Operating tax rate is assumed to remain constant at FY 2018-19 amount:

Fund		Rate	
General Fund	$	1.1235	
AB104		0.0272	Washoe County receives **66.9%** and Truckee Meadows Fire Protection District receives **5.89%**
Library Expansion		0.0200	Libraries rate expires FY 2024-25, analysis assumes the rate will continue through the analysis period
Animal Services		0.0300	Animal Shelter rate expires FY 2032-33, analysis assumes the rate will continue through the analysis period
Indigent Tax Levy		0.0600	
Child Protective Services		0.0400	
Senior Services		0.0100	
Other Restricted Special Rev.		0.0100	
Capital Facilities		0.0500	
Debt		0.0210	
	$	**1.3917**	Source: Washoe County Budget, FY 2018-19.
TM Fire Protection	**$**	**0.5400**	Source: Truckee Meadows Fire Protection District, FY 2018-19.

APPENDIX 4B-SCENARIO 2
TRUCKEE MEADOWS FIRE PROTECTION DISTRICT
ESTIMATED REAL PROPERTY TAX REVENUE

YEAR	USE TYPE	TAXABLE LAND VALUE	TAXABLE IMPROVE. VALUE	CUMULATIVE ASSESSED LAND VALUE	CUMULATIVE ASSESSED IMPROVE. VALUE	TM FIRE DISTRICT GENERAL FUND	TM FIRE DISTRICT AB104
2021	Single Family	$ 6,420,782	$ 36,718,173	$ 2,247,274	$ 12,851,361	$ 12,135	$ 36
	Open Space	1,323,064	-	463,072	-	2,501	7
Subtotal		**7,743,846**	**36,718,173**	**2,710,346**	**12,851,361**	**14,636**	**43**
2022	Single Family	8,460,439	35,814,127	5,275,846	25,771,846	97,887	291
	Open Space	-	-	476,965	-	2,576	8
Subtotal		**8,460,439**	**35,814,127**	**5,752,810**	**25,771,846**	**100,463**	**298**
2023	Single Family	8,714,252	36,888,551	8,484,109	39,455,994	184,982	549
	Open Space	-	-	491,273	-	2,653	8
Subtotal		**8,714,252**	**36,888,551**	**8,975,383**	**39,455,994**	**187,635**	**557**
2024	Single Family	8,975,680	37,995,208	11,880,120	53,937,997	277,215	823
	Open Space	-	-	506,012	-	2,732	8
Subtotal		**8,975,680**	**37,995,208**	**12,386,132**	**53,937,997**	**279,947**	**831**
2025	Single Family	9,244,950	39,135,064	15,472,256	69,253,409	374,815	1,113
	Open Space	-	-	521,192	-	2,814	8
Subtotal		**9,244,950**	**39,135,064**	**15,993,448**	**69,253,409**	**377,630**	**1,121**
2026	Single Family	9,522,298	40,309,116	19,269,228	85,439,202	478,022	1,419
	Open Space	-	-	536,828	-	2,899	9
Subtotal		**9,522,298**	**40,309,116**	**19,806,056**	**85,439,202**	**480,921**	**1,428**
2027	Single Family	1,804,666	7,639,384	20,478,938	90,676,162	571,958	1,698
	Open Space	-	-	552,933	-	2,986	9
Subtotal		**1,804,666**	**7,639,384**	**21,031,871**	**90,676,162**	**574,944**	**1,707**
2028	Single Family	-	-	21,093,307	93,396,447	603,555	1,792
	Open Space	-	-	569,521	-	3,075	9
Subtotal		**-**	**-**	**21,662,827**	**93,396,447**	**606,631**	**1,801**
2029	Single Family	-	-	21,726,106	96,198,341	621,662	1,846
	Open Space	-	-	586,606	-	3,168	9
Subtotal		**-**	**-**	**22,312,712**	**96,198,341**	**624,829**	**1,855**
2030	Single Family	-	-	22,377,889	99,084,291	640,312	1,901
	Open Space	-	-	604,204	-	3,263	10
Subtotal		**-**	**-**	**22,982,093**	**99,084,291**	**643,574**	**1,911**
2031	Single Family	-	-	23,049,226	102,056,820	659,521	1,958
	Open Space	-	-	622,331	-	3,361	10
Subtotal		**-**	**-**	**23,671,556**	**102,056,820**	**662,882**	**1,968**
2032	Single Family	-	-	23,740,702	105,118,524	679,307	2,017
	Open Space	-	-	641,000	-	3,461	10
Subtotal		**-**	**-**	**24,381,703**	**105,118,524**	**682,768**	**2,027**
2033	Single Family	-	-	24,452,923	108,272,080	699,686	2,077
	Open Space	-	-	660,230	-	3,565	11
Subtotal		**-**	**-**	**25,113,154**	**108,272,080**	**703,251**	**2,088**
2034	Single Family	-	-	25,186,511	111,520,242	720,676	2,140
	Open Space	-	-	680,037	-	3,672	11
Subtotal		**-**	**-**	**25,866,549**	**111,520,242**	**724,349**	**2,150**
2035	Single Family	-	-	25,942,106	114,865,850	742,297	2,204
	Open Space	-	-	700,439	-	3,782	11
Subtotal		**-**	**-**	**26,642,545**	**114,865,850**	**746,079**	**2,215**
2036	Single Family	-	-	26,720,370	118,311,825	764,566	2,270
	Open Space	-	-	721,452	-	3,896	12
Subtotal		**-**	**-**	**27,441,821**	**118,311,825**	**768,461**	**2,281**

APPENDIX 4B-SCENARIO 2
TRUCKEE MEADOWS FIRE PROTECTION DISTRICT
ESTIMATED REAL PROPERTY TAX REVENUE

YEAR	USE TYPE	TAXABLE LAND VALUE	TAXABLE IMPROVE. VALUE	CUMULATIVE ASSESSED LAND VALUE	CUMULATIVE ASSESSED IMPROVE. VALUE	TM FIRE DISTRICT GENERAL FUND	TM FIRE DISTRICT AB104
2037	Single Family	-	-	27,521,981	121,861,180	787,503	2,338
	Open Space	-	-	743,095	-	4,013	12
Subtotal		**-**	**-**	**28,265,076**	**121,861,180**	**791,515**	**2,350**
2038	Single Family	-	-	28,347,640	125,517,015	811,128	2,408
	Open Space	-	-	765,388	-	4,133	12
Subtotal		**-**	**-**	**29,113,028**	**125,517,015**	**815,261**	**2,420**
2039	Single Family	-	-	29,198,069	129,282,526	835,461	2,480
	Open Space	-	-	788,350	-	4,257	13
Subtotal		**-**	**-**	**29,986,419**	**129,282,526**	**839,719**	**2,493**
2040	Single Family	-	-	30,074,011	133,161,002	860,525	2,555
	Open Space	-	-	812,000	-	4,385	13
Subtotal		**-**	**-**	**30,886,012**	**133,161,002**	**864,910**	**2,568**
TOTAL		**$ 54,466,131**	**$ 234,499,623**			**$ 11,490,404**	**$ 34,113**

APPENDIX 5-SCENARIO 2
WASHOE COUNTY
ESTIMATED SALES TAX REVENUE

YEAR	USE TYPE	CUMULATIVE # OF OCCUP. HOUSEHOLDS	CONSTR. MATERIALS PURCHASES	HOUSEHOLD TAXABLE SALES	TOTAL TAXABLE SALES	WASHOE COUNTY CCRT TAX REVENUE	WASHOE COUNTY AB 104 TAX REVENUE	WASHOE COUNTY PUBLIC MASS TRANSPORT.	WASHOE COUNTY RAILROAD GRADE	WASHOE COUNTY INFRAST-RUCTURE	TM FIRE DISTRICT CCRT TAX REVENUE	TM FIRE DISTRICT AB 104 TAX REVENUE
2021	Single Family	-	$ 18,359,087	$ -	$ 18,359,087	$ 207,196	$ 30,165	$ 67,642	$ 22,547	$ 22,547	$ 15,674	$ 2,658
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**-**	**18,359,087**	**-**	**18,359,087**	**207,196**	**30,165**	**67,642**	**22,547**	**22,547**	**15,674**	**2,658**
2022	Single Family	127	17,907,064	3,039,885	20,946,949	236,402	34,417	77,176	25,725	25,725	17,883	3,033
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**127**	**17,907,064**	**3,039,885**	**20,946,949**	**236,402**	**34,417**	**77,176**	**25,725**	**25,725**	**17,883**	**3,033**
2023	Single Family	248	18,444,276	6,096,121	24,540,397	276,957	40,322	90,416	30,139	30,139	20,951	3,553
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**248**	**18,444,276**	**6,096,121**	**24,540,397**	**276,957**	**40,322**	**90,416**	**30,139**	**30,139**	**20,951**	**3,553**
2024	Single Family	369	18,997,604	9,332,996	28,330,599	319,733	46,549	104,381	34,794	34,794	24,187	4,101
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**369**	**18,997,604**	**9,332,996**	**28,330,599**	**319,733**	**46,549**	**104,381**	**34,794**	**34,794**	**24,187**	**4,101**
2025	Single Family	489	19,567,532	12,758,596	32,326,128	364,825	53,114	119,102	39,701	39,701	27,598	4,680
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**489**	**19,567,532**	**12,758,596**	**32,326,128**	**364,825**	**53,114**	**119,102**	**39,701**	**39,701**	**27,598**	**4,680**
2026	Single Family	610	20,154,558	16,381,332	36,535,890	412,336	60,031	134,612	44,871	44,871	31,192	5,289
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**610**	**20,154,558**	**16,381,332**	**36,535,890**	**412,336**	**60,031**	**134,612**	**44,871**	**44,871**	**31,192**	**5,289**
2027	Single Family	731	3,819,692	20,209,950	24,029,642	271,193	39,482	88,534	29,511	29,511	20,515	3,479
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**731**	**3,819,692**	**20,209,950**	**24,029,642**	**271,193**	**39,482**	**88,534**	**29,511**	**29,511**	**20,515**	**3,479**
2028	Single Family	753	-	21,448,711	21,448,711	242,065	35,242	79,025	26,342	26,342	18,312	3,105
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**21,448,711**	**21,448,711**	**242,065**	**35,242**	**79,025**	**26,342**	**26,342**	**18,312**	**3,105**
2029	Single Family	753	-	22,092,172	22,092,172	249,327	36,299	81,396	27,132	27,132	18,861	3,198
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**22,092,172**	**22,092,172**	**249,327**	**36,299**	**81,396**	**27,132**	**27,132**	**18,861**	**3,198**
2030	Single Family	753	-	22,754,937	22,754,937	256,807	37,388	83,838	27,946	27,946	19,427	3,294
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**22,754,937**	**22,754,937**	**256,807**	**37,388**	**83,838**	**27,946**	**27,946**	**19,427**	**3,294**
2031	Single Family	753	-	23,437,586	23,437,586	264,511	38,510	86,353	28,784	28,784	20,010	3,393
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**23,437,586**	**23,437,586**	**264,511**	**38,510**	**86,353**	**28,784**	**28,784**	**20,010**	**3,393**

APPENDIX 5-SCENARIO 2
WASHOE COUNTY
ESTIMATED SALES TAX REVENUE

YEAR	USE TYPE	CUMULATIVE # OF OCCUP. HOUSEHOLDS	CONSTR. MATERIALS PURCHASES	HOUSEHOLD TAXABLE SALES	TOTAL TAXABLE SALES	WASHOE COUNTY CCRT TAX REVENUE	WASHOE COUNTY AB 104 TAX REVENUE	WASHOE COUNTY PUBLIC MASS TRANSPORT.	WASHOE COUNTY RAILROAD GRADE	WASHOE COUNTY INFRAST-RUCTURE	TM FIRE DISTRICT CCRT TAX REVENUE	TM FIRE DISTRICT AB 104 TAX REVENUE
2032	Single Family	753	-	24,140,713	24,140,713	272,446	39,665	88,943	29,648	29,648	20,610	3,495
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**24,140,713**	**24,140,713**	**272,446**	**39,665**	**88,943**	**29,648**	**29,648**	**20,610**	**3,495**
2033	Single Family	753	-	24,864,934	24,864,934	280,620	40,855	91,612	30,537	30,537	21,228	3,600
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**24,864,934**	**24,864,934**	**280,620**	**40,855**	**91,612**	**30,537**	**30,537**	**21,228**	**3,600**
2034	Single Family	753	-	25,610,883	25,610,883	289,038	42,080	94,360	31,453	31,453	21,865	3,708
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**25,610,883**	**25,610,883**	**289,038**	**42,080**	**94,360**	**31,453**	**31,453**	**21,865**	**3,708**
2035	Single Family	753	-	26,379,209	26,379,209	297,710	43,343	97,191	32,397	32,397	22,521	3,819
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**26,379,209**	**26,379,209**	**297,710**	**43,343**	**97,191**	**32,397**	**32,397**	**22,521**	**3,819**
2036	Single Family	753	-	27,170,585	27,170,585	306,641	44,643	100,107	33,369	33,369	23,197	3,934
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**27,170,585**	**27,170,585**	**306,641**	**44,643**	**100,107**	**33,369**	**33,369**	**23,197**	**3,934**
2037	Single Family	753	-	27,985,703	27,985,703	315,840	45,982	103,110	34,370	34,370	23,892	4,052
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**27,985,703**	**27,985,703**	**315,840**	**45,982**	**103,110**	**34,370**	**34,370**	**23,892**	**4,052**
2038	Single Family	753	-	28,825,274	28,825,274	325,315	47,362	106,203	35,401	35,401	24,609	4,173
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**28,825,274**	**28,825,274**	**325,315**	**47,362**	**106,203**	**35,401**	**35,401**	**24,609**	**4,173**
2039	Single Family	753	-	29,690,032	29,690,032	335,075	48,783	109,389	36,463	36,463	25,347	4,298
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**29,690,032**	**29,690,032**	**335,075**	**48,783**	**109,389**	**36,463**	**36,463**	**25,347**	**4,298**
2040	Single Family	753	-	30,580,733	30,580,733	345,127	50,246	112,671	37,557	37,557	26,108	4,427
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**753**	**-**	**30,580,733**	**30,580,733**	**345,127**	**50,246**	**112,671**	**37,557**	**37,557**	**26,108**	**4,427**
TOTAL			**$ 117,249,812**	**$ 402,800,353**	**$ 520,050,164**	**$ 5,869,166**	**$ 854,477**	**$ 1,916,060**	**$ 638,687**	**$ 638,687**	**$ 443,986**	**$ 75,289**

APPENDIX 5, ASSUMPTIONS:

1. Sales tax rates applicable to Washoe County are as follows:

0.500%	Basic City County Relief Tax (BCCRT)
1.750%	Supplemental City County Relief Tax (SCCRT)
0.250%	Fair Share (AB 104)
0.375%	Public Mass Transportation

APPENDIX 5-SCENARIO 2
WASHOE COUNTY
ESTIMATED SALES TAX REVENUE

YEAR	USE TYPE	CUMULATIVE # OF OCCUP. HOUSEHOLDS	CONSTR. MATERIALS PURCHASES	HOUSEHOLD TAXABLE SALES	TOTAL TAXABLE SALES	WASHOE COUNTY CCRT TAX REVENUE	WASHOE COUNTY AB 104 TAX REVENUE	WASHOE COUNTY PUBLIC MASS TRANSPORT.	WASHOE COUNTY RAILROAD GRADE	WASHOE COUNTY INFRAST-RUCTURE	TM FIRE DISTRICT CCRT TAX REVENUE	TM FIRE DISTRICT AB 104 TAX REVENUE

0.125% Washoe Railroad Grade
0.125% Infrastructure

2. BCCRT and SCCRT (CCRT) sales tax revenue generated in the County is distributed to Washoe County and Truckee Meadows Fire Protection District as follows:
Washoe County **51.05%**
TM Fire District **3.86%**
Source: Distribution based on average percentage share of Washoe County C-Tax distribution from FY 2016-17 to partial year FY 18-19. Data from Nevada Department of Taxation, "Consolidated Tax Distribution: Revenue Summary by County."
3. AB104 sales tax revenue generated in the County is distributed to Washoe County and Truckee Meadows Fire Protection District as follows:
Washoe County **66.89%**
TM Fire District **5.89%**
Source: Distribution based on average percentage share of Washoe County AB104 distribution from FY 2016-17 to partial year FY 18-19. Data from Nevada Department of Taxation, "Local Government Tax Act Distribution."
4. A State administrative fee of **1.75%** of all sales tax revenue is subtracted for State uses. Source: AB 552.
5. Construction Materials Purchases-See Appendix 1.
6. Number of Occupied Households-See Appendix 2. By definition, each occupied residential unit represents a household.
7. Household Taxable Sales-estimated based on the number of occupied households, estimated household income, and expenditure information. Household incomes and percent of income spent on taxable items are estimated as follows, inflated 3% annually:

	Household Income	% Spent on Taxable Items	
Single Family	$ 87,892	24.8%	Based on an average sales price of $372,000, 10% down, 4.7% loan rate, and 30-year mortgage.

Source: Estimated home sales price based on median sales price per square foot for new homes sold in 2018 in nearby Woodland Village with a 10% premium for larger lots from Center for Regional Studies, UNR. Household income is estimated using a home affordability calculator created by EEC and Center for Regional Studies, UNR and estimated home sales price. Taxable spending ratio from Consumer Expenditure Survey, 2017, Bureau of Labor Statistics.

APPENDIX 6-SCENARIO 2
WASHOE COUNTY
SHERIFF OPERATIONS COST PROJECTIONS

YEAR	NEW RESIDENT POPULATION	OFFICERS REQUIRED	SALARY/ BENEFITS	SERVICES/ SUPPLIES	VEHICLE PURCHASE	ANNUALIZED VEH. PURCH.	ADMIN. COSTS	TOTAL COST
2021	-	-	$ -	$ -	$ -	$ -	$ -	$ -
2022	320	0.544	64,749	10,678	53,835	-	19,844	95,270
2023	622	1.058	130,980	21,600	-	27,283	40,142	220,005
2024	925	1.573	202,279	33,358	-	27,283	61,993	324,912
2025	1,228	2.088	278,940	46,000	-	27,283	85,487	437,710
2026	1,531	2.602	361,273	59,577	-	27,283	110,720	558,853
2027	1,834	3.117	449,604	74,144	124,819	27,283	137,791	688,821
2028	1,889	3.212	481,331	79,376	-	27,283	147,514	735,504
2029	1,889	3.212	500,103	82,471	-	27,283	153,267	763,125
2030	1,889	3.212	519,607	85,688	-	27,283	159,245	791,823
2031	1,889	3.212	539,872	89,030	-	27,283	165,455	821,640
2032	1,889	3.212	560,927	92,502	144,699	27,283	171,908	852,620
2033	1,889	3.212	582,803	96,109	-	27,283	178,612	884,808
2034	1,889	3.212	605,532	99,858	-	27,283	185,578	918,251
2035	1,889	3.212	629,148	103,752	-	27,283	192,816	952,999
2036	1,889	3.212	653,685	107,798	-	27,283	200,336	989,102
2037	1,889	3.212	679,179	112,003	167,746	27,283	208,149	1,026,613
2038	1,889	3.212	705,667	116,371	-	27,283	216,267	1,065,587
2039	1,889	3.212	733,188	120,909	-	27,283	224,701	1,106,081
2040	1,889	3.212	761,782	125,625	-	27,283	233,464	1,148,154
TOTAL			**$ 9,440,647**	**$ 1,556,846**	**$ 491,098**	**$ 491,098**	**$ 2,893,288**	**$ 14,381,879**

APPENDIX 6, ASSUMPTIONS:

Note: See Appendix 2 for population estimates.

1. The analysis uses Western States average of **1.7** uniformed officers per 1,000 of population. Source: Washoe County Sheriff's Office. This includes all uniformed officers for the Department, including patrol, detectives, etc.
2. Uniformed salaries are estimated at **$ 66,779** inflated **4%** annually. Source: Washoe County Human Resources website, average of salary range for Deputy Sheriff positions.
3. Benefits are estimated at **62.1%** of salaries.
   Services/Supplies estimated at **16.5%** of salaries and benefits.
   Source: Three-year average FY 2016-17 through FY 2018-19 from Washoe County Budget FY 2018-19.
4. Two vehicles are added per three rotation shift at a cost of **$ 50,000** inflated 3% annually. Life of vehicle is 5 years. Source: Washoe County Sheriff's Office.
5. Administrative costs for Operations are estimated at **26.3%** of above uniformed costs using the average costs between FY 2016-17 and FY 2018-19. Source: Washoe County Budget FY 2018-19.

APPENDIX 1-SCENARIO 3
BUILDOUT ASSUMPTIONS

YEAR	RESIDENTIAL UNITS CONSTRUCTED	SQUARE FEET CONSTRUCTED	USE TYPE	NEW TAXABLE LAND VALUE	NEW TAXABLE IMPROVEMENTS VALUE	TOTAL NEW TAXABLE VALUE	CONSTR. MATERIALS COST
2021	132	250,800	Single Family	$ 8,217,477	$ 36,718,173	$ 44,935,650	$ 18,359,087
	-	-	Retail	-	-	-	-
	-	-	Open Space	1,323,064	-	1,323,064	-
Subtotal	**132**	**250,800**		**9,540,541**	**36,718,173**	**46,258,714**	**18,359,087**
2022	125	237,500	Single Family	8,015,153	35,814,127	43,829,280	17,907,064
	-	22,500	Retail	866,934	4,868,099	5,735,033	2,434,049
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**260,000**		**8,882,087**	**40,682,226**	**49,564,313**	**20,341,113**
2023	125	237,500	Single Family	8,255,607	36,888,551	45,144,158	18,444,276
	-	22,500	Retail	892,942	5,014,142	5,907,084	2,507,071
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**260,000**		**9,148,549**	**41,902,693**	**51,051,242**	**20,951,346**
2024	125	237,500	Single Family	8,503,275	37,995,208	46,498,483	18,997,604
	-	-	Retail	-	-	-	-
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**8,503,275**	**37,995,208**	**46,498,483**	**18,997,604**
2025	125	237,500	Single Family	8,758,374	39,135,064	47,893,438	19,567,532
	-	-	Retail	-	-	-	-
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**8,758,374**	**39,135,064**	**47,893,438**	**19,567,532**
2026	125	237,500	Single Family	9,021,125	40,309,116	49,330,241	20,154,558
	-	-	Retail	-	-	-	-
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**9,021,125**	**40,309,116**	**49,330,241**	**20,154,558**
2027	125	237,500	Single Family	9,291,759	41,518,389	50,810,148	20,759,195
	-	-	Retail	-	-	-	-
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**9,291,759**	**41,518,389**	**50,810,148**	**20,759,195**
2028	125	237,500	Single Family	9,570,511	42,763,941	52,334,452	21,381,971
	-	-	Retail	-	-	-	-
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**9,570,511**	**42,763,941**	**52,334,452**	**21,381,971**
2029	125	237,500	Single Family	9,857,627	44,046,859	53,904,486	22,023,430
	-	-	Retail	-	-	-	-
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**9,857,627**	**44,046,859**	**53,904,486**	**22,023,430**
2030	125	237,500	Single Family	10,153,355	45,368,265	55,521,621	22,684,133
	-	-	Retail	-	-	-	-
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**10,153,355**	**45,368,265**	**55,521,621**	**22,684,133**
2031	125	237,500	Single Family	10,457,956	46,729,313	57,187,269	23,364,657
	-	-	Retail	-	-	-	-
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**10,457,956**	**46,729,313**	**57,187,269**	**23,364,657**
2032	125	237,500	Single Family	10,771,695	48,131,192	58,902,887	24,065,596
	-	-	Retail	-	-	-	-
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**10,771,695**	**48,131,192**	**58,902,887**	**24,065,596**

APPENDIX 1-SCENARIO 3
BUILDOUT ASSUMPTIONS

YEAR	RESIDENTIAL UNITS CONSTRUCTED	SQUARE FEET CONSTRUCTED	USE TYPE	NEW TAXABLE LAND VALUE	NEW TAXABLE IMPROVEMENTS VALUE	TOTAL NEW TAXABLE VALUE	CONSTR. MATERIALS COST
2033	125	237,500	Single Family	11,094,846	49,575,128	60,669,974	24,787,564
	-	-	Retail	-	-	-	-
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**11,094,846**	**49,575,128**	**60,669,974**	**24,787,564**
2034	125	237,500	Single Family	11,427,691	51,062,382	62,490,073	25,531,191
	-	-	Retail	-	-	-	-
	-	-	Open Space	-	-	-	-
Subtotal	**125**	**237,500**		**11,427,691**	**51,062,382**	**62,490,073**	**25,531,191**
2035	115	218,500	Single Family	10,828,880	48,386,713	59,215,593	24,193,357
	-	-	Retail	-	-	-	-
	-	-	Open Space	-	-	-	-
Subtotal	**115**	**218,500**		**10,828,880**	**48,386,713**	**59,215,593**	**24,193,357**
TOTAL	**1,872**	**3,601,800**		**$ 147,308,270**	**$ 654,324,664**	**$ 801,632,934**	**$ 327,162,332**

APPENDIX 1, ASSUMPTIONS:

1. The following is project buildout information on which the analysis is based:

	# of Acres	# of Units	Building Square Feet	Taxable Value of Land	Taxable Value of Improvements
Single Family	587.9	1,872	3,556,800	$ 109,848,960	$ 490,838,400
Retail	4.0	-	45,000	1,586,735	8,910,000
Public Facilities	31.0	-	-	-	-
Open Space	157.4	-	-	1,247,115	-
Total	**780.3**	**1,872**	**3,601,800**	**$ 112,682,809**	**$ 499,748,400**

Source: Buildout information and retail square footage from developer, residential square footage, and taxable land and improvement value from Washoe County Assessor's data for similar land uses, as shown in footnotes 2 and 3 below.

2. Taxable land and improvement values for the residential portion of the project are difficult to determine at this early stage, as a result, the analysis estimates these values using data for comparable developments in the vicinity of the proposed project (Silver Knolls development):

	Land Use Code	Taxable Land Value/Unit	Taxable Improv. Value/Sq.Ft.	
Single Family	200	$ 58,680	$ 138.00	Land value data for units with 0.5 acre and smaller lots.

Source: Washoe County Assessor data as of February 2019 for fiscal year 2017-18.

Square footage for project homes based on average size of homes built in nearby Woodland Village in 2018. Data from Silver Knolls is not used as these units were built between 1970 and 1990s and do not reflect current market demand for home size. Source: Center for Regional Studies, UNR.

3. Taxable land and improvement values for the retail portion of the project are difficult to determine at this early stage, as a result, the analysis estimates these values using data for comparable developments in the vicinity of the proposed project (retail uses along Stead Blvd):

	Land Use Code	Taxable Land Value/Acre	Taxable Improv. Value/Sq.Ft.
Retail	400	$ 396,684	$ 198.00

Source: Washoe County Assessor data as of February 2019 for fiscal year 2017-18.

4. Open Space land values are estimated using existing values of the undeveloped project parcels, which have an average taxable land value of **$ 7,923** per acre. This amount is multiplied by the number of acres dedicated to Open Space for the project. Source. Washoe County Assessor. No taxable land value is assumed for Public Facilities (roads, parks, etc.) as they will be dedicated to Washoe County for maintenance.

5. Construction Materials Cost is estimated at 50% of taxable building value. Source: Discussions with contractors.

APPENDIX 2-SCENARIO 3
WASHOE COUNTY
ESTIMATED NUMBER OF RESIDENTS AND EMPLOYEES

YEAR	USE TYPE	CUMULATIVE # OF RESIDENTIAL UNITS	CUMULATIVE # OF OCCUPIED UNITS	CUMULATIVE # OF SQUARE FEET	CUMULATIVE ESTIMATED # OF RESIDENTS	CUMULATIVE ESTIMATED # OF EMPLOYEES	% OF WASHOE CO RESIDENTS	% OF TMFPD RESIDENTS
2021	Single Family	132	-	250,800	-	-	0.00%	0.00%
	Retail	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**132**	**-**	**250,800**	**-**	**-**	**-**	**-**
2022	Single Family	257	127	488,300	320	-	0.07%	0.30%
	Retail	-	-	22,500	-	27	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**257**	**127**	**510,800**	**320**	**27**	**0.07%**	**0.30%**
2023	Single Family	382	248	725,800	622	-	0.14%	0.59%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**382**	**248**	**770,800**	**622**	**55**	**0.14%**	**0.59%**
2024	Single Family	507	369	963,300	925	-	0.21%	0.87%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**507**	**369**	**1,008,300**	**925**	**55**	**0.21%**	**0.87%**
2025	Single Family	632	489	1,200,800	1,228	-	0.27%	1.16%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**632**	**489**	**1,245,800**	**1,228**	**55**	**0.27%**	**1.16%**
2026	Single Family	757	610	1,438,300	1,531	-	0.34%	1.44%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**757**	**610**	**1,483,300**	**1,531**	**55**	**0.34%**	**1.44%**
2027	Single Family	882	731	1,675,800	1,834	-	0.41%	1.73%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**882**	**731**	**1,720,800**	**1,834**	**55**	**0.41%**	**1.73%**
2028	Single Family	1,007	851	1,913,300	2,136	-	0.48%	2.01%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**1,007**	**851**	**1,958,300**	**2,136**	**55**	**0.48%**	**2.01%**
2029	Single Family	1,132	972	2,150,800	2,439	-	0.54%	2.30%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**1,132**	**972**	**2,195,800**	**2,439**	**55**	**0.54%**	**2.30%**
2030	Single Family	1,257	1,092	2,388,300	2,742	-	0.61%	2.58%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**1,257**	**1,092**	**2,433,300**	**2,742**	**55**	**0.61%**	**2.58%**
2031	Single Family	1,382	1,213	2,625,800	3,045	-	0.68%	2.87%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**1,382**	**1,213**	**2,670,800**	**3,045**	**55**	**0.68%**	**2.87%**
2032	Single Family	1,507	1,334	2,863,300	3,347	-	0.75%	3.15%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**1,507**	**1,334**	**2,908,300**	**3,347**	**55**	**0.75%**	**3.15%**

APPENDIX 2-SCENARIO 3
WASHOE COUNTY
ESTIMATED NUMBER OF RESIDENTS AND EMPLOYEES

YEAR	USE TYPE	CUMULATIVE # OF RESIDENTIAL UNITS	CUMULATIVE # OF OCCUPIED UNITS	CUMULATIVE # OF SQUARE FEET	CUMULATIVE ESTIMATED # OF RESIDENTS	CUMULATIVE ESTIMATED # OF EMPLOYEES	% OF WASHOE CO RESIDENTS	% OF TMFPD RESIDENTS
2033	Single Family	1,632	1,454	3,100,800	3,650	-	0.81%	3.44%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**1,632**	**1,454**	**3,145,800**	**3,650**	**55**	**0.81%**	**3.44%**
2034	Single Family	1,757	1,575	3,338,300	3,953	-	0.88%	3.72%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**1,757**	**1,575**	**3,383,300**	**3,953**	**55**	**0.88%**	**3.72%**
2035	Single Family	1,872	1,696	3,556,800	4,256	-	0.95%	4.01%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**1,872**	**1,696**	**3,601,800**	**4,256**	**55**	**0.95%**	**4.01%**
2036	Single Family	1,872	1,806	3,556,800	4,534	-	1.01%	4.27%
	Retail	-	-	45,000	-	55	-	-
	Open Space	-	-	-	-	-	-	-
Subtotal		**1,872**	**1,806**	**3,601,800**	**4,534**	**55**	**1.01%**	**4.27%**

APPENDIX 2, ASSUMPTIONS:

1. Residents of the development are estimated using **2.51** residents per unit.
Source: "CP04 Comparative Housing Characteristics." 2017 American Community Survey 1-Year Estimates. Data for Washoe County, Nevada.
2. Occupied units are estimated using a vacancy rate of **3.50%** to account for household movement and other timing issues.
Source: Center for Regional Studies, University of Nevada, Reno, based on data from the American Community Survey.
All residents are considered new to the area, whether they relocating from an existing Washoe County home or moving to the area. This is because due to low housing vacancy rates in the area, homes vacated by County residents moving to the project are expected to be filled by out-of-area persons, resulting in a net increase in population in the County. Units are assumed to be occupied the year after construction.
3. Employees of the project are estimated using data from the Center for Regional Studies, UNR (CRS):

Use Type	Project Square Feet	Sq.Ft./Employee	Employee Estimate
Retail	45,000	824	55

4. Impacts: Analysis estimates costs and revenues associated with the development using estimated number of new development residents only.
The analysis assumes employees of the development will be existing residents of the region, residents of other regions, or residents of the development.
5. Some Washoe County and Truckee Meadows Fire Protection District (TMFPD) revenues and costs shown in Appendix 3 are estimated using the Average Cost Method (ACM) per capita methodology. The ACM estimates residents added to the County by the development and divides this amount by Washoe County and TMFPD FY 2017-18 population.

Population	FY 2017-2018
Washoe County	448,316
TMFPD	106,243

Source: Washoe County and Truckee Meadows Fire Protection District budgets, FY 2018-19.

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

GENERAL FUND	Base Year FY 17-18	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-YEAR SUBTOTAL
REVENUE												
Taxes												
Ad Valorem General[1]	Appendix 4A	$ 25,620	$ 186,708	$ 367,502	$ 555,742	$ 736,788	$ 928,197	$ 1,130,427	$ 1,343,955	$ 1,569,278	$ 1,806,911	**$ 8,651,129**
Ad Valorem Detention Facility[1]	Appendix 4A	1,974	14,386	28,317	42,822	56,772	71,521	87,103	103,556	120,918	139,228	**666,598**
Ad Valorem Indigent Insurance[1]	Appendix 4A	383	2,788	5,488	8,299	11,002	13,861	16,880	20,069	23,434	26,982	**129,186**
Ad Valorem AB104[1]	Appendix 4A	464	3,382	6,657	10,066	13,346	16,813	20,476	24,344	28,425	32,729	**156,702**
Ad Valorem China Springs[1]	Appendix 4A	189	1,375	2,707	4,094	5,428	6,838	8,328	9,901	11,561	13,311	**63,732**
Ad Valorem Family Court[1]	Appendix 4A	490	3,569	7,024	10,622	14,083	17,742	21,607	25,688	29,995	34,537	**165,358**
Room Tax[2]	425,000	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**$ 29,120**	**$ 212,209**	**$ 417,695**	**$ 631,645**	**$ 837,419**	**$ 1,054,970**	**$ 1,284,821**	**$ 1,527,513**	**$ 1,783,611**	**$ 2,053,700**	**$ 9,832,703**
Licenses and Permits												
Business Licenses/Permits												
Business Licenses[3]	$ 840,000	$ -	$ 2,083	$ 4,178	$ 6,397	$ 8,744	$ 11,227	$ 13,851	$ 16,623	$ 19,548	$ 22,634	**$ 105,286**
Business Licenses/Elec and Telecom[3]	4,715,000	-	11,695	23,452	35,905	49,084	63,021	77,750	93,306	109,725	127,046	**590,983**
Franchise Fees[3]	1,980,000	-	4,911	9,849	15,078	20,612	26,465	32,650	39,182	46,078	53,351	**248,175**
Liquor Licenses[3]	254,600	-	631	1,266	1,939	2,650	3,403	4,198	5,038	5,925	6,860	**31,912**
Local Gaming Licenses[2]	677,800	-	-	-	-	-	-	-	-	-	-	-
County Gaming Licenses[2]	234,300	-	-	-	-	-	-	-	-	-	-	-
AB104 Gaming Licenses[2]	725,000	-	-	-	-	-	-	-	-	-	-	-
Nonbusiness Licenses and Permits												-
Marriage Affidavits[4]	175,000	-	143	286	438	598	768	948	1,137	1,338	1,549	**7,204**
Mobile Home Permits[2]	200	-	-	-	-	-	-	-	-	-	-	-
Other[2]	300	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**$ -**	**$ 19,463**	**$ 39,031**	**$ 59,756**	**$ 81,689**	**$ 104,884**	**$ 129,397**	**$ 155,287**	**$ 182,613**	**$ 211,440**	**$ 983,560**
Intergovernmental Revenue												
Federal/State Grants and Other[2]	$ 7,233,361	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
BCCRT/SCCRT[5]	Appendix 5	207,196	261,081	299,653	311,162	353,109	397,292	443,809	492,759	544,247	598,381	**3,908,691**
Remainder C-Tax Revenue Sources[6]	16,812,065	-	13,696	27,465	42,048	57,481	73,803	91,052	109,269	128,498	148,782	**692,092**
AB 104 Sales Tax @ .25%[5]	Appendix 5	30,165	38,010	43,626	45,301	51,408	57,841	64,613	71,740	79,236	87,117	**569,056**
Remainder AB 104 Revenue[7]	-	-	-	-	-	-	-	-	-	-	-	-
Other Revenue[2]	253,712	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**$ 237,362**	**$ 312,787**	**$ 370,744**	**$ 398,511**	**$ 461,998**	**$ 528,936**	**$ 599,474**	**$ 673,768**	**$ 751,981**	**$ 834,279**	**$ 5,169,839**
Charges for Services												
General Government-Clerk/Recorder[4]	$ 2,355,500	$ -	$ 1,919	$ 3,848	$ 5,891	$ 8,054	$ 10,340	$ 12,757	$ 15,309	$ 18,004	$ 20,845	**$ 96,967**
General Gov.-PTx/Cent. Billing/Other[2]	9,608,958	-	-	-	-	-	-	-	-	-	-	-
Judicial[4]	1,343,300	-	1,094	2,194	3,360	4,593	5,897	7,275	8,731	10,267	11,888	**55,299**
Public Safety[2]	6,285,731	-	-	-	-	-	-	-	-	-	-	-
Public Works[2]	255,315	-	-	-	-	-	-	-	-	-	-	-
Welfare[2]	2,500	-	-	-	-	-	-	-	-	-	-	-
Cultural and Recreation[4]	793,572	-	646	1,296	1,985	2,713	3,484	4,298	5,158	6,065	7,023	**32,668**
Subtotal		**$ -**	**$ 3,660**	**$ 7,339**	**$ 11,236**	**$ 15,360**	**$ 19,721**	**$ 24,330**	**$ 29,198**	**$ 34,336**	**$ 39,756**	**$ 184,935**

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	Base Year FY 17-18	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-YEAR SUBTOTAL
Fines and Forfeits												
Fines[4]	$ 4,909,550	$ -	$ 3,999	$ 8,020	$ 12,279	$ 16,786	$ 21,552	$ 26,589	$ 31,909	$ 37,525	$ 43,448	$ 202,108
Forfeits[4]	1,892,000	-	1,541	3,091	4,732	6,469	8,306	10,247	12,297	14,461	16,744	77,887
Subtotal		**$ -**	**$ 5,541**	**$ 11,111**	**$ 17,011**	**$ 23,255**	**$ 29,858**	**$ 36,836**	**$ 44,206**	**$ 51,986**	**$ 60,192**	**$ 279,995**
Miscellaneous												
Miscellaneous[2]	$ 3,746,441	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
REVENUE TOTAL		**$ 266,481**	**$ 553,659**	**$ 845,921**	**$ 1,118,159**	**$ 1,419,720**	**$ 1,738,368**	**$ 2,074,858**	**$ 2,429,973**	**$ 2,804,527**	**$ 3,199,367**	**$ 16,451,032**
EXPENDITURES												
General Government												
General Government												
Commissioners[8]	$ 767,569	$ -	$ 1,269	$ 2,545	$ 3,897	$ 5,327	$ 6,840	$ 8,438	$ 10,126	$ 11,908	$ 13,788	$ 64,139
County Manager[9]	4,909,099	-	2,095	4,827	7,096	9,518	12,101	14,852	17,780	20,895	24,205	113,369
Elections[10]	1,700,013	-	1,385	2,777	4,252	5,812	7,463	9,207	11,049	12,994	15,045	69,983
Finance[9]	5,584,348	-	3,177	7,321	10,763	14,437	18,354	22,526	26,967	31,691	36,713	171,950
Human Resources[9]	2,323,128	-	1,322	3,046	4,478	6,006	7,635	9,371	11,219	13,184	15,273	71,532
Technology Services[9]	13,576,480	-	7,725	17,798	26,168	35,099	44,621	54,764	65,562	77,047	89,256	418,039
Accrued Benefits[9]	2,500,000	-	1,422	3,277	4,819	6,463	8,217	10,084	12,073	14,188	16,436	76,979
Centrally Managed Activities[9]	1,431,947	-	815	1,877	2,760	3,702	4,706	5,776	6,915	8,126	9,414	44,092
Assessor[10]	7,084,190	-	5,771	11,573	17,718	24,221	31,099	38,367	46,043	54,146	62,693	291,630
Clerk[10]	1,484,042	-	1,209	2,424	3,712	5,074	6,515	8,037	9,645	11,343	13,133	61,093
Recorder[10]	2,191,862	-	1,786	3,581	5,482	7,494	9,622	11,871	14,246	16,753	19,397	90,231
General Government Total		**$ -**	**$ 27,976**	**$ 61,046**	**$ 91,144**	**$ 123,154**	**$ 157,171**	**$ 193,293**	**$ 231,625**	**$ 272,274**	**$ 315,353**	**$ 1,473,036**
Judicial												
District Courts[10]	$ 20,788,093	$ -	$ 16,935	$ 33,960	$ 51,992	$ 71,075	$ 91,257	$ 112,585	$ 135,111	$ 158,887	$ 183,968	$ 855,770
District Attorney[10]	21,640,780	-	17,629	35,353	54,125	73,991	95,000	117,203	140,653	165,404	191,514	890,873
Public Defender[10]	13,479,521	-	10,981	22,021	33,713	46,087	59,173	73,003	87,609	103,026	119,290	554,903
Justice Courts[10]	10,849,719	-	8,838	17,724	27,136	37,096	47,629	58,760	70,517	82,926	96,017	446,644
Incline Constable[11]	176,362	-	-	-	-	-	-	-	-	-	-	-
Judicial Total		**$ -**	**$ 54,383**	**$ 109,058**	**$ 166,965**	**$ 228,249**	**$ 293,059**	**$ 361,552**	**$ 433,891**	**$ 510,245**	**$ 590,789**	**$ 2,748,190**
Public Safety												
Sheriff and Detention												
Operations and Detention[12]	Appendix 6	$ -	$ 95,270	$ 246,595	$ 351,503	$ 464,300	$ 585,443	$ 715,411	$ 854,708	$ 1,003,864	$ 1,163,436	$ 5,480,531
Administration[12]	8,462,617	-	8,984	23,254	33,147	43,784	55,208	67,464	80,600	94,665	109,713	516,820
Subtotal		**$ -**	**$ 104,254**	**$ 269,849**	**$ 384,650**	**$ 508,084**	**$ 640,651**	**$ 782,875**	**$ 935,308**	**$ 1,098,530**	**$ 1,273,149**	**$ 5,997,351**
Medical Examiner												
Medical Examiner[10]	$ 3,365,349	$ -	$ 2,742	$ 5,498	$ 8,417	$ 11,506	$ 14,773	$ 18,226	$ 21,873	$ 25,722	$ 29,782	$ 138,539
Other												
Juvenile Services[10]	$ 15,459,393	$ -	$ 12,594	$ 25,255	$ 38,665	$ 52,856	$ 67,865	$ 83,726	$ 100,477	$ 118,159	$ 136,811	$ 636,407
Manager's Office[11]	1,066,438	-	-	-	-	-	-	-	-	-	-	-

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	Base Year FY 17-18	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-YEAR SUBTOTAL
Alternative Sentencing[10]	1,546,108	-	1,259	2,526	3,867	5,286	6,787	8,373	10,049	11,817	13,683	**63,648**
Emergency Management[10]	1,229,999	-	1,002	2,009	3,076	4,205	5,400	6,661	7,994	9,401	10,885	**50,635**
Public Administrator[10]	1,220,419	-	994	1,994	3,052	4,173	5,357	6,610	7,932	9,328	10,800	**50,240**
Public Guardian[10]	1,871,400	-	1,524	3,057	4,680	6,398	8,215	10,135	12,163	14,303	16,561	**77,039**
Subtotal		**$ -**	**$ 17,374**	**$ 34,841**	**$ 53,341**	**$ 72,919**	**$ 93,624**	**$ 115,505**	**$ 138,616**	**$ 163,009**	**$ 188,740**	**$ 877,968**
Public Safety Total		**$ -**	**$ 124,369**	**$ 310,188**	**$ 446,407**	**$ 592,509**	**$ 749,049**	**$ 916,607**	**$ 1,095,797**	**$ 1,287,260**	**$ 1,491,672**	**$ 7,013,858**
Public Works												
Public Works												
Community Services[9]	$ 14,360,823	$ -	$ 8,171	$ 18,826	$ 27,679	$ 37,126	$ 47,198	$ 57,928	$ 69,350	$ 81,498	$ 94,412	**$ 442,190**
Public Works Total		**$ -**	**$ 8,171**	**$ 18,826**	**$ 27,679**	**$ 37,126**	**$ 47,198**	**$ 57,928**	**$ 69,350**	**$ 81,498**	**$ 94,412**	**$ 442,190**
Welfare												
Social Services												
Human Services[11]	$ 1,405,950	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Welfare Total		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Culture and Recreation												
Culture and Recreation												
Library[10]	$ 9,488,709	$ -	$ 7,730	$ 15,501	$ 23,732	$ 32,442	$ 41,654	$ 51,389	$ 61,671	$ 72,524	$ 83,972	**$ 390,616**
Regional Parks/Open Space[10]	6,556,129	-	5,341	10,710	16,397	22,416	28,780	35,507	42,611	50,110	58,020	**269,892**
Culture and Recreation Total		**$ -**	**$ 13,071**	**$ 26,211**	**$ 40,129**	**$ 54,858**	**$ 70,435**	**$ 86,896**	**$ 104,283**	**$ 122,634**	**$ 141,992**	**$ 660,508**
Community Support[10]	$ 367,280	$ -	$ 299	$ 600	$ 919	$ 1,256	$ 1,612	$ 1,989	$ 2,387	$ 2,807	$ 3,250	**$ 15,120**
Intergovernmental Expenditures												
Indigent Ins. Program[13]	$ 2,107,357	$ 383	$ 2,788	$ 5,488	$ 8,299	$ 11,002	$ 13,861	$ 16,880	$ 20,069	$ 23,434	$ 26,982	**$ 129,186**
China Springs Youth Facility[13]	1,249,218	189	1,375	2,707	4,094	5,428	6,838	8,328	9,901	11,561	13,311	**63,732**
TM Regional Planning[11]	250,160	-	-	-	-	-	-	-	-	-	-	**-**
Ethics Commission Assessment[11]	25,342	-	-	-	-	-	-	-	-	-	-	**-**
Intergovernmental Expenditures		**$ 571**	**$ 4,164**	**$ 8,195**	**$ 12,393**	**$ 16,430**	**$ 20,698**	**$ 25,208**	**$ 29,970**	**$ 34,994**	**$ 40,293**	**$ 192,917**
EXPENDITURES SUBTOTAL		**$ 571**	**$ 232,432**	**$ 534,125**	**$ 785,636**	**$ 1,053,582**	**$ 1,339,221**	**$ 1,643,474**	**$ 1,967,302**	**$ 2,311,713**	**$ 2,677,762**	**$ 12,545,819**
CONTINGENCY @	**1.0%**	**$ 6**	**$ 2,324**	**$ 5,341**	**$ 7,856**	**$ 10,536**	**$ 13,392**	**$ 16,435**	**$ 19,673**	**$ 23,117**	**$ 26,778**	**$ 125,458**
EXPENDITURES TOTAL		**$ 577**	**$ 234,757**	**$ 539,467**	**$ 793,492**	**$ 1,064,117**	**$ 1,352,614**	**$ 1,659,909**	**$ 1,986,975**	**$ 2,334,830**	**$ 2,704,540**	**$ 12,671,277**
GENERAL FUND SURPLUS/DEFICIT		**$ 265,904**	**$ 318,902**	**$ 306,454**	**$ 324,666**	**$ 355,602**	**$ 385,755**	**$ 414,949**	**$ 442,998**	**$ 469,697**	**$ 494,827**	**$ 3,779,755**

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

OTHER FUNDS[14]	Base Year FY 17-18	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-YEAR SUBTOTAL
LIBRARY EXPANSION FUND												
REVENUE												
Ad Valorem[1]	Appendix 4A	$ 510	$ 3,717	$ 7,317	$ 11,065	$ 14,670	$ 18,481	$ 22,507	$ 26,759	$ 31,245	$ 35,976	**$ 172,247**
Miscellaneous[2]	15,000	-	-	-	-	-	-	-	-	-	-	**-**
Revenue Total		**$ 510**	**$ 3,717**	**$ 7,317**	**$ 11,065**	**$ 14,670**	**$ 18,481**	**$ 22,507**	**$ 26,759**	**$ 31,245**	**$ 35,976**	**$ 172,247**
EXPENDITURES												
Library[10]	$ 2,589,846	$ -	$ 2,110	$ 4,231	$ 6,477	$ 8,855	$ 11,369	$ 14,026	$ 16,833	$ 19,795	$ 22,919	**$ 106,615**
SURPLUS/DEFICIT		**$ 510**	**$ 1,608**	**$ 3,086**	**$ 4,588**	**$ 5,815**	**$ 7,112**	**$ 8,481**	**$ 9,926**	**$ 11,450**	**$ 13,057**	**$ 65,633**
ANIMAL SERVICES FUND												
REVENUE												
Ad Valorem[1]	Appendix 4A	$ 765	$ 5,576	$ 10,976	$ 16,598	$ 22,005	$ 27,721	$ 33,761	$ 40,138	$ 46,867	$ 53,964	**$ 258,371**
Licenses and Permits[4]	307,000	-	250	502	768	1,050	1,348	1,663	1,995	2,346	2,717	**12,638**
Charges for Services[4]	203,000	-	165	332	508	694	891	1,099	1,319	1,552	1,796	**8,357**
Miscellaneous[2]	191,350	-	-	-	-	-	-	-	-	-	-	**-**
Revenue Total		**$ 765**	**$ 5,992**	**$ 11,809**	**$ 17,873**	**$ 23,748**	**$ 29,960**	**$ 36,523**	**$ 43,453**	**$ 50,765**	**$ 58,478**	**$ 279,366**
EXPENDITURES												
Animal Services[10]	$ 5,681,196	$ -	$ 4,628	$ 9,281	$ 14,209	$ 19,424	$ 24,940	$ 30,768	$ 36,925	$ 43,422	$ 50,277	**$ 233,874**
SURPLUS/DEFICIT		**$ 765**	**$ 1,364**	**$ 2,528**	**$ 3,664**	**$ 4,324**	**$ 5,020**	**$ 5,754**	**$ 6,528**	**$ 7,343**	**$ 8,201**	**$ 45,492**
INDIGENT TAX LEVY FUND												
REVENUE												
Ad Valorem[1]	Appendix 4A	$ 1,530	$ 11,152	$ 21,951	$ 33,195	$ 44,009	$ 55,442	$ 67,522	$ 80,276	$ 93,735	$ 107,929	**$ 516,742**
Charges for Services[2]	78,000	-	-	-	-	-	-	-	-	-	-	**-**
Miscellaneous[2]	3,322,000	-	-	-	-	-	-	-	-	-	-	**-**
Revenue Total		**$ 1,530**	**$ 11,152**	**$ 21,951**	**$ 33,195**	**$ 44,009**	**$ 55,442**	**$ 67,522**	**$ 80,276**	**$ 93,735**	**$ 107,929**	**$ 516,742**
EXPENDITURES												
Indigent Assistance[15]	$ 31,886,929	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
SURPLUS/DEFICIT		**$ 1,530**	**$ 11,152**	**$ 21,951**	**$ 33,195**	**$ 44,009**	**$ 55,442**	**$ 67,522**	**$ 80,276**	**$ 93,735**	**$ 107,929**	**$ 516,742**
CHILD PROTECTIVE SERVICES FUND												
REVENUE												
Ad Valorem[1]	Appendix 4A	$ 1,020	$ 7,435	$ 14,634	$ 22,130	$ 29,339	$ 36,962	$ 45,015	$ 53,517	$ 62,490	$ 71,953	**$ 344,495**
Licenses and Permits[4]	22,500	-	18	37	56	77	99	122	146	172	199	**926**
Intergovernmental[4]	41,036,087	-	33,429	67,038	102,633	140,304	180,143	222,245	266,712	313,646	363,157	**1,689,307**
Charges for Services[4]	3,492,000	-	2,845	5,705	8,734	11,939	15,329	18,912	22,696	26,690	30,903	**143,753**
Reimbusements[4]	7,965,822											
Miscellaneous[2]	125,000	-	-	-	-	-	-	-	-	-	-	**-**
Revenue Total		**$ 1,020**	**$ 43,727**	**$ 87,414**	**$ 133,553**	**$ 181,660**	**$ 232,532**	**$ 286,294**	**$ 343,071**	**$ 402,998**	**$ 466,212**	**$ 2,178,481**

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	Base Year FY 17-18	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-YEAR SUBTOTAL
EXPENDITURES												
Child Protective Services[10]	$ 58,006,283	$ -	$ 47,253	$ 94,761	$ 145,077	$ 198,326	$ 254,639	$ 314,153	$ 377,009	$ 443,353	$ 513,338	**$ 2,387,909**
SURPLUS/DEFICIT		**$ 1,020**	**$ (3,526)**	**$ (7,347)**	**$ (11,523)**	**$ (16,666)**	**$ (22,107)**	**$ (27,859)**	**$ (33,937)**	**$ (40,354)**	**$ (47,126)**	**$ (209,427)**
SENIOR SERVICES FUND												
REVENUE												
Ad Valorem[1]	Appendix 4A	$ 255	$ 1,859	$ 3,659	$ 5,533	$ 7,335	$ 9,240	$ 11,254	$ 13,379	$ 15,622	$ 17,988	**$ 86,124**
Intergovernmental[4]	1,695,622	-	1,381	2,770	4,241	5,797	7,444	9,183	11,021	12,960	15,006	**69,803**
Charges for Services[4]	392,834	-	320	642	982	1,343	1,724	2,128	2,553	3,003	3,476	**16,172**
Miscellaneous/Reimbursements[4]	74,450	-	61	122	186	255	327	403	484	569	659	**3,065**
Revenue Total		**$ 255**	**$ 3,621**	**$ 7,192**	**$ 10,942**	**$ 14,730**	**$ 18,735**	**$ 22,968**	**$ 27,437**	**$ 32,154**	**$ 37,129**	**$ 175,163**
EXPENDITURES												
Senior Citizens[16]	$ 5,240,937	$ -	$ 3,202	$ 6,421	$ 9,831	$ 13,439	$ 17,255	$ 21,288	$ 25,547	$ 30,043	$ 34,786	**$ 161,813**
SURPLUS/DEFICIT		**$ 255**	**$ 419**	**$ 771**	**$ 1,111**	**$ 1,291**	**$ 1,480**	**$ 1,680**	**$ 1,890**	**$ 2,111**	**$ 2,344**	**$ 13,350**
OTHER RESTRICTED SPECIAL REVENUE FUND												
REVENUE												
Ad Valorem[1]	Appendix 4A	$ 255	$ 1,859	$ 3,659	$ 5,533	$ 7,335	$ 9,240	$ 11,254	$ 13,379	$ 15,622	$ 17,988	**$ 86,124**
Car Rental Fee[2]	2,754,904	-	-	-	-	-	-	-	-	-	-	-
Intergovernmental[4]	12,251,034	-	9,980	20,014	30,640	41,887	53,780	66,350	79,625	93,637	108,418	**504,331**
Charges for Services[4]	3,629,089	-	2,956	5,929	9,077	12,408	15,931	19,655	23,587	27,738	32,116	**149,396**
Fines and Forfeits[4]	2,826,909	-	2,303	4,618	7,070	9,665	12,410	15,310	18,373	21,607	25,017	**116,374**
Miscellaneous[2]	1,036,753	-	-	-	-	-	-	-	-	-	-	-
Revenue Total		**$ 255**	**$ 17,098**	**$ 34,219**	**$ 52,320**	**$ 71,295**	**$ 91,362**	**$ 112,568**	**$ 134,965**	**$ 158,604**	**$ 183,540**	**$ 856,224**
EXPENDITURES												
General Government[17]	$ 6,080,007	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Judicial[17]	16,317,444	-	-	-	-	-	-	-	-	-	-	-
Public Safety[17]	10,887,591	-	-	-	-	-	-	-	-	-	-	-
Public Works[17]	1,002,657	-	-	-	-	-	-	-	-	-	-	-
Welfare[17]	1,417,288	-	-	-	-	-	-	-	-	-	-	-
Culture and Recreation[17]	2,068,711	-	-	-	-	-	-	-	-	-	-	-
Intergovernmental[1/]	1,404,904	-	-	-	-	-	-	-	-	-	-	-
Expenditures Total		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
SURPLUS/DEFICIT		**$ 255**	**$ 17,098**	**$ 34,219**	**$ 52,320**	**$ 71,295**	**$ 91,362**	**$ 112,568**	**$ 134,965**	**$ 158,604**	**$ 183,540**	**$ 856,224**
ROADS SPECIAL REVENUE FUND												
REVENUE												
Motor Vehicle Fuel Tax[4]	$ 9,955,724	$ -	$ 8,110	$ 16,264	$ 24,900	$ 34,039	$ 43,704	$ 53,919	$ 64,707	$ 76,093	$ 88,105	**$ 409,841**
Charges for Services[4]	750,000	-	611	1,225	1,876	2,564	3,292	4,062	4,875	5,732	6,637	**30,875**
Miscellaneous[2]	506,244	-	-	-	-	-	-	-	-	-	-	-
Revenue Total		**$ -**	**$ 8,721**	**$ 17,489**	**$ 26,776**	**$ 36,603**	**$ 46,997**	**$ 57,981**	**$ 69,581**	**$ 81,826**	**$ 94,742**	**$ 440,716**

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	Base Year FY 17-18	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10-YEAR SUBTOTAL
EXPENDITURES												
Public Works[18]	$ 20,919,086	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
SURPLUS/DEFICIT		**$ -**	**$ 8,721**	**$ 17,489**	**$ 26,776**	**$ 36,603**	**$ 46,997**	**$ 57,981**	**$ 69,581**	**$ 81,826**	**$ 94,742**	**$ 440,716**
TRUCKEE MEADOWS FIRE PROTECTION DISTRICT												
REVENUE												
Property Tax-AB104[1]	Appendix 4B	$ 41	$ 298	$ 587	$ 887	$ 1,176	$ 1,481	$ 1,804	$ 2,145	$ 2,505	$ 2,884	**$ 13,807**
Property Tax-General[1]	Appendix 4B	13,773	100,371	197,562	298,756	396,083	498,981	607,696	722,485	843,614	971,361	**4,650,681**
Sales Tax-AB104[5]	Appendix 5	2,658	3,349	3,844	3,992	4,530	5,096	5,693	6,321	6,982	7,676	**50,140**
Remainder of AB104[7]	-	-	-	-	-	-	-	-	-	-	-	**-**
Sales Tax-CCRT[5]	Appendix 5	15,674	19,750	22,668	23,539	26,712	30,054	33,573	37,276	41,171	45,266	**295,681**
Remainder of C-Tax[6]	1,271,785	-	4,372	8,767	13,422	18,349	23,559	29,065	34,880	41,018	47,493	**220,923**
Other Sources[2]	1,117,128	-	-	-	-	-	-	-	-	-	-	**-**
Revenue Total		**$ 32,146**	**$ 128,140**	**$ 233,427**	**$ 340,595**	**$ 446,849**	**$ 559,171**	**$ 677,831**	**$ 803,106**	**$ 935,289**	**$ 1,074,679**	**$ 5,231,233**
EXPENDITURES												
Fire Operations[19]	$ 26,747,759	$ -	$ 91,945	$ 184,385	$ 282,289	$ 385,900	$ 495,475	$ 611,276	$ 733,580	$ 862,672	$ 998,849	**$ 4,646,372**
Expenditure Total		**$ -**	**$ 91,945**	**$ 184,385**	**$ 282,289**	**$ 385,900**	**$ 495,475**	**$ 611,276**	**$ 733,580**	**$ 862,672**	**$ 998,849**	**$ 4,646,372**
SURPLUS/DEFICIT		**$ 32,146**	**$ 36,194**	**$ 49,042**	**$ 58,307**	**$ 60,948**	**$ 63,696**	**$ 66,554**	**$ 69,526**	**$ 72,617**	**$ 75,830**	**$ 584,861**

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

GENERAL FUND	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	10-YEAR SUBTOTAL	ANALYSIS TOTAL
REVENUE												
Taxes												
Ad Valorem General[1]	$ 2,057,390	$ 2,321,270	$ 2,599,132	$ 2,891,577	$ 3,195,919	$ 3,461,912	$ 3,565,769	$ 3,672,742	$ 3,782,924	$ 3,896,412	**$ 31,445,047**	**$ 40,096,176**
Ad Valorem Detention Facility[1]	158,529	178,861	200,272	222,805	246,256	266,752	274,754	282,997	291,487	300,231	**2,422,943**	**3,089,541**
Ad Valorem Indigent Insurance[1]	30,723	34,663	38,812	43,179	47,724	51,696	53,247	54,844	56,490	58,184	**469,563**	**598,748**
Ad Valorem AB104[1]	37,266	42,046	47,079	52,376	57,889	62,707	64,588	66,526	68,522	70,578	**569,579**	**726,281**
Ad Valorem China Springs[1]	15,156	17,100	19,147	21,302	23,544	25,503	26,268	27,057	27,868	28,704	**231,651**	**295,382**
Ad Valorem Family Court[1]	39,325	44,369	49,680	55,270	61,087	66,171	68,156	70,201	72,307	74,476	**601,040**	**766,398**
Room Tax[2]	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	**$ 2,338,389**	**$ 2,638,310**	**$ 2,954,123**	**$ 3,286,510**	**$ 3,632,418**	**$ 3,934,741**	**$ 4,052,783**	**$ 4,174,367**	**$ 4,299,598**	**$ 4,428,586**	**$ 35,739,823**	**$ 45,572,526**
Licenses and Permits												
Business Licenses/Permits												
Business Licenses[3]	$ 25,887	$ 29,315	$ 32,926	$ 36,727	$ 40,726	$ 44,693	$ 46,034	$ 47,415	$ 48,837	$ 50,303	**$ 402,863**	**$ 508,149**
Business Licenses/Elec and Telecom[3]	145,307	164,550	184,816	206,150	228,598	250,867	258,393	266,145	274,129	282,353	**2,261,308**	**2,852,290**
Franchise Fees[3]	61,020	69,100	77,611	86,570	95,997	105,348	108,509	111,764	115,117	118,570	**949,605**	**1,197,781**
Liquor Licenses[3]	7,846	8,885	9,980	11,132	12,344	13,546	13,953	14,371	14,802	15,246	**122,106**	**154,018**
Local Gaming Licenses[2]	-	-	-	-	-	-	-	-	-	-	-	-
County Gaming Licenses[2]	-	-	-	-	-	-	-	-	-	-	-	-
AB104 Gaming Licenses[2]	-	-	-	-	-	-	-	-	-	-	-	-
Nonbusiness Licenses and Permits											-	-
Marriage Affidavits[4]	1,771	2,006	2,253	2,513	2,787	3,058	3,150	3,244	3,342	3,442	**27,565**	**34,770**
Mobile Home Permits[2]	-	-	-	-	-	-	-	-	-	-	-	-
Other[2]	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	**$ 241,832**	**$ 273,856**	**$ 307,585**	**$ 343,091**	**$ 380,451**	**$ 417,513**	**$ 430,038**	**$ 442,939**	**$ 456,227**	**$ 469,914**	**$ 3,763,447**	**$ 4,747,008**
Intergovernmental Revenue												
Federal/State Grants and Other[2]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	**$ -**
BCCRT/SCCRT[5]	655,273	715,040	777,803	843,688	889,084	676,055	696,337	717,227	738,744	760,906	**7,470,157**	**11,378,847**
Remainder C-Tax Revenue Sources[6]	170,167	192,702	216,435	241,419	267,708	293,787	302,600	311,678	321,029	330,660	**2,648,186**	**3,340,278**
AB 104 Sales Tax @ .25%[5]	95,399	104,101	113,238	122,830	129,439	98,425	101,378	104,419	107,552	110,778	**1,087,561**	**1,656,618**
Remainder AB 104 Revenue[7]	-	-	-	-	-	-	-	-	-	-	-	-
Other Revenue[2]	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal	**$ 920,839**	**$ 1,011,842**	**$ 1,107,476**	**$ 1,207,938**	**$ 1,286,231**	**$ 1,068,268**	**$ 1,100,316**	**$ 1,133,325**	**$ 1,167,325**	**$ 1,202,345**	**$ 11,205,904**	**$ 16,375,742**
Charges for Services												
General Government-Clerk/Recorder[4]	$ 23,842	$ 26,999	$ 30,324	$ 33,825	$ 37,508	$ 41,162	$ 42,397	$ 43,669	$ 44,979	$ 46,328	**$ 371,031**	**$ 467,999**
General Gov.-PTx/Cent. Billing/Other[2]	-	-	-	-	-	-	-	-	-	-	-	-
Judicial[4]	13,597	15,397	17,293	19,290	21,390	23,474	24,178	24,903	25,651	26,420	**211,593**	**266,891**
Public Safety[2]	-	-	-	-	-	-	-	-	-	-	-	-
Public Works[2]	-	-	-	-	-	-	-	-	-	-	-	-
Welfare[2]	-	-	-	-	-	-	-	-	-	-	-	-
Cultural and Recreation[4]	8,032	9,096	10,216	11,396	12,636	13,867	14,284	14,712	15,153	15,608	**125,001**	**157,670**
Subtotal	**$ 45,471**	**$ 51,492**	**$ 57,834**	**$ 64,510**	**$ 71,535**	**$ 78,503**	**$ 80,858**	**$ 83,284**	**$ 85,782**	**$ 88,356**	**$ 707,625**	**$ 892,560**

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	10-YEAR SUBTOTAL	ANALYSIS TOTAL
Fines and Forfeits												
Fines[4]	$ 49,693	$ 56,274	$ 63,205	$ 70,501	$ 78,177	$ 85,793	$ 88,367	$ 91,018	$ 93,749	$ 96,561	**$ 773,337**	**$ 975,446**
Forfeits[4]	19,150	21,686	24,357	27,169	30,127	33,062	34,054	35,076	36,128	37,212	**298,022**	**375,909**
Subtotal	**$ 68,843**	**$ 77,960**	**$ 87,562**	**$ 97,670**	**$ 108,305**	**$ 118,855**	**$ 122,421**	**$ 126,094**	**$ 129,877**	**$ 133,773**	**$ 1,071,360**	**$ 1,351,355**
Miscellaneous												
Miscellaneous[2]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	**$ -**
REVENUE TOTAL	**$ 3,615,373**	**$ 4,053,461**	**$ 4,514,580**	**$ 4,999,718**	**$ 5,478,939**	**$ 5,617,880**	**$ 5,786,416**	**$ 5,960,009**	**$ 6,138,809**	**$ 6,322,973**	**$ 52,488,159**	**$ 68,939,191**
EXPENDITURES												
General Government												
General Government												
Commissioners[8]	$ 15,770	$ 17,858	$ 20,058	$ 22,373	$ 24,809	$ 27,226	$ 28,043	$ 28,884	$ 29,751	$ 30,643	**$ 245,417**	**$ 309,555**
County Manager[9]	27,722	31,456	35,417	39,617	44,068	48,527	50,199	51,930	53,722	55,578	**438,235**	**551,604**
Elections[10]	17,207	19,486	21,886	24,412	27,070	29,707	30,599	31,517	32,462	33,436	**267,781**	**337,764**
Finance[9]	42,047	47,710	53,718	60,088	66,840	73,603	76,138	78,764	81,482	84,297	**664,686**	**836,636**
Human Resources[9]	17,492	19,848	22,347	24,997	27,806	30,619	31,674	32,766	33,897	35,068	**276,514**	**348,046**
Technology Services[9]	102,224	115,991	130,597	146,085	162,498	178,941	185,105	191,487	198,096	204,940	**1,615,963**	**2,034,002**
Accrued Benefits[9]	18,824	21,359	24,048	26,900	29,923	32,951	34,086	35,261	36,478	37,738	**297,567**	**374,545**
Centrally Managed Activities[9]	10,782	12,234	13,774	15,408	17,139	18,873	19,523	20,197	20,894	21,616	**170,440**	**214,531**
Assessor[10]	71,704	81,200	91,201	101,728	112,805	123,795	127,508	131,334	135,274	139,332	**1,115,880**	**1,407,511**
Clerk[10]	15,021	17,010	19,105	21,311	23,631	25,933	26,711	27,513	28,338	29,188	**233,762**	**294,854**
Recorder[10]	22,185	25,123	28,218	31,475	34,902	38,302	39,451	40,635	41,854	43,110	**345,255**	**435,487**
General Government Total	**$ 360,978**	**$ 409,274**	**$ 460,368**	**$ 514,394**	**$ 571,492**	**$ 628,478**	**$ 649,037**	**$ 670,286**	**$ 692,247**	**$ 714,945**	**$ 5,671,500**	**$ 7,144,536**
Judicial												
District Courts[10]	$ 210,411	$ 238,275	$ 267,622	$ 298,515	$ 331,020	$ 363,267	$ 374,165	$ 385,390	$ 396,952	$ 408,860	**$ 3,274,478**	**$ 4,130,248**
District Attorney[10]	219,042	248,049	278,599	310,759	344,598	378,168	389,513	401,198	413,234	425,631	**3,408,790**	**4,299,663**
Public Defender[10]	136,436	154,504	173,533	193,564	214,642	235,551	242,618	249,897	257,393	265,115	**2,123,253**	**2,678,156**
Justice Courts[10]	109,818	124,361	139,677	155,801	172,766	189,596	195,284	201,143	207,177	213,392	**1,709,015**	**2,155,659**
Incline Constable[11]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Judicial Total	**$ 675,707**	**$ 765,189**	**$ 859,431**	**$ 958,639**	**$ 1,063,026**	**$ 1,166,582**	**$ 1,201,580**	**$ 1,237,627**	**$ 1,274,756**	**$ 1,312,999**	**$ 10,515,536**	**$ 13,263,726**
Public Safety												
Sheriff and Detention												
Operations and Detention[12]	$ 1,334,010	$ 1,516,201	$ 1,710,655	$ 1,918,053	$ 2,139,108	$ 2,362,239	$ 2,452,265	$ 2,545,803	$ 2,642,988	$ 2,743,963	**$ 21,365,285**	**$ 26,845,817**
Administration[12]	125,798	142,979	161,317	180,874	201,720	222,762	231,251	240,072	249,236	258,759	**2,014,768**	**2,531,588**
Subtotal	**$ 1,459,808**	**$ 1,659,180**	**$ 1,871,972**	**$ 2,098,928**	**$ 2,340,828**	**$ 2,585,001**	**$ 2,683,516**	**$ 2,785,874**	**$ 2,892,224**	**$ 3,002,722**	**$ 23,380,054**	**$ 29,377,404**
Medical Examiner												
Medical Examiner[10]	$ 34,063	$ 38,574	$ 43,325	$ 48,326	$ 53,588	$ 58,809	$ 60,573	$ 62,390	$ 64,262	$ 66,190	**$ 530,100**	**$ 668,639**

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	10-YEAR SUBTOTAL	ANALYSIS TOTAL
Other												
Juvenile Services[10]	$ 156,476	$ 177,197	$ 199,021	$ 221,995	$ 246,168	$ 270,149	$ 278,254	$ 286,601	$ 295,199	$ 304,055	**$ 2,435,117**	**$ 3,071,524**
Manager's Office[11]	-	-	-	-	-	-	-	-	-	-	-	-
Alternative Sentencing[10]	15,649	17,722	19,904	22,202	24,620	27,018	27,828	28,663	29,523	30,409	**243,538**	**307,186**
Emergency Management[10]	12,450	14,098	15,835	17,663	19,586	21,494	22,139	22,803	23,487	24,192	**193,746**	**244,380**
Public Administrator[10]	12,353	13,989	15,711	17,525	19,433	21,327	21,966	22,625	23,304	24,003	**192,237**	**242,477**
Public Guardian[10]	18,942	21,450	24,092	26,873	29,799	32,702	33,683	34,694	35,745	36,807	**294,777**	**371,816**
Subtotal	**$ 215,869**	**$ 244,456**	**$ 274,564**	**$ 306,258**	**$ 339,607**	**$ 372,690**	**$ 383,871**	**$ 395,387**	**$ 407,248**	**$ 419,466**	**$ 3,359,415**	**$ 4,237,383**
Public Safety Total	**$ 1,709,741**	**$ 1,942,210**	**$ 2,189,861**	**$ 2,453,512**	**$ 2,734,023**	**$ 3,016,499**	**$ 3,127,960**	**$ 3,243,651**	**$ 3,363,734**	**$ 3,488,377**	**$ 27,269,568**	**$ 34,283,426**
Public Works												
Public Works												
Community Services[9]	$ 108,129	$ 122,692	$ 138,142	$ 154,524	$ 171,886	$ 189,279	$ 195,799	$ 202,550	$ 209,541	$ 216,779	**$ 1,709,320**	**$ 2,151,510**
Public Works Total	**$ 108,129**	**$ 122,692**	**$ 138,142**	**$ 154,524**	**$ 171,886**	**$ 189,279**	**$ 195,799**	**$ 202,550**	**$ 209,541**	**$ 216,779**	**$ 1,709,320**	**$ 2,151,510**
Welfare												
Social Services												
Human Services[11]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	**$ -**
Welfare Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Culture and Recreation												
Culture and Recreation												
Library[10]	$ 96,042	$ 108,761	$ 122,156	$ 136,257	$ 151,094	$ 165,813	$ 170,787	$ 175,911	$ 181,188	$ 186,624	**$ 1,494,633**	**$ 1,885,248**
Regional Parks/Open Space[10]	66,359	75,147	84,402	94,145	104,397	114,567	118,004	121,544	125,190	128,946	**1,032,702**	**1,302,594**
Culture and Recreation Total	**$ 162,401**	**$ 183,908**	**$ 206,558**	**$ 230,402**	**$ 255,491**	**$ 280,380**	**$ 288,791**	**$ 297,455**	**$ 306,379**	**$ 315,570**	**$ 2,527,334**	**$ 3,187,842**
Community Support[10]	$ 3,718	$ 4,210	$ 4,728	$ 5,274	$ 5,848	$ 6,418	$ 6,611	$ 6,809	$ 7,013	$ 7,224	**$ 57,853**	**$ 72,972**
Intergovernmental Expenditures												
Indigent Ins. Program[13]	$ 30,723	$ 34,663	$ 38,812	$ 43,179	$ 47,724	$ 51,696	$ 53,247	$ 54,844	$ 56,490	$ 58,184	**$ 469,563**	**$ 598,748**
China Springs Youth Facility[13]	15,156	17,100	19,147	21,302	23,544	25,503	26,268	27,057	27,868	28,704	**231,651**	**295,382**
TM Regional Planning[11]	-	-	-	-	-	-	-	-	-	-	-	-
Ethics Commission Assessment[11]	-	-	-	-	-	-	-	-	-	-	-	-
Intergovernmental Expenditures	**$ 45,879**	**$ 51,764**	**$ 57,960**	**$ 64,481**	**$ 71,268**	**$ 77,199**	**$ 79,515**	**$ 81,901**	**$ 84,358**	**$ 86,889**	**$ 701,214**	**$ 894,131**
EXPENDITURES SUBTOTAL	**$ 3,066,554**	**$ 3,479,246**	**$ 3,917,047**	**$ 4,381,226**	**$ 4,873,035**	**$ 5,364,835**	**$ 5,549,293**	**$ 5,740,279**	**$ 5,938,028**	**$ 6,142,782**	**$ 48,452,325**	**$ 60,998,144**
CONTINGENCY @	**$ 30,666**	**$ 34,792**	**$ 39,170**	**$ 43,812**	**$ 48,730**	**$ 53,648**	**$ 55,493**	**$ 57,403**	**$ 59,380**	**$ 61,428**	**$ 484,523**	**$ 609,981**
EXPENDITURES TOTAL	**$ 3,097,220**	**$ 3,514,038**	**$ 3,956,218**	**$ 4,425,039**	**$ 4,921,766**	**$ 5,418,483**	**$ 5,604,786**	**$ 5,797,682**	**$ 5,997,408**	**$ 6,204,210**	**$ 48,936,848**	**$ 61,608,126**
GENERAL FUND SURPLUS/DEFICIT	**$ 518,154**	**$ 539,423**	**$ 558,362**	**$ 574,679**	**$ 557,173**	**$ 199,397**	**$ 181,630**	**$ 162,327**	**$ 141,401**	**$ 118,763**	**$ 3,551,310**	**$ 7,331,065**

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	10-YEAR SUBTOTAL	ANALYSIS TOTAL
OTHER FUNDS[14]												
LIBRARY EXPANSION FUND												
REVENUE												
Ad Valorem[1]	$ 40,963	$ 46,217	$ 51,750	$ 57,572	$ 63,632	$ 68,928	$ 70,996	$ 73,126	$ 75,320	$ 77,579	**$ 626,084**	**$ 798,331**
Miscellaneous[2]	-	-	-	-	-	-	-	-	-	-	-	-
Revenue Total	**$ 40,963**	**$ 46,217**	**$ 51,750**	**$ 57,572**	**$ 63,632**	**$ 68,928**	**$ 70,996**	**$ 73,126**	**$ 75,320**	**$ 77,579**	**$ 626,084**	**$ 798,331**
EXPENDITURES												
Library[10]	$ 26,214	$ 29,685	$ 33,341	$ 37,190	$ 41,240	$ 45,257	$ 46,615	$ 48,013	$ 49,453	$ 50,937	**$ 407,945**	**$ 514,559**
SURPLUS/DEFICIT	**$ 14,750**	**$ 16,532**	**$ 18,409**	**$ 20,383**	**$ 22,392**	**$ 23,671**	**$ 24,381**	**$ 25,113**	**$ 25,866**	**$ 26,642**	**$ 218,139**	**$ 283,772**
ANIMAL SERVICES FUND												
REVENUE												
Ad Valorem[1]	$ 61,445	$ 69,326	$ 77,625	$ 86,359	$ 95,448	$ 103,392	$ 106,494	$ 109,689	$ 112,979	$ 116,369	**$ 939,125**	**$ 1,197,497**
Licenses and Permits[4]	3,107	3,519	3,952	4,408	4,889	5,365	5,526	5,691	5,862	6,038	**48,358**	**60,996**
Charges for Services[4]	2,055	2,327	2,613	2,915	3,232	3,547	3,654	3,763	3,876	3,993	**31,976**	**40,333**
Miscellaneous[2]	-	-	-	-	-	-	-	-	-	-	-	-
Revenue Total	**$ 66,607**	**$ 75,172**	**$ 84,190**	**$ 93,682**	**$ 103,569**	**$ 112,304**	**$ 115,673**	**$ 119,144**	**$ 122,718**	**$ 126,399**	**$ 1,019,459**	**$ 1,298,825**
EXPENDITURES												
Animal Services[10]	$ 57,504	$ 65,118	$ 73,139	$ 81,581	$ 90,465	$ 99,278	$ 102,256	$ 105,324	$ 108,483	$ 111,738	**$ 894,885**	**$ 1,128,759**
SURPLUS/DEFICIT	**$ 9,104**	**$ 10,053**	**$ 11,052**	**$ 12,101**	**$ 13,104**	**$ 13,027**	**$ 13,417**	**$ 13,820**	**$ 14,235**	**$ 14,662**	**$ 124,574**	**$ 170,066**
INDIGENT TAX LEVY FUND												
REVENUE												
Ad Valorem[1]	$ 122,890	$ 138,652	$ 155,249	$ 172,717	$ 190,896	$ 206,784	$ 212,988	$ 219,377	$ 225,959	$ 232,737	**$ 1,878,251**	**$ 2,394,993**
Charges for Services[2]	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous[2]	-	-	-	-	-	-	-	-	-	-	-	-
Revenue Total	**$ 122,890**	**$ 138,652**	**$ 155,249**	**$ 172,717**	**$ 190,896**	**$ 206,784**	**$ 212,988**	**$ 219,377**	**$ 225,959**	**$ 232,737**	**$ 1,878,251**	**$ 2,394,993**
EXPENDITURES												
Indigent Assistance[15]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	**$ -**
SURPLUS/DEFICIT	**$ 122,890**	**$ 138,652**	**$ 155,249**	**$ 172,717**	**$ 190,896**	**$ 206,784**	**$ 212,988**	**$ 219,377**	**$ 225,959**	**$ 232,737**	**$ 1,878,251**	**$ 2,394,993**
CHILD PROTECTIVE SERVICES FUND												
REVENUE												
Ad Valorem[1]	$ 81,927	$ 92,435	$ 103,500	$ 115,145	$ 127,264	$ 137,856	$ 141,992	$ 146,252	$ 150,639	$ 155,158	**$ 1,252,167**	**$ 1,596,662**
Licenses and Permits[4]	228	258	290	323	358	393	405	417	430	443	**3,544**	**4,470**
Intergovernmental[4]	415,356	470,360	528,291	589,274	653,440	717,096	738,609	760,767	783,590	807,098	**6,463,881**	**8,153,188**
Charges for Services[4]	35,345	40,026	44,955	50,145	55,605	61,022	62,853	64,738	66,680	68,681	**550,049**	**693,802**
Reimbusements[4]												
Miscellaneous[2]	-	-	-	-	-	-	-	-	-	-	-	-
Revenue Total	**$ 532,856**	**$ 603,079**	**$ 677,035**	**$ 754,887**	**$ 836,668**	**$ 916,367**	**$ 943,858**	**$ 972,174**	**$ 1,001,339**	**$ 1,031,379**	**$ 8,269,641**	**$ 10,448,122**

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	10-YEAR SUBTOTAL	ANALYSIS TOTAL
EXPENDITURES												
Child Protective Services[10]	$ 587,124	$ 664,874	$ 746,762	$ 832,964	$ 923,666	$ 1,013,646	$ 1,044,055	$ 1,075,377	$ 1,107,638	$ 1,140,868	**$ 9,136,975**	**$ 11,524,883**
SURPLUS/DEFICIT	**$ (54,268)**	**$ (61,796)**	**$ (69,726)**	**$ (78,077)**	**$ (86,998)**	**$ (97,279)**	**$ (100,197)**	**$ (103,203)**	**$ (106,299)**	**$ (109,488)**	**$ (867,333)**	**$ (1,076,761)**
SENIOR SERVICES FUND												
REVENUE												
Ad Valorem[1]	$ 20,482	$ 23,109	$ 25,875	$ 28,786	$ 31,816	$ 34,464	$ 35,498	$ 36,563	$ 37,660	$ 38,790	**$ 313,042**	**$ 399,166**
Intergovernmental[4]	17,163	19,435	21,829	24,349	27,000	29,631	30,520	31,435	32,378	33,349	**267,089**	**336,892**
Charges for Services[4]	3,976	4,503	5,057	5,641	6,255	6,865	7,071	7,283	7,501	7,726	**61,878**	**78,050**
Miscellaneous/Reimbursements[4]	754	853	958	1,069	1,186	1,301	1,340	1,380	1,422	1,464	**11,727**	**14,792**
Revenue Total	**$ 42,374**	**$ 47,900**	**$ 53,720**	**$ 59,845**	**$ 66,257**	**$ 72,260**	**$ 74,428**	**$ 76,661**	**$ 78,961**	**$ 81,330**	**$ 653,736**	**$ 828,899**
EXPENDITURES												
Senior Citizens[16]	$ 39,785	$ 45,054	$ 50,603	$ 56,444	$ 62,591	$ 68,688	$ 70,749	$ 72,871	$ 75,057	$ 77,309	**$ 619,152**	**$ 780,965**
SURPLUS/DEFICIT	**$ 2,589**	**$ 2,846**	**$ 3,117**	**$ 3,401**	**$ 3,666**	**$ 3,572**	**$ 3,679**	**$ 3,790**	**$ 3,903**	**$ 4,021**	**$ 34,584**	**$ 47,934**
OTHER RESTRICTED SPECIAL REVENUE FUND												
REVENUE												
Ad Valorem[1]	$ 20,482	$ 23,109	$ 25,875	$ 28,786	$ 31,816	$ 34,464	$ 35,498	$ 36,563	$ 37,660	$ 38,790	**$ 313,042**	**$ 399,166**
Car Rental Fee[2]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Intergovernmental[4]	124,002	140,423	157,717	175,924	195,080	214,084	220,506	227,122	233,935	240,953	**1,929,746**	**2,434,077**
Charges for Services[4]	36,733	41,597	46,720	52,113	57,788	63,417	65,320	67,280	69,298	71,377	**571,643**	**721,040**
Fines and Forfeits[4]	28,613	32,402	36,393	40,594	45,014	49,400	50,882	52,408	53,980	55,600	**445,286**	**561,660**
Miscellaneous[2]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Revenue Total	**$ 209,829**	**$ 237,531**	**$ 266,706**	**$ 297,417**	**$ 329,698**	**$ 361,365**	**$ 372,206**	**$ 383,372**	**$ 394,873**	**$ 406,719**	**$ 3,259,717**	**$ 4,115,941**
EXPENDITURES												
General Government[17]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	**$ -**
Judicial[17]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Public Safety[17]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Public Works[17]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Welfare[17]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Culture and Recreation[17]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Intergovernmental[1/]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Expenditures Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
SURPLUS/DEFICIT	**$ 209,829**	**$ 237,531**	**$ 266,706**	**$ 297,417**	**$ 329,698**	**$ 361,365**	**$ 372,206**	**$ 383,372**	**$ 394,873**	**$ 406,719**	**$ 3,259,717**	**$ 4,115,941**
ROADS SPECIAL REVENUE FUND												
REVENUE												
Motor Vehicle Fuel Tax[4]	$ 100,769	$ 114,114	$ 128,168	$ 142,963	$ 158,531	$ 173,974	$ 179,193	$ 184,569	$ 190,106	$ 195,809	**$ 1,568,196**	**$ 1,978,037**
Charges for Services[4]	7,591	8,597	9,655	10,770	11,943	13,106	13,499	13,904	14,321	14,751	**118,138**	**149,013**
Miscellaneous[2]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Revenue Total	**$ 108,360**	**$ 122,710**	**$ 137,823**	**$ 153,733**	**$ 170,473**	**$ 187,080**	**$ 192,692**	**$ 198,473**	**$ 204,427**	**$ 210,560**	**$ 1,686,333**	**$ 2,127,049**

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	10-YEAR SUBTOTAL	ANALYSIS TOTAL
EXPENDITURES												
Public Works[18]	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	**$ -**
SURPLUS/DEFICIT	**$ 108,360**	**$ 122,710**	**$ 137,823**	**$ 153,733**	**$ 170,473**	**$ 187,080**	**$ 192,692**	**$ 198,473**	**$ 204,427**	**$ 210,560**	**$ 1,686,333**	**$ 2,127,049**
TRUCKEE MEADOWS FIRE PROTECTION DISTRICT												
REVENUE												
Property Tax-AB104[1]	$ 3,284	$ 3,705	$ 4,148	$ 4,615	$ 5,101	$ 5,525	$ 5,691	$ 5,862	$ 6,038	$ 6,219	**$ 50,186**	**$ 63,993**
Property Tax-General[1]	1,106,013	1,247,871	1,397,244	1,554,457	1,718,065	1,861,058	1,916,889	1,974,396	2,033,628	2,094,637	**16,904,256**	**21,554,938**
Sales Tax-AB104[5]	8,406	9,172	9,978	10,823	11,405	8,672	8,933	9,200	9,477	9,761	**95,826**	**145,966**
Remainder of AB104[7]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Sales Tax-CCRT[5]	49,570	54,091	58,839	63,823	67,257	51,142	52,676	54,256	55,884	57,560	**565,096**	**860,777**
Remainder of C-Tax[6]	54,319	61,512	69,088	77,063	85,455	93,780	96,593	99,491	102,476	105,550	**845,327**	**1,066,250**
Other Sources[2]	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Revenue Total	**$ 1,221,591**	**$ 1,376,351**	**$ 1,539,297**	**$ 1,710,780**	**$ 1,887,282**	**$ 2,020,176**	**$ 2,080,782**	**$ 2,143,205**	**$ 2,207,501**	**$ 2,273,726**	**$ 18,460,692**	**$ 23,691,925**
EXPENDITURES												
Fire Operations[19]	$ 1,142,420	$ 1,293,707	$ 1,453,043	$ 1,620,774	$ 1,797,262	$ 1,972,344	$ 2,031,514	$ 2,092,460	$ 2,155,233	$ 2,219,890	**$ 17,778,646**	**$ 22,425,018**
Expenditure Total	**$ 1,142,420**	**$ 1,293,707**	**$ 1,453,043**	**$ 1,620,774**	**$ 1,797,262**	**$ 1,972,344**	**$ 2,031,514**	**$ 2,092,460**	**$ 2,155,233**	**$ 2,219,890**	**$ 17,778,646**	**$ 22,425,018**
SURPLUS/DEFICIT	**$ 79,171**	**$ 82,644**	**$ 86,254**	**$ 90,006**	**$ 90,020**	**$ 47,833**	**$ 49,268**	**$ 50,746**	**$ 52,268**	**$ 53,836**	**$ 682,045**	**$ 1,266,906**

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

APPENDIX 3, ASSUMPTIONS:

Overall Assumption-Base Year

Unless otherwise noted, analysis uses estimated FY 2017-18 revenues and expenditures as the base year to estimate revenues and costs associated with the development. Source: Washoe County Budget, FY 2018-19.

Estimated Revenues

1 See Appendices 4A and 4B for real property tax revenue calculation. In the General Fund, revenue is divided among restricted and unrestricted sources as follows:

General Fund	Property Tax Rate	% of General Fund Revenue
General	1.0045	89.4%
Detention Facility	0.0774	6.9%
Indigent Insurance	0.0150	1.3%
China Springs	0.0074	0.7%
Family Court	0.0192	1.7%
Total	**1.1235**	**100.0%**

Source: Washoe County Budget, FY 2018-19.

2 It is expected that an increase in population will lead to an increase in these revenues. However, it is difficult to estimate how the development will impact these revenue sources as many of the sources are also impacted by other factors, such as area visitors, the analysis conservatively does not estimate revenue generated from these sources.

3 Business license, franchise fee, and liquor license revenues are based on business revenues and expenditures by project residents are expected to increase these revenues. Analysis assumes residents will impact 75% of these sources, with the remainder impacted by businesses and visitors. These revenues/services are also provided by Cities of Reno and Sparks. As a result, the analysis estimates project resident impacts on these revenue sources using the Average Cost Method (ACM) using only the unincorporated population rather than the entire Washoe County population. To use this method, revenues are calculated based on estimated FY 2017-18 Washoe County unincorporated per capita revenue, inflated **3%** annually and applied to estimated annual population generated by the residents of the development. Unincorporated per capita revenue is calculated by dividing estimated FY 2017-18 revenues for each source by Washoe County FY 2017-18 unincorporated population of **110,432** Source: Washoe County, City of Reno, and City of Sparks budgets, FY 2018-19.

4 These revenues are assumed to be directly related to population growth and are generated across the entire County, and are, therefore, estimated using the Average Cost Method (ACM) with total County population: Revenues are based on estimated FY 2017-18 Washoe County per capita revenue, inflated **3%** annually and applied to estimated annual population generated by the residents of the development. Per capita revenue is calculated by dividing estimated FY 2017-18 revenues for each source by Washoe County FY 2017-18 population of **448,316** Source: Washoe County Budget, FY 2018-19.

5 For calculation of BCCRT, SCCRT, and AB 104 sales tax revenue see Appendix 5.

6 In addition to CCRT revenue, Consolidated tax for the County includes revenue from Real Property Transfer Tax, GST (MVPT), Cigarette and Liquor taxes. A per capita methodology as explained in footnote 4 is applied to estimate this revenue. Washoe County revenues from GST, Cigarette and Liquor Tax (analysis conservatively does not include RPTT as it is not a recurring revenue) totaled **$ 32,931,007** in FY 2017-18. The County is estimated to receive **51.05%** of all County C-tax revenue (see Appendix 5). As a result, the County's portion of GST, Cigarette and Liquor Tax revenue is estimated at **$ 16,812,065** which is used to estimate development impacts using the methodology in footnote 4. Source: Nevada Department of Taxation. "Consolidated Tax Distribution FY 2017-18."
The Truckee Meadows Fire District is estimated to receive **3.86%** of all County C-tax revenue. As a result, the Fire District's portion of GST, Cigarette and Liquor Tax revenue is estimated at **$ 1,271,785** used to estimate development impacts using the methodology in footnote 4 using population estimates for the TMFPD instead of Washoe County population. Source: Nevada Department of Taxation, "Consolidated Tax Distribution FY 2017-18."

7 In addition to sales tax revenue, AB 104 revenue for the County includes revenue from property, gaming, and RPTT taxes and interest. Analysis is conservative in not estimating gaming, RPTT, and interest revenue. Property tax revenue is estimated in Appendix 4A and 4B and shown elsewhere in the report.

Estimated Costs

8 Some departments provide services to residents of the unincorporated Washoe County, rather than the geographic County region. Costs associated with these departments are estimated using the Average Cost Method (ACM) using only the unincorporated population rather than the entire Washoe County population. To use this method, costs are based on estimated FY 2017-18 Washoe County unincorporated per capita cost, inflated **3%** annually and applied to estimated annual population generated by the residents of the development. For County Commissioners, costs are estimated to 50% of department budget. Source: Washoe County budget, FY 2018-19.

9 Administration services (indirect) costs assumed to be impacted by the development are calculated at **12.1%** of all direct service costs. Percent indirect costs of direct costs for FY 2017-18. Source: Washoe County Budget, FY 2018-19. County Manager office costs are estimated at 75% of budgeted amount.

10 ACM: Expenditures are calculated based on estimated FY 2017-18 Washoe County per capita expenditures inflated **3%** annually and applied to estimated annual population of the development. Per capita cost is calculated by dividing FY 2017-18 expenditures for each source by Washoe County FY 2017-18 population. Source: Washoe County Budget FY 2018-19.

11 As the impact of the development on these expenditures is difficult to estimate, the analysis does not estimate costs associated with these expenditures. Alternately, no costs associated with the project are expected to occur.

12 See Appendix 6 for calculation of Operations and Detention costs.
Administration costs are estimated at **9.4%** of Operations and Detention costs using the average costs for these activities between FY 2016-17 and FY 2018-19. Source: Washoe County Budget FY 2018-19.

13 The amount of the expenditure is the same as the revenue estimated to be generated by the ad valorem rate for this source.

14 Other Funds: Only operating funds supported by Ad Valorem revenue or directly impacted by the development are included in this analysis. Capital Facilities and Debt Services Funds are not included, as the impact of the

APPENDIX 3-SCENARIO 3
WASHOE COUNTY
COMPARISON OF ESTIMATED REVENUE TO ESTIMATED COSTS

development on these funds is difficult to estimate, though property tax revenues for these funds are estimated in Appendix 4A.

15 The project is unlikely to generate a significant number of indigent population in the region. As a result, costs for this fund associated with the project are expected to be minimal.

16 Senior Services Fund provides various services, including Nutrition, Adult Day Care, Social Services, and more. Analysis expects project will generate need for service at a reduced rate compared to the overall County, as a result, costs are estimated at 75% of budgeted costs.

17 The impact of the project on these discretionary costs is difficult to estimate.

18 Information about roads added by the project is unavailable at this point of the project and are difficult to estimate.

19 Costs associated with the Truckee Meadows Fire Protection District are estimated using the ACM with FY 2017-18 expenditures for the TMFPD divided by the population with the TMFPD service area, applied to the estimated population of the project. Source: Truckee Meadows Fire Protection District budget, FY 2018-19.

APPENDIX 4A-SCENARIO 3
WASHOE COUNTY
ESTIMATED REAL PROPERTY TAX REVENUE

YEAR	USE TYPE	TAXABLE LAND VALUE	TAXABLE IMPROVE. VALUE	CUMULATIVE ASSESSED LAND VALUE	CUMULATIVE ASSESSED IMPROVE. VALUE	WASHOE COUNTY GENERAL FUND	AB104	LIBRARY EXPANS.	ANIMAL SERVICES	INDIGENT TAX LEVY	CHILD PROTECT.	SENIOR SERVICES	OTHER SPECIAL	CAPITAL FACILITIES	DEBT SERVICE
2021	Single Family	$ 5,964,256	$ 36,718,173	$ 2,087,490	$ 12,851,361	$ 23,453	$ 380	$ 417	$ 626	$ 1,252	$ 835	$ 209	$ 209	$ 1,044	$ 438
	Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Open Space	1,323,064	-	463,072	-	5,203	84	93	139	278	185	46	46	232	97
Subtotal		**7,287,320**	**36,718,173**	**2,550,562**	**12,851,361**	**28,656**	**464**	**510**	**765**	**1,530**	**1,020**	**255**	**255**	**1,275**	**536**
2022	Single Family	8,015,153	35,814,127	4,955,418	25,771,846	200,059	3,240	3,561	5,342	10,684	7,123	1,781	1,781	8,903	3,739
	Retail	866,934	4,868,099	303,427	1,703,835	3,409	55	61	91	182	121	30	30	152	64
	Open Space	-	-	476,965	-	5,359	87	95	143	286	191	48	48	238	100
Subtotal		**8,882,087**	**40,682,226**	**5,735,809**	**27,475,681**	**208,827**	**3,382**	**3,717**	**5,576**	**11,152**	**7,435**	**1,859**	**1,859**	**9,294**	**3,903**
2023	Single Family	8,255,607	36,888,551	7,993,543	39,455,994	379,354	6,144	6,753	10,130	20,259	13,506	3,377	3,377	16,883	7,091
	Retail	892,942	5,014,142	625,059	3,509,899	26,165	424	466	699	1,397	932	233	233	1,164	489
	Open Space	-	-	491,273	-	5,519	89	98	147	295	197	49	49	246	103
Subtotal		**9,148,549**	**41,902,693**	**9,109,875**	**42,965,894**	**411,039**	**6,657**	**7,317**	**10,976**	**21,951**	**14,634**	**3,659**	**3,659**	**18,293**	**7,683**
2024	Single Family	8,503,275	37,995,208	11,209,495	53,937,997	569,227	9,219	10,133	15,200	30,399	20,266	5,067	5,067	25,333	10,640
	Retail	-	-	643,811	3,615,196	46,667	756	831	1,246	2,492	1,661	415	415	2,077	872
	Open Space	-	-	506,012	-	5,685	92	101	152	304	202	51	51	253	106
Subtotal		**8,503,275**	**37,995,208**	**12,359,318**	**57,553,193**	**621,579**	**10,066**	**11,065**	**16,598**	**33,195**	**22,130**	**5,533**	**5,533**	**27,663**	**11,618**
2025	Single Family	8,758,374	39,135,064	14,611,211	69,253,409	770,150	12,473	13,710	20,565	41,130	27,420	6,855	6,855	34,275	14,395
	Retail	-	-	663,126	3,723,652	48,067	778	856	1,283	2,567	1,711	428	428	2,139	898
	Open Space	-	-	521,192	-	5,856	95	104	156	313	208	52	52	261	109
Subtotal		**8,758,374**	**39,135,064**	**15,795,528**	**72,977,061**	**824,073**	**13,346**	**14,670**	**22,005**	**44,009**	**29,339**	**7,335**	**7,335**	**36,674**	**15,403**
2026	Single Family	9,021,125	40,309,116	18,206,941	85,439,202	982,617	15,913	17,492	26,238	52,476	34,984	8,746	8,746	43,730	18,367
	Retail	-	-	683,019	3,835,362	49,509	802	881	1,322	2,644	1,763	441	441	2,203	925
	Open Space	-	-	536,828	-	6,031	98	107	161	322	215	54	54	268	113
Subtotal		**9,021,125**	**40,309,116**	**19,426,788**	**89,274,564**	**1,038,157**	**16,813**	**18,481**	**27,721**	**55,442**	**36,962**	**9,240**	**9,240**	**46,202**	**19,405**
2027	Single Family	9,291,759	41,518,389	22,005,265	102,533,815	1,207,139	19,549	21,489	32,233	64,467	42,978	10,744	10,744	53,722	22,563
	Retail	-	-	703,510	3,950,422	50,994	826	908	1,362	2,723	1,816	454	454	2,269	953
	Open Space	-	-	552,933	-	6,212	101	111	166	332	221	55	55	276	116
Subtotal		**9,291,759**	**41,518,389**	**23,261,707**	**106,484,237**	**1,264,345**	**20,476**	**22,507**	**33,761**	**67,522**	**45,015**	**11,254**	**11,254**	**56,268**	**23,633**
2028	Single Family	9,570,511	42,763,941	26,015,102	120,577,208	1,444,247	23,389	25,710	38,565	77,129	51,420	12,855	12,855	64,274	26,995
	Retail	-	-	724,615	4,068,935	52,524	851	935	1,403	2,805	1,870	468	468	2,338	982
	Open Space	-	-	569,521	-	6,399	104	114	171	342	228	57	57	285	120
Subtotal		**9,570,511**	**42,763,941**	**27,309,237**	**124,646,143**	**1,503,170**	**24,344**	**26,759**	**40,138**	**80,276**	**53,517**	**13,379**	**13,379**	**66,897**	**28,097**
2029	Single Family	9,857,627	44,046,859	30,245,724	139,610,925	1,694,496	27,442	30,165	45,247	90,494	60,329	15,082	15,082	75,411	31,673
	Retail	-	-	746,354	4,191,003	54,100	876	963	1,445	2,889	1,926	482	482	2,408	1,011
	Open Space	-	-	586,606	-	6,591	107	117	176	352	235	59	59	293	123
Subtotal		**9,857,627**	**44,046,859**	**31,578,684**	**143,801,929**	**1,755,186**	**28,425**	**31,245**	**46,867**	**93,735**	**62,490**	**15,622**	**15,622**	**78,112**	**32,807**

APPENDIX 4A-SCENARIO 3
WASHOE COUNTY
ESTIMATED REAL PROPERTY TAX REVENUE

YEAR	USE TYPE	TAXABLE LAND VALUE	TAXABLE IMPROVE. VALUE	CUMULATIVE ASSESSED LAND VALUE	CUMULATIVE ASSESSED IMPROVE. VALUE	WASHOE COUNTY GENERAL FUND	AB104	LIBRARY EXPANS.	ANIMAL SERVICES	INDIGENT TAX LEVY	CHILD PROTECT.	SENIOR SERVICES	OTHER SPECIAL	CAPITAL FACILITIES	DEBT SERVICE
2030	Single Family	10,153,355	45,368,265	34,706,770	159,678,146	1,958,459	31,717	34,864	52,295	104,591	69,727	17,432	17,432	87,159	36,607
	Retail	-	-	768,744	4,316,733	55,723	902	992	1,488	2,976	1,984	496	496	2,480	1,042
	Open Space	-	-	604,204	-	6,788	110	121	181	363	242	60	60	302	127
Subtotal		**10,153,355**	**45,368,265**	**36,079,719**	**163,994,879**	**2,020,970**	**32,729**	**35,976**	**53,964**	**107,929**	**71,953**	**17,988**	**17,988**	**89,941**	**37,775**
2031	Single Family	10,457,956	46,729,313	39,408,258	180,823,750	2,236,736	36,224	39,817	59,726	119,452	79,635	19,909	19,909	99,543	41,808
	Retail	-	-	791,807	4,446,235	57,394	929	1,022	1,533	3,065	2,043	511	511	2,554	1,073
	Open Space	-	-	622,331	-	6,992	113	124	187	373	249	62	62	311	131
Subtotal		**10,457,956**	**46,729,313**	**40,822,395**	**185,269,985**	**2,301,122**	**37,266**	**40,963**	**61,445**	**122,890**	**81,927**	**20,482**	**20,482**	**102,409**	**43,012**
2032	Single Family	10,771,695	48,131,192	44,360,599	203,094,380	2,529,946	40,972	45,037	67,555	135,111	90,074	22,518	22,518	112,592	47,289
	Retail	-	-	815,561	4,579,622	59,116	957	1,052	1,579	3,157	2,105	526	526	2,631	1,105
	Open Space	-	-	641,000	-	7,202	117	128	192	385	256	64	64	321	135
Subtotal		**10,771,695**	**48,131,192**	**45,817,160**	**207,674,002**	**2,596,264**	**42,046**	**46,217**	**69,326**	**138,652**	**92,435**	**23,109**	**23,109**	**115,544**	**48,528**
2033	Single Family	11,094,846	49,575,128	49,574,613	226,538,506	2,838,736	45,973	50,534	75,801	151,601	101,068	25,267	25,267	126,334	53,060
	Retail	-	-	840,028	4,717,011	60,890	986	1,084	1,626	3,252	2,168	542	542	2,710	1,138
	Open Space	-	-	660,230	-	7,418	120	132	198	396	264	66	66	330	139
Subtotal		**11,094,846**	**49,575,128**	**51,074,871**	**231,255,517**	**2,907,044**	**47,079**	**51,750**	**77,625**	**155,249**	**103,500**	**25,875**	**25,875**	**129,374**	**54,337**
2034	Single Family	11,427,691	51,062,382	55,061,543	251,206,495	3,163,777	51,237	56,320	84,480	168,960	112,640	28,160	28,160	140,800	59,136
	Retail	-	-	865,228	4,858,521	62,716	1,016	1,116	1,675	3,349	2,233	558	558	2,791	1,172
	Open Space	-	-	680,037	-	7,640	124	136	204	408	272	68	68	340	143
Subtotal		**11,427,691**	**51,062,382**	**56,606,809**	**256,065,016**	**3,234,133**	**52,376**	**57,572**	**86,359**	**172,717**	**115,145**	**28,786**	**28,786**	**143,931**	**60,451**
2035	Single Family	10,828,880	48,386,713	60,503,497	275,678,039	3,502,062	56,716	62,342	93,513	187,026	124,684	31,171	31,171	155,855	65,459
	Retail	-	-	891,185	5,004,277	64,598	1,046	1,150	1,725	3,450	2,300	575	575	2,875	1,207
	Open Space	-	-	700,439	-	7,869	127	140	210	420	280	70	70	350	147
Subtotal		**10,828,880**	**48,386,713**	**62,095,121**	**280,682,316**	**3,574,529**	**57,889**	**63,632**	**95,448**	**190,896**	**127,264**	**31,816**	**31,816**	**159,080**	**66,814**
2036	Single Family	-	-	62,318,602	283,948,381	3,797,392	61,498	67,599	101,399	202,798	135,199	33,800	33,800	168,998	70,979
	Retail	-	-	917,921	5,154,405	66,536	1,078	1,184	1,777	3,553	2,369	592	592	2,961	1,244
	Open Space	-	-	721,452	-	8,106	131	144	216	433	289	72	72	361	152
Subtotal		**-**	**-**	**63,957,974**	**289,102,786**	**3,872,034**	**62,707**	**68,928**	**103,392**	**206,784**	**137,856**	**34,464**	**34,464**	**172,320**	**72,374**
2037	Single Family	-	-	64,188,160	292,466,832	3,911,314	63,343	69,627	104,441	208,882	139,255	34,814	34,814	174,068	73,109
	Retail	-	-	945,458	5,309,038	68,532	1,110	1,220	1,830	3,660	2,440	610	610	3,050	1,281
	Open Space	-	-	743,095	-	8,349	135	149	223	446	297	74	74	372	156
Subtotal		**-**	**-**	**65,876,714**	**297,775,869**	**3,988,195**	**64,588**	**70,996**	**106,494**	**212,988**	**141,992**	**35,498**	**35,498**	**177,490**	**74,546**
2038	Single Family	-	-	66,113,805	301,240,837	4,028,653	65,244	71,716	107,574	215,148	143,432	35,858	35,858	179,290	75,302
	Retail	-	-	973,822	5,468,309	70,588	1,143	1,257	1,885	3,770	2,513	628	628	3,141	1,319
	Open Space	-	-	765,388	-	8,599	139	153	230	459	306	77	77	383	161
Subtotal		**-**	**-**	**67,853,015**	**306,709,146**	**4,107,841**	**66,526**	**73,126**	**109,689**	**219,377**	**146,252**	**36,563**	**36,563**	**182,814**	**76,782**

APPENDIX 4A-SCENARIO 3
WASHOE COUNTY
ESTIMATED REAL PROPERTY TAX REVENUE

YEAR	USE TYPE	TAXABLE LAND VALUE	TAXABLE IMPROVE. VALUE	CUMULATIVE ASSESSED LAND VALUE	CUMULATIVE ASSESSED IMPROVE. VALUE	WASHOE COUNTY GENERAL FUND	AB104	LIBRARY EXPANS.	ANIMAL SERVICES	INDIGENT TAX LEVY	CHILD PROTECT.	SENIOR SERVICES	OTHER SPECIAL	CAPITAL FACILITIES	DEBT SERVICE
2039	Single Family	-	-	68,097,219	310,278,062	4,149,513	67,201	73,868	110,801	221,603	147,735	36,934	36,934	184,669	77,561
	Retail	-	-	1,003,037	5,632,358	72,706	1,177	1,294	1,941	3,883	2,589	647	647	3,236	1,359
	Open Space	-	-	788,350	-	8,857	143	158	237	473	315	79	79	394	166
Subtotal		**-**	**-**	**69,888,606**	**315,910,420**	**4,231,076**	**68,522**	**75,320**	**112,979**	**225,959**	**150,639**	**37,660**	**37,660**	**188,299**	**79,086**
2040	Single Family	-	-	70,140,136	319,586,404	4,273,998	69,217	76,084	114,125	228,251	152,167	38,042	38,042	190,209	79,888
	Retail	-	-	1,033,128	5,801,329	74,887	1,213	1,333	2,000	3,999	2,666	667	667	3,333	1,400
	Open Space	-	-	812,000	-	9,123	148	162	244	487	325	81	81	406	171
Subtotal		**-**	**-**	**71,985,264**	**325,387,733**	**4,358,008**	**70,578**	**77,579**	**116,369**	**232,737**	**155,158**	**38,790**	**38,790**	**193,948**	**81,458**
TOTAL		**$ 145,055,049**	**$ 654,324,664**			**$ 44,846,246**	**$ 726,281**	**$ 798,331**	**$ 1,197,497**	**$ 2,394,993**	**$ 1,596,662**	**$ 399,166**	**$ 399,166**	**$ 1,995,828**	**$ 838,248**

APPENDIX 4A-B, ASSUMPTIONS:

1. As the project's parcels currently generate property tax revenue for the County, the existing FY 2018-19 taxable value of the parcels in the Project of

Taxable Land	Taxable Improve.	Total
$ 2,253,221	$ -	**$ 2,253,221**

is subtracted from Taxable Land and Improvement Values estimated in Appendix 1 in the first year of the project. Source: Washoe County Assessor.

2. Assessed land and improvement values are estimating by adjusting taxable values by 35%.

3. Cumulative assessed value for previous year's construction is increased by **3.0%** per year.

4. Improvement values are estimated to generate property tax revenue starting the year following construction to account for work in progress.

5. Operating tax rate is assumed to remain constant at FY 2018-19 amount:

Fund	Rate	
General Fund	$ 1.1235	
AB104	0.0272	Washoe County receives **66.9%** and Truckee Meadows Fire Protection District receives **5.89%**
Library Expansion	0.0200	Libraries rate expires FY 2024-25, analysis assumes the rate will continue through the analysis period
Animal Services	0.0300	Animal Shelter rate expires FY 2032-33, analysis assumes the rate will continue through the analysis period
Indigent Tax Levy	0.0600	
Child Protective Services	0.0400	
Senior Services	0.0100	
Other Restricted Special Rev.	0.0100	
Capital Facilities	0.0500	
Debt	0.0210	
	$ 1.3917	Source: Washoe County Budget, FY 2018-19.
TM Fire Protection	**$ 0.5400**	Source: Truckee Meadows Fire Protection District, FY 2018-19.

APPENDIX 4B-SCENARIO 3
TRUCKEE MEADOWS FIRE PROTECTION DISTRICT
ESTIMATED REAL PROPERTY TAX REVENUE

YEAR	USE TYPE	TAXABLE LAND VALUE	TAXABLE IMPROVE. VALUE	CUMULATIVE ASSESSED LAND VALUE	CUMULATIVE ASSESSED IMPROVE. VALUE	TM FIRE DISTRICT GENERAL FUND	TM FIRE DISTRICT AB104
2021	Single Family	$ 5,964,256	$ 36,718,173	$ 2,087,490	$ 12,851,361	$ 11,272	$ 33
	Retail	-	-	-	-	-	-
	Open Space	1,323,064	-	463,072	-	2,501	7
Subtotal		**7,287,320**	**36,718,173**	**2,550,562**	**12,851,361**	**13,773**	**41**
2022	Single Family	8,015,153	35,814,127	4,955,418	25,771,846	96,157	285
	Retail	866,934	4,868,099	303,427	1,703,835	1,639	5
	Open Space	-	-	476,965	-	2,576	8
Subtotal		**8,882,087**	**40,682,226**	**5,735,809**	**27,475,681**	**100,371**	**298**
2023	Single Family	8,255,607	36,888,551	7,993,543	39,455,994	182,333	541
	Retail	892,942	5,014,142	625,059	3,509,899	12,576	37
	Open Space	-	-	491,273	-	2,653	8
Subtotal		**9,148,549**	**41,902,693**	**9,109,875**	**42,965,894**	**197,562**	**587**
2024	Single Family	8,503,275	37,995,208	11,209,495	53,937,997	273,594	812
	Retail	-	-	643,811	3,615,196	22,430	67
	Open Space	-	-	506,012	-	2,732	8
Subtotal		**8,503,275**	**37,995,208**	**12,359,318**	**57,553,193**	**298,756**	**887**
2025	Single Family	8,758,374	39,135,064	14,611,211	69,253,409	370,166	1,099
	Retail	-	-	663,126	3,723,652	23,103	69
	Open Space	-	-	521,192	-	2,814	8
Subtotal		**8,758,374**	**39,135,064**	**15,795,528**	**72,977,061**	**396,083**	**1,176**
2026	Single Family	9,021,125	40,309,116	18,206,941	85,439,202	472,286	1,402
	Retail	-	-	683,019	3,835,362	23,796	71
	Open Space	-	-	536,828	-	2,899	9
Subtotal		**9,021,125**	**40,309,116**	**19,426,788**	**89,274,564**	**498,981**	**1,481**
2027	Single Family	9,291,759	41,518,389	22,005,265	102,533,815	580,200	1,723
	Retail	-	-	703,510	3,950,422	24,510	73
	Open Space	-	-	552,933	-	2,986	9
Subtotal		**9,291,759**	**41,518,389**	**23,261,707**	**106,484,237**	**607,696**	**1,804**
2028	Single Family	9,570,511	42,763,941	26,015,102	120,577,208	694,164	2,061
	Retail	-	-	724,615	4,068,935	25,245	75
	Open Space	-	-	569,521	-	3,075	9
Subtotal		**9,570,511**	**42,763,941**	**27,309,237**	**124,646,143**	**722,485**	**2,145**
2029	Single Family	9,857,627	44,046,859	30,245,724	139,610,925	814,444	2,418
	Retail	-	-	746,354	4,191,003	26,003	77
	Open Space	-	-	586,606	-	3,168	9
Subtotal		**9,857,627**	**44,046,859**	**31,578,684**	**143,801,929**	**843,614**	**2,505**
2030	Single Family	10,153,355	45,368,265	34,706,770	159,678,146	941,316	2,795
	Retail	-	-	768,744	4,316,733	26,783	80
	Open Space	-	-	604,204	-	3,263	10
Subtotal		**10,153,355**	**45,368,265**	**36,079,719**	**163,994,879**	**971,361**	**2,884**
2031	Single Family	10,457,956	46,729,313	39,408,258	180,823,750	1,075,067	3,192
	Retail	-	-	791,807	4,446,235	27,586	82
	Open Space	-	-	622,331	-	3,361	10
Subtotal		**10,457,956**	**46,729,313**	**40,822,395**	**185,269,985**	**1,106,013**	**3,284**
2032	Single Family	10,771,695	48,131,192	44,360,599	203,094,380	1,215,995	3,610
	Retail	-	-	815,561	4,579,622	28,414	84
	Open Space	-	-	641,000	-	3,461	10
Subtotal		**10,771,695**	**48,131,192**	**45,817,160**	**207,674,002**	**1,247,871**	**3,705**
2033	Single Family	11,094,846	49,575,128	49,574,613	226,538,506	1,364,413	4,051
	Retail	-	-	840,028	4,717,011	29,266	87
	Open Space	-	-	660,230	-	3,565	11
Subtotal		**11,094,846**	**49,575,128**	**51,074,871**	**231,255,517**	**1,397,244**	**4,148**

APPENDIX 4B-SCENARIO 3
TRUCKEE MEADOWS FIRE PROTECTION DISTRICT
ESTIMATED REAL PROPERTY TAX REVENUE

YEAR	USE TYPE	TAXABLE LAND VALUE	TAXABLE IMPROVE. VALUE	CUMULATIVE ASSESSED LAND VALUE	CUMULATIVE ASSESSED IMPROVE. VALUE	TM FIRE DISTRICT GENERAL FUND	TM FIRE DISTRICT AB104
2034	Single Family	11,427,691	51,062,382	55,061,543	251,206,495	1,520,640	4,515
	Retail	-	-	865,228	4,858,521	30,144	89
	Open Space	-	-	680,037	-	3,672	11
Subtotal		**11,427,691**	**51,062,382**	**56,606,809**	**256,065,016**	**1,554,457**	**4,615**
2035	Single Family	10,828,880	48,386,713	60,503,497	275,678,039	1,683,234	4,997
	Retail	-	-	891,185	5,004,277	31,048	92
	Open Space	-	-	700,439	-	3,782	11
Subtotal		**10,828,880**	**48,386,713**	**62,095,121**	**280,682,316**	**1,718,065**	**5,101**
2036	Single Family	-	-	62,318,602	283,948,381	1,825,182	5,419
	Retail	-	-	917,921	5,154,405	31,980	95
	Open Space	-	-	721,452	-	3,896	12
Subtotal		**-**	**-**	**63,957,974**	**289,102,786**	**1,861,058**	**5,525**
2037	Single Family	-	-	64,188,160	292,466,832	1,879,937	5,581
	Retail	-	-	945,458	5,309,038	32,939	98
	Open Space	-	-	743,095	-	4,013	12
Subtotal		**-**	**-**	**65,876,714**	**297,775,869**	**1,916,889**	**5,691**
2038	Single Family	-	-	66,113,805	301,240,837	1,936,335	5,749
	Retail	-	-	973,822	5,468,309	33,927	101
	Open Space	-	-	765,388	-	4,133	12
Subtotal		**-**	**-**	**67,853,015**	**306,709,146**	**1,974,396**	**5,862**
2039	Single Family	-	-	68,097,219	310,278,062	1,994,426	5,921
	Retail	-	-	1,003,037	5,632,358	34,945	104
	Open Space	-	-	788,350	-	4,257	13
Subtotal		**-**	**-**	**69,888,606**	**315,910,420**	**2,033,628**	**6,038**
2040	Single Family	-	-	70,140,136	319,586,404	2,054,258	6,099
	Retail	-	-	1,033,128	5,801,329	35,994	107
	Open Space	-	-	812,000	-	4,385	13
Subtotal		**-**	**-**	**71,985,264**	**325,387,733**	**2,094,637**	**6,219**
TOTAL		**$ 145,055,049**	**$ 654,324,664**			**$ 21,554,938**	**$ 63,993**

APPENDIX 5-SCENARIO 3
WASHOE COUNTY
ESTIMATED SALES TAX REVENUE

YEAR	USE TYPE	CUMULATIVE # OF OCCUP. HOUSEHOLDS	CONSTR. MATERIALS PURCHASES	HOUSEHOLD TAXABLE SALES	TOTAL TAXABLE SALES	WASHOE COUNTY CCRT TAX REVENUE	WASHOE COUNTY AB 104 TAX REVENUE	WASHOE COUNTY PUBLIC MASS TRANSPORT.	WASHOE COUNTY RAILROAD GRADE	WASHOE COUNTY INFRAST-RUCTURE	TM FIRE DISTRICT CCRT TAX REVENUE	TM FIRE DISTRICT AB 104 TAX REVENUE
2021	Single Family	-	$ 18,359,087	$ -	$ 18,359,087	$ 207,196	$ 30,165	$ 67,642	$ 22,547	$ 22,547	$ 15,674	$ 2,658
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**-**	**18,359,087**	**-**	**18,359,087**	**207,196**	**30,165**	**67,642**	**22,547**	**22,547**	**15,674**	**2,658**
2022	Single Family	127	17,907,064	2,792,532	20,699,596	233,611	34,011	76,265	25,422	25,422	17,672	2,997
	Retail	-	2,434,049	-	2,434,049	27,470	3,999	8,968	2,989	2,989	2,078	352
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**127**	**20,341,113**	**2,792,532**	**23,133,645**	**261,081**	**38,010**	**85,233**	**28,411**	**28,411**	**19,750**	**3,349**
2023	Single Family	248	18,444,276	5,600,084	24,044,360	271,359	39,506	88,588	29,529	29,529	20,528	3,481
	Retail	-	2,507,071	-	2,507,071	28,294	4,119	9,237	3,079	3,079	2,140	363
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**248**	**20,951,346**	**5,600,084**	**26,551,431**	**299,653**	**43,626**	**97,825**	**32,608**	**32,608**	**22,668**	**3,844**
2024	Single Family	369	18,997,604	8,573,576	27,571,180	311,162	45,301	101,583	33,861	33,861	23,539	3,992
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**369**	**18,997,604**	**8,573,576**	**27,571,180**	**311,162**	**45,301**	**101,583**	**33,861**	**33,861**	**23,539**	**3,992**
2025	Single Family	489	19,567,532	11,720,438	31,287,970	353,109	51,408	115,277	38,426	38,426	26,712	4,530
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**489**	**19,567,532**	**11,720,438**	**31,287,970**	**353,109**	**51,408**	**115,277**	**38,426**	**38,426**	**26,712**	**4,530**
2026	Single Family	610	20,154,558	15,048,395	35,202,953	397,292	57,841	129,701	43,234	43,234	30,054	5,096
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**610**	**20,154,558**	**15,048,395**	**35,202,953**	**397,292**	**57,841**	**129,701**	**43,234**	**43,234**	**30,054**	**5,096**
2027	Single Family	731	20,759,195	18,565,481	39,324,676	443,809	64,613	144,887	48,296	48,296	33,573	5,693
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**731**	**20,759,195**	**18,565,481**	**39,324,676**	**443,809**	**64,613**	**144,887**	**48,296**	**48,296**	**33,573**	**5,693**
2028	Single Family	851	21,381,971	22,280,049	43,662,019	492,759	71,740	160,867	53,622	53,622	37,276	6,321
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**851**	**21,381,971**	**22,280,049**	**43,662,019**	**492,759**	**71,740**	**160,867**	**53,622**	**53,622**	**37,276**	**6,321**
2029	Single Family	972	22,023,430	26,200,782	48,224,211	544,247	79,236	177,676	59,225	59,225	41,171	6,982
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**972**	**22,023,430**	**26,200,782**	**48,224,211**	**544,247**	**79,236**	**177,676**	**59,225**	**59,225**	**41,171**	**6,982**

APPENDIX 5-SCENARIO 3
WASHOE COUNTY
ESTIMATED SALES TAX REVENUE

YEAR	USE TYPE	CUMULATIVE # OF OCCUP. HOUSEHOLDS	CONSTR. MATERIALS PURCHASES	HOUSEHOLD TAXABLE SALES	TOTAL TAXABLE SALES	WASHOE COUNTY CCRT TAX REVENUE	WASHOE COUNTY AB 104 TAX REVENUE	WASHOE COUNTY PUBLIC MASS TRANSPORT.	WASHOE COUNTY RAILROAD GRADE	WASHOE COUNTY INFRAST-RUCTURE	TM FIRE DISTRICT CCRT TAX REVENUE	TM FIRE DISTRICT AB 104 TAX REVENUE
2030	Single Family	1,092	22,684,133	30,336,706	53,020,839	598,381	87,117	195,349	65,116	65,116	45,266	7,676
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**1,092**	**22,684,133**	**30,336,706**	**53,020,839**	**598,381**	**87,117**	**195,349**	**65,116**	**65,116**	**45,266**	**7,676**
2031	Single Family	1,213	23,364,657	34,697,206	58,061,863	655,273	95,399	213,922	71,307	71,307	49,570	8,406
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**1,213**	**23,364,657**	**34,697,206**	**58,061,863**	**655,273**	**95,399**	**213,922**	**71,307**	**71,307**	**49,570**	**8,406**
2032	Single Family	1,334	24,065,596	39,292,033	63,357,629	715,040	104,101	233,433	77,811	77,811	54,091	9,172
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**1,334**	**24,065,596**	**39,292,033**	**63,357,629**	**715,040**	**104,101**	**233,433**	**77,811**	**77,811**	**54,091**	**9,172**
2033	Single Family	1,454	24,787,564	44,131,321	68,918,885	777,803	113,238	253,923	84,641	84,641	58,839	9,978
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**1,454**	**24,787,564**	**44,131,321**	**68,918,885**	**777,803**	**113,238**	**253,923**	**84,641**	**84,641**	**58,839**	**9,978**
2034	Single Family	1,575	25,531,191	49,225,604	74,756,795	843,688	122,830	275,432	91,811	91,811	63,823	10,823
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**1,575**	**25,531,191**	**49,225,604**	**74,756,795**	**843,688**	**122,830**	**275,432**	**91,811**	**91,811**	**63,823**	**10,823**
2035	Single Family	1,696	24,193,357	54,585,826	78,779,183	889,084	129,439	290,252	96,751	96,751	67,257	11,405
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**1,696**	**24,193,357**	**54,585,826**	**78,779,183**	**889,084**	**129,439**	**290,252**	**96,751**	**96,751**	**67,257**	**11,405**
2036	Single Family	1,806	-	59,903,362	59,903,362	676,055	98,425	220,706	73,569	73,569	51,142	8,672
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**1,806**	**-**	**59,903,362**	**59,903,362**	**676,055**	**98,425**	**220,706**	**73,569**	**73,569**	**51,142**	**8,672**
2037	Single Family	1,806	-	61,700,463	61,700,463	696,337	101,378	227,328	75,776	75,776	52,676	8,933
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**1,806**	**-**	**61,700,463**	**61,700,463**	**696,337**	**101,378**	**227,328**	**75,776**	**75,776**	**52,676**	**8,933**
2038	Single Family	1,806	-	63,551,476	63,551,476	717,227	104,419	234,147	78,049	78,049	54,256	9,200
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**1,806**	**-**	**63,551,476**	**63,551,476**	**717,227**	**104,419**	**234,147**	**78,049**	**78,049**	**54,256**	**9,200**

APPENDIX 5-SCENARIO 3
WASHOE COUNTY
ESTIMATED SALES TAX REVENUE

YEAR	USE TYPE	CUMULATIVE # OF OCCUP. HOUSEHOLDS	CONSTR. MATERIALS PURCHASES	HOUSEHOLD TAXABLE SALES	TOTAL TAXABLE SALES	WASHOE COUNTY CCRT TAX REVENUE	WASHOE COUNTY AB 104 TAX REVENUE	WASHOE COUNTY PUBLIC MASS TRANSPORT.	WASHOE COUNTY RAILROAD GRADE	WASHOE COUNTY INFRAST-RUCTURE	TM FIRE DISTRICT CCRT TAX REVENUE	TM FIRE DISTRICT AB 104 TAX REVENUE
2039	Single Family	1,806	-	65,458,021	65,458,021	738,744	107,552	241,172	80,391	80,391	55,884	9,477
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**1,806**	**-**	**65,458,021**	**65,458,021**	**738,744**	**107,552**	**241,172**	**80,391**	**80,391**	**55,884**	**9,477**
2040	Single Family	1,806	-	67,421,761	67,421,761	760,906	110,778	248,407	82,802	82,802	57,560	9,761
	Retail	-	-	-	-	-	-	-	-	-	-	-
	Open Space	-	-	-	-	-	-	-	-	-	-	-
Subtotal		**1,806**	**-**	**67,421,761**	**67,421,761**	**760,906**	**110,778**	**248,407**	**82,802**	**82,802**	**57,560**	**9,761**
TOTAL			**$ 327,162,332**	**$ 681,085,116**	**$ 1,008,247,448**	**$ 11,378,847**	**$ 1,656,618**	**$ 3,714,762**	**$ 1,238,254**	**$ 1,238,254**	**$ 860,777**	**$ 145,966**

APPENDIX 5, ASSUMPTIONS:

1. Sales tax rates applicable to Washoe County are as follows:
   - 0.500% Basic City County Relief Tax (BCCRT)
   - 1.750% Supplemental City County Relief Tax (SCCRT)
   - 0.250% Fair Share (AB 104)
   - 0.375% Public Mass Transportation
   - 0.125% Washoe Railroad Grade
   - 0.125% Infrastructure
2. BCCRT and SCCRT (CCRT) sales tax revenue generated in the County is distributed to Washoe County and Truckee Meadows Fire Protection District as follows:
   - Washoe County **51.05%**
   - TM Fire District **3.86%**

Source: Distribution based on average percentage share of Washoe County C-Tax distribution from FY 2016-17 to partial year FY 18-19. Data from Nevada Department of Taxation, "Consolidated Tax Distribution: Revenue Summary by County."

3. AB104 sales tax revenue generated in the County is distributed to Washoe County and Truckee Meadows Fire Protection District as follows:
   - Washoe County **66.89%**
   - TM Fire District **5.89%**

Source: Distribution based on average percentage share of Washoe County AB104 distribution from FY 2016-17 to partial year FY 18-19. Data from Nevada Department of Taxation, "Local Government Tax Act Distribution."

4. A State administrative fee of **1.75%** of all sales tax revenue is subtracted for State uses. Source: AB 552.
5. Construction Materials Purchases-See Appendix 1.
6. Number of Occupied Households-See Appendix 2. By definition, each occupied residential unit represents a household.
7. Household Taxable Sales-estimated based on the number of occupied households, estimated household income, and expenditure information. Household incomes and percent of income spent on taxable items are estimated as follows, inflated 3% annually:

	Household Income	% Spent on Taxable Items	
Single Family	**$ 80,740**	**24.8%**	Based on an average sales price of $339,000, 10% down, 4.7% loan rate, and 30-year mortgage.

Source: Estimated home sales price based on median sales price per square foot for new homes sold in 2018 in nearby Woodland Village from Center for Regional Studies, UNR. Household income is estimated using a home affordability calculator created by EEC and Center for Regional Studies, UNR and estimated home sales price. Taxable spending ratio from Consumer Expenditure Survey, 2017, Bureau of Labor Statistics.

APPENDIX 6-SCENARIO 3
WASHOE COUNTY
SHERIFF OPERATIONS COST PROJECTIONS

YEAR	NEW RESIDENT POPULATION	OFFICERS REQUIRED	SALARY/ BENEFITS	SERVICES/ SUPPLIES	VEHICLE PURCHASE	ANNUALIZED VEH. PURCH.	ADMIN. COSTS	TOTAL COST
2021	-	-	$ -	$ -	$ -	$ -	$ -	$ -
2022	320	0.544	64,749	10,678	-	-	19,844	95,270
2023	622	1.058	130,980	21,600	55,450	53,874	40,142	246,595
2024	925	1.573	202,279	33,358	-	53,874	61,993	351,503
2025	1,228	2.088	278,940	46,000	-	53,874	85,487	464,300
2026	1,531	2.602	361,273	59,577	-	53,874	110,720	585,443
2027	1,834	3.117	449,604	74,144	-	53,874	137,791	715,411
2028	2,136	3.632	544,275	89,756	128,563	53,874	166,805	854,708
2029	2,439	4.146	645,646	106,473	132,420	53,874	197,872	1,003,864
2030	2,742	4.661	754,097	124,357	-	53,874	231,109	1,163,436
2031	3,045	5.176	870,024	143,475	-	53,874	266,638	1,334,010
2032	3,347	5.691	993,847	163,894	-	53,874	304,586	1,516,201
2033	3,650	6.205	1,126,005	185,688	149,040	53,874	345,088	1,710,655
2034	3,953	6.720	1,266,960	208,933	153,511	53,874	388,287	1,918,053
2035	4,256	7.235	1,417,196	233,708	-	53,874	434,330	2,139,108
2036	4,534	7.708	1,568,844	258,716	-	53,874	480,806	2,362,239
2037	4,534	7.708	1,630,029	268,806	-	53,874	499,557	2,452,265
2038	4,534	7.708	1,693,600	279,289	172,778	53,874	519,040	2,545,803
2039	4,534	7.708	1,759,650	290,182	177,961	53,874	539,282	2,642,988
2040	4,534	7.708	1,828,276	301,499	-	53,874	560,314	2,743,963
TOTAL			**$ 17,586,272**	**$ 2,900,131**	**$ 969,723**	**$ 969,723**	**$ 5,389,690**	**$ 26,845,817**

APPENDIX 6, ASSUMPTIONS:

Note: See Appendix 2 for population estimates.

1. The analysis uses Western States average of **1.7** uniformed officers per 1,000 of population. Source: Washoe County Sheriff's Office. This includes all uniformed officers for the Department, including patrol, detectives, etc.
2. Uniformed salaries are estimated at **$ 66,779** inflated **4%** annually. Source: Washoe County Human Resources website, average of salary range for Deputy Sheriff positions.
3. Benefits are estimated at **62.1%** of salaries.
   Services/Supplies estimated at **16.5%** of salaries and benefits.
   Source: Three-year average FY 2016-17 through FY 2018-19 from Washoe County Budget FY 2018-19.
4. Two vehicles are added per three rotation shift at a cost of **$ 50,000** inflated 3% annually. Life of vehicle is 5 years. Source: Washoe County Sheriff's Office.
5. Administrative costs for Operations are estimated at **26.3%** of above uniformed costs using the average costs between FY 2016-17 and FY 2018-19. Source: Washoe County Budget FY 2018-19.

PRELIMINARY
GEOTECHNICAL INVESTIGATION
SILVER HILLS
RENO, NEVADA

File No. 28813

March 10, 2009

SUMMIT™ ENGINEERING CORPORATION

Prepared For:

Mr. Robert Lissner
Lifestyle Homes TND, LLC
P.O. Box 7548
Reno, Nevada 89510

Prepared By:

Summit Engineering Corporation
5405 Mae Anne Avenue
Reno, Nevada 89523

PROFESSIONAL ENGINEER, STATE OF NEVADA
JOHN K. GLYNN III
Exp. 6-30-09
CIVIL
No. 8517
3-16-09

Tom Harding
Staff Geotechnician

Jack K. Glynn III, P.E.
Geotechnical Manager

March 10, 2009 Job No. 28813

Mr. Robert Lissner
Lifestyle Homes TND, LLC
P.O. Box 7548
Reno, NV 89510

RE: Preliminary
Geotechnical Investigation
Silver Hills
Reno, Nevada

Dear Mr. Lissner:

Attached please find the results of our preliminary geotechnical investigation for the proposed Silver Hills development approximately 3 miles northwest of the intersection of US 395 and Red Rock Road in Reno, Nevada. Summit excavated 15 test pits and 3 fault trenches to characterize the site. Material testing was performed on samples from the site. Results of the analyses and logs of the test pits are included as sheets in this report.

The material found on site classifies predominately as a sandstone bedrock that has been slightly to moderately altered which excavates to a silty sand (SM), clayey sand (SC), silty clayey sand (SC-SM), poorly graded sand with silt (SP-SM), and well graded sand with silt (SW/SM). The majority of the native material uncovered during the geotechnical exploration shall provide foundation support. No groundwater was encountered in any of the 15 test pits.

Design plans and traffic studies were not available during the preparation of this report. Summit Engineering should be afforded the opportunity of reviewing plans, particularly any deep foundations or depressed floor/pit areas to verify the applicability of our recommendations. The following report provides geotechnical recommendations and guidelines for the design and construction of the project. We wish to thank you for the opportunity of providing our services. We are readily available to answer any related questions.

Sincerely,

SUMMIT ENGINEERING CORPORATION

Jack K. Glynn III, P.E.
Geotechnical Department Manager

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PRELIMINARY
GEOTECHNICAL INVESTIGATION
SILVER HILLS
RENO, NEVADA

I. INTRODUCTION

A. Project Description

This report presents the results of our Geotechnical Investigation to evaluate the Silver Hills project with respect to geotechnical and geologic site conditions. Exploration, laboratory testing and engineering analyses were conducted to provide geotechnical recommendations for the design and construction of the project.

Proposed development is to be single-family residential subdivision and will likely be 1 to 2 story wood frame construction. Foundations are anticipated to be either conventional spread footings or slab-on-grade with moderate structural loads. Sheet 1 presents a vicinity map and Sheet 2 presents the project site with test pit locations.

B. Purpose and Scope

The purpose of this investigation was to determine subsurface soil conditions and to provide geotechnical design criteria for the Silver Hills project. The scope of this investigation included surface reconnaissance, subsurface exploration, analysis of field and laboratory data, research of pertinent geologic literature and report preparation. This report provides conclusions and recommendations concerning:

- General subsurface conditions and geology
- Site preparation and earthwork
- Engineering properties of the soils that will influence design of future structures, including:
  - Bearing capacities
  - Settlement potential
  - Lateral earth pressures
  - Portland cement concrete
  - Asphalt concrete
  - Seismic design criteria

C. Field Exploration and Laboratory Testing

Summit Engineering Corporation conducted the subsurface investigation by excavating fifteen test pits to a maximum depth of 14 feet. No grading planes were available at the time of the field exploration. Additional exploration (test pits) will be needed prior to completion of the final report. All test pits were excavated with a Cat 420 D Backhoe. Representative samples of the soil were collected from the test pits. Selected samples were tested at Summit's laboratory and two outside laboratories. Sheet 1 shows the vicinity map and Sheet 2 presents a site map with the locations of the test pits. General site geology is shown on sheet 3. Sheets 4 through 18 display the logs of soils encountered in the excavations. Sheet 19 provides a key to the test pit logs as well as a copy of the Unified Soil Classification System used to identify the site soils.

Representative bulk samples were taken from the excavations every three feet of depth or every significant lithologic change. Representative samples were tested as follows: 1) sieve analyses tests (ASTM D422); 2) moisture content tests (ASTM D2216); 3) Atterberg limits tests (ASTM 4318), to confirm field soil classifications; 4) a soluble sulfates test to determine if the native soils are reactive with Portland cement concrete; and 5) an R-value test (ASTM D2844), to determine a flexible pavement structural section. The index test results can be used to estimate engineering properties of the native soil. Results of the laboratory tests are displayed on the test pit logs, and presented independently in Sheets 20 through 25. All laboratory testing was conducted in accordance with the applicable standards.

II. DISCUSSION

A. Site Description

The proposed site will consist of a single-family residential subdivision approximately 3 miles northwest of the intersection of US 395 and Red Rock Road in Reno, Nevada. The site is situated in Section 23, Township 21 North, and Range 18 East, and North ½ of Section 24, Township 21 North, Range 18 East, SW ¼ of Section 24, Township 21 North, and Range 18 East (M.D.B.M). The site is in a rural area surrounded by an undeveloped desert to the east and desert with some older homes on the remaining sides. The property on the west side of Red Rock Road has overhead power lines that run northwest to southeast with a gas line below ground. Also the west property there is cable running underground parallel to the

power lines. There are currently old tires, furniture, and typical trash around the site. The site is has some small hills and drainages running through out the site. Access to the site is from Red Rock Road.

B. Site Geology

The primary geologic reference reviewed was the Reno NW Quad 4Dg Geologic Map (S.A. Soeller and R.L. Nielsen, 1980). The bulletin and its geologic map (Sheet 3) provided information about the general geology and earthquake hazards for the subject property and surrounding area. The site was described as a "Qsw, Ts, Qpg, Mzgd ". The authors characterized the site geology as the following:

> **Qsw: Sheetwash Alluvium:** "Thin deposits of moderately to poorly sorted medium to fine sand, granular coarse to medium sand, and sandy pebble gravel. Color and texture closely related to local bedrock source areas."
>
> **Ts: Lacustrine and Alluvial Sediments:** "Thick basin-fill deposits of grayish-orange to pale-brown, coarse to medium sand, granular sand, siltstone, silty to pebbly sandstone, and minor sandy pebble conglomerate, very thin-bedded ash and diatomite. Sediments are generally unconsolidated and bedding is usually indistinct. In part includes much younger alluvium near the surface. Probably equivalent in age to the sandstone of Hunter Creek" (Bonham and Bingler, 1973).
>
> **Qpg: Pediment gravel:** "Thin sheets of pale-brown and pale yellowish-brown, sandy granule to cobble gravel, and pebbly very coarse sand. Clasts comprise a wide range of lithologic compositions and locally from a desert pavement."
>
> **Mzgd: Granodiorite:** "Medium- to coarse-grained, massive, plutonic, dark-gray biotite and hornblende granodiorite. Includes aplite and pegmatite dikes. Resistant to erosion and forms abundant knobby outcrops."

According to the map (#32031C2825G) available by F.E.M.A. (Federal Emergency Management Agency) the site is within Zone X. According to F.E.M.A., Zone X is "areas determined to be outside the 0.2% annual chance floodplain".

C. Regional Seismicity

The property, according to U.S. Geological Survey, may be subject to strong seismic acceleration, 0.504g

ground acceleration, and therefore has a strong probability for experiencing a major seismic event. The effect of seismic shaking, therefore, is an important consideration. The site has native soil profiles of D, "stiff soil." The following table summarizes seismic design parameters for the 2006 International Building Code criteria for structural design of the project:

IBC SEISMIC DESIGN

Site Class		D
Soil Profile Type		Stiff Soil
Seismic Source Type		B
Soil Shear Wave Velocity ($\ddot{v}_s$)		600-1200
Standard penetration resistance (N)		15-50
Soil undrained shear strength (s_u)		1000-2000
Site Coefficient (F_a) w/ short accel. (s_s)		1.005
Site Coefficient (F_v) w/ 1-sec. accel. (s_1)		1.534
Max. ground motion, 0.2-sec SA (S_s), g		1.237
Max. ground motion, 1.0-sec SA (S_1), g		0.466
Design acceleration, S_{DS}, g		0.829
Design acceleration, S_{D1}, g		0.477

Design of improvements shall be based on Site Class D as per IBC 2006 standards. The Peak Ground Acceleration (PGA) of the site with a Probability of Exceedance of 5% and Exposure Time of 50 was calculated to be a $K_H = 0.3708g$.

Earthquake activity is difficult to predict and it is not known which documented fault system may produce an earthquake event and associated surface rupture. Current research by the Nevada Bureau of Mines and Geology and the University of Nevada, Reno indicates that a local earthquake event of Magnitude 7.0 would be likely. The nearest active faults known to be capable of producing such an event are located approximately 17 miles northeast, 20 miles southeast and 25 miles east of the site (dePolo and Ramelli, 2004; dePolo, 1996; and dePolo and dePolo, 1999, respectively).

At the present time, there are not any local codes that provide guidelines for the evaluation of seismic risk or surface rupture hazard associated with Quaternary (Holocene and Pleistocene) faults. The State of Nevada requires the use of seismic provisions set by the IBC, as well as adoptions of appropriate local standards (NRS 278.580.5). For the purposes of assessing seismic hazard and potential fault rupture hazard, standard engineering practice is to pursue the most diligent investigation of those faults deemed to be most likely to

be active. Most geological consultants in Nevada follow the conventions established by the Nevada Earthquake Safety Council, whose guidelines are based on the Alquist-Priolo Act of 1972 in California. Per these guidelines, faults with evidence of movement in Holocene time (past 10,000 years) are considered "Holocene active". Those faults with evidence of displacement during Late Pleistocene time (10,000 to 130,000 years ago) would be considered "Late Quaternary active". Faults with evidence of last displacement having occurred during middle and early Quaternary time (130,000 years to 1,600,000 years ago) are considered "Quaternary Active Faults". Faults with last displacement older than 1,600,000 years are deemed "inactive". Active faults are afforded a greater degree of study and analysis than those regarded as inactive.

Normally, any fault suspected of being active, as demonstrated by presence of scarps, offset of the argillic (topsoil) horizon, and other criteria, poses a greater risk to development and requires a minimum setback of 50 feet for occupied structures. **Three mapped faults cross the site (Sheet 3). Two of these faults were encountered during this investigation and interpreted to be active (Appendix C).** The seismic hazard at the Silver Hills site is probably no greater than other comparable locations in the area that are located at comparable distances to similar faults. Occupied structures have been built over and adjacent to inactive faults in the area for decades, without significant harm to residents from temblors affecting the area. Building codes have evolved in recent years to provide adequate structural protection to residents for the level of tremors experienced to date. **Summit Engineering does not recommend siting occupied structures over any faults.**

Groundwater was not encountered in any of the test pit excavations. Liquefaction, a hazard in seismic zones where water-saturated granular cohesionless soils lose their bearing during seismic shaking, is not anticipated to be a problem on the project site because of cohesive soils and groundwater depth.

D. Subsurface Materials and Conditions

Fifteen test pits were excavated on this site to a maximum depth of 14 feet. The native materials encountered included sandstone bedrock that has been slightly to moderately altered which excavates to a silty sand (SM), clayey sand (SC), silty clayey sand (SC-SM), poorly graded sand with silt (SP-SM), and well graded sand with silt (SW/SM).

Groundwater was not encountered in any of the test pits and is not likely to affect development of the site.

III. CONCLUSIONS AND RECOMMENDATIONS

From a geotechnical engineering standpoint, it is our opinion that the Silver Hills site is suitable for the construction of the proposed subdivision provided that the recommendations contained in this report are incorporated into design and construction. The following sections present our conclusions and recommendations concerning the proposed project.

A. Foundation Considerations

All expansive materials shall not provide direct foundation support. The primary geotechnical recommendation is to remove this material entirely from all structural areas and replace it with structural fill to footing grade and pavement and concrete slab subgrade. A less preferable, but less costly, alternative with more risk is to minimize the potential for post-construction differential foundation and subgrade movement by providing a minimum of 3 feet of structural fill beneath footings, and 2 feet of structural fill beneath all pavement and concrete slab subgrades.

The near-surface native materials uncovered during the course of the investigation may not provide direct foundation support. If any other materials are encountered in the course of construction, they may provide direct foundation support provided they meet parameters for structural fill as provided in this report. Analysis obtained from field and laboratory testing indicates the imported material (silty sand with gravel) can typically support up to 2,000 pounds per square foot for dead plus long term live loads (per IBC 2006 Table 1804.2) on spread type footings with less than 1 inch of total settlement and less than 1/2 inch of differential settlement across the length of the structures.

The design coefficient of friction for the majority of the native material on site is 0.25. The passive soil pressure was calculated as 407 pounds per cubic foot (407 psf per foot of depth). The active soil pressure was similarly was calculated as 35 pounds per cubic foot (35 psf per foot of depth). The at-rest soil pressure, when walls are braced on the top and the bottom, was calculated as 55 pounds per cubic foot (55 psf per foot of depth). These design values assume the non-expansive granular soils that meet the outlined parameters are providing vertical and lateral support. All exterior footings shall be embedded a minimum 24 inches below adjacent finished grade for frost protection, and a minimum of four feet above groundwater.

B. Grading and Filling

All expansive materials that are encountered within 3 feet of the bottom of footings, shall be removed prior to placing any fill. These materials are unsuitable for use as fill in structural areas due to their potentially detrimental properties. Therefore, these materials shall only be placed as the final lift of fill in landscaped areas. **If any uncontrolled fill is encountered, it will require complete removal, or if the material is suitable for fill according to the Geotechnical Engineer, removed and properly recompacted.**

All areas that are to receive fill or structural loading shall be scarified to a depth of at least 12 inches, moisture conditioned to within 2 percent of optimum, and recompacted to at least 90 percent relative compaction (ASTM D 1557). If the native subgrade is too coarse to density test, then moisture conditioning and compaction shall be completed to the satisfaction of the Geotechnical Engineer. A proof-rolling program of a minimum 5 complete passes with a minimum 10-ton roller or a Cat 825 self propelled sheepfoot may be acceptable. For footing trenches, three complete passes with hand compactors may be adequate.

All fill, except rock fill, shall be placed in 12-inch maximum lifts, moisture conditioned to within 2 percent of optimum, and compacted to at least 90 percent (ASTM D1557). If any of the on-site materials are too coarse for density testing (>30% retained on the ¾" sieve), these materials must be treated as rock fill. Whenever structural foundations will be placed partially in cut and partially in structural fill, over-excavation and replacement of material on the cut side may be necessary in order to reduce the potential for differential settlement. Any differential fills shall be reduced to a maximum of 8 feet within the building envelope.

The maximum particle size shall be 12 inches up to 5 feet below finished grade and 6 inches from 5 feet below finished grade to finished grade. This material shall be placed in 12-inch lifts (maximum), moisture conditioned, and compacted to the satisfaction of the Geotechnical Engineer. Care should be taken to insure that voids between cobbles and boulders are filled with finer materials. Five complete passes of a minimum 10-ton roller or Cat 825 sheepsfoot compactor may achieve adequate compaction. Acceptance of density requirements for this type of rock fill shall be by observation of lift thickness, moisture conditioning, and applied compactive effort. The maximum allowable particle size shall be decreased if the Geotechnical Engineer is not satisfied with the achieved compaction and/or "nesting" of particles is observed.

Native materials are suitable to be utilized as structural cap material. Structural cap materials are materials within 3 feet below bottom of footing and within 2 feet below pavement and concrete subgrade. Any native

materials encountered that do not meet the requirements of structural fill will not be permitted within 3 feet of footings or 2 feet of roadway improvements without approval of the Geotechnical Engineer.

Any expansive soils, if encountered during the course of excavation, may not be utilized for direct support of improvements (including streets), nor may they be reused as structural fill. The primary geotechnical recommendation is to remove this material entirely from all structural areas and replace it with structural fill to footing grade and pavement and concrete slab subgrade. A less preferable, but less costly alternative with more risk is to minimize the potential for post-construction differential foundation and subgrade movement by providing a minimum of 3 feet of structural fill beneath footings, and 2 feet of structural fill beneath all pavement and concrete slab subgrades. This may be accomplished entirely by fill or by over-excavation and replacement with structural fill, or any combination thereof. Soils at the bottom of the over excavation shall be scarified to a minimum depth of 6 inches; moisture conditioned to at least optimum moisture, and recompacted to 90 percent (ASTM D1557). If the Owner/Developer elects to implement this alternate method and not remove all clays from structural areas, he will assume the risk of potential post-construction differential foundation movement, and will hold harmless the Geotechnical Engineer for this decision.

Expansive soil shall be defined as any soil or bedrock with more than 30 percent (by weight) passing the No. 200 sieve and/or a plasticity index of 16 or greater and/or an expansion index of at least 21. Expansive soils may only be placed as fill in non-structural areas, or as structural fill to within 3 feet of footing grade or 2 feet of pavement subgrade. Expansive soils utilized as fill shall be moisture conditioned to at least optimum and compacted to a minimum of 90 percent. All direct structural support shall be provided by non-expansive material. Any imported structural fill for this project should meet or exceed the following guideline specifications:

Sieve Sizes	Percentage Passing (by weight)
4 Inch	100
3/4 Inch	70-100
No. 40	15-50
No. 200	10-30
Additional Requirements are as follows:	
Water Soluble Sulfate (SO_4)(max)	0.1%
Total Available Water Soluble Sodium Sulfate (Na_2SO_4)(max)	0.2%
Solubility (max)(AWWA 2540C)	0.5%
Liquid Limit (max.)	38
Plasticity Index (max.)	15
Expansion Index (max.)	20

This specification is meant as a guideline to pre-approve imported structural fill. Other materials not meeting this specification may be suitable, but will require approval from the Geotechnical Engineer.

Mining of structural fill material on-site is not permissible unless taken from non-structural areas, or from re-using suitable material as structural fill taken from areas of designated cut.

C. Surface and Subsurface Drainage

Surface drainage shall be diverted away from all buildings and not be permitted to pond or pool adjacent to foundations. If crawlspaces are utilized it is recommended that all crawlspaces be lined with Visqueen sheeting, and that positive crawlspace drainage be provided to a collection point. A small diameter pipe (2 to 4-inch) may be placed beneath and perpendicular to the footing, sloped to drain to daylight, or the drain rock bedding of the storm water catchment basin lateral to the street may be utilized to drain the crawlspace. Slab-on-grade foundation systems may require subsurface drainage dependent on conditions encountered during grading. The Geotechnical Engineer shall determine whether subsurface drainage is required at that time.

Grading plans should be designed to minimize the potential for infiltrated precipitation or landscaping irrigation to migrate laterally and downslope along the cut/fill interface and surfacing in downslope lots. Roof gutters and downspouts are recommended to discharge water well away from foundation areas. Steps should also be taken to minimize the moisture seepage at the joint between the stem wall and the footing.

D. Slope Stability and Erosion Control

The results of our exploration and testing indicate that 2:1 (H:V) slopes will be stable for on-site materials in cut and fill. All cut and fill slopes should incorporate brow ditches to divert surface drainage away from the slope face. Any major cut or fill slopes shall include mid-height benches in accordance with International Building Code standards.

The potential for dust generation, both during and after construction, is high at this project. Dust control will be mandatory on this project in order to comply with air quality standards. The contractor shall submit a dust control plan and obtain the required permits from Washoe County and the City of Reno prior to commencing site grading.

Stabilization of all slopes and areas disturbed by construction will be required to prevent erosion and to control dust. Stabilization may consist of riprap, revegetation and landscaping, or dust palliative. Slopes steeper than 3:1 (H:V) will require stabilization.

Where the fill extends onto native slopes with gradients greater than 5:1, the fill shall be keyed into the native soils. The keys will have a minimum width of equipment width or 10 feet, whichever is lesser, and constructed with a minimum 5 percent slope into the hillside.

E. Trenching and Excavation

All trenching and excavation shall be conducted in accordance with all local, state, and federal (OSHA) standards. In general, the soil, encountered during exploration meets the criteria for OSHA Type A and B soils. Any oversized material loosened during excavation will require scaling prior to permitting workmen to enter the trench.

Any area in question should be examined by the Geotechnical Engineer. The following table is reproduced from Occupational Safety and Health, Subpart P, 1926.652, Appendix B:

TABLE B-1

MAXIMUM ALLOWABLE SLOPES

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V) [1] FOR EXCAVATIONS LESS THAN 20 FEET DEEP [3]
STABLE ROCK	VERTICAL (90°)
TYPE A [2]	3/4:1 (53°)
TYPE B	1:1 (45°)
TYPE C	1 1/2:1 (34°)

NOTES

1. Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.
2. A short-term maximum allowable slope of 1/2 H:1V (63°) is allowed in excavations in Type A soil that are 12 feet (3.67 m) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 m) in depth shall be 3/4 H:1V (53°).
3. Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

Bedding and initial backfill over the pipe will require import to meet the specifications of the utility having jurisdiction. On-site soils may be used for trench backfill, provided particles over 4 inches in diameter are removed. Imported structural cap material or native material meeting the requirements for structural fill will be required within 3 feet below bottom of footing and 2 feet below bottom of pavement subgrade. All trench backfill shall be placed in 8 inch (max.) finished lifts, moisture conditioned to within 2 percent of optimum, and densified to at least 90 percent relative compaction (ASTM D1557). If metal pipes are to be utilized, corrosion protective measures shall be taken.

F. Asphaltic Concrete Design

Truck traffic counts and the type of trucks were not available during the preparation of this report so assumptions were made for the pavement design. A sample from TP-5 was analyzed to determine a representative R-value for the existing materials found on site. The R-value for this sample is 33. This material can provide adequate support for the intended improvements (Appendix B), provided the recommendations in this report are incorporated into design and construction. A Type 2 (3/4 inch size) or Type 3 (1/2 inch size) may be used for the bottom layer, but a Type 3 (1/2 inch size) mix is recommended for the access ways and parking areas for a smoother, more flush finished surface, which is less susceptible

to moisture penetration. A 50 Blow, Marshall mix design with 3-5 percent air voids is recommended for this project. The use of PG64-28NV is also recommended in order to increase the resistance to thermal cracking and help reduce pavement maintenance over the life of the pavement. A mix design shall be submitted to the Geotechnical Engineer for approval one week prior to paving.

Subgrade material shall be scarified to a minimum depth of 12 inches below finished asphalt grade, moisture conditioned to within 2 percent of optimum, and compacted to at least 90 percent. Next, 8 inches of aggregate base materials (Type 2, Class B) shall be placed on top of the subgrade. The aggregate base materials shall be approved by the Geotechnical Engineer prior to incorporation into the pavement structure. Aggregate base shall be moisture conditioned to within 2 percent of optimum and compacted to at least 95 percent compaction (ASTM D 1557). Finally, 4 inches of asphaltic concrete shall be placed on top of the base in two approximately equal lifts.

G. Concrete Slabs

All dedicated concrete walkways and driveways should be directly underlain by aggregate base per accepted standards. Decomposed granite, the same unit thickness as aggregate base, can be used in lieu of aggregate base under private walks and driveways. The concrete mix design for exterior concrete shall have a minimum of 6 sacks of Portland cement, with a maximum water to cement ratio of 0.45, and air content between 4.5 and 7.5 percent. This recommendation is to provide resistance to freeze-thaw cycles that occur in the Reno area. Additional requirements for exterior concrete are as follows:

Minimum compression strength = 4,000 psi,
Maximum slump = 4"

Interior slab-on-grade and foundation concrete shall follow criteria established by the project structural engineer. One sample was tested for soluble sulfates. Soluble sulfates have a detrimental effect on Portland cement concrete. The results (Sheet 25) indicate that there are 0.01 percent soluble sulfates in the native soils. Therefore, the sulfate exposure is ranked "negligible". This is according to Table 4.3.1 of the ACI Building Code Requirements (as per IBC, 2006), as follows:

TABLE 4.3.1

REQUIREMENTS FOR CONCRETE EXPOSED TO SULFATE-CONTAINING SOLUTIONS

SULFATE EXPOSURE	WATER SOLUBLE SULFATE (SO_4) IN SOIL, PERCENT BY WEIGHT	SULFATE (SO_4) IN WATER (ppm)	CEMENT TYPE	MAXIMUM WATER-CEMENTITIOUS MATERIAL RATIO, BY WEIGHT, NORMAL WEIGHT AGGREGATE CONCRETE *	MINIMUM f'_c NORMAL-WEIGHT AND LIGHTWEIGHT AGGREGATE CONCRETE (psi)*
Negligible	$0.00 \leq SO_4 < 0.10$	$0 \leq SO_4 < 150$	-	-	-
Moderate†	$0.10 \leq SO_4 < 0.20$	$150 \leq SO_4 < 1500$	II, IP(MS), IS(MS), P(MS), I(PM)(MS), I(SM)(MS)	0.50	4,000
Severe	$0.20 \leq SO_4 < 2.00$	$1500 \leq SO_4 < 10,000$	V	0.45	4,500
Very severe	$SO_4 > 0.20$	$SO_4 > 10,000$	V plus pozzolan‡	0.45	4,500

* When both Table 4.3.1 and Table 4.2.2 are considered, the lowest applicable maximum water-cementitious material ratio and highest applicable minimum f'_c shall be used.

† Seawater.

‡ Pozzolan that has been determined by test or service record to improve sulfate resistance when used in concrete containing Type V cement.

Structural concrete mix designs for interior and private improvements only should meet one of the additional following criteria:

TYPE OF CEMENT	MINIMUM SACKS OF CEMENT PER CUBIC YARD (prior to replacement with fly ash)	MAXIMUM WATER TO CEMENTIOUS MATERIALS RATIO
Type II	6	0.5
Type II and fly ash	5.5	0.53
Type IP	5.5	0.53
Type V	5.5	0.53
Type V and fly ash	5.5	0.53

Concrete mix designs shall be determined per Chapter 7 of "Design and Control of Concrete Mixtures" by the Portland Cement Association and as further modified by IBC 2006 standards, and submitted to the Geotechnical Engineer for approval at least one week prior to pouring the concrete.

The greater Elko area is in a climatic zone of low humidity and concrete is susceptible to shrinkage cracking and curling during curing. All concrete work shall follow the procedures of the American Concrete Institute.

H. Anticipated Construction Problems

The site has a high potential for dust generation, and will require constant dust suppression measures during construction. The disposal of construction waste may also cause problems due to the lack of nearby washouts. Furthermore, proximity of the site to existing residences may limit the hours during which certain work can be done.

LIMITATIONS

This report is prepared solely for the use of Summit Engineering's client. Any entity wishing to utilize this report must obtain permission from them prior to doing so. Our services consist of professional opinions and recommendations made in accordance with generally accepted soil and foundation engineering principles and practices. The analyses and recommendations contained in this report are based on our site reconnaissance, the information derived from our field exploration and laboratory testing, our understanding of the proposed development, and the assumption that the soil conditions in the proposed building and grading areas do not deviate from the anticipated conditions.

Unanticipated variations in soil conditions could exist in unexplored areas on the site. If any soil or groundwater conditions are encountered at the site that are different from those discussed in this report, our firm should be immediately notified so that our recommendations can be modified to accommodate the situation. In addition, if the scope of the proposed construction, including proposed loads or structural location, changes from that described in this report, our firm should be notified.

Recommendations made in this report are based on the assumption that an adequate number of tests and inspections will be made during construction to verify compliance with these recommendations. Such tests and inspections should include, but not necessarily be limited to, the following:

- Review of site construction plans for conformance with soils investigation.
- Observation and testing during site preparation, grading, excavation and placement of fill.
- Observation and testing of materials and placement of asphalt concrete and site concrete.
- Foundation observation and review.
- Consultation as may be required during construction.

The findings in this report are valid as of the present date; however, changes in the conditions of the property can occur with the passage of time, whether they are due to natural processes or to the works of man on this or adjacent lands. In addition, changes in applicable or appropriate standards occur, whether they result from legislation or from the broadening of knowledge. Accordingly, the findings in this report might be invalidated, wholly or partially, by changes outside of our control.

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APPENDIX A

APPENDIX A
SPECIFICATIONS FOR
SITE PREPARATION, EXCAVATION, COMPACTION
STRUCTURAL FILL, AND SUBGRADE PREPARATION

1.0 GENERAL

1.1 Standard Specifications - Where referred to in these specifications, "Standard Specifications" shall mean the Standard Specifications for Public Works Construction sponsored and distributed by the Regional Transportation Commission of Washoe County, *et al.* (2007 edition).

1.2 Scope - All work shall be done in accordance with the Standard Specifications except as may be modified by the specifications outlined below. The work done under these specifications shall include clearing, stripping, removal of unsuitable material, excavation and preparation of natural soil, placement and compaction of on-site and/or imported fill material, or as specifically referred to in the plans or specifications.

1.3 Geotechnical Engineer - When used herein, Geotechnical Engineer shall mean the engineer or a representative under the engineer's supervision. The work covered by these specifications shall be inspected by a Geotechnical Engineer, who shall be retained by the Owner. The Geotechnical Engineer will be present during the site preparation and grading to inspect the work and to perform the tests necessary to evaluate material quality and compaction. The Geotechnical Engineer shall submit a report to the Owner, including a tabulation of all tests performed.

1.4 Soils Report - A "Geotechnical Investigation" report, prepared by Summit Engineering Corporation, is available for review and may be used as a reference to the surface and subsurface soil and groundwater conditions on these projects. The Contractor shall make his own interpretation with regards to the methods and equipment necessary to perform the excavations.

1.5 Percent Relative Compaction - Where referred to herein, percent relative compaction shall mean the in-place dry unit weight of soil expressed as a percentage of the maximum dry unit weight of the same material, as determined by ASTM D-1557, laboratory compaction test procedure. Optimum moisture content is the moisture content corresponding to the maximum dry density determined by ASTM D-1557.

2.0 SITE PREPARATION AND EARTHWORK

2.1 All earthwork and site preparation should be performed in accordance with the requirements of this report and attached specifications, and the Standard Specifications.

2.2 Clearing - Areas to be graded shall be cleared of brush and debris. These materials shall be removed from the site and discarded by an acceptable means approved by the owner.

2.3 Stripping - Surface soils containing roots and organic matter shall be stripped from areas to be graded and stockpiled or discarded as specified by the plans and specifications or at the discretion of the owner. Strippings may be used as the final lift of fill for areas to be planted.

2.4 Dust Control - The contractor shall prevent and maintain control of all dust generated during construction in compliance with all federal, state, and county regulations. The project specifications should include an indemnification by the contractor of the engineer and owner for all dust generated during the entire construction period.

2.5 Materials - All material not suitable for use as structural fill, shall be removed from the sites by the Contractor, or placed in non-structural fill areas. The Geotechnical Engineer shall determine the suitability of material for reuse as structural fill.

2.6 Ground Surface - The ground surface exposed by stripping and/or excavation shall be scarified to a minimum depth of 12 inches, moisture conditioned, by aerating or adding water, to within 2 percent of optimum moisture content and compacted to 90 percent relative compaction, unless otherwise specified. Compaction of the ground surface shall be approved by the Geotechnical Engineer prior to placement of fill, structural fill, aggregate base, and/or Portland cement concrete.

2.7 Backfill of test pits and trenches – Our exploration pits and trenches were backfilled without mechanical compaction. In structural areas, backfill in the pits should be removed and replaced in lifts with compactive effort.

3.0 FILL MATERIAL

3.1 Fill material shall be free of perishable, organic material. Rock used in the fill shall be placed in such a manner that no voids are present, either between or around the rock, after compacting the layer.

3.2 Structural Fill Material - Material shall consist of suitable non-expansive soils having a plasticity index less than 16, and a minimum R-value of 30. The gradation requirements shall be as follows:

Sieve Sizes	Percentage Passing (by weight)
4"	100
3/4"	70 - 100
#40	15 - 50
#200	10 - 30

Materials not meeting the above requirements may be suitable for use as structural cap material at the discretion of the Geotechnical Engineer. Samples of imported fill proposed for use as structural cap material shall be submitted to the Geotechnical Engineer and approved before it is delivered to a site.

3.3 Rock Fill - Fill material containing over 30 percent (by weight) of rock larger than 3/4 inches in greatest dimension is defined as rock fill. Rock Fill located five or more feet below finished grade may be constructed in loose lifts up to the maximum size of the rock in the material but not exceeding diameters of 18 inches. The voids around the rock in each rock fill lift shall be filled with granular material and fines and compacted to the satisfaction of the Geotechnical Engineer. Rocks larger than 18 inches in diameter shall be placed in non-structural areas or in deep fills at the discretion of the geotechnical engineer. Care should be taken to fill all voids with finer grained materials. No nesting of larger rocks shall be allowed. Rock fill shall not be used for slab-on-grade construction without

the approval of the Geotechnical Engineer. The maximum allowable particle size shall be decreased by the Geotechnical Engineer if the achieved compaction is not satisfactory to the Geotechnical Engineer or "nesting" is observed by the Geotechnical Engineer.

4.0 EARTHWORK AND FILL PLACEMENT

4.1 Placement - Fill material shall be placed in layers that shall not exceed 12 inches of compacted thickness, unless otherwise approved by the Geotechnical Engineer. Each layer shall be evenly spread and moisture conditioned to within 2 percent of optimum moisture content. Unless otherwise specified, each layer of earth fill shall be compacted to 90 percent relative compaction. Compaction shall be approved by the Geotechnical Engineer. Rock fill shall be placed in accordance with the appropriate sections of the Standard Specifications. Rock fill placement and compaction shall be approved by the Geotechnical Engineer. Full time inspection of fill placement is required in structural areas and areas designated as dedicated improvement for the Washoe County, unless otherwise approved by the Engineer.

4.2 Keyways - Where the fill extends onto native slopes with gradients greater than 5:1, the fill shall be keyed into the native soils. The keys will have a minimum width of equipment width or 10 feet, whichever is lesser, and constructed with a minimum 5 percent slope into the hillside.

4.3 Compaction Equipment - The Contractor shall provide and use equipment of a type and weight suitable for the conditions encountered in the field. The equipment shall be capable of obtaining the required degree of compaction in all areas including those that are inaccessible to ordinary rolling equipment.

4.4 Reworking - When, in the judgment of the Geotechnical Engineer, sufficient compaction effort has not been used, or where the field density tests indicate that the required compaction or moisture content has not been obtained, subgrade and/or fill materials shall be reworked and compacted as needed to obtain the required density and moisture content. This reworking shall be accomplished prior to the placement of fill, structural fill, aggregate base, and/or Portland cement concrete.

4.5 Unstable Areas - If pumping or other indications of instability are noted, fill and/or subgrade materials shall be evaluated by the Geotechnical Engineer, scarified, left to dry, and recompacted or removed and replaced as needed to obtain the required density and moisture content. This work shall be accomplished prior to the placement of fill, structural fill, aggregate base, and/or Portland cement concrete.

4.6 Frozen Materials – Fill shall not be placed on frozen materials, nor shall frozen material be utilized as fill.

5.0 EXCAVATION AND SLOPE REQUIREMENTS

5.1 Finished cut slopes shall not exceed 2 horizontal to 1 vertical and fill slopes should not exceed ratios of 2 horizontal to 1 vertical. Slopes steeper than three horizontal to one vertical or more than ten feet in height should be protected from erosion using riprap, vegetation, or a similar designated and acceptable means meeting the applicable standards.

5.2 Temporary, unsupported construction slopes less than ten feet in height may stand at a slope as steep as 1½:1 (H:V) provided that the length of the unsupported slope does not exceed twenty feet. These temporary slopes should not remain unsupported for extended periods of time.

6.0 FOUNDATIONS AND FOOTING DESIGN

6.1 Spread type continuous and column footings should be designed to impose a maximum net dead plus long-term live load of 2,000 pounds per square foot (per IBC 2006 Table 1804.2). Net bearing pressures of up to one-third in excess of the given bearing value are permitted for transient live loads from wind and earthquake.

6.2 Exterior footings should be embedded a minimum of 30 inches below the lowest adjacent final compacted subgrade to provide adequate frost protection and confinement. Isolated interior footings should be imbedded per IBC requirements. The recommendations of this report are applicable to all footings.

6.3 Passive soil resistance to lateral footing pressures may be calculated as 407 pounds per square foot per foot of depth and a base coefficient of friction of 0.25 for footings. Active soil pressure may be calculated as 35 pounds per square foot per foot of depth. At-rest soil pressure may be calculated as 55 pounds per square foot per foot of depth.

6.4 Backfill of footing excavations or formed footings should be moisture conditioned to within 2 percent of optimum moisture content and compacted to a minimum of 90 percent relative compaction.

6.5 All footing excavations should be clear of loose material prior to placement of concrete. The bottom of the footing excavation should be scarified to a depth of 12 inches, moisture conditioned to within 2 percent of optimum moisture content, and compacted to a minimum of 90 percent relative compaction.

7.0 UTILITY TRENCH BACKFILL

7.1 Bedding Material - Bedding material shall meet one of the following gradation requirements listed below and shall be nonplastic:

Bedding will require import to meet one of the following specifications:

	CLASS A BACKFILL	CLASS B BACKFILL	CLASS C BACKFILL
SIEVE SIZE	% PASSING	%PASSING	% PASSING
1"	-	-	100
¾"	-	-	90-100
½"	-	100	-
3/8"	100	-	10-55
#4	90-100	0-15	0-10
#50	10-40	-	-
#100	3-20	-	-
#200	0-15	0-3	-

Bedding as defined in this report shall be within 6 inches of the bottom of the pipe, within 12 inches of the sides of the pipe, and within 12 inches, or to a depth required from the top of the pipe to the top of the groundwater table, whichever is greater, over the pipe. Where groundwater is encountered, filter fabric or filter material shall encapsulate the bedding, if Class B or Class C backfill is utilized. The filter fabric shall be a 10 oz./sq. yd. nonwoven geotextile.

Individual utility companies may have additional specifications, which should also be followed.

7.2 Placement and Compaction - Bedding material shall first be placed so that the pipe is supported for the full length of the barrel with full bearing on the bottom segment of the pipe equal to a minimum of 0.4 times the outside diameter of the barrel. Bedding shall also extend to one foot above the top of the pipe. Pipe bedding within 6 inches of the pipe shall be placed in thin layers not exceeding 8 inches in loose thickness, conditioned to the proper moisture content for compaction. Class A backfill shall be compacted to at least 90 percent relative compaction. Class B and/or C backfill shall be compacted to the satisfaction of the Geotechnical Engineer. All other trench backfill shall be placed in thin layers not exceeding 8 inches in loose thickness, conditioned to within 2 percent of optimum moisture content, and compacted as required for adjacent fill, or if not specified, to at least 90 percent compaction in areas under structures, utilities, roadways, parking areas, and concrete flatwork.

7.3 Drain Rock - Any necessary subsurface drainage systems shall use drain rock conforming to the following Class C gradation:

Sieve Sizes	Percentage Passing (by weight)
1"	100
3/4"	90-100
3/8"	10-55
#4	0-10

8.0 CONCRETE SLAB-ON-GRADE AND FLATWORK CONSTRUCTION

8.1 Slab-on-grade - When used in this report, slab-on-grade shall refer to all interior concrete floors.

8.2 Concrete flatwork - A general term, flatwork refers to all exterior concrete site work including sidewalks, driveways, curb and gutters, and patios.

8.3 Subgrade - The upper twelve inches of subgrade beneath the aggregate base under concrete flatwork and slabs-on-grade shall be scarified, moisture conditioned to within 2 percent of optimum moisture content, and compacted to 90 percent relative compaction. Compaction shall be approved by the Geotechnical Engineer.

8.4 Concrete Mix Design - The contractor shall submit a concrete mix design to the Geotechnical Engineer for review and approval at least 1 week prior to placement of any concrete. The exterior concrete mix design shall utilize a minimum of 6 sacks of Portland Cement Concrete and a maximum water cement ratio of 0.45. Exterior concrete shall also meet the following specifications:

Minimum 28 day compressive strength = 4000 psi.
Air content = 4.5 – 7.5%
Maximum slump = 4 inches

Interior concrete mix designs shall comply with the structural plans and the tables included in Section G of this report.

Admixtures - All admixtures incorporated in the mix design shall be approved by the Geotechnical Engineer.

Finishing - All finishing shall be done in the absence of bleed water. No water shall be added to placed concrete during finishing.

8.5 Overexcavation - If encountered, expansive soils within two feet of flatwork or three feet of slab-on-grade shall be overexcavated. Overexcavations should extend at least two feet laterally beyond the edge of the flatwork/slab-on-grade section.

8.6 Base - Base material shall be compacted to 95 percent relative compaction. Compaction shall be approved by the Geotechnical Engineer. Type II Class B aggregate base meeting the following requirements shall be used:

Gradation Requirements

Sieve Size	Percentage Passing (by weight)
1"	100
3/4"	90-100
#4	35-65
#16	15-40
#200	2-10

Plasticity Index should meet the following requirements:

Percentage Passing #200 (by weight)	Plasticity Index Maximum
0.1 to 3.0	15
3.1 to 4.0	12
4.1 to 5.0	9
5.1 to 8.0	6
8.0 to 11.0	4

Other Requirements

R-value	Minimum of 70
Fractured faces	Minimum of 35%
LA Abrasion	Maximum of 45%
Liquid Limit	Maximum of 35%

8.7 Concrete slab-on-grade thickness and compressive strength requirements shall be in accordance with design criteria provided by the Structural Engineer. Minimum slab thickness and compressive strength for flatwork shall be in accordance with the applicable requirements.

8.8 Concrete work shall conform to all requirements of ACI 301-84, Specifications for Structural Concrete for Buildings, except as modified by supplemental requirements.

8.9 To facilitate curing of the slab, base materials shall be kept moist until placement of the concrete.

8.10 Excessive slump (high water cement ratio) of the concrete and/or improper curing procedures used during hot or cold weather could lead to excessive shrinkage, cracking or curling of slabs and other flatwork.

9.0 RETAINING WALLS

9.1 Retaining walls should be designed using a passive pressure calculated as 407 pounds per square foot per foot of depth and active soil pressure should be calculated as 35 pounds per square foot per foot of depth. A base coefficient of 0.25 should be used for resistance to sliding.

9.2 Footings should be placed at least 24 inches below the lowest adjacent finished grade. Subgrade shall be prepared as per these specifications.

9.3 In addition to active soil pressures the effects of any surcharge from adjacent structures or roadways should be included in calculating lateral pressures on retaining walls.

9.4 The design pressures given assume the soils retained are granular, non-expansive and free draining.

9.5 Retaining wall backfill should be moisture conditioned to within 2 percent of optimum and compacted to 85 percent in non-structural areas and 90 percent in structural areas. The use of heavy compaction equipment could cause excessive lateral pressures, which may cause failure of the wall.

9.6 Installation of weep holes or a continuous drain along the base of the wall is recommended to prevent water from being retained behind the wall.

9.7 An interceptor swale should be provided at the top of all retaining walls.

10.0 ASPHALTIC CONCRETE PAVEMENT

10.1 Material and Procedure - The asphalt-concrete material and placement procedures shall

conform to appropriate sections of the "Standard Specifications". Aggregate materials for asphaltic concrete shall conform to the requirements listed for Type 2 and Type 3 aggregate in Section 200.02.02 of the "Standard Specifications, 2007". A Type 3, 50-blow, Marshall mix design with 3 to 5 percent air voids is recommended. An asphaltic cement grade PG64-22 or equivalent is recommended for top layer for this project. The Contractor shall submit proposed asphalt-concrete mix designs to the Geotechnical Engineer for review and approval at least one week prior to paving. Asphalt materials should be compacted to a minimum of 92 percent of its theoretical maximum specific gravity or 96 percent of its Marshall density.

10.2 Subgrade Preparation - After completion of the utility trench backfill and prior to the placement of aggregate base, the upper 12 inches of finished subgrade soil or structural fill material shall be moisture conditioned to at within 2 percent of optimum and compacted to at least 90 percent. This may require scarifying, moisture conditioning and compacting.

10.3 Aggregate Base Rock - After the subgrade and/or structural fill is properly prepared, the aggregate base material shall be placed uniformly on the approved areas. Aggregate base shall be placed in such a manner as to prevent segregation of the different sizes of material and any such segregation, unless satisfactorily corrected, shall be cause for rejection at the discretion of the Geotechnical Engineer. The aggregate base material shall be spread for compaction in layers not to exceed six inches; moisture conditioned to within 2 percent of optimum, and compacted to at least 95 percent compaction. Aggregate base materials shall meet the requirements of Section 200.01.03 of the "Standard Specifications, 2007" for Type 2, Class B aggregate base. The aggregate base materials shall be approved by the Geotechnical Engineer prior to incorporation into the pavement structure.

11.0 SEISMIC DESIGN

11.1 Design of structures should include an allowance for earthquake loading. Structures should be designed in conjunction with IBC 2006 criteria for seismic acceleration of 0.504g in soil profile D.

APPENDIX B

SILVER HILLS

Truck Type	Daily Traffic Count	Number of Vehicles/Year	Number of Vehicles/Year in Design Lane	Truck Factor	Growth Factor	ESAL
Single-Unit Trucks						
2-Axle, 4-Tire	1000	365000	182500	0.006	29.8	32631
2-Axle, 6-Tire (includes school buses)	4	1460	730	0.13	29.8	2828
3-Axle or more (includes RTC buses)	4	1460	730	0.72	29.8	15663
Tractor Semi-Trailers and Combinations						
4-Axle or less	2	730	365	0.4	29.8	4351
5-Axle	1	365	183	0.63	29.8	3426
6-Axle or more	0	0	0	0.64	29.8	0
				Total ESAL		**58,899**

Percentage of Truck in Design Lane **50**

Key Assumptions
Urban Collector
20 year design @ 4% growth

1993 AASHTO Pavement Design

DARWin Pavement Design and Analysis System

A Proprietary AASHTOWare
Computer Software Product

Don M. McHarg

Flexible Structural Design Module

Asphalt Section

Flexible Structural Design

18-kip ESALs Over Initial Performance Period	60,000
Initial Serviceability	4.2
Terminal Serviceability	3
Reliability Level	90 %
Overall Standard Deviation	0.49
Roadbed Soil Resilient Modulus	12,949 psi
Stage Construction	1
Calculated Design Structural Number	1.81 in

Layered Thickness Design

Thickness precision: Actual

Layer	Material Description	Struct Coef. (Ai)	Drain Coef. (Mi)	Spec Thickness (Di)(in)	Min Thickness (Di)(in)	Elastic Modulus (psi)	Width (ft)	Calculated Thickness (in)	Calculated SN (in)
1	Asphalt	0.44	1	-	3	350,000	12	3.00	1.32
2	Base	0.12	1	6	-	27,500	12	6.00	0.72
Total	-	-	-	-	-	-	-	9.00	2.04

APPENDIX C

PRELIMINARY FAULTLINE EXPLORATION
SILVER HILLS AREA
WASHOE COUNTY, NEVADA

A Professional Geologist supervised the excavation of three trenches across mapped faults on this proposed development. Two of the faults (FT-2 and FT-3) were determined to be active; the other fault (FT-1) was not encountered during this program. The faults were generally excavated to depths of 4-5 feet below ground surface and ranged from 45 feet in length to 111 feet. Excavations were done using a CAT 420 backhoe.

Fault trench FT-1 was excavated at the southwestern corner of the development in an effort to transect a mapped northwesterly fault that parallels the Walker Lane fault zone. The mapped fault was plotted on a topographic map, and the trench was positioned to intersect the trace of the fault using both the topographic map and interpreted linears from orthophotography. The trench was 45 ft long and ranged in depth from 44 inches on western part to 40 inches on the eastern part (Sheet C1). The topsoil, a blocky dark brown clayey sand, ranged in thickness from 22 inches to 32 inches depth below ground surface (bgs), increasing in depth to the east. The underlying soil was a decomposed arkosic sandstone that excavates to a coherent coarse clayey or silty sand, or decomposed granite. No abrupt changes in soils were noted in the trench in either the topsoil or the underlying sands. The change in topsoil thickness was a gradual tapering thickness downslope. No fault appeared to be intersected in this trench, and no scarps were noted in the surrounding topography (Sheet C2).

Fault trench FT-2 was excavated at the northwestern part of the development. The trench was sited to intersect a mapped north-south rangefront fault where it intersected an abrupt northwesterly photolinear interpreted to be a northwesterly striking fault parallel the Walker Lane orientation. The trench was 57 feet long and ranged in depth from 52 inches bgs on the southwest terminus to 36 inches bgs on its northeast origin. Two faults were noted in the trench with an intervening damage zone (Sheets C3, C4). The first fault was at 0+35 feet, and separated an arkosic sandstone containing clasts of the Peavine Peak metamorphic rocks on the east from the fault zone breccia. The eastern unit is estimated to excavate to a silty sand with gravel (SM). The second fault was at 0+43 - 0+46 feet, and separated the fault zone breccia on the east from an arkosic sandstone containing clasts of coarse and fine grained granite. This western unit is estimated to excavate to a clayey sand (SC). A rotated clast of topsoil was noted and photographed at 0+46 in the hanging wall of the fault. The western unit contained veinlets of hydrothermal magnetite from approximately 0+46 - 0+48 feet. Clay alteration of the western unit prevailed to the terminus of the trench at 0+57 feet, presumably associated with the hydrothermal magnetite. This alteration may cause isolated problems during construction, and should be evaluated in greater detail. The intervening breccia between 0+35 feet and 0+43 feet was a brecciated arkosic sandstone with clasts of both granitic

and metamorphic rocks, and is estimated to excavate to the properties of a clayey sand (SC).

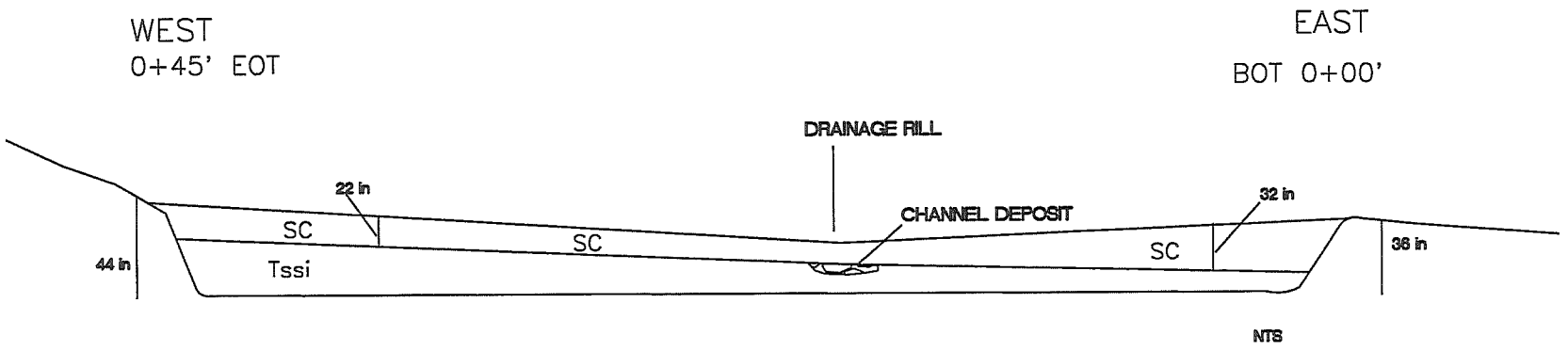
The topsoil, a dark brown blocky clayey sand, ranged in thickness from 24 inches on the southwest part of the trench to 12 inches on the northeast part of the trench. No abrupt thinning of topsoil was observed, but, as noted previously, a clast of topsoil was observed in the western fault within the arkosic sandstone (Sheet C5). The fault is interpreted to be active Holocene, with right lateral strike slip motion. A 50-foot offset of both sides of the faults is proscribed for occupied structures.

Fault trench FT-3 was excavated at the northeastern part of the proposed Silver Hills development (Sheet C6). The trench was sited to intersect a mapped north-south fault situated approximately 1 mile east of the rangefront (see geologic map). When reconnoitering the area in the field, a scarp was noticed and the trench was sited to intersect the scarp (Sheet C7). The trench was 111 feet long and ranged in depth from 56 inches bgs near the terminus on the western end to 40 inches depth at the origin on the eastern end. Topsoil, a dark brown clayey sand (SC) with blocky break, averaged approximately 24 inches thickness bgs, but thinned to approximately 15 inches in two faults.

The main fault zone occurred at the surface scarp between 0+65 – 0+82 feet. The fault separates a fine-grained medium reddish brown sandstone on the east from a medium greenish gray shale on the west (Sheet C8). The sandstone is estimated to excavate to a dense well graded sand (SW). The shale is estimated to excavate to a very stiff sandy silt (ML).

The second smaller fault zone occurred at 1+03 – 1+08, apparently parallel to the main fault. This second fault separates the shale on the east side from a dark greenish gray poorly consolidated conglomerate on the west (Sheet C9). The conglomerate is estimated to excavate to a medium dense silty gravel with sand (GM). The topsoil thins over this fault to 15-17 inches. Because the topsoil is thinned over both faults, they are interpreted to be active Holocene, with indeterminate dip slip motion. A 50-foot offset of both sides of the faults is proscribed for occupied structures.

FAULT TRENCH FT-1 SCHEMATIC SECTION



SC - TOPSOIL, CLAYEY SAND

Tssi - arkosic sandstone, excavates to a CLAYEY SAND

SHEET C1 OF APP. C

SUMMIT ENGINEERING CORPORATION
5405 MAE ANNE AVENUE, RENO, NV. 89523
PHONE:(775) 747-8550 FAX:(775) 747-8559

JOB NO.: 28813
APPR.: JKG
BY: WMM
9:22 AM * 05-MAR-2009

FAULT TRENCH SCHEMATIC
SILVER HILLS
WASHOE CO., NV

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PHOTO OF TRENCH FT-1
SILVER HILLS
WASHOE CO., NV

JOB NO.: 28813
APPR.: JKG
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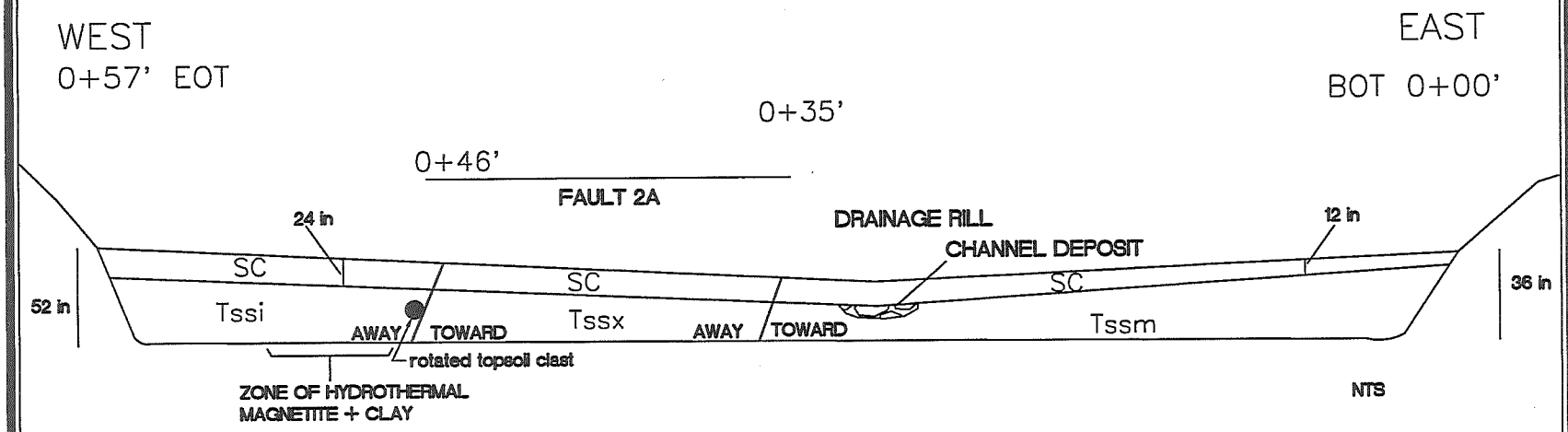
SHEET C2
OF APP. C

FAULT TRENCH FT-2 SCHEMATIC SECTION



SC - TOPSOIL, CLAYEY SAND

Tssx - brecciated arkosic sandstone w/ granite + metamorphic clasts, excavates to a CLAYEY SAND

Tssi - arkosic sandstone w/granite clasts, excavates to a CLAYEY SAND

Tssm - arkosic sandstone w/metamorphic clasts, excavates to a SILTY SAND W/GRAVEL

SHEET C3 OF APP. C

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FAULT TRENCH SCHEMATIC
SILVER HILLS
WASHOE CO., NV

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PHOTO OF TRENCH FT-2
SILVER HILLS
WASHOE CO., NV

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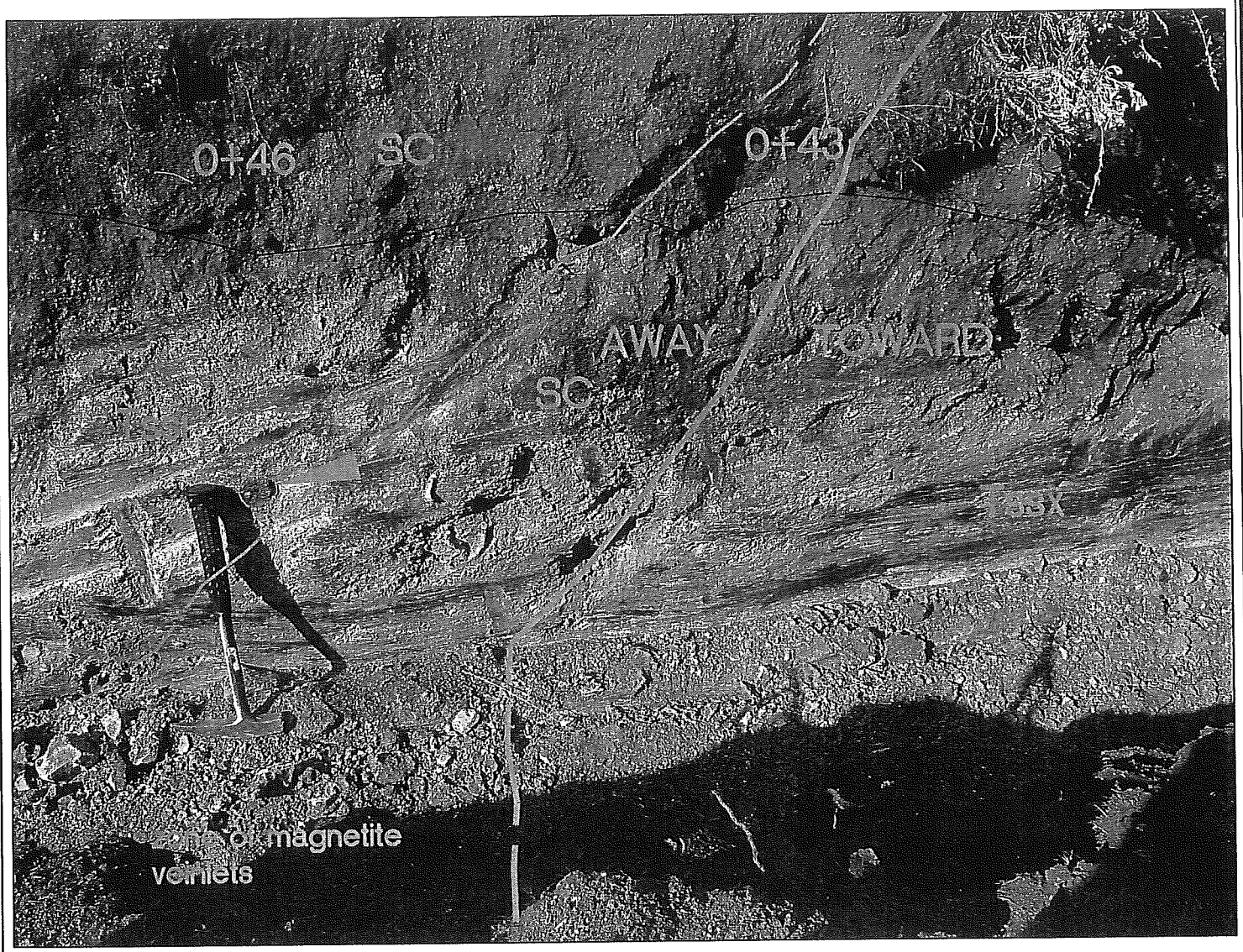
SHEET C4
OF APP. C



DETAIL- FAULT TRENCH 2
SILVER HILLS
WASHOE COUNTY, NV

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APPR.:	JKG
BY:	WMM
	9:26 AM * 05-MAR-2009

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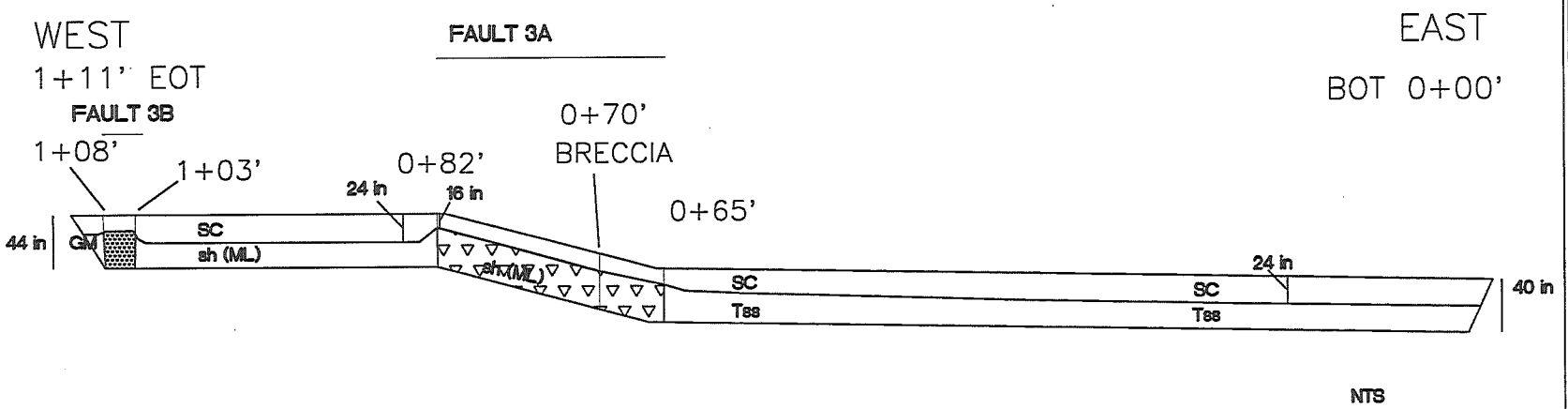
SHEET C5

OF APP. C

FAULT TRENCH FT-3 SCHEMATIC SECTION



NTS

SC - TOPSOIL, CLAYEY SAND

GM - SILTY GRAVEL W/SAND

sh (ML) - SHALE, excavtes to a SANDY SILT

Tss - Tertiary sandstone, excavates to a POORLY GRADED SAND

SHEET C6

OF APP. C

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FAULT TRENCH SCHEMATIC
SILVER HILLS
WASHOE CO., NV

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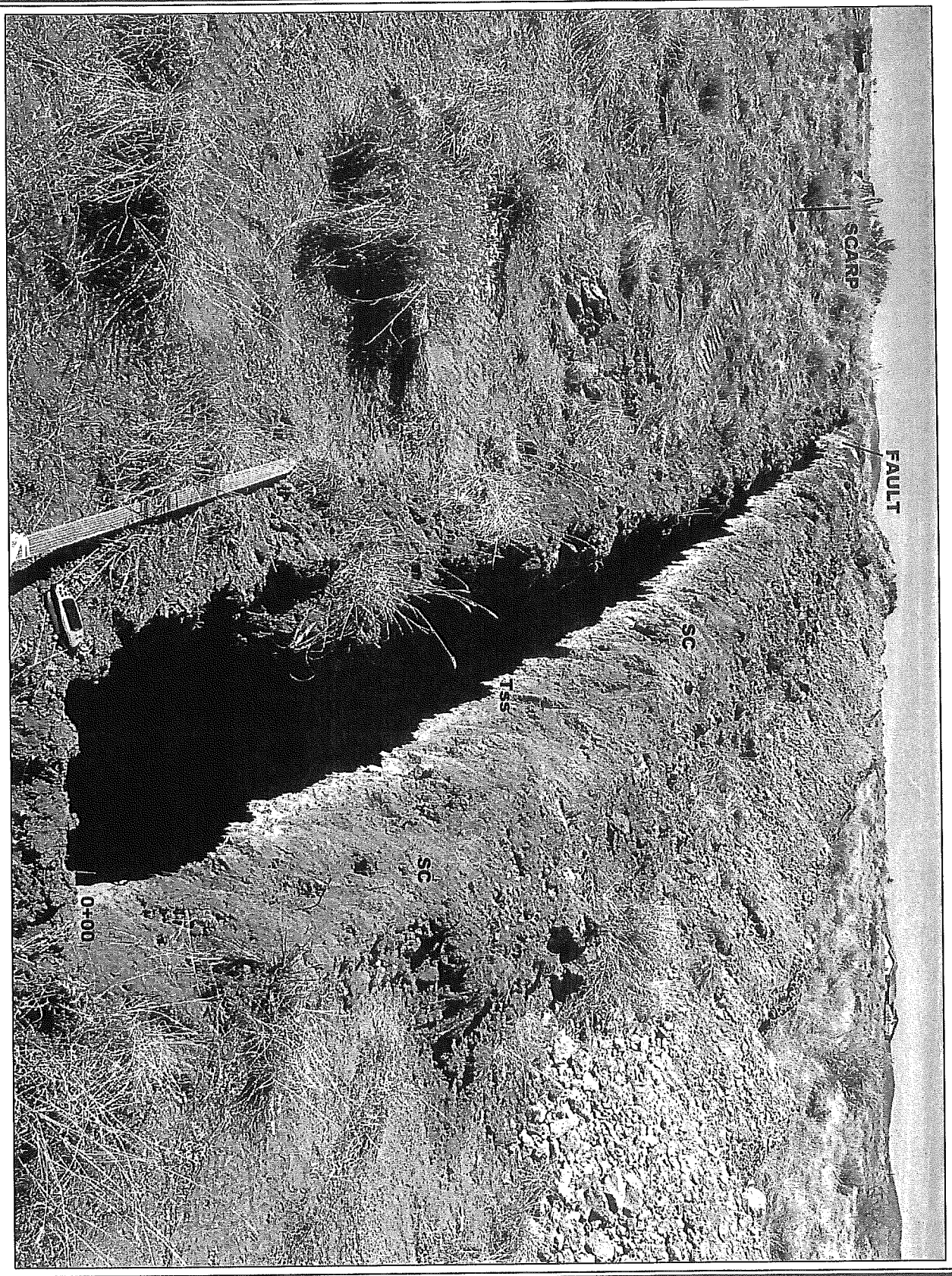

PHOTO OF TRENCH FT-3
SILVER HILLS
WASHOE CO., NV

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BY: WMM
9:43 AM * 05-MAR-2009

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SHEET C7
OF APP. C

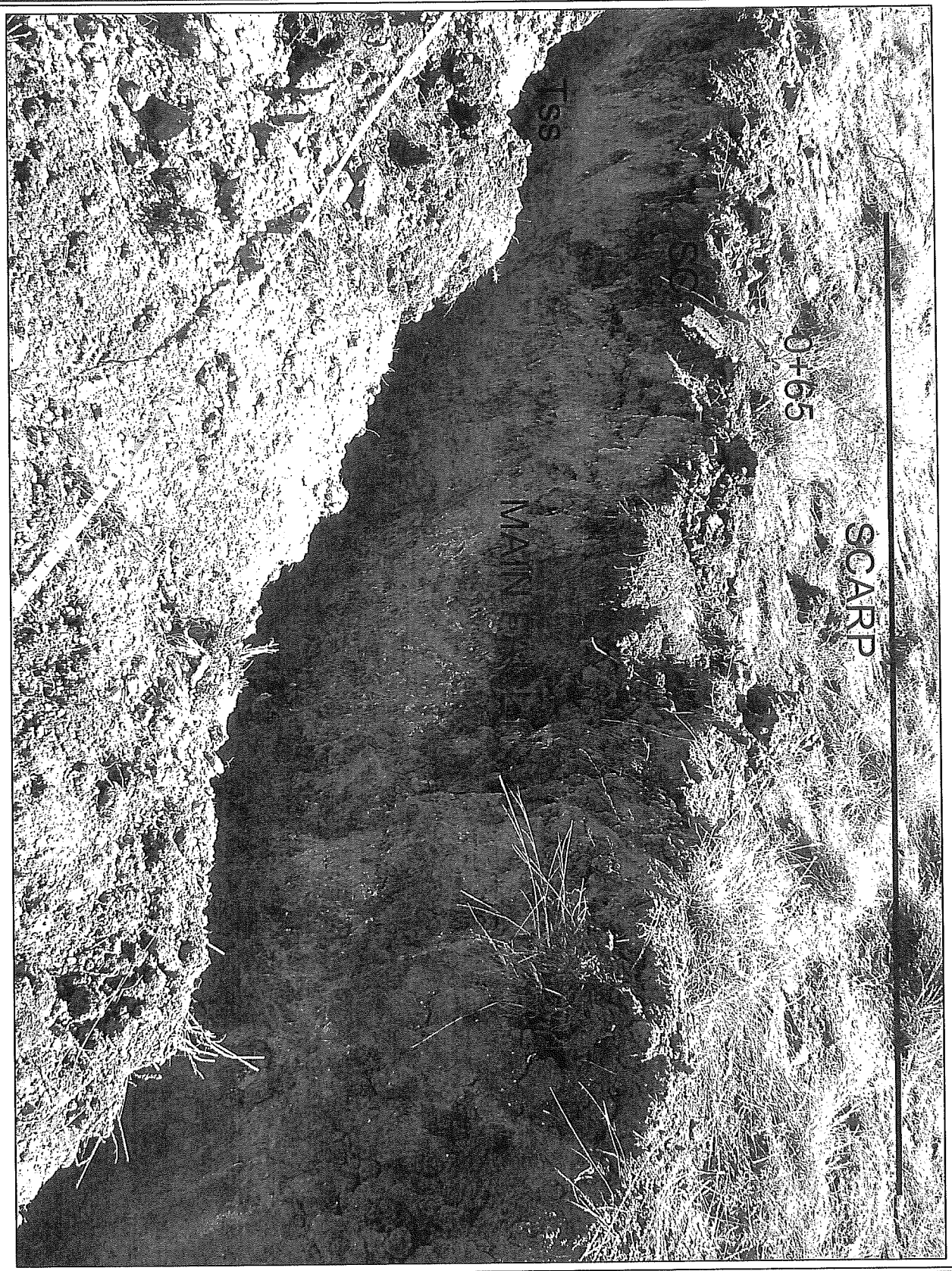

PHOTO OF TRENCH FT-3
SILVER HILLS
WASHOE CO., NV

JOB NO.: 28813
APPR.: JKG
BY: WMM
9:31 AM * 05-MAR-2009

N:\DWGS\J28813_SilverHills\Geotech\ft-3_mainfault.DWG

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SHEET C8
OF APP. C

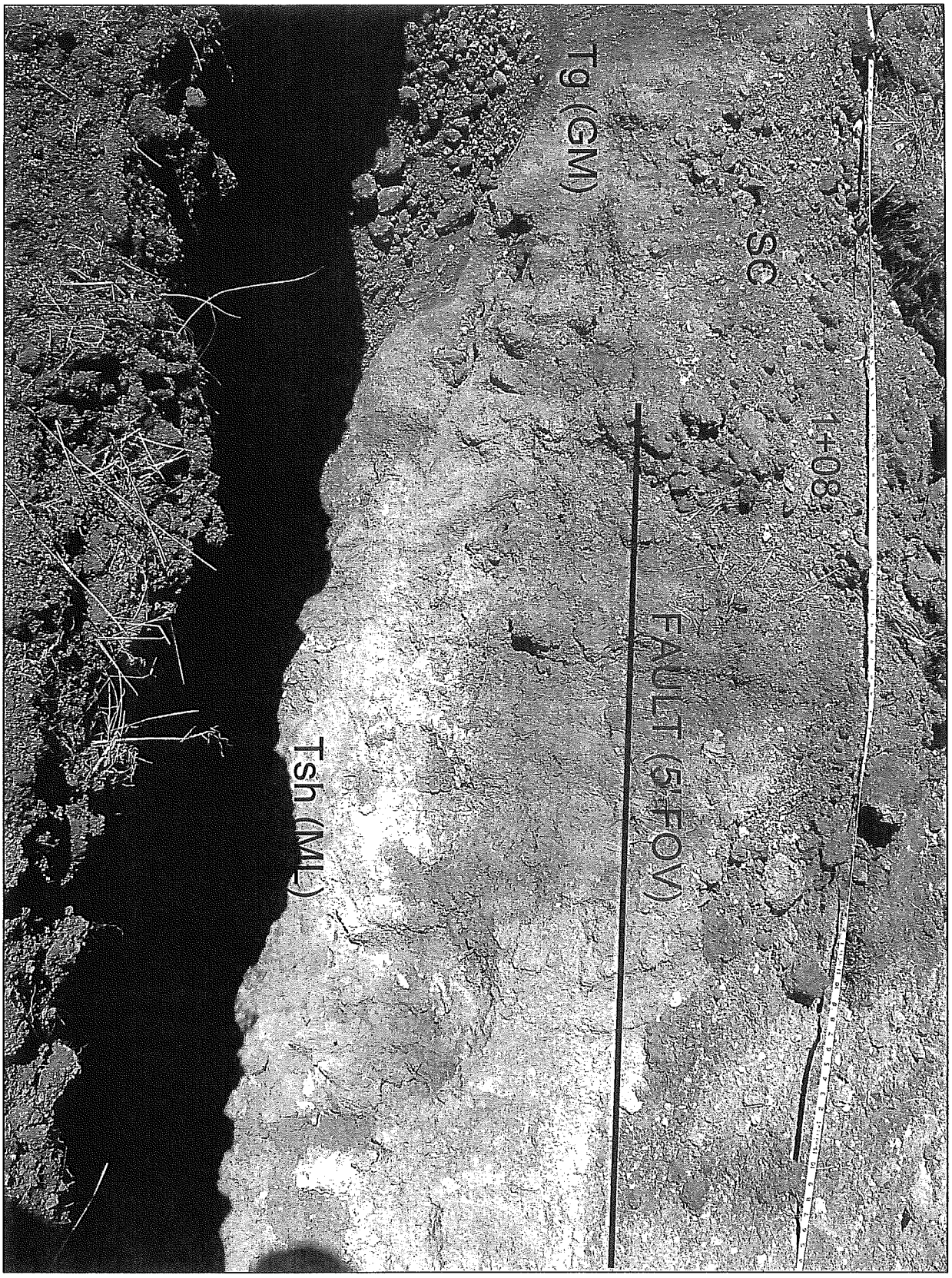

PHOTO OF TRENCH FT-3
SILVER HILLS
WASHOE CO., NV

JOB NO.: 28813
APPR.: JKG
BY: WMM
9:45 AM * 05-MAR-2009

N:\DWGS\J28813_SilverHills\Geotech\ft-3_1+05.DWG

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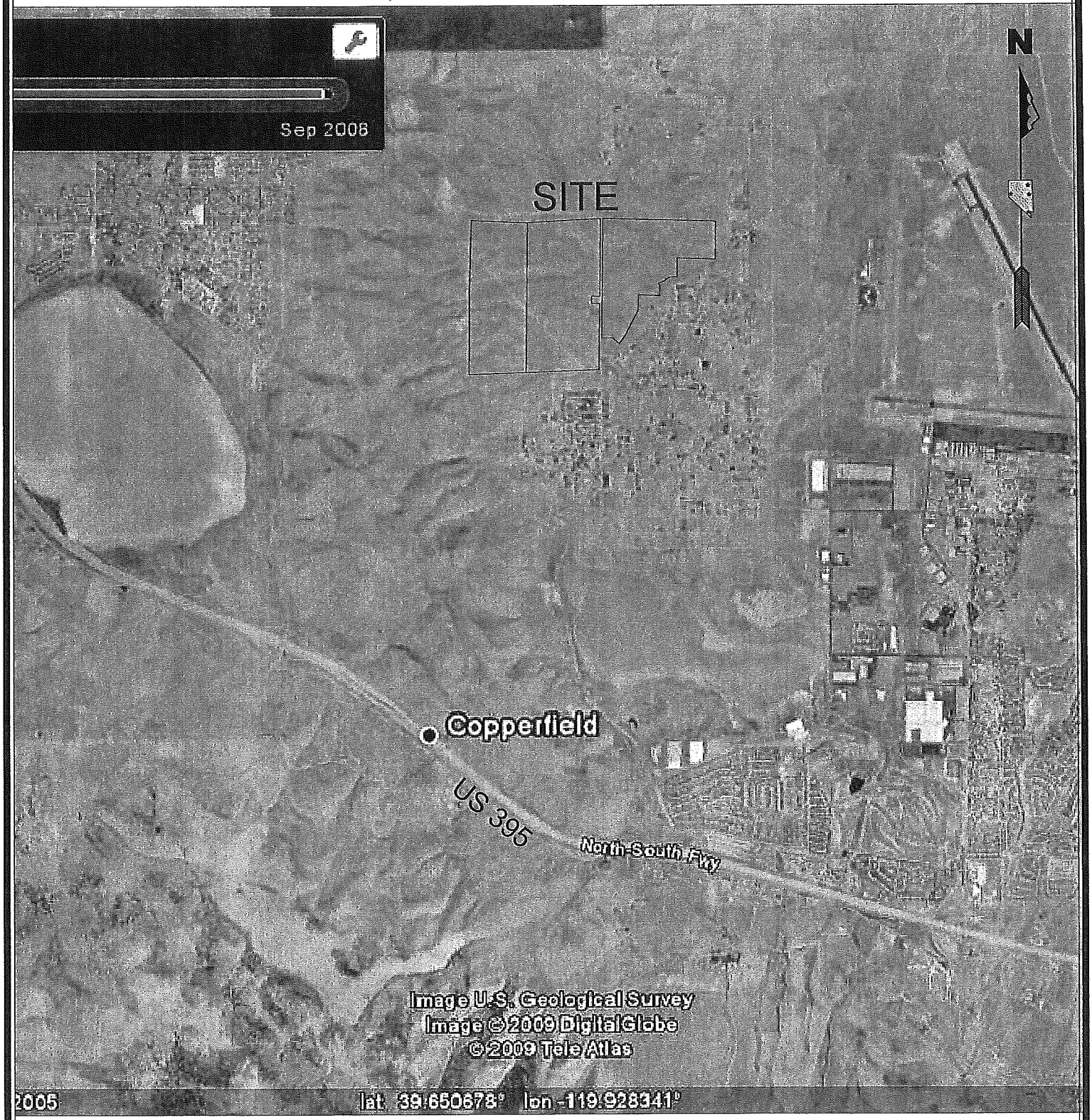
SHEET C9 OF APP. C

SHEETS



VICINITY MAP
SILVER HILLS
RENO, NEVADA

JOB NO.:	28813
APPR.:	JKG
BY.:	TMH

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N:\DWGS\J28813_SilverHills\Geotech\VICINITY.DWG ~ 2:41 PM * 06-MAR-2009

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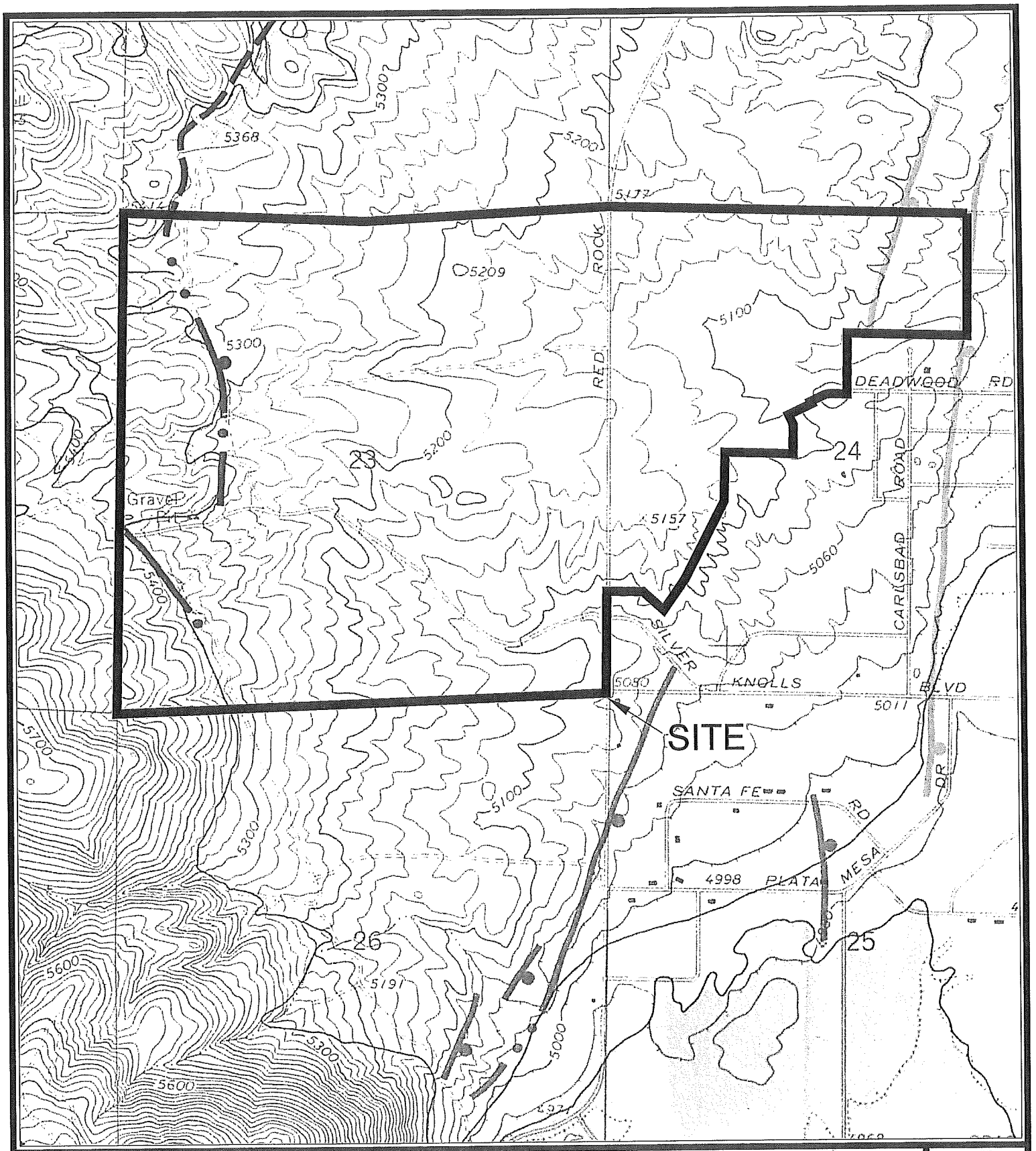
SCALE: 1"=700'	DESIGNED BY:
JOB #: 28813	CHECKED BY: JKG
Copyright SUMMIT ENG 2009	DRAWN BY: tmh
N:\DWGS\J28813_SilverHills\Geotech\site.DWG ~ 2:39 PM * 06-MAR-2009	

SITE MAP
SILVER HILLS
RENO, NEVADA

SHEET 2 OF 25



GEOLOGY MAP
SILVER HILLS
RENO, NEVADA

JOB NO.: 28813
APPR.: JKG
BY: TMH
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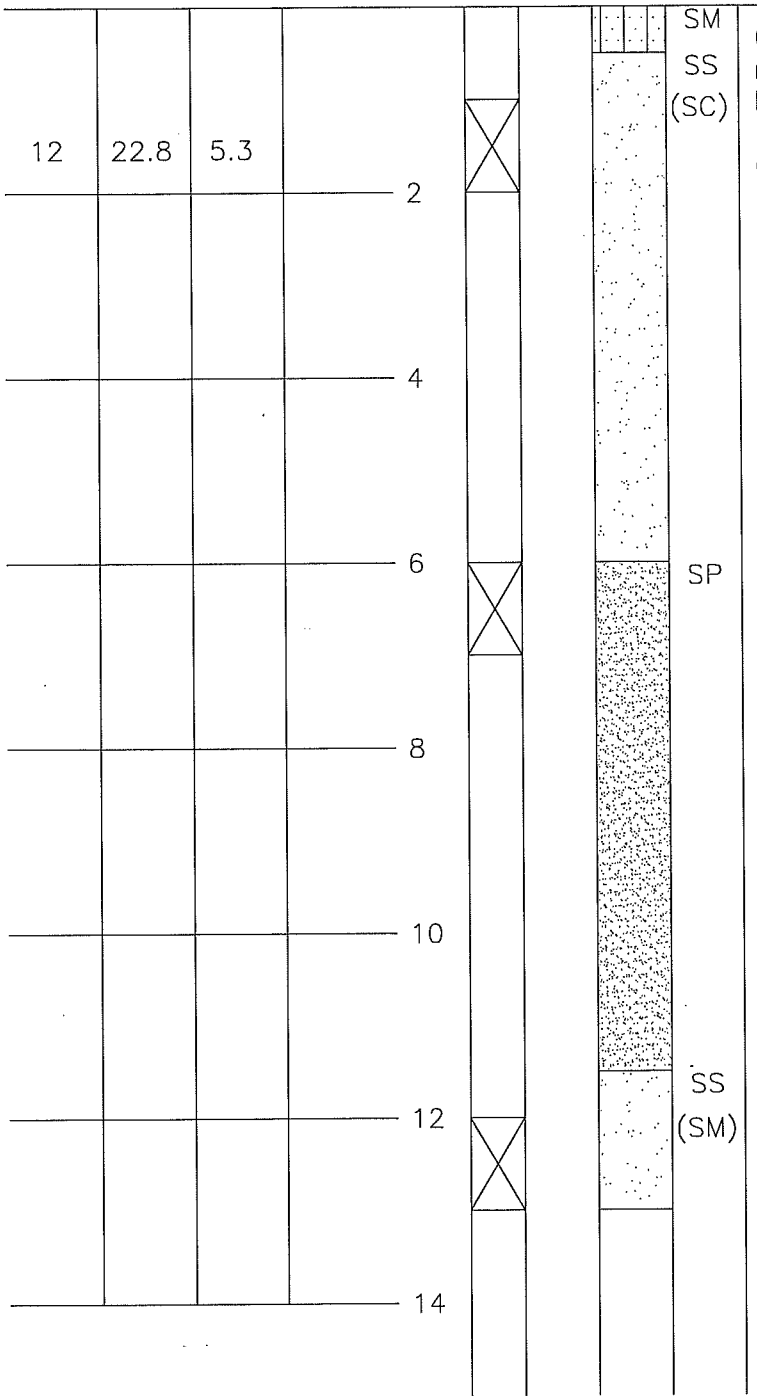
SHEET 3 OF 25

LOG OF TEST PIT 1

EQUIPMENT: CAT 420 D

DATE: 2-23-09 ELEV.



0-0.5': Silty Sand, dark brown, medium dense, slightly moist. Estimated 20% non plastic silt, 80% fine to coarse sand, trace gravel to 0.5".

0.5'-6': Bedrock: brown, medium dense, fine grained, Sandstone, slightly moist. Excavates to the properties of a Clayey Sand (SC), Approximately 25% medium plastic clay, 70% fine to coarse sand, 5% fine gravel to 0.5".

4': dense.

6'-11.5': Poorly Graded Sand with Silt, tan, medium dense, slightly moist. Estimated 5% non plastic silt, 95% fine to coarse sand, trace gravel to 0.5". organics to 9' (roots)

11.5'-13': Bedrock: brown, medium dense, fine grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Estimated 20% non plastic silt, 70% fine to coarse sand, 10% fine gravel to 0.5".

Bottom of hole @ 13'
No Groundwater Encountered.

TEST PIT LOG
SILVER HILLS
RENO, NEVADA

JOB NO.: 28813
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SHEET 4 OF 25

N:\DWGS\J28813_SilverHills\Geotech\TP-1.DWG ~ 2:51 PM * 06-MAR-2009

LOG OF TEST PIT 2

EQUIPMENT: CAT 420 D

DATE: 2-23-09 ELEV.

PLASTICITY INDEX	% PASSING #200	MOISTURE CONTENT % OF DRY WT.	DRY DENSITY (PCF)	DEPTH (FT.)	SAMPLE LOCATION	BLOWS / FOOT		
				2			SC	0-1': Clayey Sand, dark brown, medium dense, slightly moist. Estimated 20% low plastic clay, 80% fine to coarse sand.
							CL	
							SS (SC)	1-1.5': Lean Clay with Sand, dark brown, stiff, slightly moist. Estimated 60% medium plastic clay, 40% fine to coarse sand.
NP	42.4	16.4		4			SS (SM)	1.5'-3': Bedrock: brown, medium dense, fine grained, Sandstone, moist. Excavates to the properties of a Clayey Sand (SC), Estimated 20% low plastic clay, 80% fine to coarse sand.
				6				3'-8': Bedrock: white, medium dense, fine grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Approximately 40% non plastic silt, 60% fine sand.
				8			SP	8'-11': Poorly Graded Sand with Silt, tan, medium dense, slightly moist. Estimated 5% non plastic silt, 95% fine to coarse sand, trace gravel to 0.5".
				10				
				12			SS (SM)	11'-13': Bedrock: brown, medium dense, fine grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Estimated 45% low plastic silt, 55% very fine to fine sand.
				14				Bottom of hole @ 13' No Groundwater Encountered.

TEST PIT LOG
SILVER HILLS
RENO, NEVADA

JOB NO.: 28813

APPR.: JKG

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LOG OF TEST PIT 3

EQUIPMENT: CAT 420 D

DATE: 2-23-09 ELEV.

PLASTICITY INDEX	% PASSING #200	MOISTURE CONTENT % OF DRY WT.	DRY DENSITY (PCF)	DEPTH (FT.)	SAMPLE LOCATION	BLOWS / FOOT	
				2			SC SS (SC)
				4			
				6			SS (SM)
NP	19.9	7.4		8			
				10			
				12			
				14			

0-1': Clayey Sand, dark brown, medium dense, slightly moist. Estimated 20% low plastic clay, 80% fine to coarse sand.

1'-6': Bedrock: brown, medium dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Clayey Sand (SC), Estimated 40% low plastic clay, 60% fine to coarse sand.

6'-13': Bedrock: tan, orange, brown, medium dense, fine grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Approximately 20% non plastic silt, 75% fine to medium sand, 5% gravel to 0.5". Slightly cemented

9' white

Bottom of hole @ 13'
No Groundwater Encountered.

TEST PIT LOG
SILVER HILLS
RENO, NEVADA

JOB NO.: 28813
APPR.: JKG
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SHEET 6
OF 25

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LOG OF TEST PIT 4

EQUIPMENT: CAT 420 D

DATE: 2-23-09 ELEV.

PLASTICITY INDEX	% PASSING #200	MOISTURE CONTENT % OF DRY WT.	DRY DENSITY (PCF)	DEPTH (FT.)	SAMPLE LOCATION	BLOWS / FOOT		
				2	X		SS (SM)	0-14': Bedrock: brown, medium dense, fine grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Estimated 20% non plastic silt, 80% fine to coarse sand, trace gravel.
				4	X			3' slightly cemented
				6				
				8	X			8': tan, 10% non plastic silt, 90% fine to coarse sand, trace gravel.
				10				
				12				
				14	X			Bottom of hole @ 14' No Groundwater Encountered.

TEST PIT LOG
SILVER HILLS
RENO, NEVADA

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SHEET 7 OF 25

N:\DWGS\J28813_SilverHills\Geotech\TP-4.DWG ~ 2:52 PM * 06-MAR-2009

LOG OF TEST PIT 5

EQUIPMENT: CAT 420 D

DATE: 2-23-09 ELEV.

PLASTICITY INDEX	% PASSING #200	MOISTURE CONTENT % OF DRY WT.	DRY DENSITY (PCF)	DEPTH (FT.)	SAMPLE LOCATION	BLOWS / FOOT	
				2			SM SS (SC) 0-0.5': Silty Sand, dark brown, medium dense, slightly moist. Estimated 20% non plastic silt, 80% fine to coarse sand. 0.5'-3.5': Bedrock: brown, medium dense, fine grained, Sandstone, slightly moist. Excavates to the properties of a Clayey Sand (SC), Approximatly 20% medium plastic clay, 70% fine to coarse sand, 10% fine gravel to 0.5".
12	21.2	6.2		4			SS (SM)
				6			3.5'-9': Bedrock: brown, tan, orange, medium dense, medium grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Estimated 15% non plastic silt, 85% very fine to coarse sand, trace gravel.
				8			coarse sand bedding, fine gravel bedding. 8.5' dense.
				10			SS (SC) 9'-12': Bedrock: brown, tan, orange medium dense, fine grained, Sandstone, slightly moist. Excavates to the properties of a Clayey Sand (SC), Estimated 20% low plastic clay, 70% fine to coarse sand, 10% fine gravel to 0.5".
				12			Bottom of hole @ 12' No Groundwater Encountered.
				14			

TEST PIT LOG
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RENO, NEVADA

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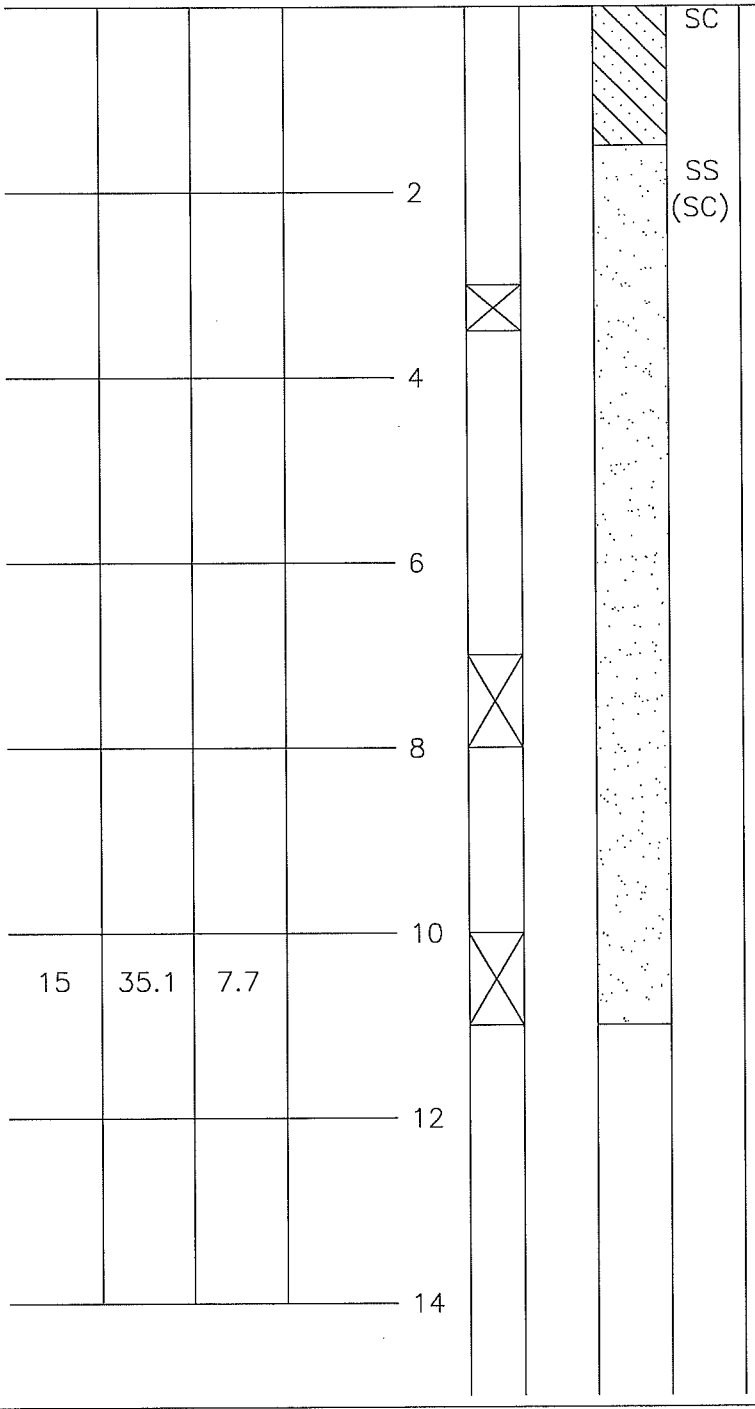
LOG OF TEST PIT 6

EQUIPMENT: CAT 420 D

DATE: 2-24-09 ELEV.



SC

0-1.5': Clayey Sand, dark brown, medium dense, slightly moist. Estimated 30% low plastic clay, 70% fine to coarse sand, trace cobbles.

SS (SC)

1.5'-11': Bedrock: tan, medium dense, fine grained, Sandstone, slightly moist. Excavates to the properties of a Clayey Sand (SC), Approximatly 20% low plastic clay, 80% fine to coarse sand.

4': very dense.

8': 35% medium plastic clay, 65% fine to medium sand.

Bottom of hole @ 11'
No Groundwater Encountered.

TEST PIT LOG
SILVER HILLS
RENO, NEVADA

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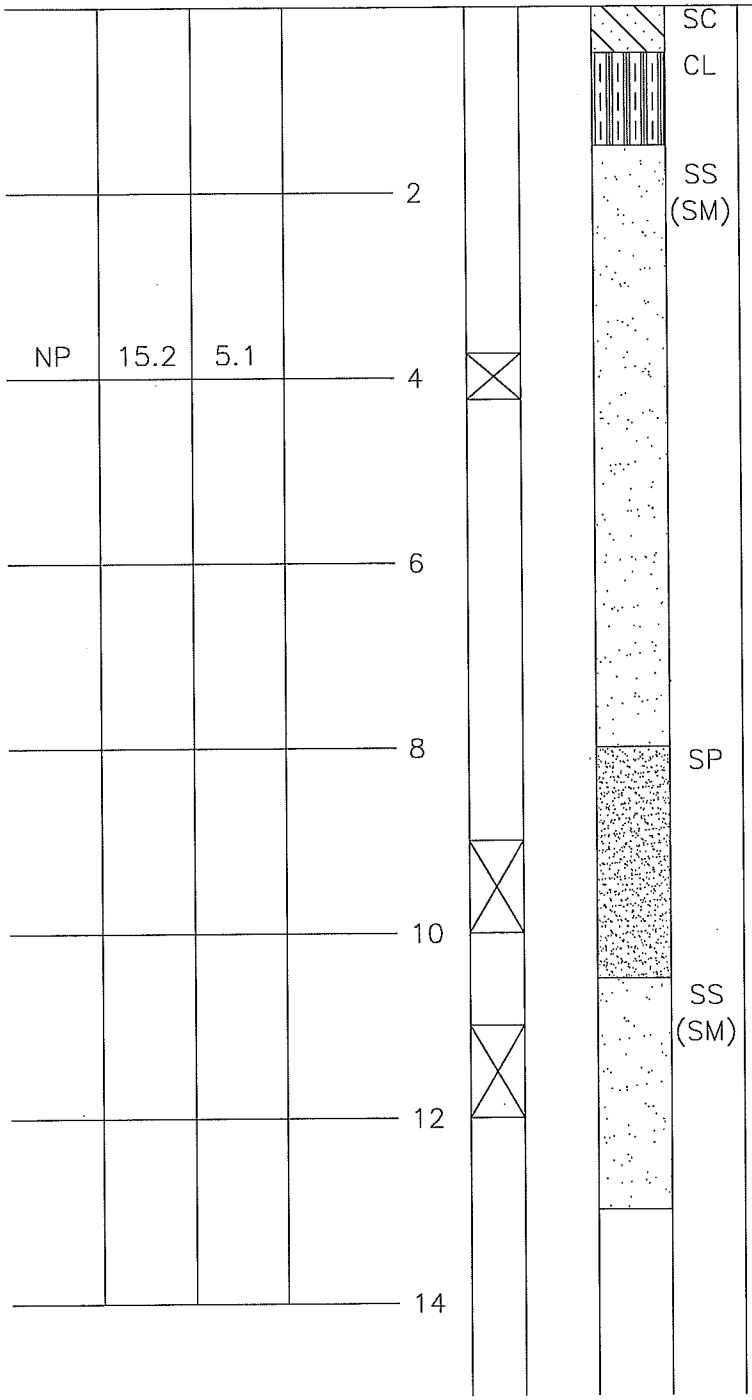
SHEET 9 OF 25

N:\DWGS\J28813_SilverHills\Geotech\TP-6.DWG ~ 2:53 PM * 06-MAR-2009

LOG OF TEST PIT 7

EQUIPMENT: CAT 420 D

DATE: 2-24-09 ELEV.



0-0.5': Clayey Sand, dark brown, medium dense, slightly moist. Estimated 30% low plastic clay, 70% fine to coarse sand, trace gravel.

0.5'-1.5': Lean Clay with Sand, dark brown, stiff, slightly moist. Estimated 60% medium plastic clay, 40% fine to coarse sand, trace gravel to 1".

1.5'-8': Bedrock: brown, tan, red, yellow, medium dense, medium grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Approximately 15% non plastic silt, 80% very fine to coarse sand, 5% fine gravel to 0.5", slightly cemented.

8'-10.5': Poorly Graded Sand with Silt, tan, medium dense, slightly moist. Estimated 5% non plastic silt, 95% fine to coarse sand, trace gravel to 0.5".

10.5'-13': Bedrock: tan, medium dense, fine grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Estimated 40% low plastic silt, 60% very fine to coarse sand.

Bottom of hole @ 13'
No Groundwater Encountered.

TEST PIT LOG
SILVER HILLS
RENO, NEVADA

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SHEET 10
OF 25

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LOG OF TEST PIT 8

EQUIPMENT: CAT 420 D

DATE: 2-24-09 ELEV.

PLASTICITY INDEX	% PASSING #200	MOISTURE CONTENT % OF DRY WT.	DRY DENSITY (PCF)	DEPTH (FT.)	SAMPLE LOCATION	BLOWS / FOOT		
							SM	0-1': Silty Sand, dark brown, medium dense, slightly moist. Estimated 25% non plastic silt, 75% fine to coarse sand, trace gravel.
20	42.3	11.9					SC	1'-2': Clayey Sand, dark brown, medium dense, slightly moist. Approximately 40% medium plastic clay, 60% fine to coarse sand, trace gravel.
				2			SS (SM)	
				4				2'-11': Bedrock: red, tan, yellow medium dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Approximatly 10% non plastic silt, 80% fine to coarse sand, 10% gravel to 0.5", slightly cemented.
				6				6' tan to brown.
				8				9' moist.
				10				11'-13': Bedrock: tan, medium dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Well Graded Sand with Silt (SW/SM), Approximatly 10% non plastic silt, 80% fine to coarse sand, 10% gravel to 0.5", slightly cemented.
				12			SS (SW) (SM)	
NP	10.1	6.5						
				14				Bottom of hole @ 13' No Groundwater Encountered.

TEST PIT LOG
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SHEET 11 OF 25

N:\DWGS\J28813_SilverHills\Geotech\TP-8.DWG ~ 2:54 PM * 06-MAR-2009

LOG OF TEST PIT 9

EQUIPMENT: CAT 420 D

DATE: 2-24-09 ELEV.

PLASTICITY INDEX	% PASSING #200	MOISTURE CONTENT % OF DRY WT.	DRY DENSITY (PCF)	DEPTH (FT.)	SAMPLE LOCATION	BLOWS / FOOT		
				2			SM	0-1': Silty Sand, dark brown, medium dense, slightly moist. Estimated 25% non plastic silt, 75% fine to coarse sand, trace gravel.
							SC	1'-2.5': Clayey Sand, dark brown, medium dense, slightly moist. Estimated 40% medium plastic clay, 60% fine to coarse sand, trace gravel.
				4			SS (SC) (SM)	2.5'-12': Bedrock: tan, orange, medium dense, medium grained, Sandstone, slightly moist. Excavates to the properties of a Silty Clayey Sand (SC/SM), Approximately 30% low plastic clay/silt, 70% very fine to medium sand, trace gravel to 0.5".
5	27.8	5.9						
				6				
				8				
				10				10' 35% non plastic silt, 65% very fine to fine sand.
				12				Bottom of hole @ 12' No Groundwater Encountered.
				14				

TEST PIT LOG
SILVER HILLS
RENO, NEVADA

JOB NO.: 28813

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SHEET 12 OF 25

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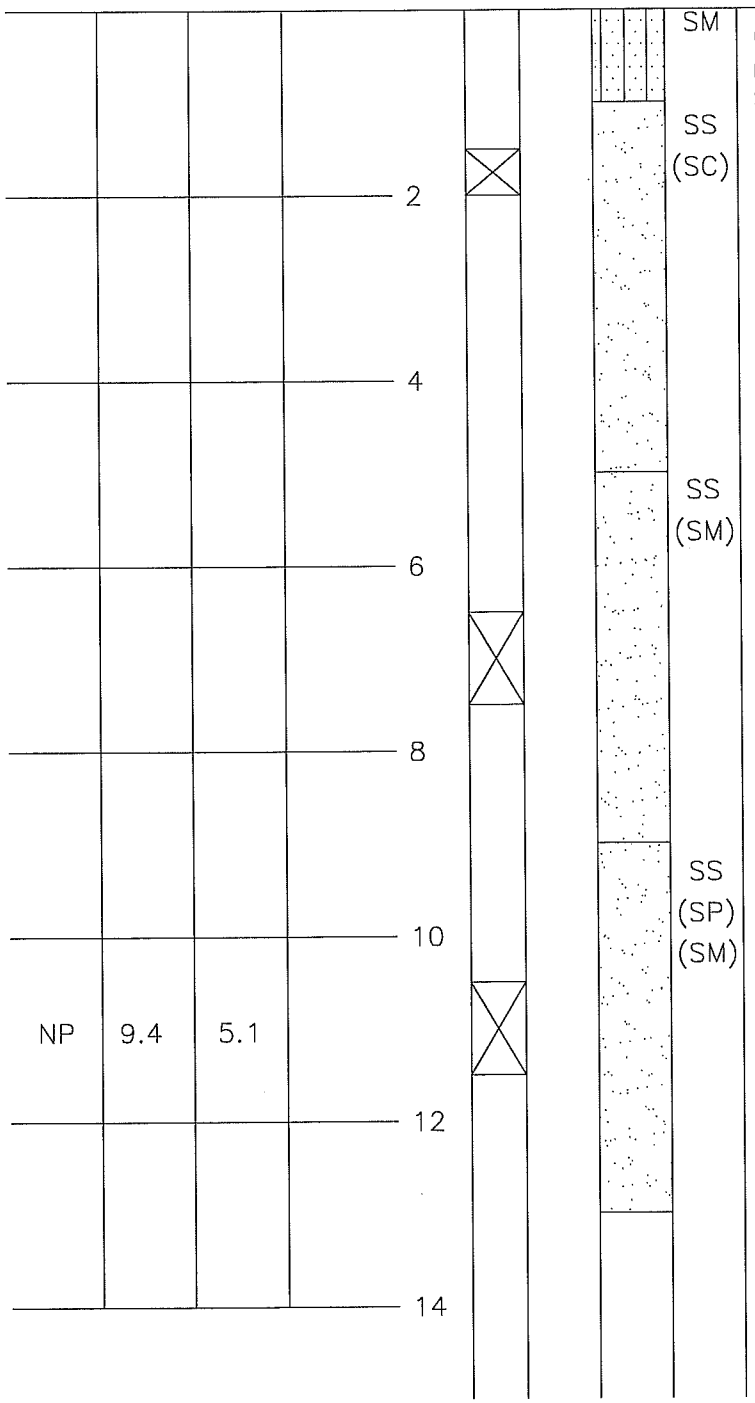
LOG OF TEST PIT 10

EQUIPMENT: CAT 420 D

DATE: 2-24-09 ELEV.



SM

SS (SC)

0-1': Silty Sand, dark brown, medium dense, slightly moist. Estimated 25% non plastic silt, 75% fine to coarse sand, trace gravel.

1'-5': Bedrock: brown to tan, medium dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Clayey Sand (SC), Estimated 20% low plastic clay, 80% fine to coarse sand, trace gravel

SS (SM)

5'-9': Bedrock: brown to red, medium dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Estimated 25% non plastic silt, 75% very fine to coarse sand, trace gravel to 0.5".

SS (SP) (SM)

9'-13': Bedrock: tan, yellow, gray medium dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Poorly Graded Sand with Silt (SP/SM), Approximatly 10% non plastic silt, 90% fine to medium sand.

Bottom of hole @ 13'
No Groundwater Encountered.

TEST PIT LOG
SILVER HILLS
RENO, NEVADA

JOB NO.: 28813
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SHEET 13
OF 25

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LOG OF TEST PIT 11

EQUIPMENT: CAT 420 D

DATE: 2-24-09 ELEV.

PLASTICITY INDEX	% PASSING #200	MOISTURE CONTENT % OF DRY WT.	DRY DENSITY (PCF)	DEPTH (FT.)	SAMPLE LOCATION	BLOWS / FOOT	
				2			SM SS (SC) 0-0.5': Silty Sand, dark brown, medium dense, slightly moist. Estimated 20% non plastic silt, 80% fine to coarse sand, trace gravel.
							0.5'-3': Bedrock: tan, medium dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Clayey Sand (SC), Estimated 30% low plastic clay, 70% fine to coarse sand, trace gravel
NP	12.1	6.7		4			SS (SM)
				6			3'-12': Bedrock: brown to tan, medium dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Approximately 10% non plastic silt, 85% very fine to coarse sand, 5% gravel to 0.5".
				8			
				10			
				12			Bottom of hole @ 12' No Groundwater Encountered.
				14			

TEST PIT LOG
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RENO, NEVADA

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LOG OF TEST PIT 12

EQUIPMENT: CAT 420 D

DATE: 2-24-09 ELEV.

PLASTICITY INDEX	% PASSING #200	MOISTURE CONTENT % OF DRY WT.	DRY DENSITY (PCF)	DEPTH (FT.)	SAMPLE LOCATION	BLOWS / FOOT		
				2			SM SS (SC)	0-1': Silty Sand, dark brown, medium dense, slightly moist. Estimated 25% non plastic silt, 75% fine to coarse sand, trace gravel. 1'-8': Bedrock: brown, medium dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Clayey Sand (SC), Estimated 25% medium plastic clay, 75% fine to coarse sand, trace gravel
				4				
				6				
				8				
14	28.5	6.0		10			SS (SC)	8'-11.5': Bedrock: brown, tan, red, dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Clayey Sand (SC), Approximately 30% medium plastic clay, 70% fine to coarse sand, trace gravel to 0.5" Bottom of hole @ 11.5' No Groundwater Encountered.
				12				
				14				

TEST PIT LOG
SILVER HILLS
RENO, NEVADA

JOB NO.: 28813

APPR.: JKG

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LOG OF TEST PIT 13

EQUIPMENT: CAT 420 D

DATE: 2-24-09 ELEV.

PLASTICITY INDEX	% PASSING #200	MOISTURE CONTENT % OF DRY WT.	DRY DENSITY (PCF)	DEPTH (FT.)	SAMPLE LOCATION	BLOWS / FOOT	
				2		SM SS (SM)	0-1': Silty Sand, dark brown, medium dense, slightly moist. Estimated 20% non plastic silt, 80% fine to coarse sand, trace gravel.
3	21.4	3.5		4			1'-12': Bedrock: brown to tan, medium dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Approximately 20% low plastic silt, 80% fine to coarse sand, trace gravel to 0.5".
				6			
				8			
				10			
				12		SS (SC)	12'-14': Bedrock: brown, dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Clayey Sand (SC), Estimated 30% low plastic clay, 70% fine to medium sand, trace gravel
				14			Bottom of hole @ 14' No Groundwater Encountered.

TEST PIT LOG
SILVER HILLS
RENO, NEVADA

JOB NO.: 28813

APPR.: JKG

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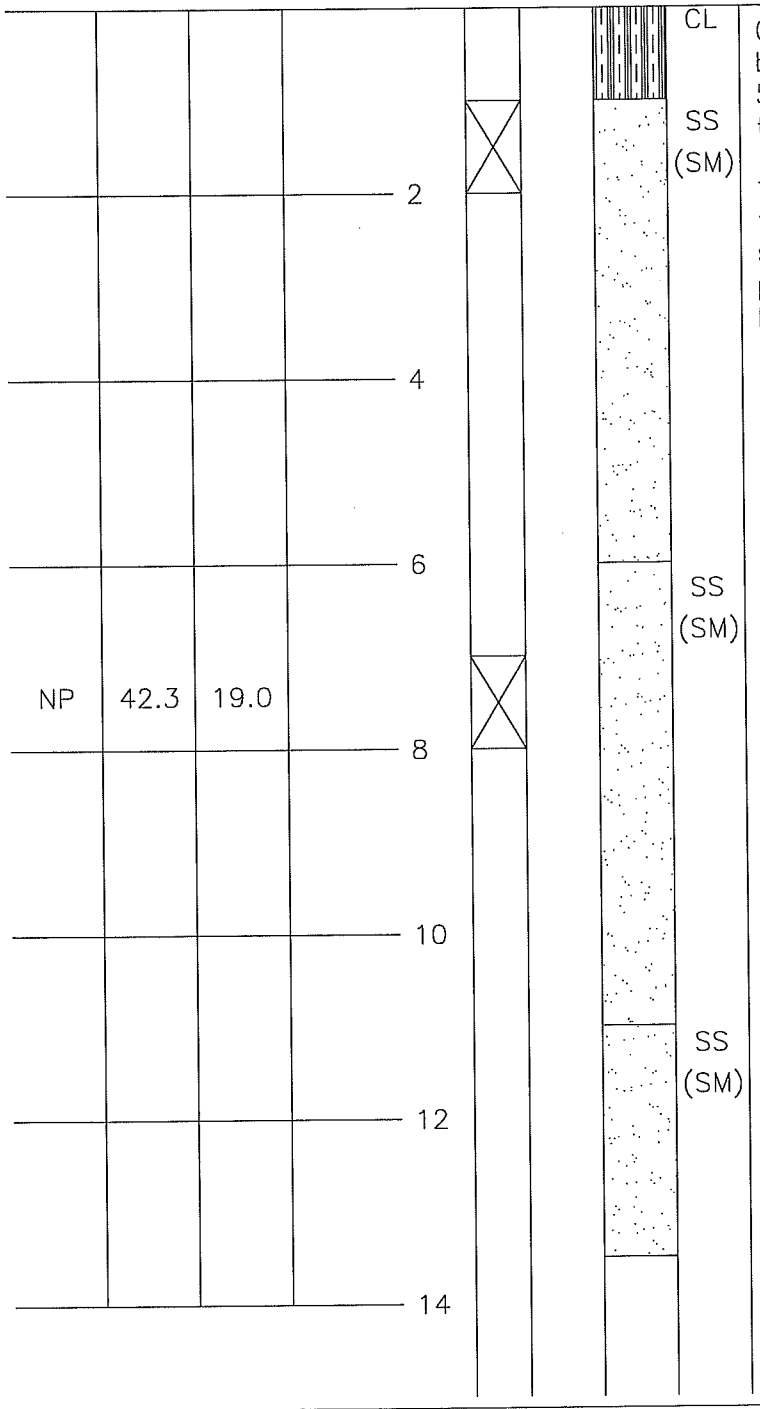
SHEET 16 OF 25

N:\DWGS\J28813_SilverHills\Geotech\TP-13.DWG ~ 2:57 PM * 06-MAR-2009

LOG OF TEST PIT 14

EQUIPMENT: CAT 420 D

DATE: 2-24-09 ELEV.



CL

SS (SM)

0'-1': Lean Clay with Sand, dark brown, stiff, slightly moist. Estimated 50% medium plastic clay, 50% fine to coarse sand, trace gravel to 0.5".

1'-6': Bedrock: gray to tan, dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Estimated 30% low plastic silt, 70% fine to coarse sand, trace gravel to 0.5".

SS (SM)

6'-11': Bedrock: tan, medium dense, fine grained, Sandstone, moist. Excavates to the properties of a Silty Sand (SM), Approximately 40% non plastic silt, 60% very fine to fine sand.

SS (SM)

11'-13.5': Bedrock: tan, medium dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Estimated 10% non plastic silt, 90% fine to medium sand.

Bottom of hole @ 13.5'
No Groundwater Encountered.

TEST PIT LOG
SILVER HILLS
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SHEET 17 OF 25

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LOG OF TEST PIT 15

EQUIPMENT: CAT 420 D

DATE: 2-24-09 ELEV.

PLASTICITY INDEX	% PASSING #200	MOISTURE CONTENT % OF DRY WT.	DRY DENSITY (PCF)	DEPTH (FT.)	SAMPLE LOCATION	BLOWS / FOOT		
				2			SM SS (SC)	0-1': Silty Sand, dark brown, medium dense, slightly moist. Estimated 20% non plastic silt, 80% fine to coarse sand, trace gravel.
				4				1'-5': Bedrock: dark brown, medium dense, fine grained, Sandstone, moist. Excavates to the properties of a Clayey Sand (SC), Estimated 30% low plastic clay, 70% fine to coarse sand, trace gravel to 0.5".
NP	29.3	13.9		6			SS (SM)	5'-13': Bedrock: gray, tan, brown, medium dense, fine to medium grained, Sandstone, slightly moist. Excavates to the properties of a Silty Sand (SM), Approximately 30% non plastic silt, 70% fine to medium sand.
				8				
				10				
				12				
				14				Bottom of hole @ 13' No Groundwater Encountered.

TEST PIT LOG
SILVER HILLS
RENO, NEVADA

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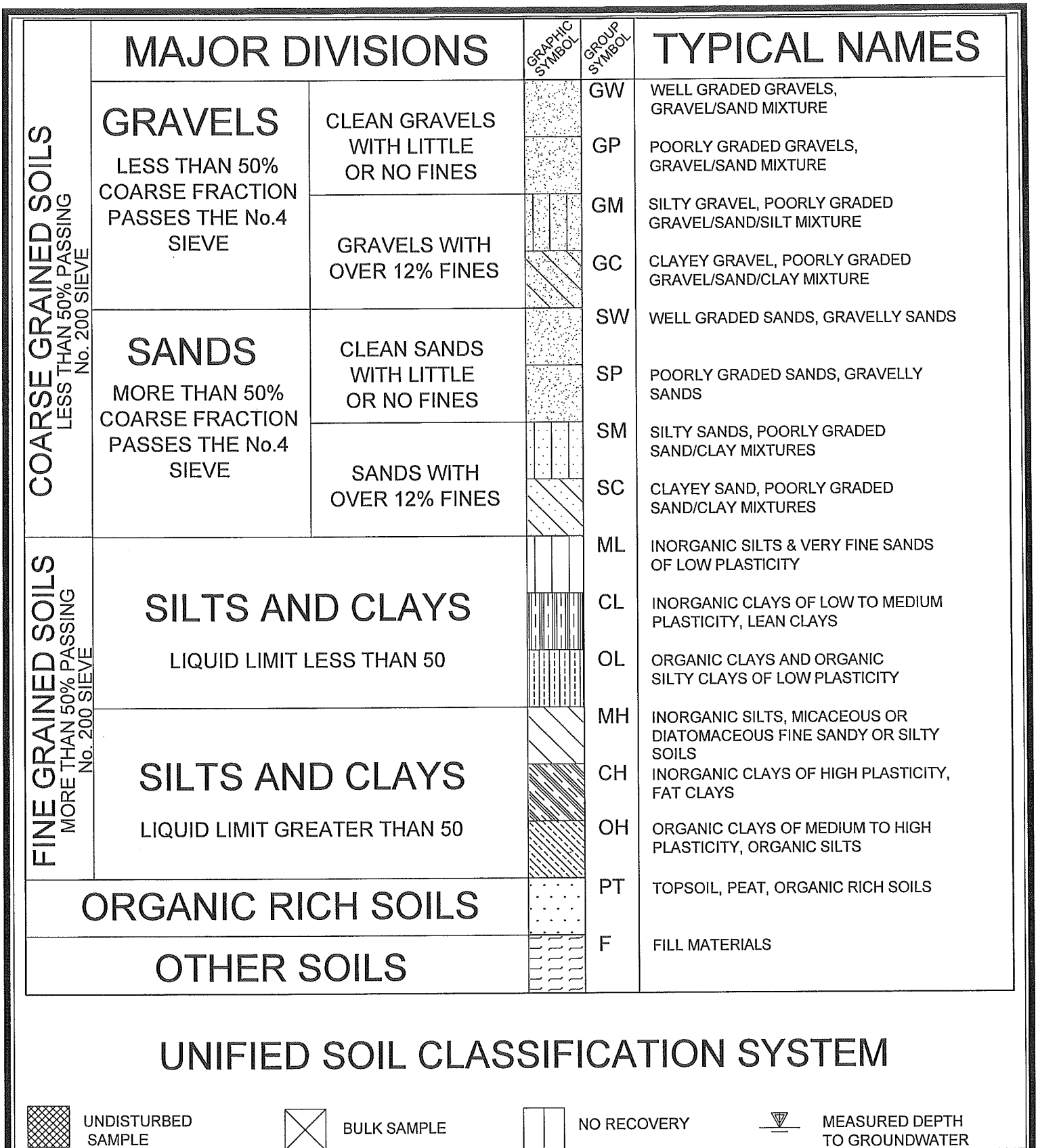

UNIFIED SOIL CLASSIFICATION SYSTEM

UNDISTURBED SAMPLE

BULK SAMPLE

NO RECOVERY

MEASURED DEPTH TO GROUNDWATER

KEY TO TEST PIT LOGS
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SHEET 19 OF 25

SAMPLE LOCATION	SAMPLE DEPTH	% PASSING 3"	% PASSING #4	% PASSING #40	% PASSING #200	LIQUID LIMIT	PLASTICTY INDEX	EXPANSION INDEX	USCS
TP-1	1'-2'	100	94	44	22.8	27	12	-	SC
TP-2	3.5'-4'	100	94	65	42.4	NP	NP	-	SM
TP-3	8'-9'	100	94	57	19.9	NP	NP	-	SM
TP-5	2'-3'	100	93	39	21.2	27	12	-	SC
TP-6	10'-11'	100	99	56	35.1	31	15	-	SC
TP-7	4'	100	95	56	15.2	NP	NP	-	SM
TP-8	1'-2'	100	99	71	42.3	42	20	-	SC
TP-8	12'-13'	100	90	32	10.1	NP	NP	-	SW-SM
TP-9	4'-5'	100	98	69	27.8	25	5	-	SC-SM
TP-10	10.5'-11.5'	100	100	67	9.4	NP	NP	-	SP-SM
TP-11	3.5'-4.5'	100	94	50	12.1	NP	NP	-	SM
TP-12	8.5'-9.5'	100	96	53	28.5	27	14	-	SC
TP-13	2'-3'	100	97	53	21.4	19	3	-	SM
TP-14	7'-8'	100	100	79	42.3	NP	NP	-	SM
TP-15	6'-7'	100	100	71	29.3	NP	NP	-	SM

SIEVE ANALYSIS
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GRADING ANALYSIS
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RENO, NEVADA

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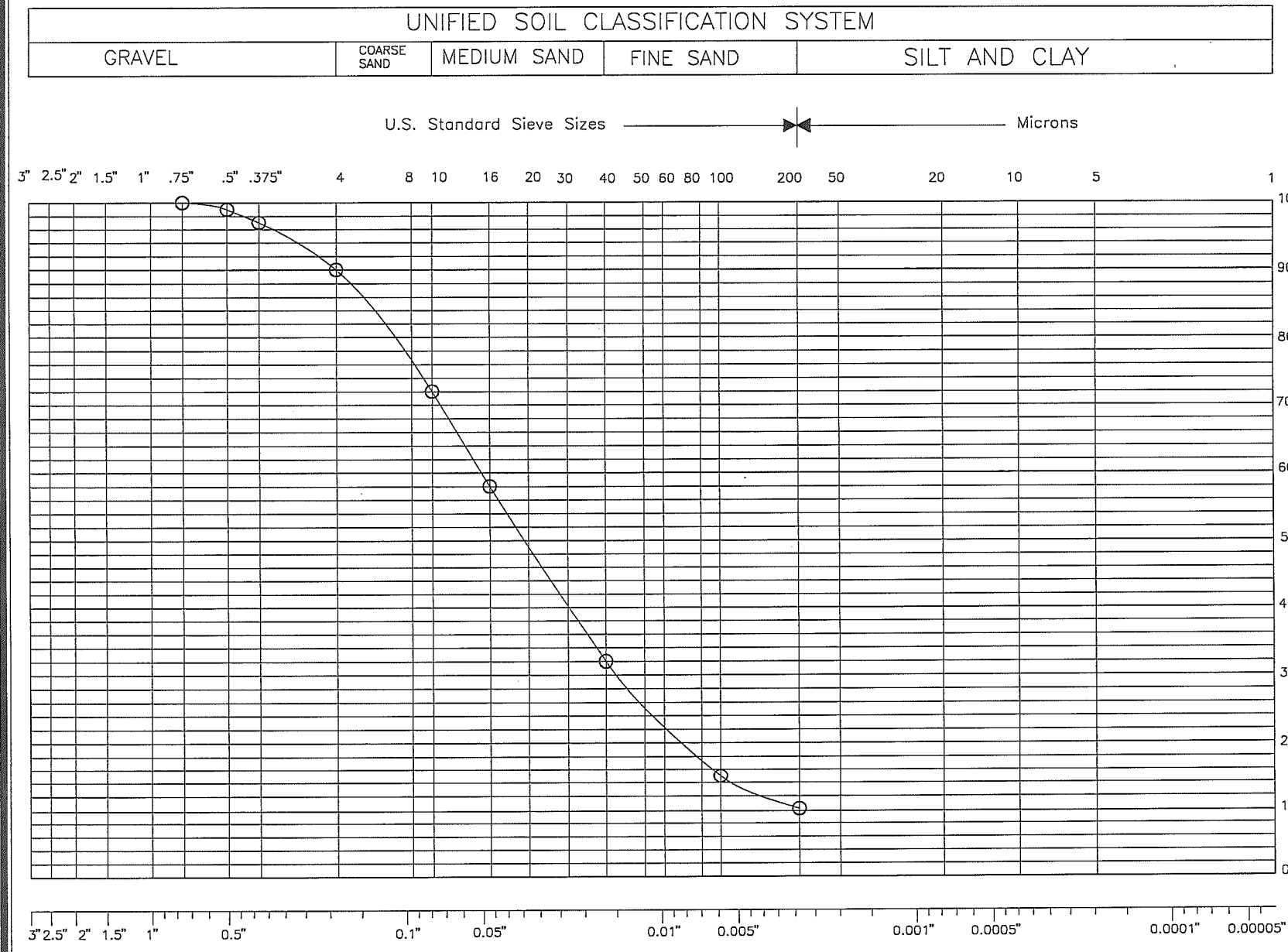
SHEET 21 OF 25

N:\DWGS\J2B813_SilverHills\Geotech\SieveTP-8@12-13'.DWG ~ 2:59 PM * 06-MAR-2009



SAMPLE NO.: TP-8
LOCATION.: 12'-13'

SYMBOL: ○
D-60 = 0.05

D-30 = 0.015
D-10 = 0.00252

CU = 19.84
CC = 1.78

DESCRIPTION\
CLASSIFICATION: SW-SM
WELL GRADED SAND WITH SILT

GRADING ANALYSIS
SILVER HILLS
RENO, NEVADA

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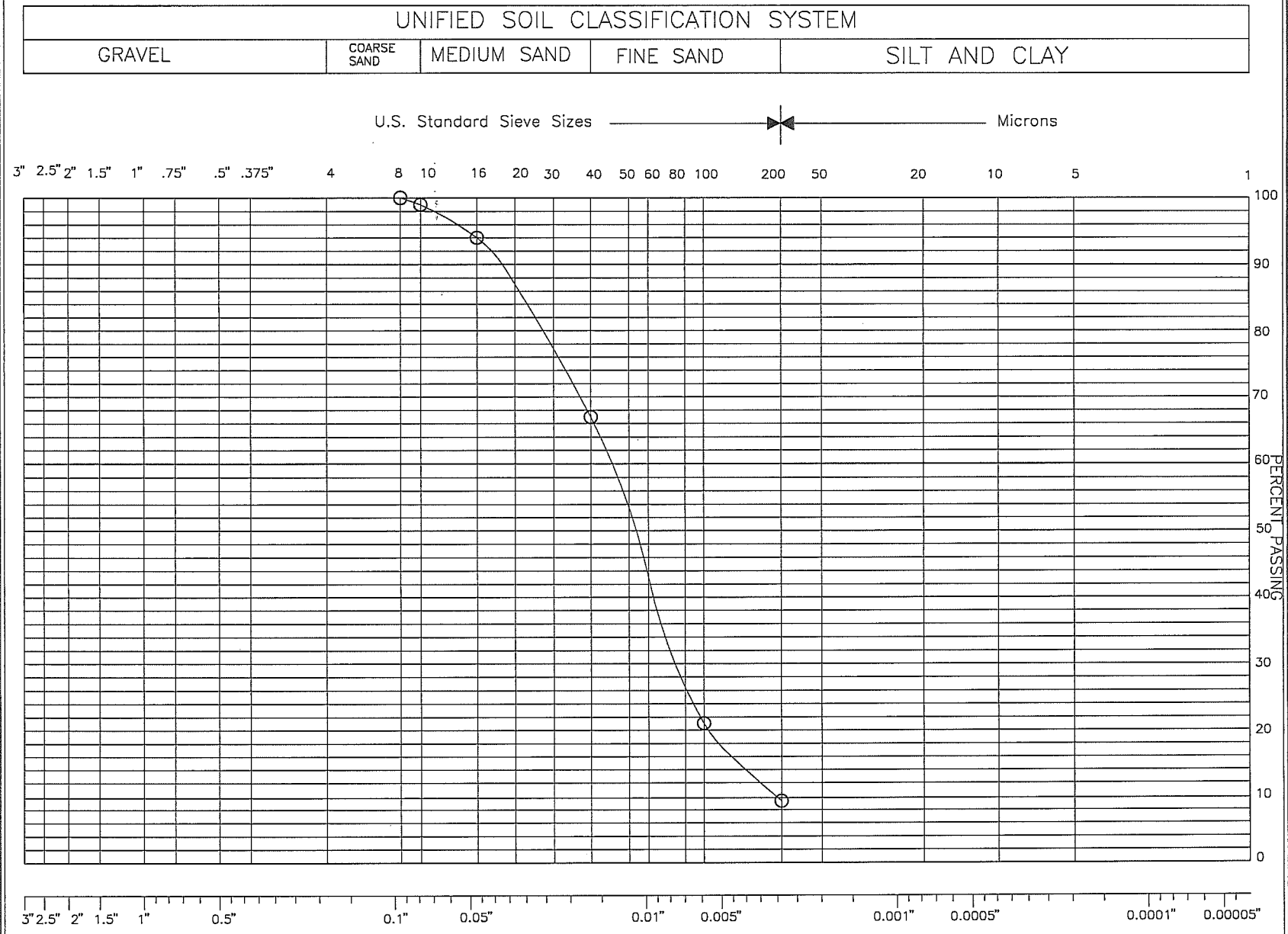


SAMPLE NO.: TP-10
LOCATION.: 10.5'-11.5'

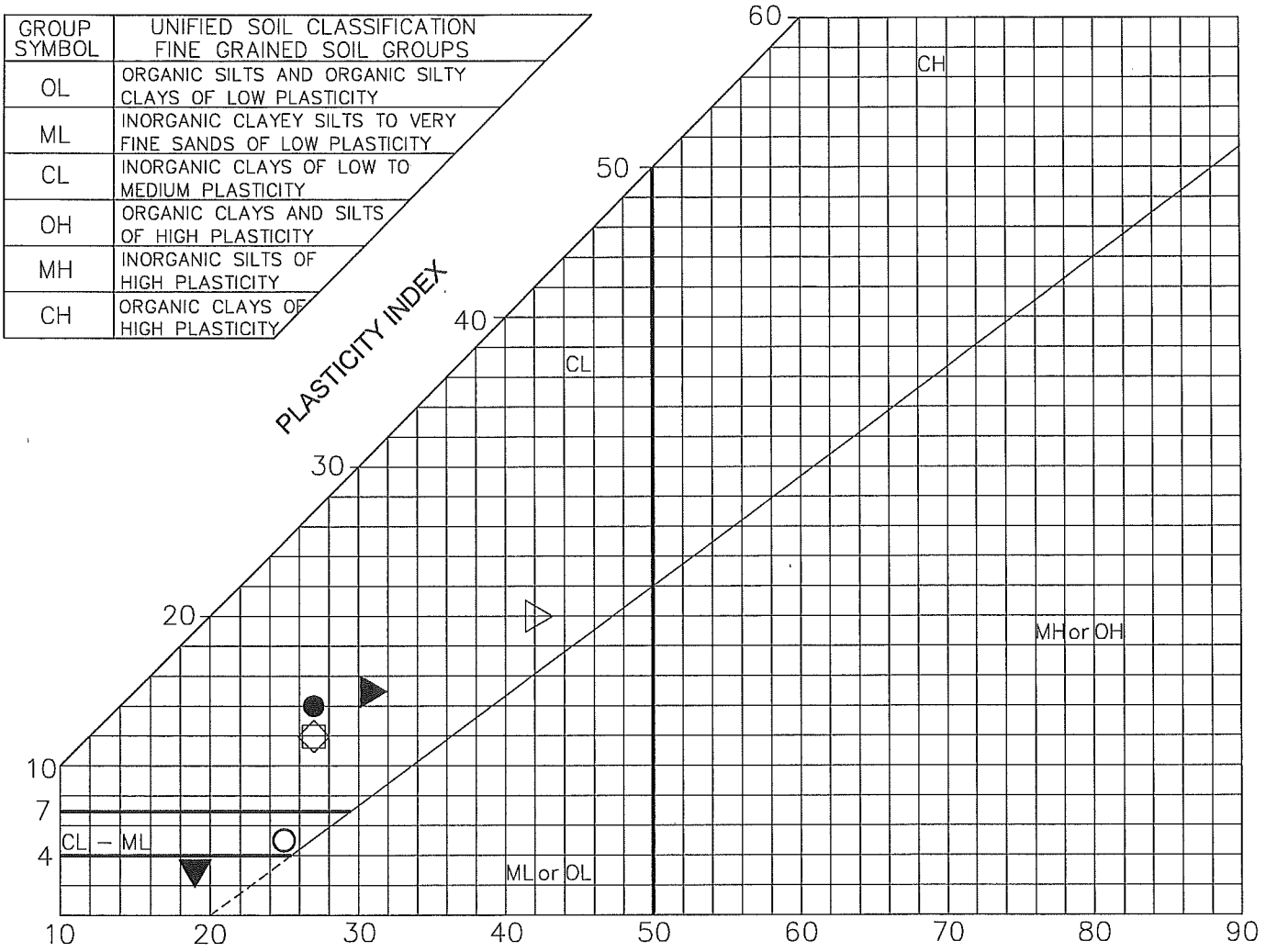
SYMBOL: ○
D-60 = 0.014

D-30 = 0.0078
D-10 = 0.003

CU = 4.66
CC = 1.448

DESCRIPTION\
CLASSIFICATION: SP-SM
POORLY GRADED SAND WITH SILT

GROUP SYMBOL	UNIFIED SOIL CLASSIFICATION FINE GRAINED SOIL GROUPS
OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
ML	INORGANIC CLAYEY SILTS TO VERY FINE SANDS OF LOW PLASTICITY
CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY
OH	ORGANIC CLAYS AND SILTS OF HIGH PLASTICITY
MH	INORGANIC SILTS OF HIGH PLASTICITY
CH	ORGANIC CLAYS OF HIGH PLASTICITY



TEST SYMBOL	SAMPLE LOCATION	SAMPLE DEPTH	% PASSING #200 SIEVE	LIQUID LIMIT	PLASTICITY INDEX	EXP. INDEX	CLASSIFICATION
□	TP–1	1'–2'	22.8	27	12		SC
◇	TP–5	2'–3'	21.2	27	12		SC
▶	TP–6	10'–11'	35.1	31	15		SC
▷	TP–8	1'–2'	42.3	42	20		SC
○	TP–9	4'–5'	27.8	25	5		SC–SM
●	TP–12	8.5'–9.5'	28.5	27	14		SC
▼	TP–13	2'–3'	21.4	19	3		SM

PLASTICITY INDEX
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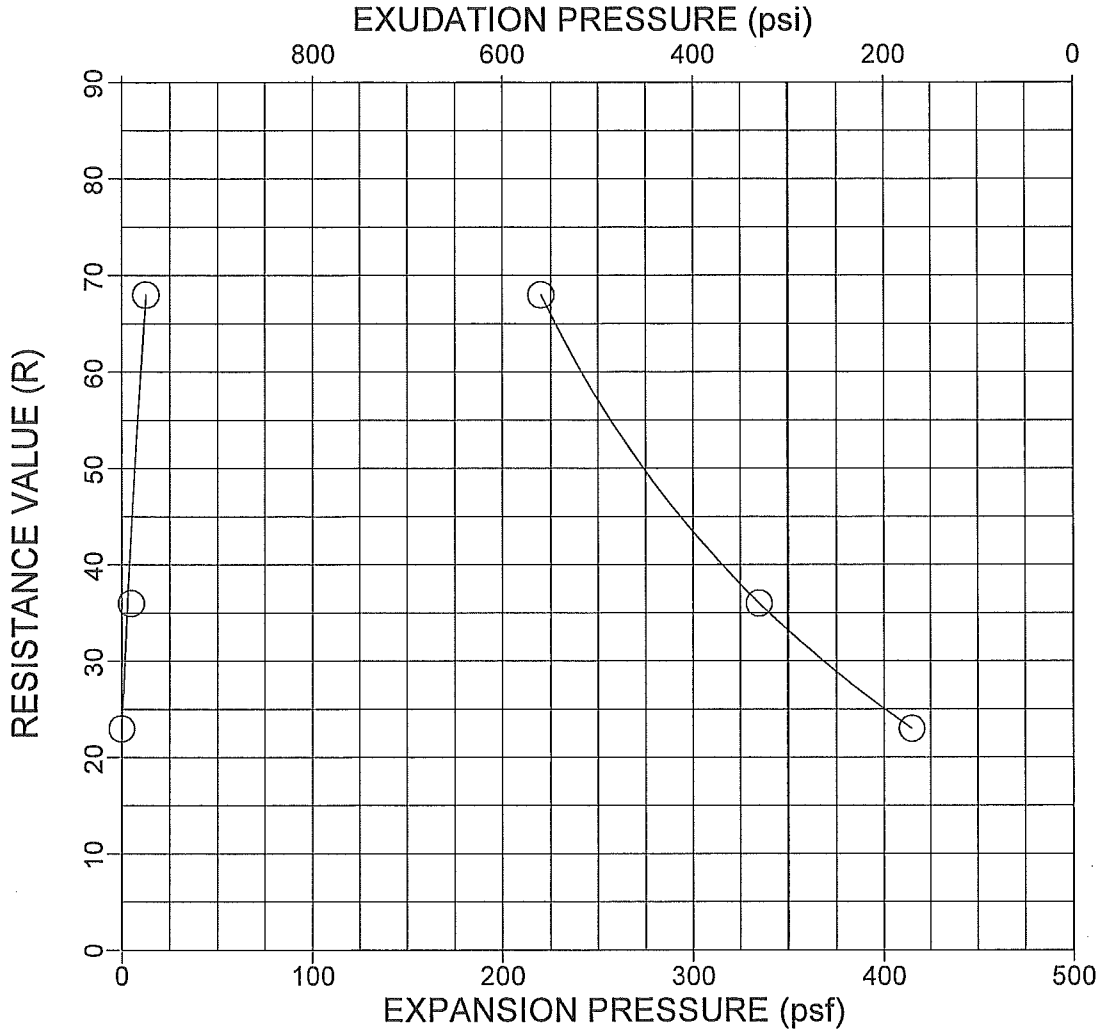

Specimen No.	1	2	3
Water Content (%)	11.5	12.5	10.5
Dry Density (pcf)	128.8	126.8	130.7
Exudation Pressure (psi)	330	167	561
Expansion Pressure (psf)	4.32	0.0	12.96
Resistance Value (R)	36	23	68

Sample Source	Classification	Sand Equivalent	Values Interpolated at 300 psi Exudation press.	
			Expansion Pressure	R-value
TP-5 2'-3'	CLAYEY SAND		3	33

R-VALUE
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(702) 383-1199 • Fax (702) 383-4983

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TESTING MATERIALS

ACT LAB NO: 15425(a) **DATE:** February 27, 2009

PROJECT NO: 28813 **P.O.** 4196

SUBMITTED BY: Summit Engineering Corporation (Reno) **LAB ID:** 8995

ANALYZED BY: Kurt D. Ergun

Silver Hills

WATER SOLUBLE SALT ANALYSIS IN SOIL
1:5 (soil:water) Aqueous Extraction
AWWA 3500-Na D, AWWA 4500 E
AWWA 2540 C

SOIL SIEVE SIZE = -10 MESH

Sample No.	Location	Depth (feet)	Sodium (Percent)	Water Soluble Sulfate (SO_4) (Percent)	Total Available Water Soluble Sodium Sulfate (Na_2SO_4) (Percent)
	TP-1	1.0-2.0	<0.01	0.01	<0.01
Solubility = 0.05%					
	TP-8	1.0-2.0	<0.01	0.01	<0.01
Solubility = 0.05%					
	TP-13	2.0-3.0	<0.01	0.01	<0.01
Solubility = 0.06%					

Kurt D. Ergun
LABORATORY DIRECTOR

Notes: The results for each constituent denote the percentage of that analyte, at a 1:5 (soil:water) extraction ratio, which is present in the soil. Sodium was determined by flame photometry, sulfate turbidimetrically, and sodium sulfate by calculation.

TOTAL P.01

SULFATE ANALYSIS
SILVER HILLS
RENO, NEVADA

JOB NO.: 28813
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OF 25

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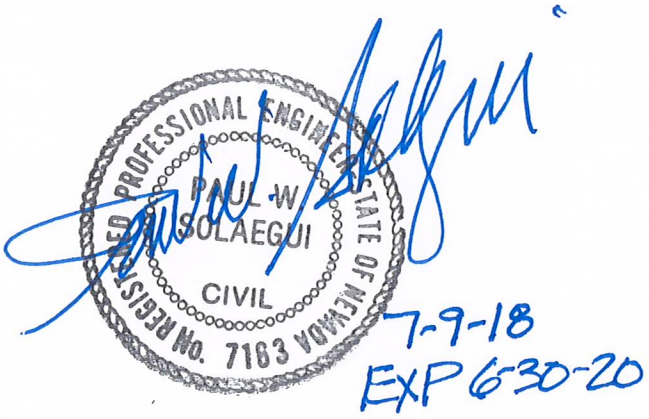
SILVER HILLS

TRAFFIC ANALYSIS

JULY, 2018



Prepared by:
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715 H Street
Sparks, Nevada 89431
(775) 358-1004

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SILVER HILLS

TRAFFIC ANALYSIS

EXECUTIVE SUMMARY

The proposed Silver Hills development is located in Washoe County, Nevada. The project site is located west of Red Rock Road in the vicinity of Silver Knolls Boulevard. The project site is currently undeveloped land. The purpose of this study is to address the project's impact upon the adjacent street network. The Red Rock Road intersections with the U.S. 395 Northbound and Southbound Ramps, Silver Lake Road, Moya Boulevard, Bighorn Drive, Silver Knolls Boulevard, and a new project access roadway have been identified for capacity analysis for the existing, existing plus project, 2028 base, and 2028 base plus project scenarios. The segment of Red Rock Road from US-395 to north of the project site has been identified for roadway capacity analysis for the existing, existing plus project, 2028 base, and 2028 base plus project scenarios.

The proposed Silver Hills development will consist of the construction of 1,654 single family homes. Project access will be provided from two roadways intersecting Red Rock Road and from the extension of Bighorn Drive at the project's south boundary. The project is expected to generate 13,878 average daily trips with 1,168 trips occurring during the AM peak hour and 1,313 trips occurring during the PM peak hour.

Traffic generated by the proposed Silver Hills development will have some impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.

It is recommended that any required signing, striping, or traffic control improvements comply with Washoe County and Nevada Department of Transportation requirements.

It is recommended that Red Rock Road ultimately be widened to four lanes from Moya Boulevard to Evans Ranch through RTC's Regional Road Impact Fee Program.

It is recommended that traffic signal warrants be periodically reviewed at the Red Rock Road/US-395 Southbound Ramp intersection and traffic signal/capacity improvements be constructed when warranted through RTC's Regional Road Impact Fee Program.

It is recommended that traffic signal warrants be periodically reviewed at the Red Rock Road/US-395 Northbound Ramp intersection and traffic signal/capacity improvements be constructed when warranted through RTC's Regional Road Impact Fee Program. An exclusive right turn lane at the east approach should be considered a priority improvement that the project developer is suggested to purse through RTC impact fee waivers.

It is recommended that capacity improvements be constructed at the Red Rock Road/Silver Lake Road intersection per RTC's North Valleys Multimodal Transportation Study. The intersection improvements shall be constructed through RTC's Regional Road Impact Fee Program. Capacity improvements at this intersection should be considered a priority improvement that the project developer is suggested to purse through RTC impact fee waivers.

It is recommended that the Red Rock Road/Silver Knolls Boulevard/Project Access intersection continue to operate with stop sign control at the east and west approaches, improved to include exclusive left turn lanes at the north and south approaches, and modified to prohibit left turn and through movements at the east and west approaches.

It is recommended that the Red Rock Road/Project Access intersection be constructed as an unsignalized three-leg intersection with stop sign control at the west approach and an exclusive left turn lane at the south approach.

INTRODUCTION

STUDY AREA

The proposed Silver Hills development is located in Washoe County, Nevada. The project site is located west of Red Rock Road in the vicinity of Silver Knolls Boulevard. The location of the project site is shown in Figure 1. The purpose of this study is to address the project's impact upon the adjacent street network. The Red Rock Road intersections with the U.S. 395 Northbound and Southbound Ramps, Silver Lake Road, Moya Boulevard, Bighorn Drive, Silver Knolls Boulevard, and a new project access roadway have been identified for capacity analysis for the existing, existing plus project, 2028 base, and 2028 base plus project scenarios. The segment of Red Rock Road from US-395 to north of the project site has been identified for roadway capacity analysis for the existing, existing plus project, 2028 base, and 2028 base plus project scenarios.

EXISTING AND PROPOSED LAND USES

The project site is currently undeveloped land. Properties adjacent to the project site generally include residential development to the east and south and undeveloped land to the north and west. The proposed Silver Hills development will consist of the construction of 1,654 single family homes. Project access will be provided from two roadways intersecting Red Rock Road and from the extension of Bighorn Drive at the project's south boundary.

EXISTING AND PROPOSED ROADWAYS AND INTERSECTIONS

Red Rock Road is a four-lane roadway with two through lanes in each direction from the US-395 Northbound Ramp intersection to Moya Boulevard and a two-lane roadway with one through lane in each direction south of the US-395 Northbound Ramp intersection and north of Moya Boulevard. The speed limit is posted for 35 miles per hour from US-395 to Moya Boulevard, 40 miles per hour from Moya Boulevard to Custer Road, 25 miles per hour from Custer Road to Longview Drive, 40 miles per hour between Longview Drive and the fire station, and 50 miles per hour further north. Roadway improvements generally include curb, gutter and sidewalk on the four-lane segment and graded shoulders with striped edgelines on the two-lane section.

Silver Lake Road is a two-lane roadway with one through-lane in each direction. The speed limit is posted for 35 miles per hour. Roadway improvements generally include curb, gutter and sidewalk in some areas and graded shoulders with striped edgelines in other areas. Bike lanes exist on both sides of the street east of Red Rock Road.

Moya Boulevard is a two-lane roadway with one lane in each direction east of Red Rock Road. The speed limit is posted for 45 miles per hour with a 35 mile per hour speed limit for trucks. Roadway improvements generally include curb, gutter, sidewalks, and bike lanes on both sides of the street with a center two-way left turn lane.

Bighorn Drive is a two-lane roadway with one lane in each direction west of Red Rock Road. The speed limit is not posted. Roadway improvements include paved travel lanes with graded shoulders.

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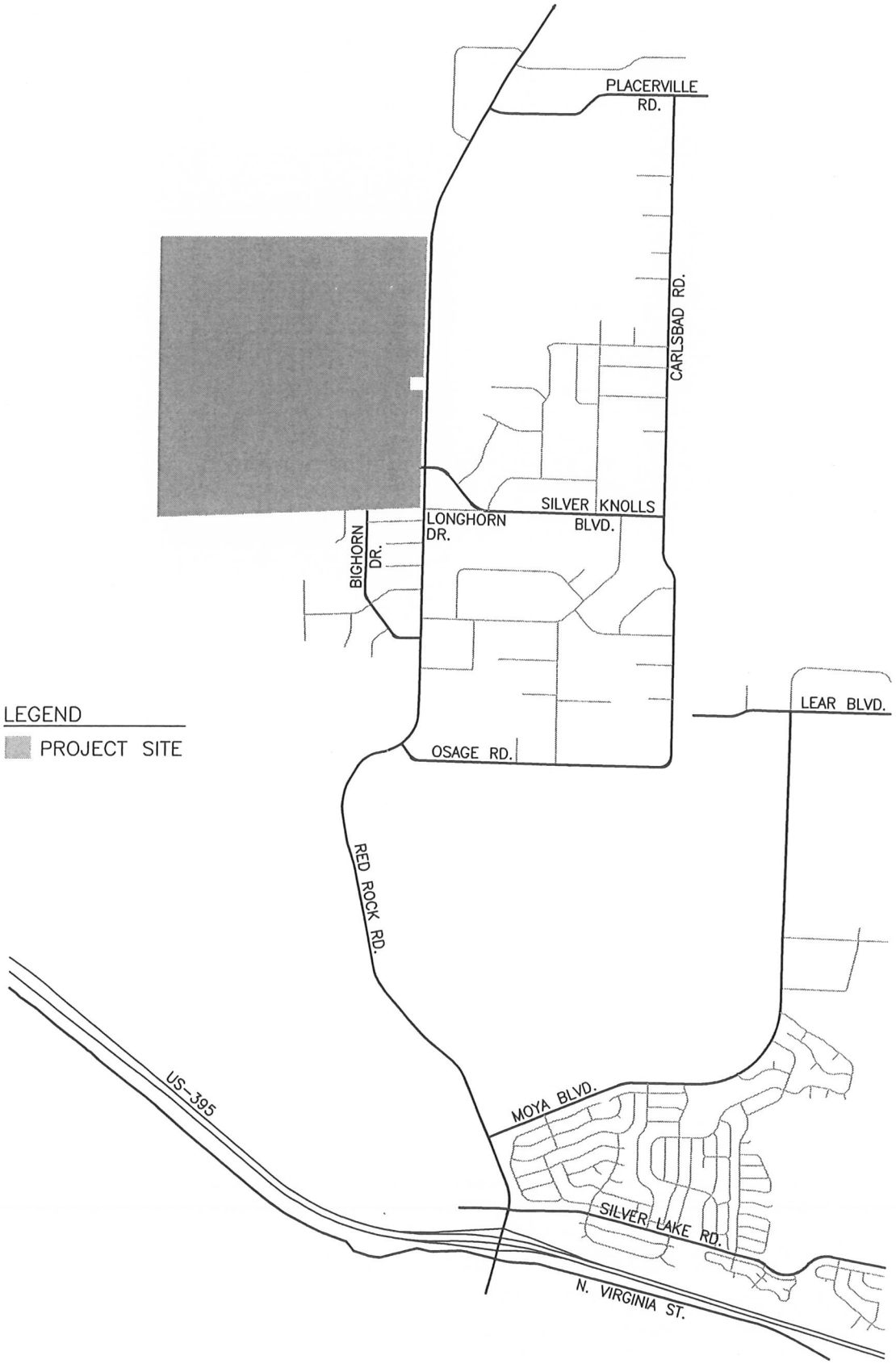

SILVER HILLS

VICINITY MAP
FIGURE 1

Silver Knolls Boulevard is a two-lane roadway with one lane in each direction east of Red Rock Road. The speed limit is posted for 25 miles per hour. Roadway improvements include paved travel lanes with graded shoulders. Silver Knolls Boulevard is an unimproved gravel road west of Red Rock Road but will ultimately be improved with development of the project.

The Red Rock Road/US-395 Southbound Ramp intersection is an unsignalized four-leg intersection with stop sign control at the off-ramp approach. The north Red Rock Road approach contains one shared left turn-through lane. The south Red Rock Road approach contains one shared through-right turn lane. The off-ramp approach contains one shared left turn-through-right turn lane. The east leg is the on-ramp to southbound US-395.

The Red Rock Road/US-395 Northbound Ramp intersection is an unsignalized four-leg intersection with stop sign control at the off-ramp approach. The north Red Rock Road approach contains one through lane and one right turn lane. The south Red Rock Road approach contains one shared left turn-through lane. The off-ramp approach contains one shared left turn-through-right turn lane. The west leg is the on-ramp to northbound US-395.

The Red Rock Road/Silver Lake Road intersection is an unsignalized four-leg intersection with stop sign control at the east and west approaches. The north and south approaches each contain one left turn lane, one through lane, and one shared through-right turn lane. The east approach contains one shared left turn-through-right turn lane. The west approach contains one shared left turn-through lane and one right turn lane. Pedestrian crosswalks exist at all approaches.

The Red Rock Road/Moya Boulevard intersection is a signalized three-leg intersection with flashing yellow arrow phasing for the southbound left turn movement. The north approach contains one left turn lane and one through lane. The south approach contains one through lane and one right turn lane. The east approach contains one left turn lane and one shared left turn-right turn lane.

The Red Rock Road/Bighorn Drive intersection is an unsignalized three-leg intersection with stop sign control at the west approach. The north approach contains one shared through-right turn lane. The south approach contains one shared left turn-through lane. The west approach contains one shared left turn-right turn lane.

The Red Rock Road/Silver Knolls Boulevard intersection is an unsignalized four-leg intersection with stop sign control at the east and west approaches. All approaches contain one shared left turn-through-right turn lane. The west leg of the intersection will be improved to serve as a project access with development of the project.

The Red Rock Road/North Project Access intersection does not currently exist but is anticipated to be constructed as a three-leg intersection with development of the project. At a minimum, the intersection is anticipated to contain one shared through-right turn lane at the north approach, one shared left turn-through lane at the south approach, and one shared left turn-right turn lane at the west approach.

TRIP GENERATION

In order to assess the magnitude of traffic impacts of the proposed development on the adjacent street network, trip generation rates and peak hours had to be determined. Trip generation rates were obtained from the *Ninth Edition of ITE Trip Generation* (2012) for Land Use 210 "Single Family Detached Housing". Trip generation was calculated for an average weekday and the weekday peak hours occurring between 7:00 and 9:00 AM and 4:00 and 6:00 PM which correspond to the peak hours of adjacent street traffic. Table 1 shows a summary of the average weekday traffic (ADT) volumes and weekday peak hour volumes generated by the proposed project. The trip generation worksheet is included in the Appendix.

TABLE 1
TRIP GENERATION

ITE LAND USE	ADT	AM PEAK HOUR			PM PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Single Family (1,654 Dwelling Units)	13,878	292	876	1,168	827	486	1,313

TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of the project traffic to the key intersections was based on existing and future peak hour traffic patterns and the locations of attractions and productions in the area. The anticipated trip distribution is shown on Figure 2. The project trips were subsequently assigned to the key roadway segments and intersections based on the trip distribution. Figure 3 shows the AM and PM peak hour project trip assignment at the intersections and average daily trip assignment on Red Rock Road.

EXISTING AND PROJECTED TRAFFIC VOLUMES

Figure 4 shows the existing traffic volumes. The existing peak hour volumes at the Red Rock Road intersections with Silver Road and Moya Boulevard were obtain from the North Valleys Multimodal Transportation Study. The existing peak hour volumes at the remaining intersections were obtained from traffic counts taken in August of 2017. The existing average daily traffic volume on Red Rock Road north of Moya Boulevard was obtained from NDOT's 2017 Annual Traffic Report. The daily traffic volumes on the remaining roadway segments were estimated by applying a 9.35% peak hour factor to the existing PM peak hour volumes. The peak hour factor was calculated from daily and peak hour traffic volumes on Red Rock Road north of Moya Boulevard. Figure 5 shows the existing plus project traffic volumes. Figure 6 shows the 2028 base traffic volumes. The 2028 base traffic volumes were estimated based on average daily and peak hour traffic volumes extrapolated from 2025 and 2030 traffic volumes obtained directly from the Regional Transportation Commission's traffic forecasting model. Figure 7 shows the 2028 base plus project traffic volumes.

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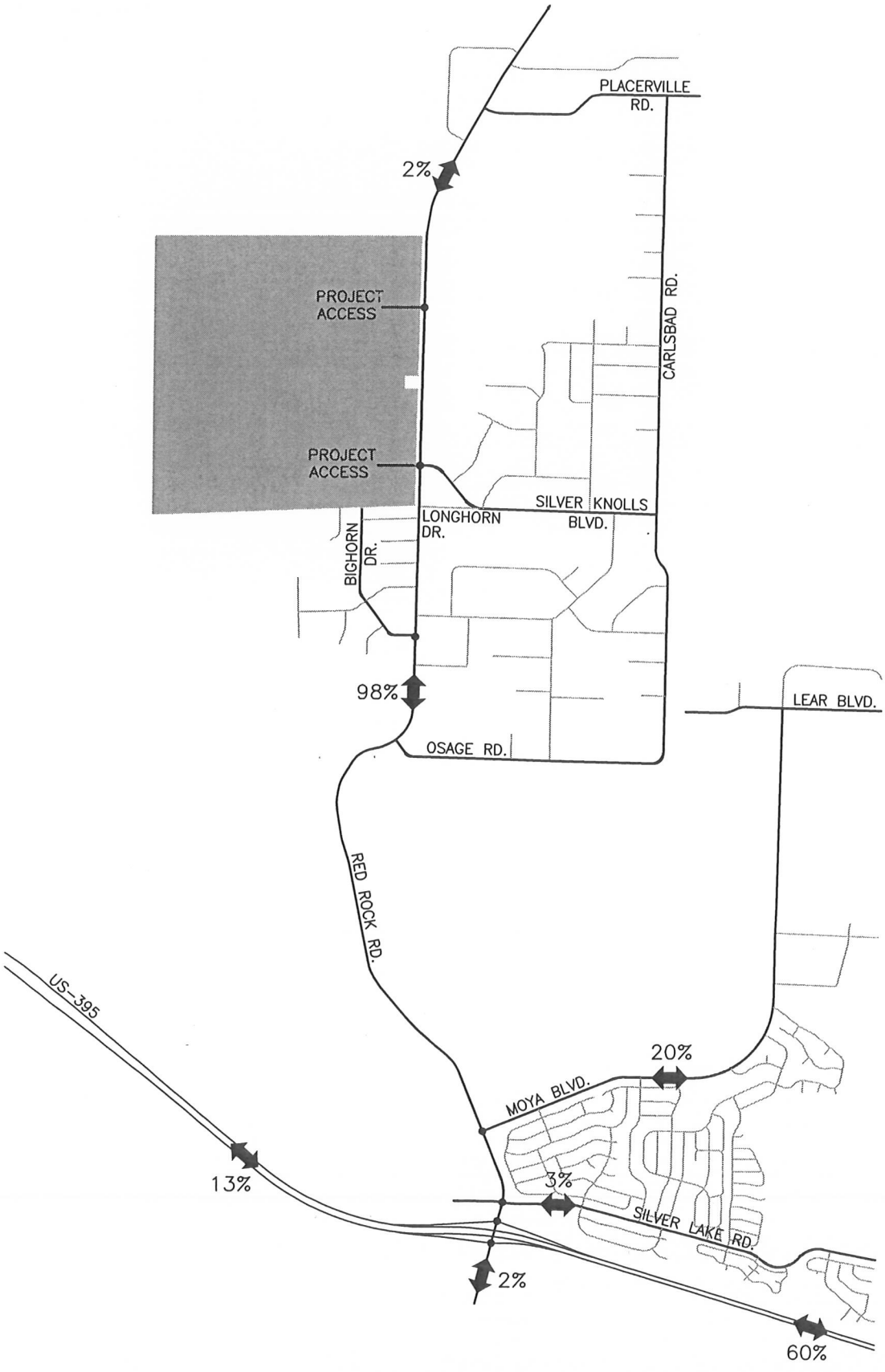

SILVER HILLS

TRIP DISTRIBUTION
FIGURE 2

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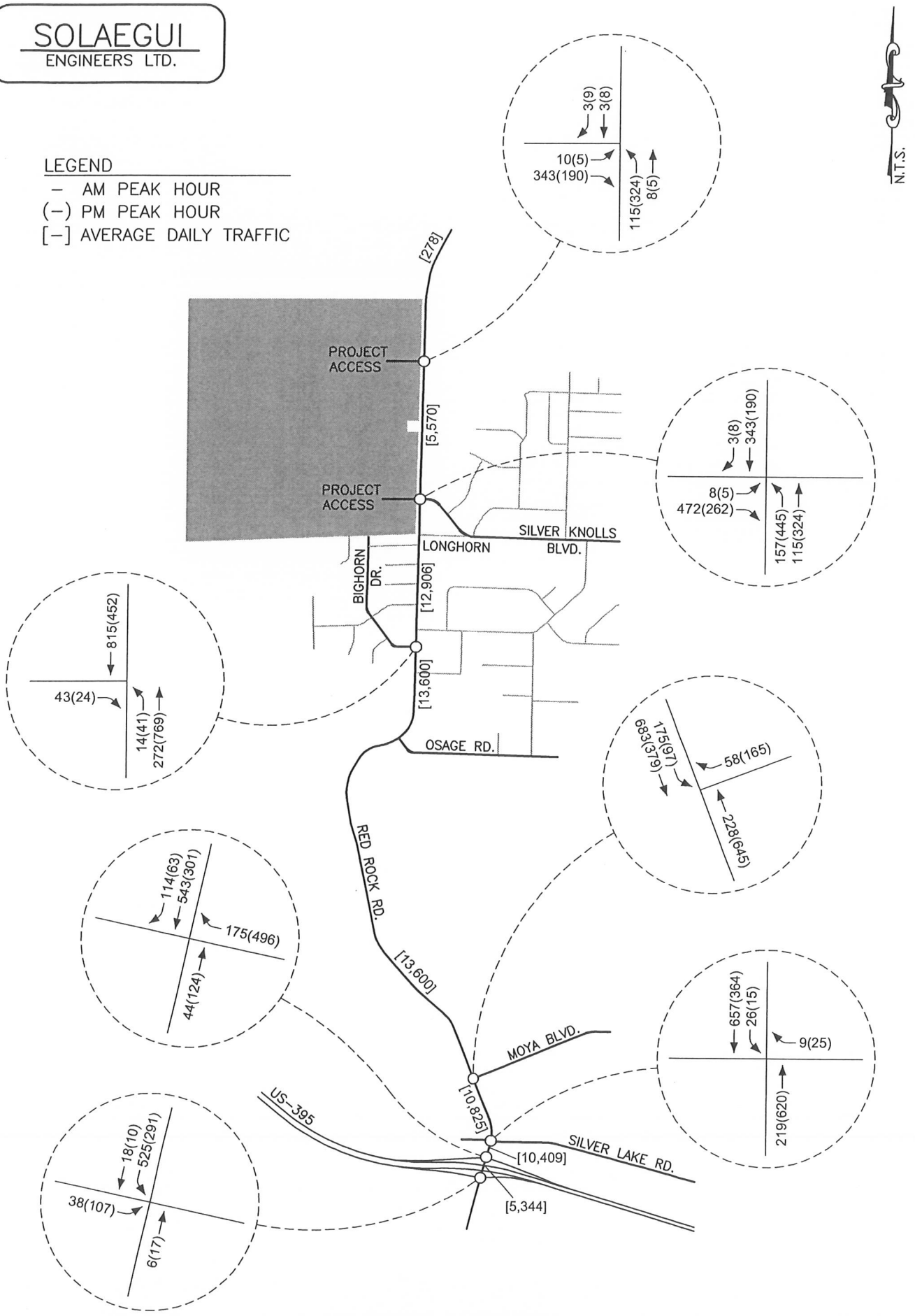

SILVER HILLS

TRIP ASSIGNMENT
FIGURE 3

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LEGEND
– AM PEAK HOUR
(–) PM PEAK HOUR
[–] AVERAGE DAILY TRAFFIC

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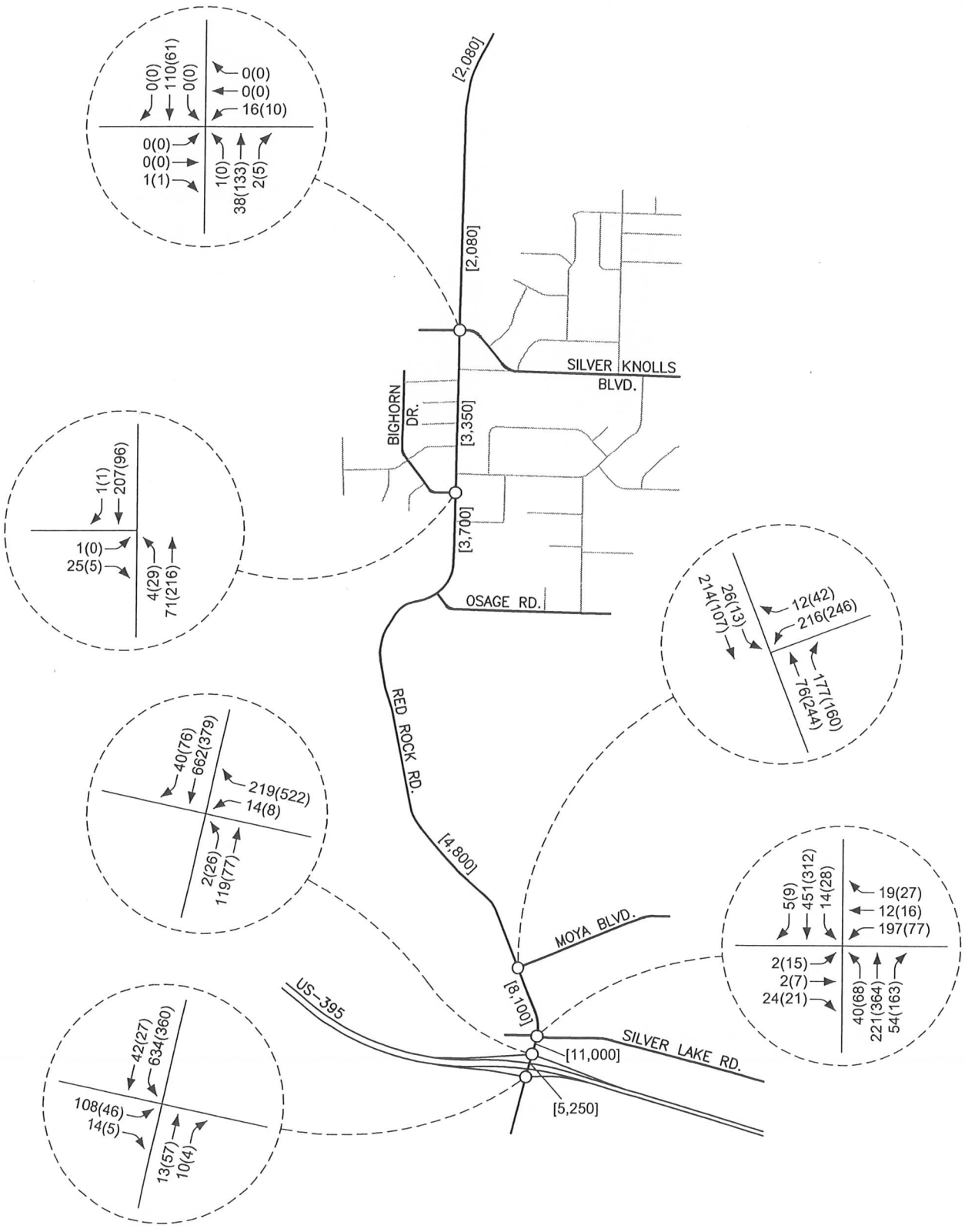

SILVER HILLS

EXISTING TRAFFIC VOLUMES
FIGURE 4

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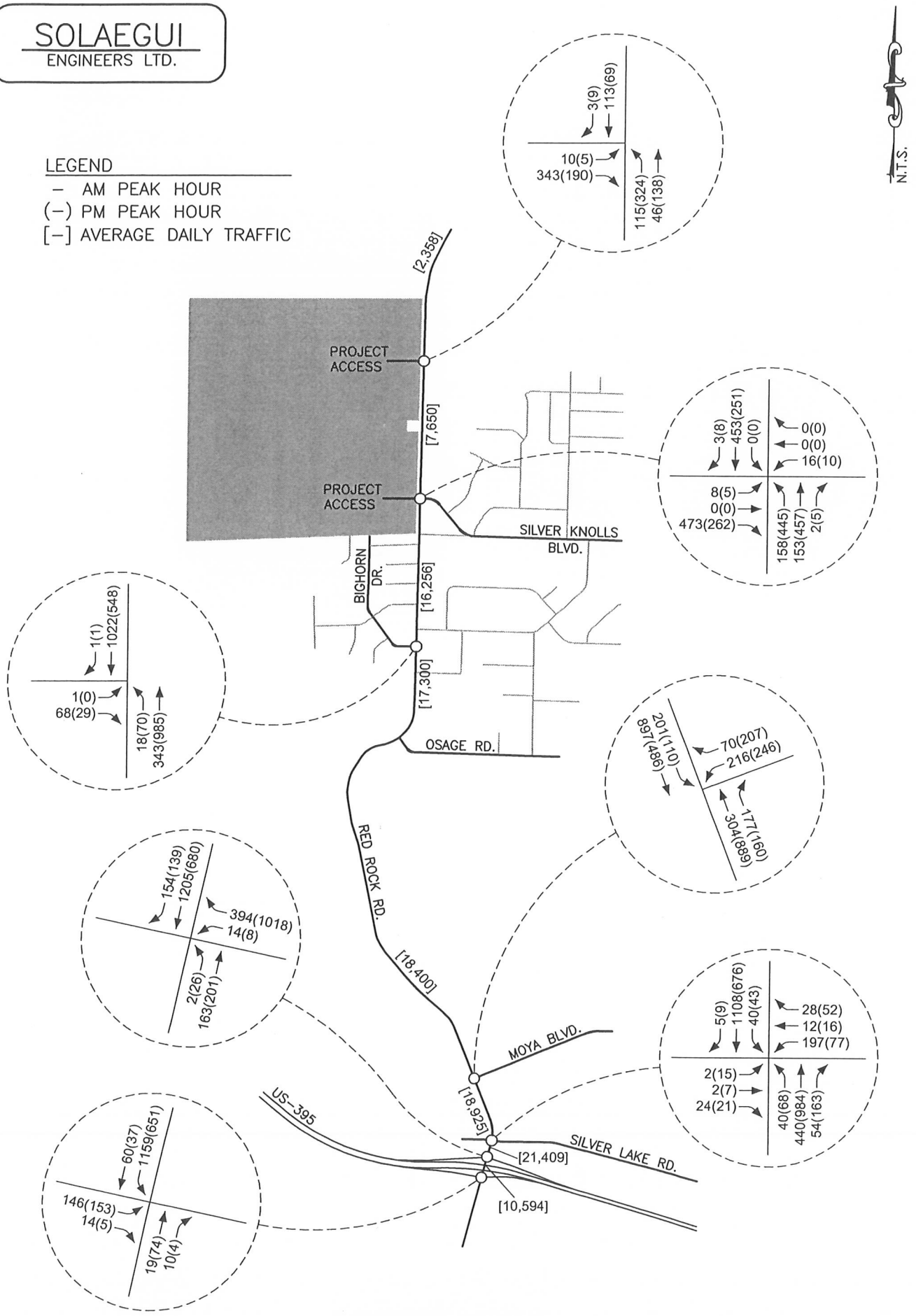
LEGEND
– AM PEAK HOUR
(–) PM PEAK HOUR
[–] AVERAGE DAILY TRAFFIC



SILVER HILLS

EXISTING PLUS PROJECT TRAFFIC VOLUMES
FIGURE 5

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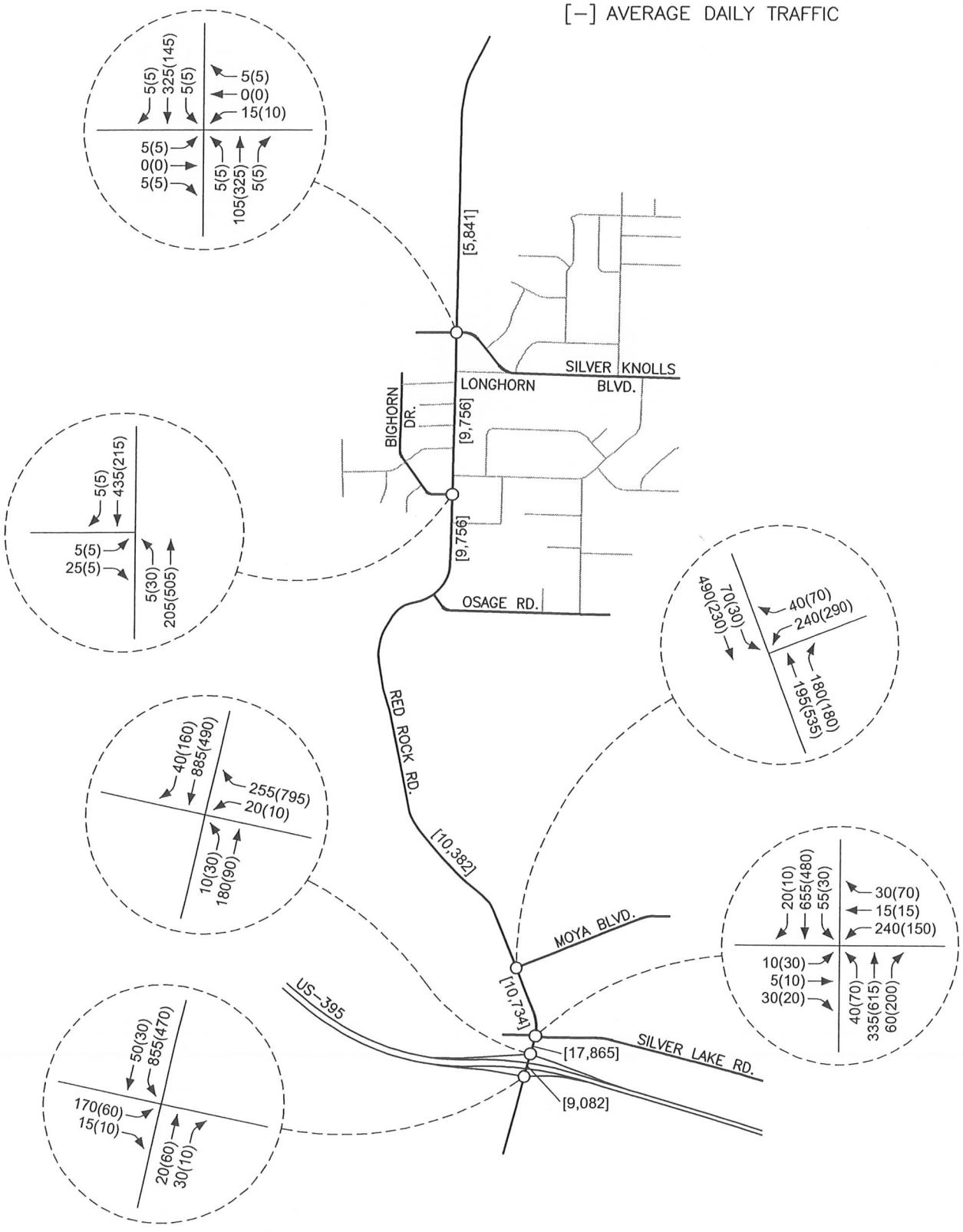

SILVER HILLS

2028 BASE TRAFFIC VOLUMES

FIGURE 6

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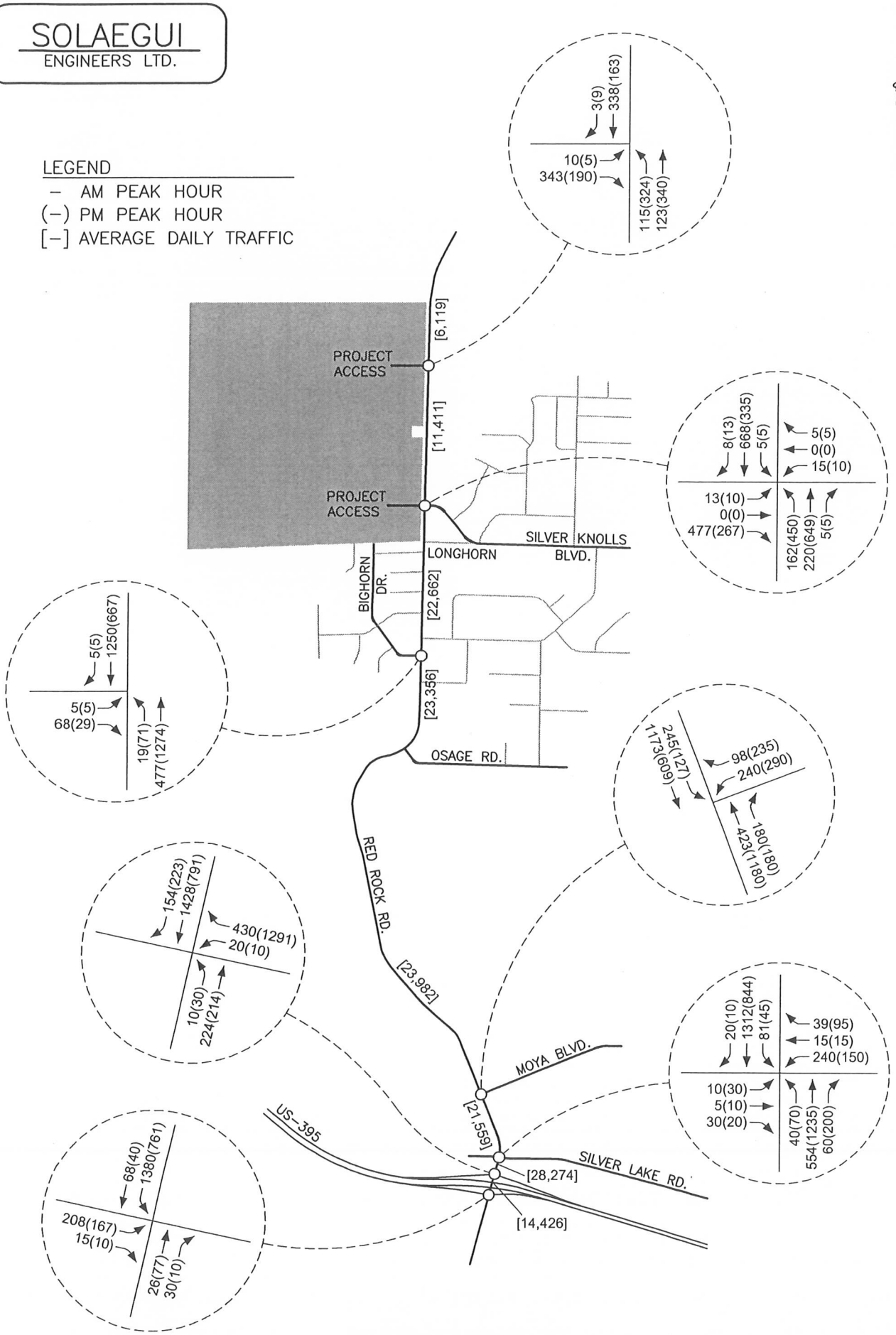


SILVER HILLS

2028 BASE PLUS PROJECT TRAFFIC VOLUMES
FIGURE 7

ROADWAY CAPACITY ANALYSIS

The segment of Red Rock Road from US-395 to north of the project site was identified for roadway capacity analysis. Roadway capacity is based on average daily level of service thresholds established by the Regional Transportation Commission. The 2040 Regional Transportation Plan indicates that LOS standards used for assessing the need for street and highway improvements at a planning level are LOS D for all regional roadway facilities projected to carry less than 27,000 ADT and LOS E for all regional roadway facilities projected to carry 27,000 or more ADT. The 2040 Regional Transportation Plan indicates that Red Rock Road is classified as an arterial with moderate access control. Table 2 shows the average daily level of service thresholds for moderate access control arterials.

TABLE 2
LEVEL OF SERVICE CRITERIA FOR ROADWAY SEGMENTS

FACILITY/LANES	AVERAGE DAILY TRAFFIC VOLUME			
	LOS B	LOS C	LOS D	LOS E
Arterial with Moderate Access Control				
2 Lanes	≤5,500	5,501-14,800	14,801-17,500	17,501-18,600
4 Lanes	≤12,000	12,001-32,200	32,201-35,200	35,201-36,900
6 Lanes	≤18,800	18,801-49,600	49,601-52,900	52,901-55,400
8 Lanes	≤25,600	25,601-66,800	66,801-70,600	70,601-73,900

Red Rock Road was subsequently reviewed for capacity based on the existing and projected average daily traffic volumes and the level of service thresholds presented above. Table 3 shows a summary of the roadway segment level of service results for the existing, existing plus project, 2028 base, and 2028 base plus project traffic volumes.

TABLE 3
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

ROADWAY SEGMENT	EXISTING		EXISTING + PROJECT		2028 BASE		2028 BASE + PROJECT	
	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS
Red Rock Road between the US-395 NB and SB Ramps 2-Lane MAC Arterial (Existing)	5,250	B	10,594	C	9,082	C	14,426	C
Red Rock Road between the US-395 NB Ramps and Silver Lake Road 4-Lane MAC Arterial (Existing)	11,000	B	21,409	C	17,865	C	28,274	C
Red Rock Road between Silver Lake Road and Moya Boulevard 4-Lane MAC Arterial (Existing)	8,100	B	18,925	C	10,734	B	21,559	C

TABLE 3 (CONTINUED) ROADWAY SEGMENT LEVEL OF SERVICE RESULTS								
ROADWAY SEGMENT	EXISTING		EXISTING + PROJECT		2028 BASE		2028 BASE + PROJECT	
	ADT	LOS	ADT	LOS	ADT	LOS	ADT	LOS
Red Rock Road between Moya Boulevard and Osage Road								
2-Lane MAC Arterial (Existing)	4,800	B	18,400	E	10,382	C	23,982	F
4-Lane MAC Arterial (Needed)	-	-	18,400	C	-	-	23,982	C
Red Rock Road between Osage Road And Bighorn Drive								
2-Lane MAC Arterial (Existing)	3,700	B	17,300	D	9,756	C	23,356	F
4-Lane MAC Arterial (Needed)	-	-	-	-	-	-	23,356	C
Red Rock Road between Bighorn Drive and Silver Knolls Boulevard								
2-Lane MAC Arterial (Existing)	3,350	B	16,256	D	9,756	C	22,662	F
4-Lane MAC Arterial (Needed)	-	-	-	-	-	-	22,662	C
Red Rock Road between Silver Knolls Boulevard and Project Access Road								
2-Lane MAC Arterial (Existing)	2,080	B	7,650	C	5,841	C	11,411	C
Red Rock Road north of the Project Access Road								
2-Lane MAC Arterial (Existing)	2,080	B	2,358	B	5,841	C	6,119	C

As shown in Table 3, the existing two-lane segment of Red Rock Road south of the US-395 northbound ramps and the existing four-lane segment from the US-395 northbound ramps to Moya Boulevard operate at LOS C or better for the existing, existing plus project, 2028 base, and 2028 base plus project traffic volumes. The existing two-lane segment from Moya Boulevard to Osage Road operates at LOS C or better for the existing and 2028 base traffic volumes, LOS E for the existing plus project volumes, and LOS F for the 2028 base plus project traffic volumes. The existing two-lane segment from Osage Road and Silver Knolls Boulevard operates at LOS D or better for the existing, existing plus project, and 2028 base traffic volumes and LOS F for the 2028 base plus project traffic volumes. The existing two lane segment from Silver Knolls Boulevard to north of the project access operates at LOS C or better for the existing, existing plus project, 2028 base, and 2028 base plus project traffic volumes.

The existing two-lane segment of Red Rock Road just north of Moya Boulevard exceeds the policy LOS D threshold by only 900 ADT for the existing plus project scenario. It is estimated that all but approximately 108 of the proposed dwelling units can be constructed before this segment of roadway exceeds the policy LOS D threshold.

The existing two-lane segment of Red Rock Road between Moya Boulevard and Silver Knolls Boulevard will need to be widened to four lanes in order to maintain policy LOS D operation for the 2028 base plus project traffic volumes. The RTC's 2040 Regional Transportation Plan indicates that Red Rock Road is planned to be widened to four lanes from Moya Boulevard to Evans Ranch in the 2022 to 2026 timeframe. Evans Ranch is located north of the project site. The North Valleys Multimodal Transportation Study also identifies the need for a four-lane widening of Red Rock Road to Evans Ranch. It is recommended that Red Rock Road be widened to four lanes from Moya Boulevard to Evans Ranch through RTC's Regional Road Impact Fee Program.

INTERSECTION CAPACITY ANALYSIS

The Red Rock Road intersections with the U.S. 395 northbound and southbound ramps, Silver Lake Road, Moya Boulevard, Bighorn Drive, Silver Knolls Boulevard, and the project access roadway were identified for intersection capacity analysis. Intersection capacity analysis is based on procedures presented in the *Highway Capacity Manual (6th Edition)*, prepared by the Transportation Research Board, for unsignalized and signalized intersections.

The result of capacity analysis is a level of service (LOS) rating for each signalized intersection, roundabout, or minor movement at a two-way stop controlled intersection. Level of service is a qualitative measure of traffic operating conditions where a letter grade "A" through "F", corresponding to progressively worsening traffic operation, is assigned to the intersection or minor movement.

The *Highway Capacity Manual* defines level of service for two-way stop controlled intersections in terms of computed or measured control delay for each minor movement. Level of service is not defined for the intersection as a whole. The level of service criteria for unsignalized intersections is shown in Table 4.

TABLE 4
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	DELAY RANGE (SEC/VEH)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Level of service for signalized intersections is stated in terms of the average control delay per vehicle for a peak 15 minute analysis period. The level of service criteria for signalized intersections is shown in Table 5.

TABLE 5 LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS	
LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (SEC)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

The key intersections were subsequently reviewed for capacity using the latest version of the Highway Capacity software. Table 6 shows a summary of the level of service and delay results at the key intersections. The capacity worksheets are included in the Appendix.

TABLE 6
INTERSECTION LEVEL OF SERVICE AND DELAY RESULTS

	EXISTING		EXISTING + PROJECT		2028 BASE		2028 BASE + PROJECT	
INTERSECTION	AM	PM	AM	PM	AM	PM	AM	PM
Red Rock Road & US-395 SB Ramps								
Stop at West Leg w/Existing Lanes								
EB Left-Thru-Right	F173.9	C20.3	F999+	F457.5	F999+	D32.2	F999+	F982.6
SB Left	A9.0	A8.1	C15.5	A9.5	B10.7	A8.6	D33.9	B10.3
Signalized w/Improvements	N/A	N/A	D37.0	B17.3	N/A	N/A	C29.0	B12.8
Red Rock Road & US-395 NB Ramps								
Stop at East Leg w/Existing Lanes								
WB Left-Thru-Right	B11.5	B14.3	C20.5	F200.7	C15.3	E35.2	F70.4	F386.8
NB Left	A9.3	A8.5	B12.9	A9.9	B10.3	A9.2	C15.1	B11.0
Stop at East Leg w/Improvements								
WB Left-Thru	N/A	N/A	C17.4	B12.1	N/A	N/A	C22.7	C15.4
NB Left	N/A	N/A	B13.0	A8.7	N/A	N/A	C15.2	B11.0
Signalized w/Improvements	N/A	N/A	B14.6	B20.0	N/A	N/A	B16.2	C24.6
Red Rock Road & Silver Lake Road								
Stop at East/West w/Existing Lanes								
EB Left-Thru	C18.7	C23.0	F77.5	F190.9	E36.4	F58.0	F446.9	F999+
EB Right	A10.0	A9.4	B13.7	B11.0	B11.0	B10.1	C15.7	B11.9
WB Left-Thru-Right	E37.0	D32.9	F703.3	F972.5	F346.2	F482.2	F999+	F999+
NB Left	A8.5	A8.2	B11.8	A9.6	A9.4	A8.8	B13.6	B10.5
SB Left	A7.9	A8.7	A8.7	B12.1	A8.4	A9.9	A9.3	B14.7
Signalized w/Existing Lanes	N/A	N/A	C20.7	B19.5	C20.7	B18.3	C24.2	C24.5
Red Rock Road & Moya Boulevard								
Signalized w/Existing Lanes	B13.3	B18.3	B19.9	C29.7	B13.3	C20.6	F79.6	F89.6
Signalized w/Improvements	N/A	N/A	N/A	N/A	N/A	N/A	B13.2	B17.6

TABLE 6 (CONTINUED)
INTERSECTION LEVEL OF SERVICE AND DELAY RESULTS

INTERSECTION	EXISTING		EXISTING + PROJECT		2028 BASE		2028 BASE + PROJECT	
	AM	PM	AM	PM	AM	PM	AM	PM
Red Rock Road & Bighorn Drive								
Stop at West Leg w/Existing Lanes								
EB Left-Right	A9.6	A8.8	D25.4	B12.6	B12.0	B13.0	E46.1	D30.5
NB Left	A7.7	A7.5	B10.9	A9.0	A8.3	A7.8	B12.5	A9.5
Stop at West Leg w/Improvements								
EB Left-Right	N/A	N/A	N/A	N/A	N/A	N/A	C20.3	C16.9
NB Left	N/A	N/A	N/A	N/A	N/A	N/A	B12.5	A9.5
Red Rock & Silver Knolls/Project Access								
Stop at East & West w/Existing Lanes								
EB Left-Thru-Right	A8.9	A8.6	F52.0	C17.8	B11.5	B11.2	F206.6	F108.4
WB Left-Thru-Right	A9.6	A9.9	F739.8	F322.1	B11.9	B12.4	F999+	F841.4
NB Left	A7.5	A7.3	A9.0	A9.5	A8.0	A7.6	B10.2	B10.2
SB Left	A7.3	A7.5	A7.6	A8.4	A7.5	A8.0	A7.7	A9.1
Stop at East & West w/Improvements								
EB Right	N/A	N/A	E36.2	B12.3	N/A	N/A	D27.9	B11.6
WB Right	N/A	N/A	A9.2	B11.3	N/A	N/A	A9.0	B10.7
NB Left	N/A	N/A	A8.9	A9.4	N/A	N/A	B10.0	B10.0
SB Left	N/A	N/A	A7.5	A8.3	N/A	N/A	A7.7	A9.0
Red Rock Road & North Project Access								
Stop at West Leg								
EB Left-Right	N/A	N/A	B11.8	B10.2	N/A	N/A	C17.9	B11.5
NB Left	N/A	N/A	A7.7	A8.1	N/A	N/A	A8.4	A8.5

Red Rock Road/US-395 Southbound Ramp Intersection

The Red Rock Road/US-395 Southbound Ramp intersection was analyzed as an unsignalized four-leg intersection with stop sign control at the west approach for all scenarios. The intersection minor movements currently operate at LOS C or better except for the eastbound left turn movement which operates at level of service F during the AM peak hour. For the existing plus project traffic volumes the eastbound left turn movement operates at LOS F during the AM and PM peak hours. For the 2028 base traffic volumes the eastbound left turn movement operates at LOS F during the AM peak hour and LOS D during the PM peak hour. For the 2028 base plus project traffic volumes the eastbound left turn movement operates at LOS F during the AM and PM peak hours. The intersection was analyzed with the existing approach lanes for all scenarios. Capacity improvements such as exclusive left turn lanes at the north and west approaches continue to result in LOS F operation for all scenarios under unsignalized conditions.

Traffic signal warrant 3 per the *Manual on Uniform Traffic Control Devices* (MUTCD) was subsequently reviewed at the Red Rock Road/US-395 Southbound Ramp intersection due to the poor level of service operation. Peak hour warrant 3 appears to be met at the intersection for the existing plus project and 2028 base plus project volumes.

With traffic signal control and capacity improvements the Red Rock Road/US-395 Southbound Ramp intersection operates at LOS D or better for the existing plus project and 2028 base plus project scenarios. The capacity improvements include separate left turn and through lanes at the north approach for the existing plus project scenario and one left turn lane and one shared left turn-through lane at the north approach for the 2028 base plus project scenario. It should be noted that peak hour warrant 3 should be applied only in unusual cases such as office complexes, manufacturing plants, industrial complexes, or other high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The MUTCD has eight additional warrants that should be evaluated when considering the need for the installation of a traffic signal. It is recommended that traffic signal warrants be periodically reviewed at the Red Rock Road/US-395 Southbound Ramp intersection and traffic signal and capacity improvements be constructed when warranted through RTC's Regional Road Impact Fee Program.

Red Rock Road/US-395 Northbound Ramp Intersection

The Red Rock Road/US-395 Northbound Ramp intersection was analyzed as an unsignalized four-leg intersection with stop sign control at the east approach for all scenarios. The intersection minor movements currently operate at LOS B or better during the AM and PM peak hours. For the existing plus project traffic volumes the westbound left turn-through-right turn movement operates at LOS C during the AM peak hour and LOS F during the PM peak hour. For the 2028 base traffic volumes the intersection minor movements operate at LOS C or better during the AM peak hour and LOS E or better during the PM peak hour. For the 2028 base plus project traffic volumes the westbound left turn-through-right turn movement operates at LOS F during the AM and PM peak hours. The intersection was analyzed with the existing approach lanes for all scenarios. Capacity improvements such as two southbound through lanes and a westbound right turn lane will result in LOS C or better operation during the AM and PM peak hours for the existing plus project and 2028 base plus project scenarios under unsignalized conditions. An exclusive right turn lane at the east approach of the Red Rock Road/US-395 Northbound Ramp intersection should be considered a priority improvement that the project developer is suggested to purse through RTC impact fee waivers.

Traffic signal warrant 3 per the *Manual on Uniform Traffic Control Devices* (MUTCD) was also reviewed at the Red Rock Road/US-395 Northbound Ramp intersection. Warrant 3 is met for the existing plus project and 2028 base plus project scenarios when the westbound right turn volume is included in the minor street approach volume. With traffic signal control and capacity improvements the intersection operates at LOS C or better during the AM and PM peak hours for both scenarios. The capacity improvements include an additional through lane at the north approach and an additional right turn lane at the east approach. It should be noted that peak hour warrant 3 should be applied only in unusual cases such as office complexes, manufacturing plants, industrial complexes, or other high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The MUTCD has eight additional warrants that should be evaluated when considering the need for the installation of a traffic signal. It is recommended that traffic signal warrants be periodically reviewed at the Red Rock Road/US-395 Northbound Ramp intersection and traffic signal and/or capacity improvements be constructed when warranted through RTC's Regional Road Impact Fee Program.

Red Rock Road/Silver Lake Road Intersection

The Red Rock Road/Silver Lake Road intersection was analyzed as an unsignalized four-leg intersection with stop sign control at the east and west approaches for all scenarios. The intersection minor movements currently operate at LOS E or better during the AM peak hour and LOS D or better during the PM peak hour. For the existing plus project volumes the eastbound and westbound left turn-through-right turn movements operate at LOS F during the AM and PM peak hours. For the 2028 base traffic volumes the eastbound left turn-through movement and westbound left turn-through-right turn movement operate at LOS E and/or F during the AM and PM peak hours. For the 2028 base plus project traffic volumes the eastbound left turn-through movement and westbound left turn-through-right turn movement operate at LOS F during the AM and PM peak hours. The intersection was analyzed with the existing approach lanes for all scenarios. Capacity improvements such as an exclusive westbound left turn lane and exclusive northbound right turn lane continue to result in LOS F operation for the existing plus project, 2028 base, and 2028 base plus project scenarios under existing unsignalized conditions.

Traffic signal warrant 3 per the *Manual on Uniform Traffic Control Devices* (MUTCD) was subsequently reviewed at the Red Rock Road/Silver Lake Road intersection due to the poor level of service operation. Warrant 3 is met for the existing plus project, 2028 base, and 2028 base plus project volumes. With traffic signal control and the existing lanes the intersection operates at LOS C or better during the AM and PM peak hours for each scenario. It should be noted that peak hour warrant 3 should be applied only in unusual cases such as office complexes, manufacturing plants, industrial complexes, or other high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time. The *Manual on Uniform Traffic Control Devices* has eight additional warrants that should be evaluated when considering the need for the installation of a traffic signal.

It is recommended that capacity improvements be constructed at the Red Rock Road/Silver Lake Road intersection per RTC's North Valleys Multimodal Transportation Study. The capacity improvements will include a combination of measures such as adding additional through or turning lanes, lengthening existing turn pockets, upgrading intersection control (traffic signal), signal timing optimization and coordination, and/or a roundabout. Capacity improvements at the Red Rock Road/Silver Lake Road intersection should be considered a priority improvement that the project developer is suggested to purse through RTC impact fee waivers.

Red Rock Road/Moya Boulevard Intersection

The Red Rock Road/Moya Boulevard intersection was analyzed as a signalized three-leg intersection for all scenarios. The intersection currently operates at LOS B with a delay of 13.3 seconds per vehicle during the AM peak hour and 18.3 seconds per vehicle during the PM peak hour. For the existing plus project traffic volumes the intersection operates at LOS B with a delay of 19.9 seconds per vehicle during the AM peak hour and LOS C with a delay of 29.7 seconds per vehicle during the PM peak hour. For the 2028 base traffic volumes the intersection operates at LOS B with a delay of 13.3 seconds per vehicle during the AM peak hour and LOS C with a delay of 20.6 seconds per vehicle during the PM peak hour.

For the 2028 base plus project traffic volumes the Red Rock Road/Moya Boulevard intersection operates at LOS E with a delay of 79.6 seconds per vehicle during the AM peak hour and LOS F with a delay of 89.6 seconds per vehicle during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. Capacity improvements such as additional northbound and southbound through lanes will result in LOS B operation for the AM and PM peak hour 2028 base plus project scenario.

The RTC's 2040 Regional Transportation Plan indicates that Red Rock Road is planned to be widened to four lanes from Moya Boulevard to Evans Ranch in the 2022 to 2026 timeframe. The North Valleys Multimodal Transportation Study also identifies the need for a four-lane widening of Red Rock Road to Evans Ranch.

Red Rock Road/Bighorn Drive Intersection

The Red Rock Road/Bighorn Drive intersection was analyzed as an unsignalized three-leg intersection with stop sign control at the west approach for all scenarios. The intersection minor movements currently operate at LOS A during the AM and PM peak hours. For the existing plus project traffic volumes the intersection minor movements operate at LOS D or better during the AM and PM peak hours. For the 2028 base traffic volumes the intersection minor movements operate at LOS B or better during the AM and PM peak hours. For the 2028 base plus project traffic volumes the eastbound left turn-right turn movement operates at LOS E during the AM peak hour and LOS D during the PM peak hour. The intersection was analyzed with the existing approach lanes for all scenarios. Capacity improvements such as additional northbound and southbound through lanes and an exclusive northbound left turn lane result in LOS C or better operation for the 2028 base plus project scenario under existing unsignalized conditions.

The RTC's 2040 Regional Transportation Plan indicates that Red Rock Road is planned to be widened to four lanes from Moya Boulevard to Evans Ranch in the 2022 to 2026 timeframe. The North Valleys Multimodal Transportation Study also identifies the need for a four-lane widening of Red Rock Road to Evans Ranch.

Red Rock Road/Silver Knolls Boulevard/Project Access Intersection

The Red Rock Road/Silver Knolls Boulevard/Project Access intersection was analyzed as an unsignalized four-leg intersection with stop sign control at the east and west approaches for all scenarios. The intersection minor movements currently operate at LOS A during the AM and PM peak hours. For the existing plus project traffic volumes the eastbound and westbound left turn-through-right turn movements operate at LOS F during the AM and/or PM peak hours. For the 2028 base traffic volumes the intersection minor movements operate at LOS B or better during the AM and PM peak hours. For the 2028 base plus project traffic volumes the eastbound and westbound left turn-through-right turn movements operate at LOS F during the AM and PM peak hours. The intersection was analyzed with the existing approach lanes for all scenarios.

The Red Rock Road/Silver Knolls Boulevard/Project Access intersection was subsequently analyzed as an unsignalized four-leg intersection with left turn and through movements prohibited at the east and west approaches for the existing plus project and 2028 base plus project scenarios. The left turn movement at the east approach can easily divert to Longhorn Drive to access southbound Red Rock Road and the left turn movement at the west approach can divert to the project access road to access northbound Red Rock Road. For the existing plus project traffic volumes the intersection minor movements operate at LOS B or better except for the right turn movement at the west approach which operates at LOS E during the AM peak hour. For the 2028 base plus project traffic volumes the intersection minor movements operate at LOS D or better during the AM and PM peak hours. For the existing plus project scenario the intersection was analyzed with one left turn lane and one shared through-right turn lane at the north and south approaches and one right turn lane at the east and west approaches. The intersection was analyzed with two through lanes at the north and south approaches for the 2028 base plus project scenarios.

It is recommended that the Red Rock Road/Silver Knolls Boulevard/Project Access intersection continue to operate with stop sign control at the east and west approaches, improved to include exclusive left turn lanes at the north and south approaches, and modified to prohibit left turn and through movements at the east and west approaches.

Red Rock Road/Project Access

The Red Rock Road/Project Access intersection was analyzed as an unsignalized three-leg intersection with stop sign control at the west approach for the existing plus project and 2028 base plus project scenarios. The intersection minor movements operate at LOS C or better during the AM and PM peak hours for both scenarios. The intersection was analyzed with one shared through-right turn lane at the north approach, one left turn lane and one through lane at the south approach; and one shared left turn-right turn lane at the west approach.

It is recommended that the Red Rock Road/Project Access intersection be constructed as an unsignalized three-leg intersection with stop sign control at the west approach and an exclusive left turn lane at the south approach.

SITE PLAN REVIEW

A copy of the preliminary site plan for the Silver Hills development is included in this submittal. The site plan indicates that primary access will be provided from the extension of Silver Knolls Boulevard west of Red Rock Road and from a new roadway intersecting Red Rock Road north of Silver Knolls Boulevard. Secondary access will be provided from the extension of Bighorn Drive at the project's south boundary. The Red Rock Road/Project Access intersection will be located more than 3,000 north of the existing Red Rock Road/Silver Knolls Boulevard intersection which will meet Washoe County and RTC spacing requirements for signalized and unsignalized intersections.

RECOMMENDATIONS

Traffic generated by the proposed Silver Hills development will have some impact on the adjacent street network. The following recommendations are made to mitigate project traffic impacts.

It is recommended that any required signing, striping, or traffic control improvements comply with Washoe County and Nevada Department of Transportation requirements.

It is recommended that Red Rock Road ultimately be widened to four lanes from Moya Boulevard to Evans Ranch through RTC's Regional Road Impact Fee Program.

It is recommended that traffic signal warrants be periodically reviewed at the Red Rock Road/US-395 Southbound Ramp intersection and traffic signal/capacity improvements be constructed when warranted through RTC's Regional Road Impact Fee Program.

It is recommended that traffic signal warrants be periodically reviewed at the Red Rock Road/US-395 Northbound Ramp intersection and traffic signal/capacity improvements be constructed when warranted through RTC's Regional Road Impact Fee Program. An exclusive right turn lane at the east approach should be considered a priority improvement that the project developer is suggested to purse through RTC impact fee waivers.

It is recommended that capacity improvements be constructed at the Red Rock Road/Silver Lake Road intersection per RTC's North Valleys Multimodal Transportation Study. The intersection improvements shall be constructed through RTC's Regional Road Impact Fee Program. Capacity improvements at this intersection should be considered a priority improvement that the project developer is suggested to purse through RTC impact fee waivers.

It is recommended that the Red Rock Road/Silver Knolls Boulevard/Project Access intersection continue to operate with stop sign control at the east and west approaches, improved to include exclusive left turn lanes at the north and south approaches, and modified to prohibit left turn and through movements at the east and west approaches.

It is recommended that the Red Rock Road/Project Access intersection be constructed as an unsignalized three-leg intersection with stop sign control at the west approach and an exclusive left turn lane at the south approach.

APPENDIX

Trip Generation Summary - Alternative 1

Project: New Project
Alternative: Alternative 1

Open Date: 7/3/2018
Analysis Date: 7/3/2018

ITE	Land Use	Average Daily Trips			AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
210	SFHOUSE 1	6939	6939	13878	292	876	1168	827	486	1313
	1654 Dwelling Units									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets		0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

HCS7 Two-Way Stop-Control Report

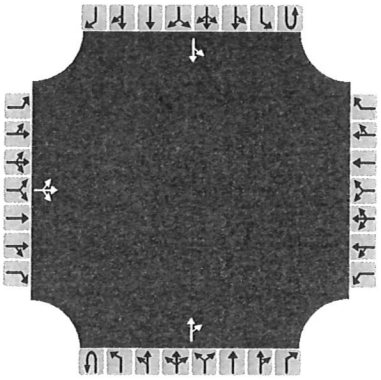
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 SB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 SB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		108	0	14							13	10		634	42	
Percent Heavy Vehicles (%)		2	2	2										2		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			133											689		
Capacity, c (veh/h)			123											1588		
v/c Ratio			1.08											0.43		
95% Queue Length, Q_{95} (veh)			7.7											2.3		
Control Delay (s/veh)			173.9											9.0		
Level of Service, LOS			F											A		
Approach Delay (s/veh)		173.9												8.7		
Approach LOS		F														

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HCS7 Two-Way Stop-Control Report

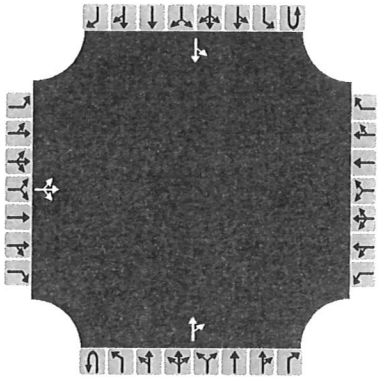
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 SB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 SB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		46	0	5							57	4		360	27	
Percent Heavy Vehicles (%)		2	2	2										2		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			55											391		
Capacity, c (veh/h)			290											1535		
v/c Ratio			0.19											0.25		
95% Queue Length, Q_{95} (veh)			0.7											1.0		
Control Delay (s/veh)			20.3											8.1		
Level of Service, LOS			C											A		
Approach Delay (s/veh)		20.3												7.7		
Approach LOS		C														

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HCS7 Two-Way Stop-Control Report

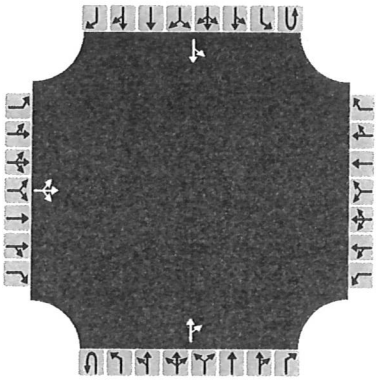
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 SB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 SB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		146	0	14							19	10		1159	60	
Percent Heavy Vehicles (%)		2	2	2										2		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			174											1260		
Capacity, c (veh/h)			18											1579		
v/c Ratio			9.81											0.80		
95% Queue Length, Q_{95} (veh)			22.4											9.6		
Control Delay (s/veh)			4387.2											15.5		
Level of Service, LOS			F											C		
Approach Delay (s/veh)		4387.2												15.4		
Approach LOS		F														

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HCS7 Two-Way Stop-Control Report

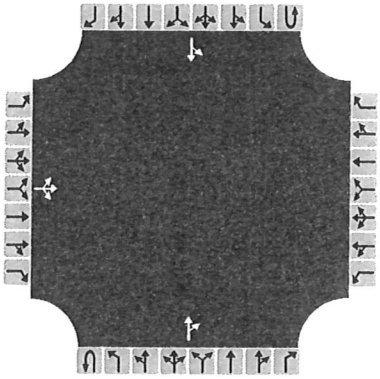
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 SB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 SB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		153	0	5							74	4		651	37	
Percent Heavy Vehicles (%)		2	2	2										2		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			172											708		
Capacity, c (veh/h)			97											1510		
v/c Ratio			1.77											0.47		
95% Queue Length, Q_{95} (veh)			13.9											2.6		
Control Delay (s/veh)			457.5											9.5		
Level of Service, LOS			F											A		
Approach Delay (s/veh)		457.5												9.2		
Approach LOS		F														

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HCS7 Two-Way Stop-Control Report

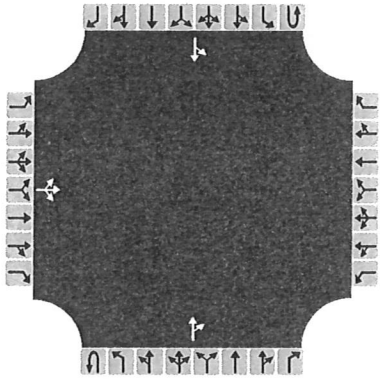
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	AM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 SB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 SB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		170	0	15							20	30		855	50	
Percent Heavy Vehicles (%)		2	2	2										2		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			201											929		
Capacity, c (veh/h)			52											1550		
v/c Ratio			3.84											0.60		
95% Queue Length, Q_{95} (veh)			22.0											4.3		
Control Delay (s/veh)			1437.6											10.7		
Level of Service, LOS			F											B		
Approach Delay (s/veh)		1437.6												10.5		
Approach LOS		F														

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HCS7 Two-Way Stop-Control Report

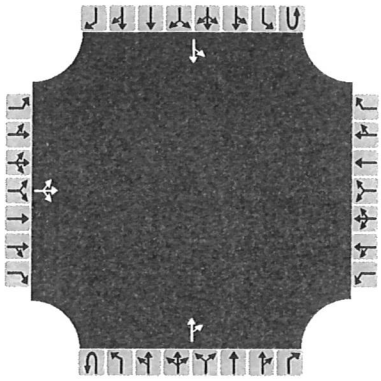
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 SB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 SB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		60	0	10							60	10		470	30	
Percent Heavy Vehicles (%)		2	2	2										2		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			76											511		
Capacity, c (veh/h)			207											1522		
v/c Ratio			0.37											0.34		
95% Queue Length, Q_{95} (veh)			1.6											1.5		
Control Delay (s/veh)			32.2											8.6		
Level of Service, LOS			D											A		
Approach Delay (s/veh)		32.2												8.2		
Approach LOS		D														

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HCS7 Two-Way Stop-Control Report

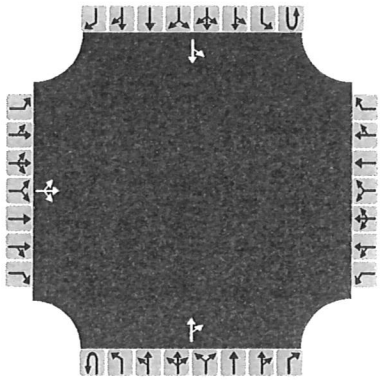
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	+
Jurisdiction	Washoe County
East/West Street	US-395 SB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		208	0	15							26	30		1380	68	
Percent Heavy Vehicles (%)		2	2	2										2		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			242											1500		
Capacity, c (veh/h)			7											1541		
v/c Ratio			32.92											0.97		
95% Queue Length, Q_{95} (veh)			32.2											21.3		
Control Delay (s/veh)			15343.5											33.9		
Level of Service, LOS			F											D		
Approach Delay (s/veh)		15343.5												33.9		
Approach LOS		F														

HCS7 Two-Way Stop-Control Report

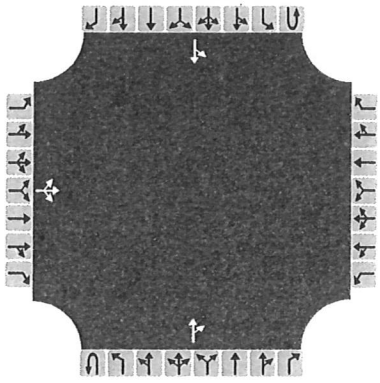
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 SB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 SB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LTR									TR		LT		
Volume, V (veh/h)		167	0	10							77	10		761	40	
Percent Heavy Vehicles (%)		2	2	2										2		
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			192											827		
Capacity, c (veh/h)			67											1498		
v/c Ratio			2.88											0.55		
95% Queue Length, Q_{95} (veh)			19.4											3.6		
Control Delay (s/veh)			982.6											10.3		
Level of Service, LOS			F											B		
Approach Delay (s/veh)		982.6												10.1		
Approach LOS		F														

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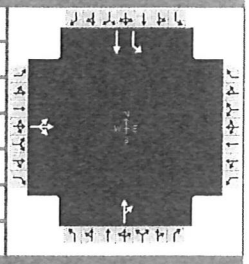
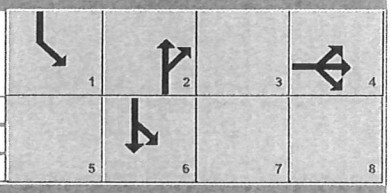
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	Red Rock & US-395 SB...	File Name	RrSb18aw1.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	146	0	14					19	10	1159	60	

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	50.0	14.0	11.0	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	1.0	1.0	1.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		12.0				8.3	1.0	4.0
Phase Duration, s		16.0				19.0	55.0	74.0
Change Period, (*Y+R c*), s		5.0				5.0	5.0	5.0
Max Allow Headway (*MAH*), s		3.1				0.0	3.1	0.0
Queue Clearance Time (*g s*), s		10.3					52.0	
Green Extension Time (*g e*), s		0.0				0.0	0.0	0.0
Phase Call Probability		1.00					1.00	
Max Out Probability		1.00					1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h		168						32		1260	65	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1769						1728		1781	1870	
Queue Service Time (*g s*), s		8.3						1.4		50.0	0.8	
Cycle Queue Clearance Time (*g c*), s		8.3						1.4		50.0	0.8	
Green Ratio (*g/C*)		0.12						0.16		0.73	0.77	
Capacity (*c*), veh/h		216						269		1262	1434	
Volume-to-Capacity Ratio (*X*)		0.779						0.117		0.998	0.045	
Back of Queue (*Q*), ft/ln (95 th percentile)		199.7						29.5		810.3	9.5	
Back of Queue (*Q*), veh/ln (95 th percentile)		7.9						1.2		31.9	0.4	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00						0.00		0.00	0.00	
Uniform Delay (*d 1*), s/veh		38.3						32.7		11.8	2.5	
Incremental Delay (*d 2*), s/veh		15.2						0.9		24.8	0.1	
Initial Queue Delay (*d 3*), s/veh		0.0						0.0		0.0	0.0	
Control Delay (*d*), s/veh		53.5						33.6		36.6	2.6	
Level of Service (LOS)		D						C		D	A	
Approach Delay, s/veh / LOS	53.5	D		0.0			33.6	C		35.0	C	
Intersection Delay, s/veh / LOS	37.0						D					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.73	B	1.95	B	1.42	A	1.32	A
Bicycle LOS Score / LOS	0.77	A			0.54	A	2.67	C

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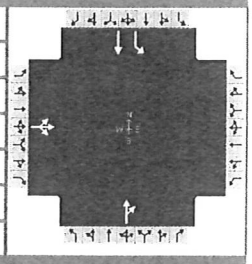
HCS7 Signalized Intersection Results Summary

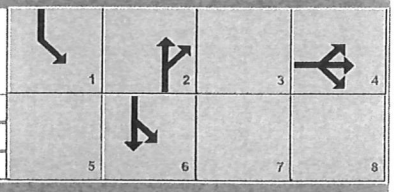
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	Red Rock & US-395 SB...	File Name	RrSb18pw1.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	153	0	5					74	4	651	37	

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	15.0	40.0	20.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		12.0				8.3	1.0	4.0
Phase Duration, s		25.0				45.0	20.0	65.0
Change Period, ($Y+R_c$), s		5.0				5.0	5.0	5.0
Max Allow Headway (*MAH*), s		3.1				0.0	3.1	0.0
Queue Clearance Time (g_s), s		9.5					17.0	
Green Extension Time (g_e), s		0.2				0.0	0.0	0.0
Phase Call Probability		1.00					1.00	
Max Out Probability		0.00					1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h		172						85		708	40	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1774						1850		1781	1870	
Queue Service Time (g_s), s		7.5						2.4		15.0	0.7	
Cycle Queue Clearance Time (g_c), s		7.5						2.4		15.0	0.7	
Green Ratio (*g/C*)		0.22						0.44		0.63	0.67	
Capacity (*c*), veh/h		394						822		925	1247	
Volume-to-Capacity Ratio (*X*)		0.436						0.103		0.765	0.032	
Back of Queue (*Q*), ft/ln (95 th percentile)		143.4						46.3		318.7	10.6	
Back of Queue (*Q*), veh/ln (95 th percentile)		5.6						1.8		12.5	0.4	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00						0.00		0.00	0.00	
Uniform Delay (d_1), s/veh		30.1						14.6		11.7	5.1	
Incremental Delay (d_2), s/veh		0.3						0.3		3.5	0.0	
Initial Queue Delay (d_3), s/veh		0.0						0.0		0.0	0.0	
Control Delay (*d*), s/veh		30.4						14.8		15.1	5.2	
Level of Service (LOS)		C						B		B	A	
Approach Delay, s/veh / LOS	30.4	C		0.0			14.8	B		14.6	B	
Intersection Delay, s/veh / LOS	17.3						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.73	B	1.95	B	1.39	A	1.35	A
Bicycle LOS Score / LOS	0.77	A			0.63	A	1.72	B

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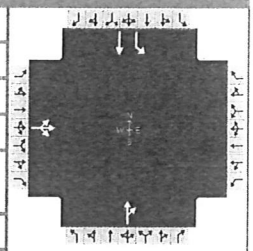
HCS7 Signalized Intersection Results Summary

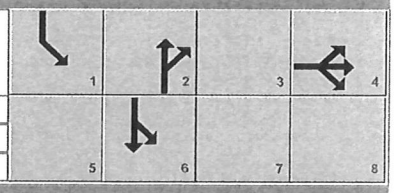
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base + Project	Analysis Period	1> 7:00
Intersection	Red Rock & US-395 SB...	File Name	RrSb28aw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	208	0	15					26	30	920	528	

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	15.0	45.0	15.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		12.0				8.3	1.0	4.0
Phase Duration, s		20.0				50.0	20.0	70.0
Change Period, ($Y+R_c$), s		5.0				5.0	5.0	5.0
Max Allow Headway (*MAH*), s		3.1				0.0	3.1	0.0
Queue Clearance Time (g_s), s		13.9					17.0	
Green Extension Time (g_e), s		0.1				0.0	0.0	0.0
Phase Call Probability		1.00					1.00	
Max Out Probability		1.00					1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h		242						61		1000	574	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1767						1677		1781	1870	
Queue Service Time (g_s), s		11.9						1.7		15.0	11.1	
Cycle Queue Clearance Time (g_c), s		11.9						1.7		15.0	11.1	
Green Ratio (*g/C*)		0.17						0.50		0.69	0.72	
Capacity (*c*), veh/h		294						839		1022	1351	
Volume-to-Capacity Ratio (*X*)		0.823						0.073		0.978	0.425	
Back of Queue (*Q*), ft/ln (95 th percentile)		264						28.8		574.4	161.9	
Back of Queue (*Q*), veh/ln (95 th percentile)		10.4						1.1		22.6	6.4	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00						0.00		0.00	0.00	
Uniform Delay (d_1), s/veh		36.2						11.7		14.8	5.0	
Incremental Delay (d_2), s/veh		16.0						0.2		22.8	1.0	
Initial Queue Delay (d_3), s/veh		0.0						0.0		0.0	0.0	
Control Delay (*d*), s/veh		52.2						11.8		37.6	6.0	
Level of Service (LOS)		D						B		D	A	
Approach Delay, s/veh / LOS	52.2	D		0.0			11.8	B		26.1	C	
Intersection Delay, s/veh / LOS	29.0						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.73	B	1.95	B	1.38	A	1.33	A
Bicycle LOS Score / LOS	0.89	A			0.59	A	3.08	C

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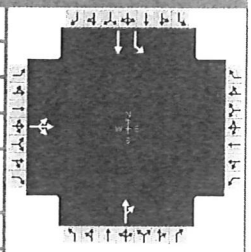
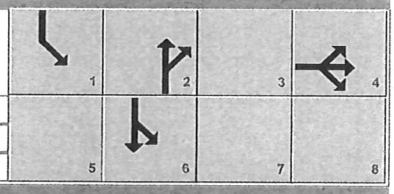
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base + Project	Analysis Period	1> 7:00
Intersection	Red Rock & US-395 SB...	File Name	RrSb28pw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	167	0	10					77	10	508	293	

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	15.0	40.0	20.0	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	1.0	1.0	1.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		12.0				8.3	1.0	4.0
Phase Duration, s		25.0				45.0	20.0	65.0
Change Period, (*Y+R c*), s		5.0				5.0	5.0	5.0
Max Allow Headway (*MAH*), s		3.1				0.0	3.1	0.0
Queue Clearance Time (*g s*), s		10.5					16.8	
Green Extension Time (*g e*), s		0.2				0.0	0.0	0.0
Phase Call Probability		1.00					1.00	
Max Out Probability		0.00					1.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h		192						95		552	318	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1769						1825		1781	1870	
Queue Service Time (*g s*), s		8.5						2.7		14.8	6.2	
Cycle Queue Clearance Time (*g c*), s		8.5						2.7		14.8	6.2	
Green Ratio (*g/C*)		0.22						0.44		0.63	0.67	
Capacity (*c*), veh/h		393						811		916	1247	
Volume-to-Capacity Ratio (*X*)		0.489						0.117		0.603	0.255	
Back of Queue (*Q*), ft/ln (95 th percentile)		162.8						52.1		220.3	99.2	
Back of Queue (*Q*), veh/ln (95 th percentile)		6.4						2.1		8.7	3.9	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00						0.00		0.00	0.00	
Uniform Delay (*d 1*), s/veh		30.5						14.6		9.0	6.0	
Incremental Delay (*d 2*), s/veh		0.4						0.3		0.8	0.5	
Initial Queue Delay (*d 3*), s/veh		0.0						0.0		0.0	0.0	
Control Delay (*d*), s/veh		30.9						14.9		9.8	6.5	
Level of Service (LOS)		C						B		A	A	
Approach Delay, s/veh / LOS	30.9	C		0.0			14.9	B		8.6	A	
Intersection Delay, s/veh / LOS	12.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.73	B	1.95	B	1.39	A	1.35	A
Bicycle LOS Score / LOS	0.81	A			0.64	A	1.92	B

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HCS7 Two-Way Stop-Control Report

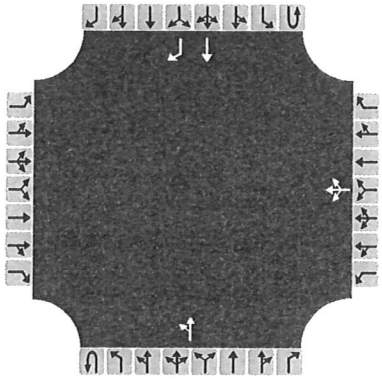
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 NB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 NB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	1
Configuration							LTR			LT					T	R
Volume, V (veh/h)						14	0	219		2	119				662	40
Percent Heavy Vehicles (%)						2	2	2		2						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							253			2						
Capacity, c (veh/h)							804			849						
v/c Ratio							0.32			0.00						
95% Queue Length, Q_{95} (veh)							1.4			0.0						
Control Delay (s/veh)							11.5			9.3						
Level of Service, LOS							B			A						
Approach Delay (s/veh)						11.5				0.2						
Approach LOS						B										

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HCS7 Two-Way Stop-Control Report

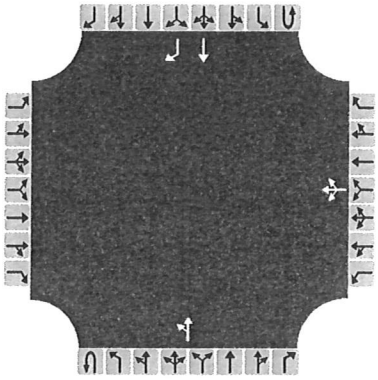
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 NB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 NB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	1
Configuration							LTR			LT					T	R
Volume, V (veh/h)						8	0	522		26	77				379	76
Percent Heavy Vehicles (%)						2	2	2		2						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							576			28						
Capacity, c (veh/h)							955			1068						
v/c Ratio							0.60			0.03						
95% Queue Length, Q_{95} (veh)							4.2			0.1						
Control Delay (s/veh)							14.3			8.5						
Level of Service, LOS							B			A						
Approach Delay (s/veh)						14.3				2.3						
Approach LOS						B										

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HCS7 Two-Way Stop-Control Report

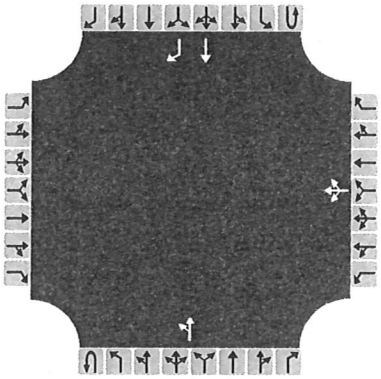
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 NB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 NB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	1
Configuration							LTR			LT					T	R
Volume, V (veh/h)						14	0	394		2	163				1205	154
Percent Heavy Vehicles (%)						2	2	2		2						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							443			2						
Capacity, c (veh/h)							666			456						
v/c Ratio							0.67			0.00						
95% Queue Length, Q_{95} (veh)							5.1			0.0						
Control Delay (s/veh)							20.5			12.9						
Level of Service, LOS							C			B						
Approach Delay (s/veh)						20.5				0.2						
Approach LOS						C										

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HCS7 Two-Way Stop-Control Report

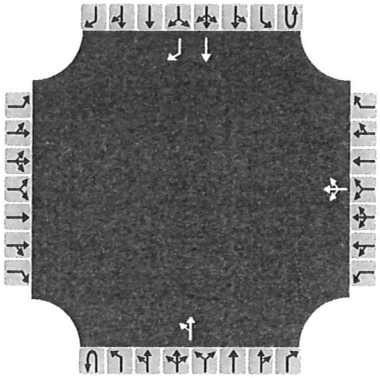
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 NB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 NB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	1
Configuration							LTR			LT					T	R
Volume, V (veh/h)						8	0	1018		26	201				680	139
Percent Heavy Vehicles (%)						2	2	2		2						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							1115			28						
Capacity, c (veh/h)							801			761						
v/c Ratio							1.39			0.04						
95% Queue Length, Q_{95} (veh)							48.0			0.1						
Control Delay (s/veh)							200.7			9.9						
Level of Service, LOS							F			A						
Approach Delay (s/veh)						200.7				1.5						
Approach LOS						F										

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HCS7 Two-Way Stop-Control Report

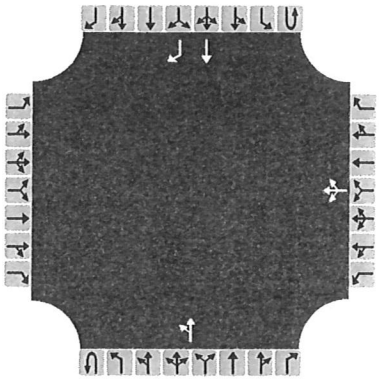
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	AM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 NB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 NB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	1
Configuration							LTR			LT					T	R
Volume, V (veh/h)						20	0	255		10	180				885	40
Percent Heavy Vehicles (%)						2	2	2		2						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							299			11						
Capacity, c (veh/h)							646			689						
v/c Ratio							0.46			0.02						
95% Queue Length, Q_{95} (veh)							2.4			0.0						
Control Delay (s/veh)							15.3			10.3						
Level of Service, LOS							C			B						
Approach Delay (s/veh)						15.3				0.7						
Approach LOS						C										

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HCS7 Two-Way Stop-Control Report

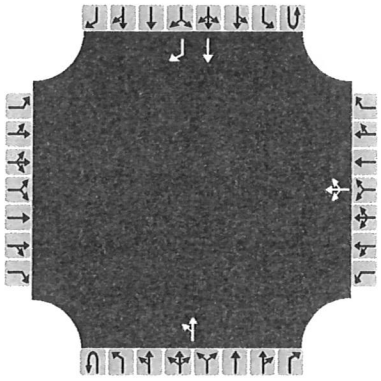
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 NB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 NB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	1
Configuration							LTR			LT					T	R
Volume, V (veh/h)						10	0	795		30	90				490	160
Percent Heavy Vehicles (%)						2	2	2		2						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							875			33						
Capacity, c (veh/h)							945			891						
v/c Ratio							0.93			0.04						
95% Queue Length, Q_{95} (veh)							14.2			0.1						
Control Delay (s/veh)							35.2			9.2						
Level of Service, LOS							E			A						
Approach Delay (s/veh)						35.2				2.6						
Approach LOS						E										

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HCS7 Two-Way Stop-Control Report

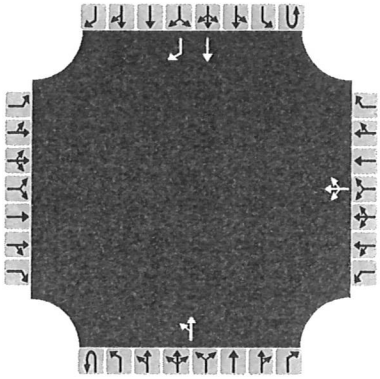
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 NB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 NB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	1
Configuration							LTR			LT					T	R
Volume, V (veh/h)						20	0	430		10	224				1428	154
Percent Heavy Vehicles (%)						2	2	2		2						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							489			11						
Capacity, c (veh/h)							488			368						
v/c Ratio							1.00			0.03						
95% Queue Length, Q_{95} (veh)							13.6			0.1						
Control Delay (s/veh)							70.4			15.1						
Level of Service, LOS							F			C						
Approach Delay (s/veh)						70.4				1.1						
Approach LOS						F										

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HCS7 Two-Way Stop-Control Report

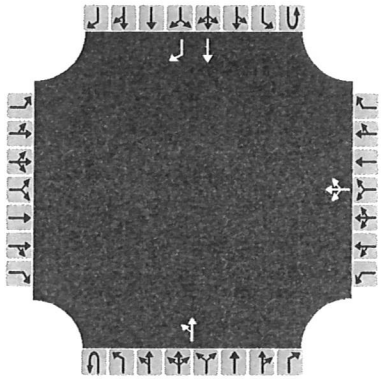
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 NB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 NB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	1
Configuration							LTR			LT					T	R
Volume, V (veh/h)						10	0	1291		30	214				791	223
Percent Heavy Vehicles (%)						2	2	2		2						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							1414			33						
Capacity, c (veh/h)							779			633						
v/c Ratio							1.82			0.05						
95% Queue Length, Q_{95} (veh)							85.6			0.2						
Control Delay (s/veh)							386.8			11.0						
Level of Service, LOS							F			B						
Approach Delay (s/veh)						386.8				1.9						
Approach LOS						F										

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HCS7 Two-Way Stop-Control Report

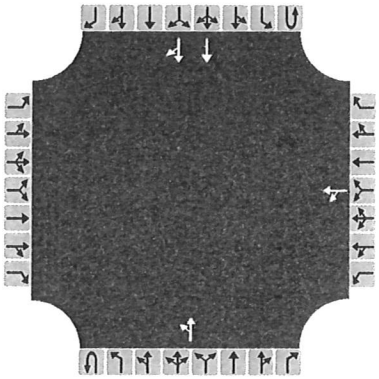
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 NB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 NB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	2	0
Configuration						LT				LT					T	TR
Volume, V (veh/h)						14	0			2	163				1205	154
Percent Heavy Vehicles (%)						2	2			2						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						15				2						
Capacity, c (veh/h)						306				452						
v/c Ratio						0.05				0.00						
95% Queue Length, Q_{95} (veh)						0.2				0.0						
Control Delay (s/veh)						17.4				13.0						
Level of Service, LOS						C				B						
Approach Delay (s/veh)						17.4				0.2						
Approach LOS						C										

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HCS7 Two-Way Stop-Control Report

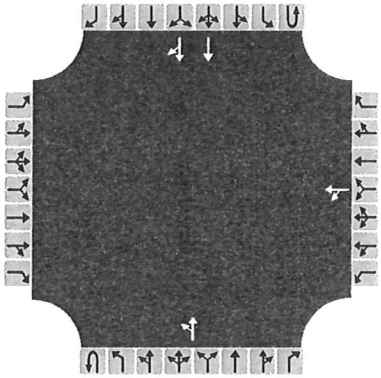
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 NB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 NB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	2	0
Configuration						LT				LT					T	TR
Volume, V (veh/h)						8	0			26	201				380	139
Percent Heavy Vehicles (%)						2	2			2						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						9				28						
Capacity, c (veh/h)						513				1004						
v/c Ratio						0.02				0.03						
95% Queue Length, Q_{95} (veh)						0.1				0.1						
Control Delay (s/veh)						12.1				8.7						
Level of Service, LOS						B				A						
Approach Delay (s/veh)						12.1				1.2						
Approach LOS						B										

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HCS7 Two-Way Stop-Control Report

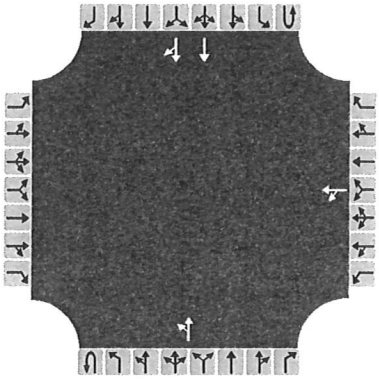
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 NB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 NB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	2	0
Configuration						LT				LT					T	TR
Volume, V (veh/h)						20	0			10	224				1428	154
Percent Heavy Vehicles (%)						2	2			2						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						22				11						
Capacity, c (veh/h)						226				364						
v/c Ratio						0.10				0.03						
95% Queue Length, Q_{95} (veh)						0.3				0.1						
Control Delay (s/veh)						22.7				15.2						
Level of Service, LOS						C				C						
Approach Delay (s/veh)						22.7				1.2						
Approach LOS						C										

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HCS7 Two-Way Stop-Control Report

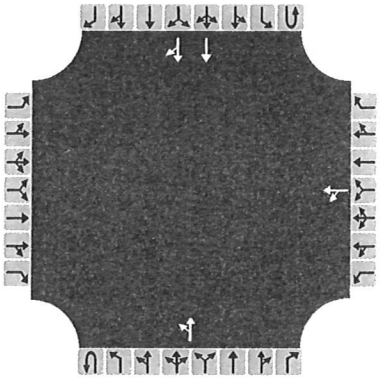
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock/US-395 NB Ramps
Jurisdiction	Washoe County
East/West Street	US-395 NB Ramps
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	2	0
Configuration						LT				LT					T	TR
Volume, V (veh/h)						10	0			30	214				791	223
Percent Heavy Vehicles (%)						2	2			2						
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11				33						
Capacity, c (veh/h)						359				629						
v/c Ratio						0.03				0.05						
95% Queue Length, Q_{95} (veh)						0.1				0.2						
Control Delay (s/veh)						15.4				11.0						
Level of Service, LOS						C				B						
Approach Delay (s/veh)						15.4				1.9						
Approach LOS						C										

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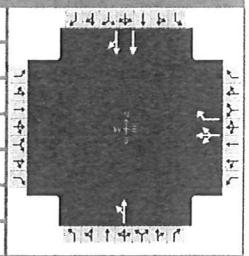
HCS7 Signalized Intersection Results Summary

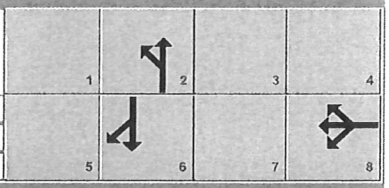
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	Red Rock & US-395 NB...	File Name	RrNb18aw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				14	0	394	2	163			1205	154

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	65.0	15.0	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	1.0	1.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2		6
Case Number				11.0		8.0		8.0
Phase Duration, s				20.0		70.0		70.0
Change Period, (*Y+R c*), s				5.0		5.0		5.0
Max Allow Headway (*MAH*), s				3.3		0.0		0.0
Queue Clearance Time (*g s*), s				14.3				
Green Extension Time (*g e*), s				0.1		0.0		0.0
Phase Call Probability				1.00				
Max Out Probability				1.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	5	2			6	16
Adjusted Flow Rate (*v*), veh/h					111	224		179			752	726
Adjusted Saturation Flow Rate (*s*), veh/h/ln					1612	1585		1854			1870	1783
Queue Service Time (*g s*), s					6.1	12.3		0.0			16.8	17.2
Cycle Queue Clearance Time (*g c*), s					6.1	12.3		2.7			16.8	17.2
Green Ratio (*g/C*)					0.17	0.17		0.72			0.72	0.72
Capacity (*c*), veh/h					269	264		1379			1351	1288
Volume-to-Capacity Ratio (*X*)					0.413	0.847		0.130			0.556	0.563
Back of Queue (*Q*), ft/ln (95 th percentile)					116.1	259		38			234.8	231.1
Back of Queue (*Q*), veh/ln (95 th percentile)					4.6	10.2		1.5			9.2	9.1
Queue Storage Ratio (*RQ*) (95 th percentile)					0.00	0.00		0.00			0.00	0.00
Uniform Delay (*d 1*), s/veh					39.6	36.4		3.8			5.8	5.9
Incremental Delay (*d 2*), s/veh					0.4	20.8		0.2			1.7	1.8
Initial Queue Delay (*d 3*), s/veh					0.0	0.0		0.0			0.0	0.0
Control Delay (*d*), s/veh					40.0	57.2		4.0			7.5	7.6
Level of Service (LOS)					D	E		A			A	A
Approach Delay, s/veh / LOS	0.0			51.5		D	4.0		A	7.6		A
Intersection Delay, s/veh / LOS	14.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.95	B	1.96	B	1.76	B	1.33	A
Bicycle LOS Score / LOS			1.04	A	0.78	A	1.71	B

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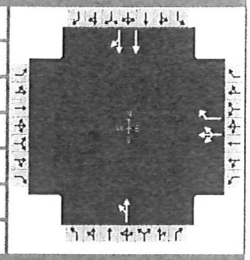
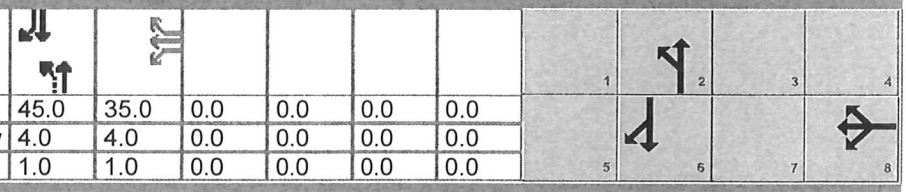
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	Red Rock & US-395 NB...	File Name	RrNb18pw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				8	0	1018	26	201			680	139

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	45.0	35.0	0.0	0.0	0.0	0.0		
Yellow	4.0	4.0	0.0	0.0	0.0	0.0		
Red	1.0	1.0	0.0	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2		6
Case Number				11.0		8.0		8.0
Phase Duration, s				40.0		50.0		50.0
Change Period, ($Y+R_c$), s				5.0		5.0		5.0
Max Allow Headway (*MAH*), s				3.3		0.0		0.0
Queue Clearance Time (g_s), s				17.0				
Green Extension Time (g_e), s				1.2		0.0		0.0
Phase Call Probability				1.00				
Max Out Probability				0.00				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	5	2			6	16
Adjusted Flow Rate (*v*), veh/h					268	304		247			461	429
Adjusted Saturation Flow Rate (*s*), veh/h/ln					1591	1585		1625			1870	1739
Queue Service Time (g_s), s					15.0	13.1		0.1			14.5	14.7
Cycle Queue Clearance Time (g_c), s					15.0	13.1		14.8			14.5	14.7
Green Ratio (*g/C*)					0.39	0.39		0.50			0.50	0.50
Capacity (*c*), veh/h					619	616		857			935	869
Volume-to-Capacity Ratio (*X*)					0.433	0.493		0.288			0.493	0.493
Back of Queue (*Q*), ft/ln (95 th percentile)					276.2	206.5		131.1			262	248.4
Back of Queue (*Q*), veh/ln (95 th percentile)					10.9	8.1		5.2			10.3	9.8
Queue Storage Ratio (*RQ*) (95 th percentile)					0.00	0.00		0.00			0.00	0.00
Uniform Delay (d_1), s/veh					34.6	20.8		13.0			14.9	14.9
Incremental Delay (d_2), s/veh					0.2	0.2		0.8			1.9	2.0
Initial Queue Delay (d_3), s/veh					0.0	0.0		0.0			0.0	0.0
Control Delay (*d*), s/veh					34.8	21.0		13.8			16.8	16.9
Level of Service (LOS)					C	C		B			B	B
Approach Delay, s/veh / LOS	0.0			27.4		C	13.8		B	16.9		B
Intersection Delay, s/veh / LOS	20.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.95	B	1.96	B	2.38	B	1.38	A
Bicycle LOS Score / LOS			1.43	A	0.89	A	1.22	A

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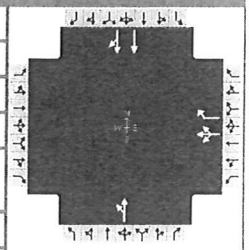
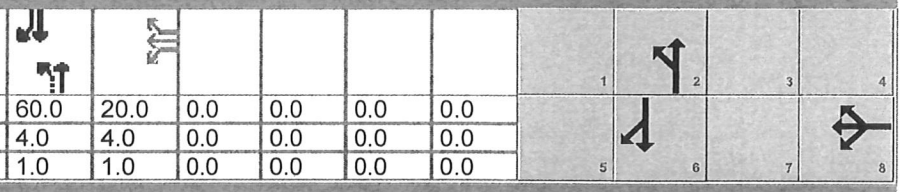
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base + Project	Analysis Period	1> 7:00
Intersection	Red Rock & US-395 NB...	File Name	RrNb28aw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				20	0	430	10	224			1428	154

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



	EB		WB				NB				SB			
Green	60.0	20.0	0.0	0.0	0.0	0.0								
Yellow	4.0	4.0	0.0	0.0	0.0	0.0								
Red	1.0	1.0	0.0	0.0	0.0	0.0								

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2		6
Case Number				11.0		8.0		8.0
Phase Duration, s				25.0		65.0		65.0
Change Period, ($Y+R_c$), s				5.0		5.0		5.0
Max Allow Headway (*MAH*), s				3.3		0.0		0.0
Queue Clearance Time (g_s), s				15.2				
Green Extension Time (g_e), s				0.4		0.0		0.0
Phase Call Probability				1.00				
Max Out Probability				0.36				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	5	2			6	16
Adjusted Flow Rate (*v*), veh/h					129	251		254			867	852
Adjusted Saturation Flow Rate (*s*), veh/h/ln					1618	1585		1706			1870	1796
Queue Service Time (g_s), s					7.0	13.2		0.0			26.3	27.1
Cycle Queue Clearance Time (g_c), s					7.0	13.2		4.7			26.3	27.1
Green Ratio (*g/C*)					0.22	0.22		0.67			0.67	0.67
Capacity (*c*), veh/h					360	352		1179			1247	1197
Volume-to-Capacity Ratio (*X*)					0.360	0.713		0.216			0.695	0.712
Back of Queue (*Q*), ft/ln (95 th percentile)					133.6	235		76.4			371.1	374.7
Back of Queue (*Q*), veh/ln (95 th percentile)					5.3	9.3		3.0			14.6	14.8
Queue Storage Ratio (*RQ*) (95 th percentile)					0.00	0.00		0.00			0.00	0.00
Uniform Delay (d_1), s/veh					37.1	32.3		5.8			9.3	9.5
Incremental Delay (d_2), s/veh					0.2	5.7		0.4			3.2	3.6
Initial Queue Delay (d_3), s/veh					0.0	0.0		0.0			0.0	0.0
Control Delay (*d*), s/veh					37.3	38.1		6.2			12.5	13.1
Level of Service (LOS)					D	D		A			B	B
Approach Delay, s/veh / LOS	0.0			37.8		D	6.2		A	12.8		B
Intersection Delay, s/veh / LOS	16.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.95	B	1.96	B	1.78	B	1.35	A
Bicycle LOS Score / LOS			1.12	A	0.91	A	1.91	B

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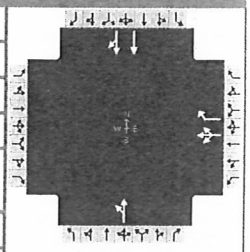
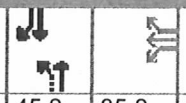
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base + Project	Analysis Period	1> 7:00
Intersection	Red Rock & US-395 NB...	File Name	RrNb28pw.xus		
Project Description					

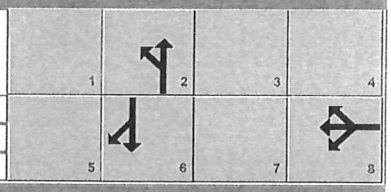


Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				10	0	1291	30	214			791	223

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	45.0	35.0	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	1.0	1.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2		6
Case Number				11.0		8.0		8.0
Phase Duration, s				40.0		50.0		50.0
Change Period, (*Y+R c*), s				5.0		5.0		5.0
Max Allow Headway (*MAH*), s				3.3		0.0		0.0
Queue Clearance Time (*g s*), s				24.9				
Green Extension Time (*g e*), s				1.6		0.0		0.0
Phase Call Probability				1.00				
Max Out Probability				0.09				

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18	5	2			6	16
Adjusted Flow Rate (*v*), veh/h					406	464		265			577	526
Adjusted Saturation Flow Rate (*s*), veh/h/ln					1590	1585		1342			1870	1702
Queue Service Time (*g s*), s					22.9	22.8		1.5			19.5	20.1
Cycle Queue Clearance Time (*g c*), s					22.9	22.8		21.6			19.5	20.1
Green Ratio (*g/C*)					0.39	0.39		0.50			0.50	0.50
Capacity (*c*), veh/h					618	616		716			935	851
Volume-to-Capacity Ratio (*X*)					0.657	0.753		0.371			0.617	0.618
Back of Queue (*Q*), ft/ln (95 th percentile)					399.7	346.5		146.4			340.8	318.7
Back of Queue (*Q*), veh/ln (95 th percentile)					15.7	13.6		5.8			13.4	12.5
Queue Storage Ratio (*RQ*) (95 th percentile)					0.00	0.00		0.00			0.00	0.00
Uniform Delay (*d 1*), s/veh					38.6	23.8		13.4			16.3	16.3
Incremental Delay (*d 2*), s/veh					2.0	4.7		1.5			3.0	3.4
Initial Queue Delay (*d 3*), s/veh					0.0	0.0		0.0			0.0	0.0
Control Delay (*d*), s/veh					40.6	28.4		14.9			19.3	19.6
Level of Service (LOS)					D	C		B			B	B
Approach Delay, s/veh / LOS	0.0			34.1		C	14.9		B	19.5		B
Intersection Delay, s/veh / LOS	24.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.95	B	1.96	B	2.38	B	1.38	A
Bicycle LOS Score / LOS			1.92	B	0.93	A	1.40	A

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HCS7 Two-Way Stop-Control Report

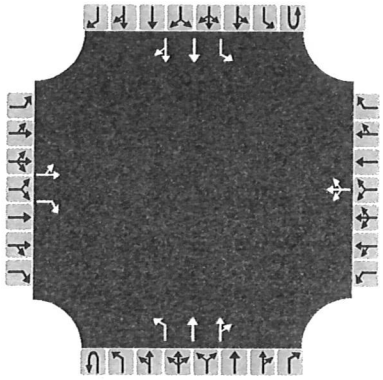
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Lake
Jurisdiction	Washoe County
East/West Street	Silver Lake Road
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	0	0	1	2	0	0	1	2	0
Configuration		LT		R			LTR			L	T	TR		L	T	TR
Volume, V (veh/h)		2	2	24		197	12	19		40	221	54		14	451	5
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4		26			248			43				15		
Capacity, c (veh/h)		268		752			349			1064				1259		
v/c Ratio		0.02		0.03			0.71			0.04				0.01		
95% Queue Length, Q_{95} (veh)		0.0		0.1			5.2			0.1				0.0		
Control Delay (s/veh)		18.7		10.0			37.0			8.5				7.9		
Level of Service, LOS		C		A			E			A				A		
Approach Delay (s/veh)		11.2				37.0				1.1				0.2		
Approach LOS		B				E										

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HCS7 Two-Way Stop-Control Report

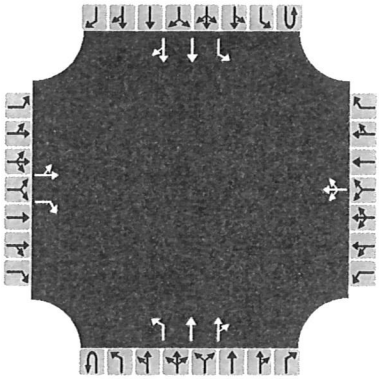
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Lake
Jurisdiction	Washoe County
East/West Street	Silver Lake Road
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	0	0	1	2	0	0	1	2	0
Configuration		LT		R			LTR			L	T	TR		L	T	TR
Volume, V (veh/h)		15	7	21		77	16	27		68	364	163		28	312	9
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		24		23			130			74				30		
Capacity, c (veh/h)		223		839			255			1207				996		
v/c Ratio		0.11		0.03			0.51			0.06				0.03		
95% Queue Length, Q_{95} (veh)		0.4		0.1			2.7			0.2				0.1		
Control Delay (s/veh)		23.0		9.4			32.9			8.2				8.7		
Level of Service, LOS		C		A			D			A				A		
Approach Delay (s/veh)		16.4				32.9				0.9				0.7		
Approach LOS		C				D										

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HCS7 Two-Way Stop-Control Report

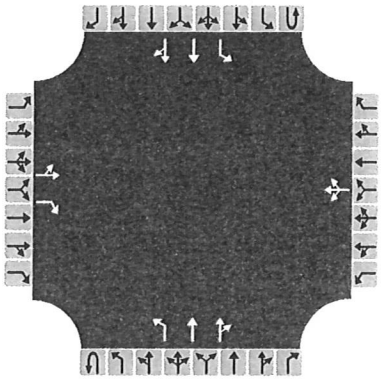
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Lake
Jurisdiction	Washoe County
East/West Street	Silver Lake Road
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	0	0	1	2	0	0	1	2	0
Configuration		LT		R			LTR			L	T	TR		L	T	TR
Volume, V (veh/h)		2	2	24		197	12	28		40	440	54		40	1108	5
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4		26			258			43				43		
Capacity, c (veh/h)		54		441			109			572				1027		
v/c Ratio		0.08		0.06			2.36			0.08				0.04		
95% Queue Length, Q_{95} (veh)		0.3		0.2			22.8			0.2				0.1		
Control Delay (s/veh)		77.5		13.7			703.3			11.8				8.7		
Level of Service, LOS		F		B			F			B				A		
Approach Delay (s/veh)		22.8				703.3				0.9				0.3		
Approach LOS		C				F										

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HCS7 Two-Way Stop-Control Report

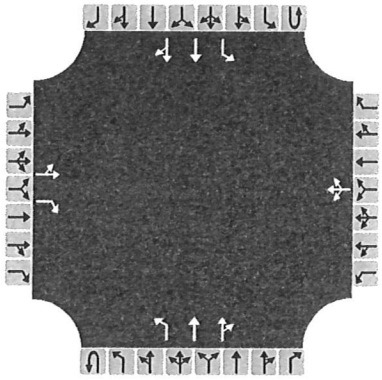
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Lake
Jurisdiction	Washoe County
East/West Street	Silver Lake Road
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	0	0	1	2	0	0	1	2	0
Configuration		LT		R			LTR			L	T	TR		L	T	TR
Volume, V (veh/h)		15	7	21		77	16	52		68	984	163		43	676	9
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		24		23			158			74				47		
Capacity, c (veh/h)		39		625			56			859				554		
v/c Ratio		0.61		0.04			2.81			0.09				0.08		
95% Queue Length, Q_{95} (veh)		2.2		0.1			16.3			0.3				0.3		
Control Delay (s/veh)		190.9		11.0			972.5			9.6				12.1		
Level of Service, LOS		F		B			F			A				B		
Approach Delay (s/veh)		103.0				972.5				0.5				0.7		
Approach LOS		F				F										

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HCS7 Two-Way Stop-Control Report

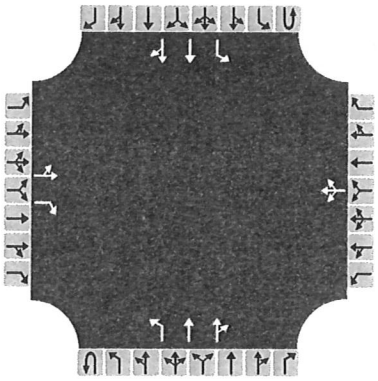
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	AM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Lake
Jurisdiction	Washoe County
East/West Street	Silver Lake Road
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	0	0	1	2	0	0	1	2	0
Configuration		LT		R			LTR			L	T	TR		L	T	TR
Volume, V (veh/h)		10	5	30		240	15	30		40	335	60		55	655	20
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		16		33			310			43				60		
Capacity, c (veh/h)		131		630			191			867				1127		
v/c Ratio		0.12		0.05			1.62			0.05				0.05		
95% Queue Length, Q_{95} (veh)		0.4		0.2			20.5			0.2				0.2		
Control Delay (s/veh)		36.4		11.0			346.2			9.4				8.4		
Level of Service, LOS		E		B			F			A				A		
Approach Delay (s/veh)		19.5				346.2				0.9				0.6		
Approach LOS		C				F										

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HCS7 Two-Way Stop-Control Report

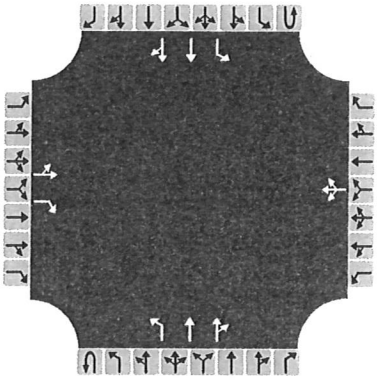
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Lake
Jurisdiction	Washoe County
East/West Street	Silver Lake Road
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	0	0	1	2	0	0	1	2	0
Configuration		LT		R			LTR			L	T	TR		L	T	TR
Volume, V (veh/h)		30	10	20		150	15	70		70	615	200		30	480	10
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		43		22			255			76				33		
Capacity, c (veh/h)		110		732			135			1031				760		
v/c Ratio		0.40		0.03			1.89			0.07				0.04		
95% Queue Length, Q_{95} (veh)		1.6		0.1			19.9			0.2				0.1		
Control Delay (s/veh)		58.0		10.1			482.2			8.8				9.9		
Level of Service, LOS		F		B			F			A				A		
Approach Delay (s/veh)		42.0				482.2				0.7				0.6		
Approach LOS		E				F										

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HCS7 Two-Way Stop-Control Report

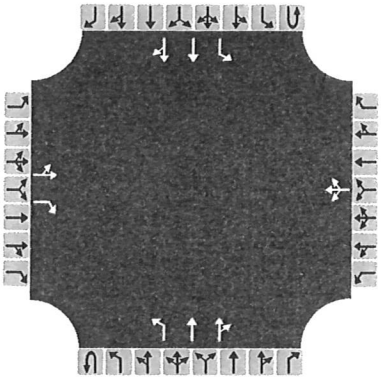
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Lake
Jurisdiction	Washoe County
East/West Street	Silver Lake Road
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	0	0	1	2	0	0	1	2	0
Configuration		LT		R			LTR			L	T	TR		L	T	TR
Volume, V (veh/h)		10	5	30		240	15	39		40	554	60		81	1312	20
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		16		33			320			43				88		
Capacity, c (veh/h)		19		368			51			464				919		
v/c Ratio		0.87		0.09			6.22			0.09				0.10		
95% Queue Length, Q_{95} (veh)		2.3		0.3			36.8			0.3				0.3		
Control Delay (s/veh)		446.9		15.7			2506.4			13.6				9.3		
Level of Service, LOS		F		C			F			B				A		
Approach Delay (s/veh)		159.4				2506.4				0.8				0.5		
Approach LOS		F				F										

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HCS7 Two-Way Stop-Control Report

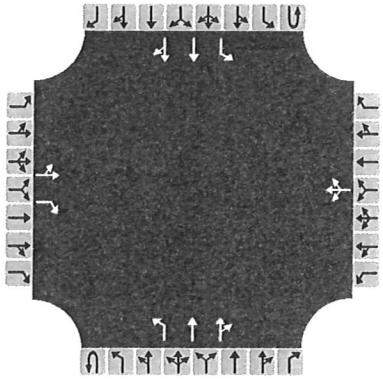
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Lake
Jurisdiction	Washoe County
East/West Street	Silver Lake Road
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	1		0	1	0	0	1	2	0	0	1	2	0
Configuration		LT		R			LTR			L	T	TR		L	T	TR
Volume, V (veh/h)		30	10	20		150	15	95		70	1235	200		45	844	10
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		43		22			283			76				49		
Capacity, c (veh/h)		8		545			16			733				420		
v/c Ratio		5.42		0.04			17.89			0.10				0.12		
95% Queue Length, Q_{95} (veh)		6.8		0.1			36.3			0.3				0.4		
Control Delay (s/veh)		2890.6		11.9			8066.3			10.5				14.7		
Level of Service, LOS		F		B			F			B				B		
Approach Delay (s/veh)		1931.1				8066.3				0.5				0.7		
Approach LOS		F				F										

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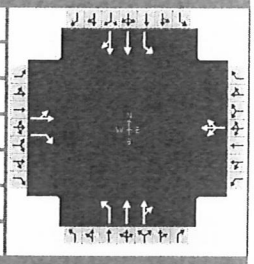
HCS7 Signalized Intersection Results Summary

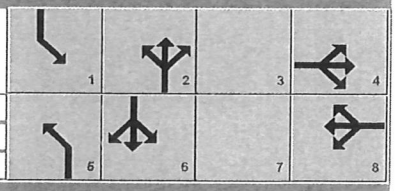
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	Red Rock & Silver Lake	File Name	RrSl18aw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	2	2	24	197	12	28	40	440	54	40	1108	5

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	10.0	44.0	21.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		7.0		8.0	1.1	4.0	1.1	4.0
Phase Duration, s		26.0		26.0	15.0	49.0	15.0	49.0
Change Period, ($Y+R_c$), s		5.0		5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s		3.1		3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s		3.2		17.0	2.9		2.9	
Green Extension Time (g_e), s		0.5		0.2	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.49	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h		4	26		258		43	274	263	43	605	604
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1599	1549		1440		1781	1870	1785	1781	1870	1867
Queue Service Time (g_s), s		0.0	1.2		14.9		0.9	7.9	8.0	0.9	22.0	22.0
Cycle Queue Clearance Time (g_c), s		0.2	1.2		15.0		0.9	7.9	8.0	0.9	22.0	22.0
Green Ratio (*g/C*)		0.23	0.23		0.23		0.60	0.49	0.49	0.60	0.49	0.49
Capacity (*c*), veh/h		433	361		409		380	914	873	606	914	913
Volume-to-Capacity Ratio (*X*)		0.010	0.072		0.630		0.114	0.299	0.302	0.072	0.662	0.662
Back of Queue (*Q*), ft/ln (95 th percentile)		3.2	19.6		229.9		14.2	151.1	146.4	14.1	372.9	372.4
Back of Queue (*Q*), veh/ln (95 th percentile)		0.1	0.8		9.1		0.6	5.9	5.8	0.6	14.7	14.7
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh		26.5	26.9		32.2		10.9	13.8	13.8	8.0	17.4	17.4
Incremental Delay (d_2), s/veh		0.0	0.0		2.3		0.0	0.8	0.9	0.0	3.8	3.8
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh		26.5	26.9		34.6		11.0	14.6	14.7	8.0	21.1	21.2
Level of Service (LOS)		C	C		C		B	B	B	A	C	C
Approach Delay, s/veh / LOS	26.9	C		34.6	C		14.4	B		20.7	C	
Intersection Delay, s/veh / LOS	20.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.29	B	2.29	B	1.67	B	1.90	B
Bicycle LOS Score / LOS	0.54	A	0.91	A	0.97	A	1.52	B

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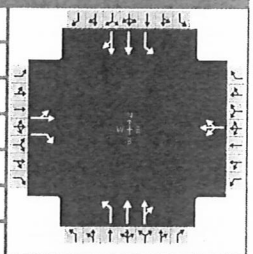
HCS7 Signalized Intersection Results Summary

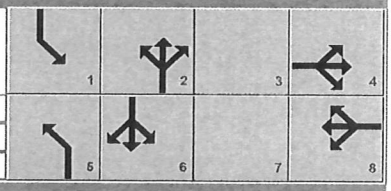
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	Red Rock & Silver Lake	File Name	RrSl18pw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	15	7	21	77	16	52	68	984	163	43	676	9

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	10.0	45.0	20.0	0.0	0.0	0.0						
Yellow	4.0	4.0	4.0	0.0	0.0	0.0						
Red	1.0	1.0	1.0	0.0	0.0	0.0						



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		7.0		8.0	1.1	4.0	1.1	4.0
Phase Duration, s		25.0		25.0	15.0	50.0	15.0	50.0
Change Period, ($Y+R_c$), s		5.0		5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s		3.2		3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s		3.0		9.9	3.5		2.9	
Green Extension Time (g_e), s		0.3		0.3	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.00	0.01		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h		24	23		158		74	641	606	47	373	371
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1464	1548		1514		1781	1870	1760	1781	1870	1860
Queue Service Time (g_s), s		0.0	1.0		6.2		1.5	23.5	23.6	0.9	11.2	11.2
Cycle Queue Clearance Time (g_c), s		0.9	1.0		7.9		1.5	23.5	23.6	0.9	11.2	11.2
Green Ratio (*g/C*)		0.22	0.22		0.22		0.61	0.50	0.50	0.61	0.50	0.50
Capacity (*c*), veh/h		393	344		398		531	935	880	374	935	930
Volume-to-Capacity Ratio (*X*)		0.061	0.066		0.396		0.139	0.685	0.689	0.125	0.399	0.399
Back of Queue (*Q*), ft/ln (95 th percentile)		18.2	17.4		131.9		23.4	392.4	377.4	14.6	209.9	209.1
Back of Queue (*Q*), veh/ln (95 th percentile)		0.7	0.7		5.2		0.9	15.4	14.9	0.6	8.3	8.2
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh		27.6	27.6		30.2		8.2	17.1	17.2	11.1	14.1	14.1
Incremental Delay (d_2), s/veh		0.0	0.0		0.2		0.0	4.1	4.4	0.1	1.3	1.3
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh		27.6	27.7		30.5		8.2	21.2	21.5	11.1	15.3	15.3
Level of Service (LOS)		C	C		C		A	C	C	B	B	B
Approach Delay, s/veh / LOS	27.6	C		30.5	C		20.6	C		15.1	B	
Intersection Delay, s/veh / LOS	19.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.29	B	2.29	B	1.67	B	1.89	B
Bicycle LOS Score / LOS	0.56	A	0.75	A	1.58	B	1.14	A

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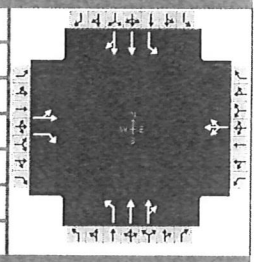
HCS7 Signalized Intersection Results Summary

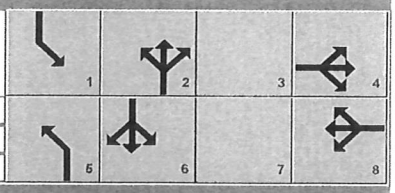
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base	Analysis Period	1> 7:00
Intersection	Red Rock & Silver Lake	File Name	RrSl28ax.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	10	5	30	240	15	30	40	335	60	55	355	20

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	10.0	45.0	20.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		7.0		8.0	1.1	4.0	1.1	4.0
Phase Duration, s		25.0		25.0	15.0	50.0	15.0	50.0
Change Period, ($Y+R_c$), s		5.0		5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s		3.1		3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s		3.5		21.3	2.9		3.2	
Green Extension Time (g_e), s		0.6		0.0	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		1.00	0.00		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h		16	33		310		43	219	210	60	205	202
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1505	1548		1435		1781	1870	1753	1781	1870	1828
Queue Service Time (g_s), s		0.0	1.5		18.7		0.9	6.0	6.1	1.2	5.5	5.6
Cycle Queue Clearance Time (g_c), s		0.6	1.5		19.3		0.9	6.0	6.1	1.2	5.5	5.6
Green Ratio (*g/C*)		0.22	0.22		0.22		0.61	0.50	0.50	0.61	0.50	0.50
Capacity (*c*), veh/h		401	344		393		684	935	877	671	935	914
Volume-to-Capacity Ratio (*X*)		0.041	0.095		0.789		0.064	0.235	0.239	0.089	0.220	0.221
Back of Queue (*Q*), ft/ln (95 th percentile)		12.4	25		303.5		13.4	113.5	109.3	18.7	105.3	104.1
Back of Queue (*Q*), veh/ln (95 th percentile)		0.5	1.0		12.0		0.5	4.5	4.3	0.7	4.1	4.1
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh		27.5	27.8		34.7		7.3	12.7	12.8	7.4	12.6	12.6
Incremental Delay (d_2), s/veh		0.0	0.0		9.5		0.0	0.6	0.6	0.0	0.5	0.6
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh		27.5	27.9		44.3		7.3	13.3	13.4	7.5	13.2	13.2
Level of Service (LOS)		C	C		D		A	B	B	A	B	B
Approach Delay, s/veh / LOS	27.7	C		44.3	D		12.8	B		12.5	B	
Intersection Delay, s/veh / LOS	20.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.29	B	2.29	B	1.67	B	1.89	B
Bicycle LOS Score / LOS	0.57	A	1.00	A	0.88	A	0.87	A

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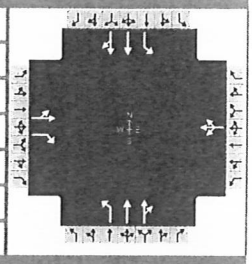
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base	Analysis Period	1> 7:00
Intersection	Red Rock & Silver Lake	File Name	RrSl28px.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	10	20	150	15	70	70	615	200	30	480	10

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

								1	2	3	4	
Green	10.0	45.0	20.0	0.0	0.0	0.0						
Yellow	4.0	4.0	4.0	0.0	0.0	0.0						
Red	1.0	1.0	1.0	0.0	0.0	0.0	5	6	7	8		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		7.0		8.0	1.1	4.0	1.1	4.0
Phase Duration, s		25.0		25.0	15.0	50.0	15.0	50.0
Change Period, ($Y+R_c$), s		5.0		5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s		3.2		3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s		4.1		16.6	3.6		2.7	
Green Extension Time (g_e), s		0.6		0.2	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		0.86	0.01		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h		43	22		255		76	433	399	33	267	265
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1368	1548		1474		1781	1870	1719	1781	1870	1854
Queue Service Time (g_s), s		0.0	1.0		12.5		1.6	13.6	13.6	0.7	7.5	7.5
Cycle Queue Clearance Time (g_c), s		2.1	1.0		14.6		1.6	13.6	13.6	0.7	7.5	7.5
Green Ratio (*g/C*)		0.22	0.22		0.22		0.61	0.50	0.50	0.61	0.50	0.50
Capacity (*c*), veh/h		374	344		393		621	935	860	494	935	927
Volume-to-Capacity Ratio (*X*)		0.116	0.063		0.650		0.122	0.463	0.464	0.066	0.286	0.286
Back of Queue (*Q*), ft/ln (95 th percentile)		33.6	16.6		232.4		24	244.5	230.6	10.1	142.8	141.9
Back of Queue (*Q*), veh/ln (95 th percentile)		1.3	0.7		9.1		0.9	9.6	9.1	0.4	5.6	5.6
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh		28.0	27.6		32.8		7.7	14.6	14.6	8.4	13.1	13.1
Incremental Delay (d_2), s/veh		0.1	0.0		3.0		0.0	1.6	1.8	0.0	0.8	0.8
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh		28.0	27.6		35.8		7.7	16.3	16.4	8.4	13.9	13.9
Level of Service (LOS)		C	C		D		A	B	B	A	B	B
Approach Delay, s/veh / LOS	27.9	C		35.8	D		15.6	B		13.6	B	
Intersection Delay, s/veh / LOS	18.3						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.36	B	2.29	B	1.67	B	1.89	B
Bicycle LOS Score / LOS	0.60	A	0.91	A	1.24	A	0.95	A

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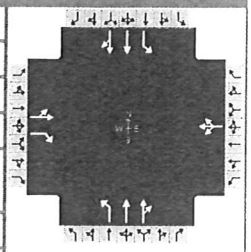
HCS7 Signalized Intersection Results Summary

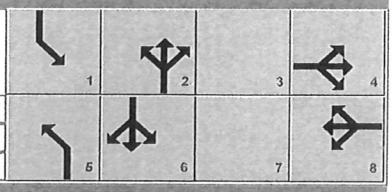
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base + Project	Analysis Period	1> 7:00
Intersection	Red Rock & Silver Lake	File Name	RrSl28aw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	10	5	30	240	15	39	40	554	60	81	1313	20

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	10.0	45.0	20.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		7.0		8.0	1.1	4.0	1.1	4.0
Phase Duration, s		25.0		25.0	15.0	50.0	15.0	50.0
Change Period, ($Y+R_c$), s		5.0		5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s		3.1		3.1	3.1	0.0	3.1	0.0
Queue Clearance Time (g_s), s		3.5		22.0	2.9		3.8	
Green Extension Time (g_e), s		0.6		0.0	0.0	0.0	0.1	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		1.00	0.00		0.01	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h		16	33		320		43	340	327	88	726	723
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1496	1548		1438		1781	1870	1794	1781	1870	1858
Queue Service Time (g_s), s		0.0	1.5		19.4		0.9	10.0	10.0	1.8	28.6	28.6
Cycle Queue Clearance Time (g_c), s		0.6	1.5		20.0		0.9	10.0	10.0	1.8	28.6	28.6
Green Ratio (*g/C*)		0.22	0.22		0.22		0.61	0.50	0.50	0.61	0.50	0.50
Capacity (*c*), veh/h		399	344		392		337	935	897	560	935	929
Volume-to-Capacity Ratio (*X*)		0.041	0.095		0.815		0.129	0.364	0.365	0.157	0.777	0.778
Back of Queue (*Q*), ft/ln (95 th percentile)		12.4	25		319.5		13.6	191.3	184.8	28.1	473.2	472.5
Back of Queue (*Q*), veh/ln (95 th percentile)		0.5	1.0		12.6		0.5	7.5	7.3	1.1	18.6	18.6
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh		27.5	27.8		35.0		12.9	13.7	13.8	8.1	18.4	18.4
Incremental Delay (d_2), s/veh		0.0	0.0		11.7		0.1	1.1	1.1	0.0	6.3	6.4
Initial Queue Delay (d_3), s/veh		0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh		27.5	27.9		46.6		13.0	14.8	14.9	8.1	24.7	24.8
Level of Service (LOS)		C	C		D		B	B	B	A	C	C
Approach Delay, s/veh / LOS	27.7	C		46.6	D		14.8	B		23.8	C	
Intersection Delay, s/veh / LOS	24.2						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.29	B	2.29	B	1.67	B	1.89	B
Bicycle LOS Score / LOS	0.57	A	1.01	A	1.07	A	1.76	B

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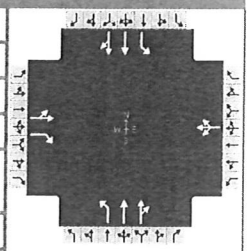
HCS7 Signalized Intersection Results Summary

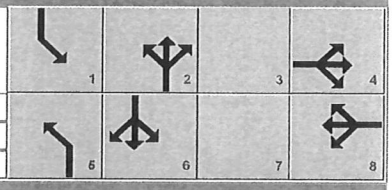
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base + Project	Analysis Period	1> 7:00
Intersection	Red Rock & Silver Lake	File Name	RrSl28pw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	10	20	150	15	95	70	1235	200	45	844	10

Signal Information			
Cycle, s	90.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	10.0	45.0	20.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2	1	6
Case Number		7.0		8.0	1.1	4.0	1.1	4.0
Phase Duration, s		25.0		25.0	15.0	50.0	15.0	50.0
Change Period, (*Y+R c*), s		5.0		5.0	5.0	5.0	5.0	5.0
Max Allow Headway (*MAH*), s		3.2		3.2	3.1	0.0	3.1	0.0
Queue Clearance Time (*g s*), s		4.2		18.4	3.6		3.0	
Green Extension Time (*g e*), s		0.6		0.1	0.0	0.0	0.0	0.0
Phase Call Probability		1.00		1.00	1.00		1.00	
Max Out Probability		0.00		1.00	0.01		0.00	

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h		43	22		283		76	765	740	49	465	463
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1276	1548		1484		1781	1870	1786	1781	1870	1861
Queue Service Time (*g s*), s		0.0	1.0		14.2		1.6	31.1	31.9	1.0	14.9	14.9
Cycle Queue Clearance Time (*g c*), s		2.2	1.0		16.4		1.6	31.1	31.9	1.0	14.9	14.9
Green Ratio (*g/C*)		0.22	0.22		0.22		0.61	0.50	0.50	0.61	0.50	0.50
Capacity (*c*), veh/h		353	344		393		466	935	893	321	935	931
Volume-to-Capacity Ratio (*X*)		0.123	0.063		0.720		0.163	0.818	0.829	0.152	0.498	0.498
Back of Queue (*Q*), ft/ln (95 th percentile)		33.7	16.6		263.9		24.1	517.1	512.9	16.7	264.4	263.4
Back of Queue (*Q*), veh/ln (95 th percentile)		1.3	0.7		10.4		0.9	20.4	20.2	0.7	10.4	10.4
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.00		0.00		0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (*d 1*), s/veh		28.0	27.6		33.5		8.9	19.0	19.2	14.4	15.0	15.0
Incremental Delay (*d 2*), s/veh		0.1	0.0		5.5		0.1	7.9	8.8	0.1	1.9	1.9
Initial Queue Delay (*d 3*), s/veh		0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh		28.1	27.6		39.0		9.0	26.9	28.0	14.5	16.9	16.9
Level of Service (LOS)		C	C		D		A	C	C	B	B	B
Approach Delay, s/veh / LOS	27.9	C		39.0	D		26.6	C		16.8	B	
Intersection Delay, s/veh / LOS	24.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.36	B	2.29	B	1.67	B	1.89	B
Bicycle LOS Score / LOS	0.60	A	0.95	A	1.79	B	1.29	A

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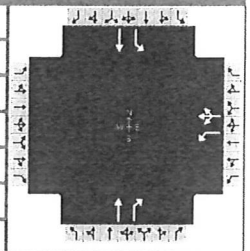
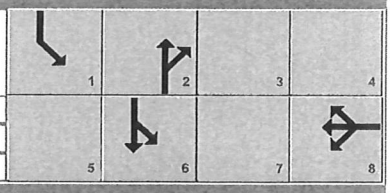
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing	Analysis Period	1> 7:00
Intersection	Red Rock & Moya	File Name	RrMo18ax.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				216	0	12		76	177	26	214	

Signal Information			
Cycle, s	65.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	6.0	24.0	20.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2	1	6
Case Number				10.0		7.3	1.0	4.0
Phase Duration, s				25.0		29.0	11.0	40.0
Change Period, (*Y+R c*), s				5.0		5.0	5.0	5.0
Max Allow Headway (*MAH*), s				3.2		3.2	3.1	3.2
Queue Clearance Time (*g s*), s				8.9		6.4	2.5	6.3
Green Extension Time (*g e*), s				0.4		0.8	0.0	0.9
Phase Call Probability				1.00		1.00	1.00	1.00
Max Out Probability				0.00		0.00	0.51	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h				235	13			83	149	28	233	
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1767	1531			1870	1535	1781	1870	
Queue Service Time (*g s*), s				6.9	0.4			1.9	4.4	0.5	4.3	
Cycle Queue Clearance Time (*g c*), s				6.9	0.4			1.9	4.4	0.5	4.3	
Green Ratio (*g/C*)				0.31	0.31			0.37	0.37	0.49	0.54	
Capacity (*c*), veh/h				544	471			691	567	723	1007	
Volume-to-Capacity Ratio (*X*)				0.432	0.028			0.120	0.263	0.039	0.231	
Back of Queue (*Q*), ft/ln (95 th percentile)				117.4	5.7			32.9	63.1	8	64.1	
Back of Queue (*Q*), veh/ln (95 th percentile)				4.6	0.2			1.3	2.5	0.3	2.5	
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00			0.00	0.00	0.00	0.00	
Uniform Delay (*d 1*), s/veh				18.0	15.7			13.5	14.3	8.6	7.9	
Incremental Delay (*d 2*), s/veh				0.2	0.0			0.0	0.1	0.0	0.0	
Initial Queue Delay (*d 3*), s/veh				0.0	0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh				18.2	15.7			13.6	14.4	8.6	7.9	
Level of Service (LOS)				B	B			B	B	A	A	
Approach Delay, s/veh / LOS	0.0			18.0		B	14.1		B	8.0		A
Intersection Delay, s/veh / LOS	13.3						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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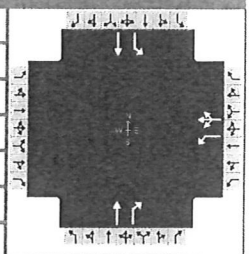
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing	Analysis Period	1> 7:00
Intersection	Red Rock & Moya	File Name	RrMo18px.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				246	0	42		244	160	13	107	

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4
							5	6	7	8
Green	6.0	39.0	15.0	0.0	0.0	0.0				
Yellow	4.0	4.0	4.0	0.0	0.0	0.0				
Red	1.0	1.0	1.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2	1	6
Case Number				10.0		7.3	1.0	4.0
Phase Duration, s				20.0		44.0	11.0	55.0
Change Period, ($Y+R_c$), s				5.0		5.0	5.0	5.0
Max Allow Headway (*MAH*), s				3.2		3.1	3.1	3.1
Queue Clearance Time (g_s), s				12.8		7.9	2.2	3.7
Green Extension Time (g_e), s				0.2		1.0	0.0	1.0
Phase Call Probability				1.00		1.00	1.00	1.00
Max Out Probability				1.00		0.00	0.22	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h				267	46			265	147	14	116	
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1759	1519			1870	1540	1781	1870	
Queue Service Time (g_s), s				10.8	1.9			5.9	3.8	0.2	1.7	
Cycle Queue Clearance Time (g_c), s				10.8	1.9			5.9	3.8	0.2	1.7	
Green Ratio (*g/C*)				0.20	0.20			0.52	0.52	0.63	0.67	
Capacity (*c*), veh/h				352	304			973	801	729	1247	
Volume-to-Capacity Ratio (*X*)				0.760	0.150			0.273	0.183	0.019	0.093	
Back of Queue (*Q*), ft/ln (95 th percentile)				223.3	29.5			97.7	51.5	3.1	22	
Back of Queue (*Q*), veh/ln (95 th percentile)				8.8	1.2			3.8	2.0	0.1	0.9	
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh				28.3	24.7			10.1	9.5	5.7	4.4	
Incremental Delay (d_2), s/veh				8.4	0.1			0.1	0.0	0.0	0.0	
Initial Queue Delay (d_3), s/veh				0.0	0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh				36.7	24.8			10.1	9.6	5.7	4.5	
Level of Service (LOS)				D	C			B	A	A	A	
Approach Delay, s/veh / LOS	0.0			35.0		C	9.9		A	4.6		A
Intersection Delay, s/veh / LOS	18.3						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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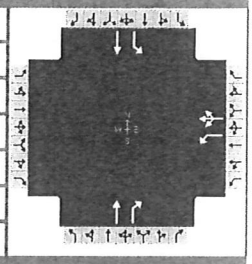
HCS7 Signalized Intersection Results Summary

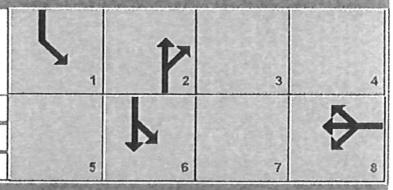
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	Red Rock & Moya	File Name	RrMo18aw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				216	0	70		304	177	201	897	

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.0	29.0	20.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2	1	6
Case Number				10.0		7.3	1.0	4.0
Phase Duration, s				25.0		34.0	11.0	45.0
Change Period, (*Y+R c*), s				5.0		5.0	5.0	5.0
Max Allow Headway (*MAH*), s				3.2		3.1	3.1	3.1
Queue Clearance Time (*g s*), s				9.7		10.8	6.6	34.7
Green Extension Time (*g e*), s				0.5		3.5	0.0	0.2
Phase Call Probability				1.00		1.00	1.00	1.00
Max Out Probability				0.00		0.05	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h				235	76			330	192	218	975	
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1766	1530			1870	1537	1781	1870	
Queue Service Time (*g s*), s				7.7	2.6			8.8	5.9	4.6	32.7	
Cycle Queue Clearance Time (*g c*), s				7.7	2.6			8.8	5.9	4.6	32.7	
Green Ratio (*g/C*)				0.29	0.29			0.41	0.41	0.53	0.57	
Capacity (*c*), veh/h				504	437			775	637	558	1069	
Volume-to-Capacity Ratio (*X*)				0.465	0.174			0.426	0.302	0.391	0.912	
Back of Queue (*Q*), ft/ln (95 th percentile)				134.9	39.8			152.9	83.9	69.7	513.1	
Back of Queue (*Q*), veh/ln (95 th percentile)				5.3	1.6			6.0	3.3	2.7	20.2	
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00			0.00	0.00	0.00	0.00	
Uniform Delay (*d 1*), s/veh				20.6	18.8			14.6	13.7	9.9	13.4	
Incremental Delay (*d 2*), s/veh				0.2	0.1			0.1	0.1	0.2	11.4	
Initial Queue Delay (*d 3*), s/veh				0.0	0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh				20.8	18.9			14.7	13.8	10.1	24.8	
Level of Service (LOS)				C	B			B	B	B	C	
Approach Delay, s/veh / LOS	0.0			20.4		C	14.4		B	22.1		C
Intersection Delay, s/veh / LOS	19.9						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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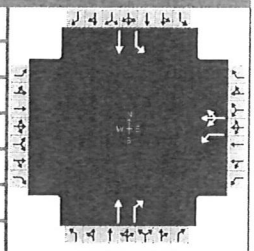
HCS7 Signalized Intersection Results Summary

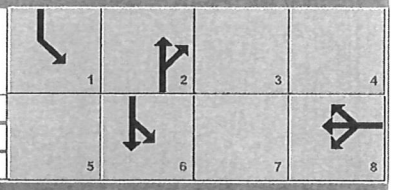
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	Existing + Project	Analysis Period	1> 7:00
Intersection	Red Rock & Moya	File Name	RrMo18pw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				246	0	207		889	160	110	486	

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.0	39.0	15.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2	1	6
Case Number				10.0		7.3	1.0	4.0
Phase Duration, s				20.0		44.0	11.0	55.0
Change Period, (*Y+R c*), s				5.0		5.0	5.0	5.0
Max Allow Headway (*MAH*), s				3.3		3.1	3.1	3.1
Queue Clearance Time (*g s*), s				12.8		40.5	4.0	11.8
Green Extension Time (*g e*), s				0.3		0.0	0.0	4.1
Phase Call Probability				1.00		1.00	1.00	1.00
Max Out Probability				1.00		1.00	1.00	0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h				267	198			966	147	120	528	
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1759	1519			1870	1540	1781	1870	
Queue Service Time (*g s*), s				10.8	9.0			38.5	3.8	2.0	9.8	
Cycle Queue Clearance Time (*g c*), s				10.8	9.0			38.5	3.8	2.0	9.8	
Green Ratio (*g/C*)				0.20	0.20			0.52	0.52	0.63	0.67	
Capacity (*c*), veh/h				352	304			973	801	243	1247	
Volume-to-Capacity Ratio (*X*)				0.760	0.651			0.994	0.183	0.493	0.424	
Back of Queue (*Q*), ft/ln (95 th percentile)				223.3	155.8			727.7	51.5	47	130.8	
Back of Queue (*Q*), veh/ln (95 th percentile)				8.8	6.1			28.6	2.0	1.9	5.2	
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00			0.00	0.00	0.00	0.00	
Uniform Delay (*d 1*), s/veh				28.3	27.6			17.9	9.5	16.8	5.8	
Incremental Delay (*d 2*), s/veh				8.4	3.9			27.2	0.0	0.6	0.1	
Initial Queue Delay (*d 3*), s/veh				0.0	0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh				36.7	31.5			45.1	9.6	17.4	5.9	
Level of Service (LOS)				D	C			D	A	B	A	
Approach Delay, s/veh / LOS	0.0			34.5	C		40.4	D		8.0	A	
Intersection Delay, s/veh / LOS	29.7						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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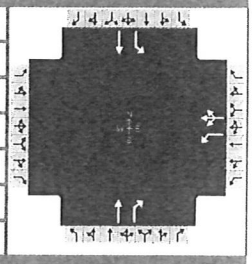
HCS7 Signalized Intersection Results Summary

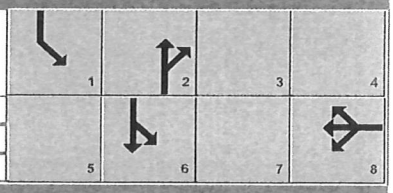
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base	Analysis Period	1> 7:00
Intersection	Red Rock & Moya	File Name	RrMo28ax.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				240	0	40		195	180	70	490	

Signal Information			
Cycle, s	65.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.0	24.0	20.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2	1	6
Case Number				10.0		7.3	1.0	4.0
Phase Duration, s				25.0		29.0	11.0	40.0
Change Period, ($Y+R_c$), s				5.0		5.0	5.0	5.0
Max Allow Headway (*MAH*), s				3.2		3.1	3.1	3.1
Queue Clearance Time (g_s), s				9.8		8.0	3.5	13.9
Green Extension Time (g_e), s				0.4		1.8	0.0	1.8
Phase Call Probability				1.00		1.00	1.00	1.00
Max Out Probability				0.00		0.01	1.00	0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h				261	43			212	196	76	533	
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1767	1531			1870	1535	1781	1870	
Queue Service Time (g_s), s				7.8	1.3			5.2	6.0	1.5	11.9	
Cycle Queue Clearance Time (g_c), s				7.8	1.3			5.2	6.0	1.5	11.9	
Green Ratio (*g/C*)				0.31	0.31			0.37	0.37	0.49	0.54	
Capacity (*c*), veh/h				544	471			691	567	613	1007	
Volume-to-Capacity Ratio (*X*)				0.480	0.092			0.307	0.345	0.124	0.529	
Back of Queue (*Q*), ft/ln (95 th percentile)				132.9	19.3			91.3	85.7	22.1	182	
Back of Queue (*Q*), veh/ln (95 th percentile)				5.2	0.8			3.6	3.4	0.9	7.2	
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh				18.3	16.0			14.6	14.8	9.2	9.7	
Incremental Delay (d_2), s/veh				0.2	0.0			0.1	0.1	0.0	0.3	
Initial Queue Delay (d_3), s/veh				0.0	0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh				18.5	16.1			14.7	15.0	9.2	9.9	
Level of Service (LOS)				B	B			B	B	A	A	
Approach Delay, s/veh / LOS	0.0			18.2		B	14.8		B	9.9		A
Intersection Delay, s/veh / LOS	13.3						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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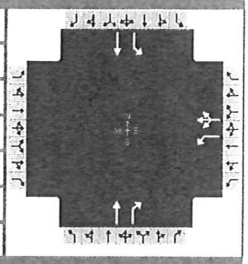
HCS7 Signalized Intersection Results Summary

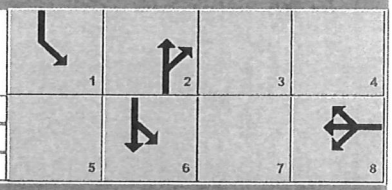
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base	Analysis Period	1> 7:00
Intersection	Red Rock & Moya	File Name	RrMo28px.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				290	0	70		535	180	30	230	

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.0	39.0	15.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2	1	6
Case Number				10.0		7.3	1.0	4.0
Phase Duration, s				20.0		44.0	11.0	55.0
Change Period, ($Y+R_c$), s				5.0		5.0	5.0	5.0
Max Allow Headway (*MAH*), s				3.2		3.1	3.1	3.1
Queue Clearance Time (g_s), s				15.1		18.2	2.5	5.9
Green Extension Time (g_e), s				0.0		2.0	0.0	2.0
Phase Call Probability				1.00		1.00	1.00	1.00
Max Out Probability				1.00		0.00	0.51	0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h				315	49			582	168	33	250	
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1759	1519			1870	1540	1781	1870	
Queue Service Time (g_s), s				13.1	2.0			16.2	4.4	0.5	3.9	
Cycle Queue Clearance Time (g_c), s				13.1	2.0			16.2	4.4	0.5	3.9	
Green Ratio (*g/C*)				0.20	0.20			0.52	0.52	0.63	0.67	
Capacity (*c*), veh/h				352	304			973	801	491	1247	
Volume-to-Capacity Ratio (*X*)				0.896	0.161			0.598	0.210	0.066	0.200	
Back of Queue (*Q*), ft/ln (95 th percentile)				305.1	31.7			254.2	60	7.2	51.3	
Back of Queue (*Q*), veh/ln (95 th percentile)				12.0	1.2			10.0	2.4	0.3	2.0	
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh				29.2	24.8			12.5	9.7	7.6	4.8	
Incremental Delay (d_2), s/veh				23.7	0.1			0.7	0.0	0.0	0.0	
Initial Queue Delay (d_3), s/veh				0.0	0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh				52.9	24.9			13.3	9.7	7.7	4.8	
Level of Service (LOS)				D	C			B	A	A	A	
Approach Delay, s/veh / LOS	0.0			49.1		D	12.5		B	5.2		A
Intersection Delay, s/veh / LOS	20.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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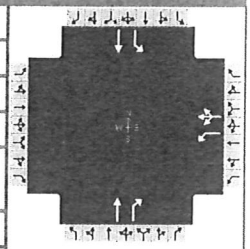
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base + Project	Analysis Period	1> 7:00
Intersection	Red Rock & Moya	File Name	RrMo28aw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				240	0	98		423	180	245	1173	

Signal Information			
Cycle, s	65.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4		
Green	6.0	24.0	20.0	0.0	0.0	0.0						
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	5	6	7	8		
Red	1.0	1.0	1.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2	1	6
Case Number				10.0		7.3	1.0	4.0
Phase Duration, s				25.0		29.0	11.0	40.0
Change Period, ($Y+R_c$), s				5.0		5.0	5.0	5.0
Max Allow Headway (*MAH*), s				3.2		3.1	3.1	3.1
Queue Clearance Time (g_s), s				9.8		15.4	7.8	37.0
Green Extension Time (g_e), s				0.6		4.0	0.0	0.0
Phase Call Probability				1.00		1.00	1.00	1.00
Max Out Probability				0.01		0.52	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h				261	107			460	196	266	1275	
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1767	1531			1870	1535	1781	1870	
Queue Service Time (g_s), s				7.8	3.4			13.4	6.0	5.8	35.0	
Cycle Queue Clearance Time (g_c), s				7.8	3.4			13.4	6.0	5.8	35.0	
Green Ratio (*g/C*)				0.31	0.31			0.37	0.37	0.49	0.54	
Capacity (*c*), veh/h				544	471			691	567	428	1007	
Volume-to-Capacity Ratio (*X*)				0.480	0.226			0.666	0.345	0.623	1.266	
Back of Queue (*Q*), ft/ln (95 th percentile)				132.9	49.6			234.8	85.7	97.6	1756.1	
Back of Queue (*Q*), veh/ln (95 th percentile)				5.2	2.0			9.2	3.4	3.8	69.1	
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh				18.3	16.7			17.1	14.8	12.4	15.0	
Incremental Delay (d_2), s/veh				0.2	0.1			2.0	0.1	2.1	127.7	
Initial Queue Delay (d_3), s/veh				0.0	0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh				18.5	16.8			19.1	15.0	14.5	142.7	
Level of Service (LOS)				B	B			B	B	B	F	
Approach Delay, s/veh / LOS	0.0			18.0		B	17.9		B	120.5		F
Intersection Delay, s/veh / LOS	79.6						E					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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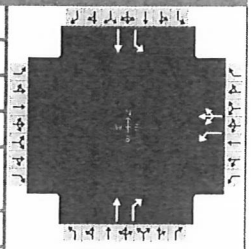
HCS7 Signalized Intersection Results Summary

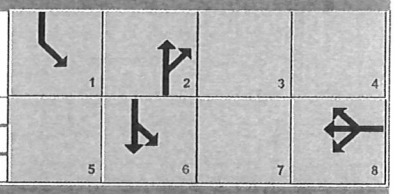
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base + Project	Analysis Period	1> 7:00
Intersection	Red Rock & Moya	File Name	RrMo28pw.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				290	0	235		1180	180	127	609	

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.0	39.0	15.0	0.0	0.0	0.0
Yellow	4.0	4.0	4.0	0.0	0.0	0.0
Red	1.0	1.0	1.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2	1	6
Case Number				10.0		7.3	1.0	4.0
Phase Duration, s				20.0		44.0	11.0	55.0
Change Period, (*Y+R c*), s				5.0		5.0	5.0	5.0
Max Allow Headway (*MAH*), s				3.3		3.1	3.1	3.1
Queue Clearance Time (*g s*), s				15.1		41.0	4.4	15.7
Green Extension Time (*g e*), s				0.0		0.0	0.0	6.8
Phase Call Probability				1.00		1.00	1.00	1.00
Max Out Probability				1.00		1.00	1.00	0.07

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h				315	228			1283	168	138	662	
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1759	1519			1870	1540	1781	1870	
Queue Service Time (*g s*), s				13.1	10.6			39.0	4.4	2.4	13.7	
Cycle Queue Clearance Time (*g c*), s				13.1	10.6			39.0	4.4	2.4	13.7	
Green Ratio (*g/C*)				0.20	0.20			0.52	0.52	0.63	0.67	
Capacity (*c*), veh/h				352	304			973	801	239	1247	
Volume-to-Capacity Ratio (*X*)				0.896	0.751			1.319	0.210	0.579	0.531	
Back of Queue (*Q*), ft/ln (95 th percentile)				305.1	199			2052.8	60	59.2	184.3	
Back of Queue (*Q*), veh/ln (95 th percentile)				12.0	7.8			80.8	2.4	2.3	7.3	
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00			0.00	0.00	0.00	0.00	
Uniform Delay (*d 1*), s/veh				29.2	28.2			18.0	9.7	16.9	6.4	
Incremental Delay (*d 2*), s/veh				23.7	9.0			150.7	0.0	2.3	0.2	
Initial Queue Delay (*d 3*), s/veh				0.0	0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh				52.9	37.2			168.7	9.7	19.2	6.7	
Level of Service (LOS)				D	D			F	A	B	A	
Approach Delay, s/veh / LOS	0.0			46.3		D	150.3		F	8.8		A
Intersection Delay, s/veh / LOS	89.6						F					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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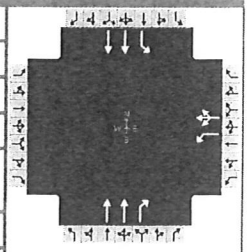
HCS7 Signalized Intersection Results Summary

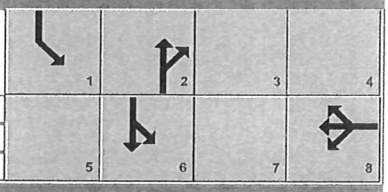
General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	AM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base + Project	Analysis Period	1> 7:00
Intersection	Red Rock & Moya	File Name	RrMo28aw4.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				240	0	98		423	180	245	1173	

Signal Information			
Cycle, s	65.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	6.0	24.0	20.0	0.0	0.0	0.0	
Yellow	4.0	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2	1	6
Case Number				10.0		7.3	1.0	4.0
Phase Duration, s				25.0		29.0	11.0	40.0
Change Period, ($Y+R_c$), s				5.0		5.0	5.0	5.0
Max Allow Headway (*MAH*), s				3.2		3.1	3.1	3.1
Queue Clearance Time (g_s), s				9.8		8.1	7.8	18.7
Green Extension Time (g_e), s				0.6		5.1	0.0	4.4
Phase Call Probability				1.00		1.00	1.00	1.00
Max Out Probability				0.01		0.12	1.00	0.26

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h				261	107			460	196	266	1275	
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1773	1553			1781	1535	1781	1781	
Queue Service Time (g_s), s				7.8	3.3			6.1	6.0	5.8	16.7	
Cycle Queue Clearance Time (g_c), s				7.8	3.3			6.1	6.0	5.8	16.7	
Green Ratio (*g/C*)				0.31	0.31			0.37	0.37	0.49	0.54	
Capacity (*c*), veh/h				545	478			1315	567	532	1918	
Volume-to-Capacity Ratio (*X*)				0.478	0.223			0.350	0.345	0.500	0.665	
Back of Queue (*Q*), ft/ln (95 th percentile)				132.9	49.5			100.3	85.7	88.1	233.8	
Back of Queue (*Q*), veh/ln (95 th percentile)				5.2	1.9			4.0	3.4	3.5	9.2	
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh				18.3	16.7			14.8	14.8	10.6	10.8	
Incremental Delay (d_2), s/veh				0.2	0.1			0.1	0.1	0.3	0.7	
Initial Queue Delay (d_3), s/veh				0.0	0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh				18.5	16.8			14.9	15.0	10.8	11.5	
Level of Service (LOS)				B	B			B	B	B	B	
Approach Delay, s/veh / LOS	0.0			18.0		B	14.9		B	11.4		B
Intersection Delay, s/veh / LOS	13.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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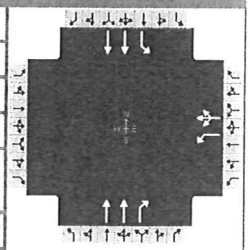
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency				Duration, h	0.25
Analyst	Solaegui Engineers	Analysis Date	Jul 3, 2018	Area Type	Other
Jurisdiction	Washoe County	Time Period	PM Peak Hour	PHF	0.92
Urban Street		Analysis Year	2028 Base + Project	Analysis Period	1> 7:00
Intersection	Red Rock & Moya	File Name	RrMo28pw4.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				290	0	235		1180	180	127	609	

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	Yes	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

							1	2	3	4
							5	6	7	8
Green	6.0	34.0	20.0	0.0	0.0	0.0				
Yellow	4.0	4.0	4.0	0.0	0.0	0.0				
Red	1.0	1.0	1.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				8		2	1	6
Case Number				10.0		7.3	1.0	4.0
Phase Duration, s				25.0		39.0	11.0	50.0
Change Period, ($Y+R_c$), s				5.0		5.0	5.0	5.0
Max Allow Headway (*MAH*), s				3.3		3.1	3.1	3.1
Queue Clearance Time (g_s), s				13.9		25.1	4.8	8.8
Green Extension Time (g_e), s				0.7		4.3	0.0	6.6
Phase Call Probability				1.00		1.00	1.00	1.00
Max Out Probability				0.22		0.43	1.00	0.02

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				3	8	18		2	12	1	6	
Adjusted Flow Rate (*v*), veh/h				315	228			1283	168	138	662	
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1771	1551			1781	1538	1781	1781	
Queue Service Time (g_s), s				11.9	9.5			23.1	5.0	2.8	6.8	
Cycle Queue Clearance Time (g_c), s				11.9	9.5			23.1	5.0	2.8	6.8	
Green Ratio (*g/C*)				0.27	0.27			0.45	0.45	0.56	0.60	
Capacity (*c*), veh/h				472	414			1614	697	301	2137	
Volume-to-Capacity Ratio (*X*)				0.667	0.552			0.794	0.242	0.458	0.310	
Back of Queue (*Q*), ft/ln (95 th percentile)				221.5	153.6			349.3	72	42.7	97.9	
Back of Queue (*Q*), veh/ln (95 th percentile)				8.7	6.0			13.8	2.8	1.7	3.9	
Queue Storage Ratio (*RQ*) (95 th percentile)				0.00	0.00			0.00	0.00	0.00	0.00	
Uniform Delay (d_1), s/veh				24.5	23.6			17.5	12.6	14.0	7.4	
Incremental Delay (d_2), s/veh				2.9	0.9			2.6	0.1	0.4	0.0	
Initial Queue Delay (d_3), s/veh				0.0	0.0			0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh				27.4	24.6			20.1	12.7	14.4	7.4	
Level of Service (LOS)				C	C			C	B	B	A	
Approach Delay, s/veh / LOS	0.0			26.2		C	19.3		B	8.6		A
Intersection Delay, s/veh / LOS	17.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS								
Bicycle LOS Score / LOS								

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HCS7 Two-Way Stop-Control Report

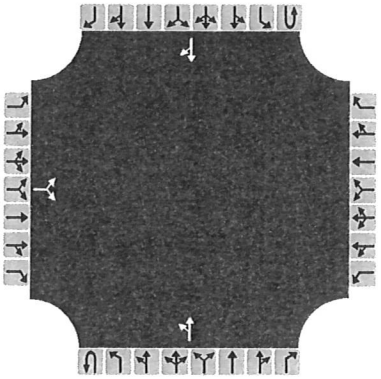
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Bighorn
Jurisdiction	Washoe County
East/West Street	Bighorn Drive
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		1		25						4	71				207	1
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			28							4						
Capacity, c (veh/h)			807							1341						
v/c Ratio			0.04							0.00						
95% Queue Length, Q_{95} (veh)			0.1							0.0						
Control Delay (s/veh)			9.6							7.7						
Level of Service, LOS			A							A						
Approach Delay (s/veh)		9.6								0.4						
Approach LOS		A														

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HCS7 Two-Way Stop-Control Report

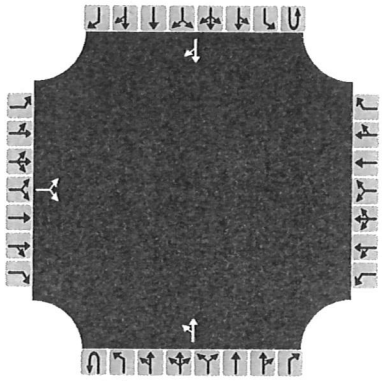
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Bighorn
Jurisdiction	Washoe County
East/West Street	Bighorn Drive
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		5						29	216				96	1
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			5							32						
Capacity, c (veh/h)			949							1485						
v/c Ratio			0.01							0.02						
95% Queue Length, Q_{95} (veh)			0.0							0.1						
Control Delay (s/veh)			8.8							7.5						
Level of Service, LOS			A							A						
Approach Delay (s/veh)		8.8								1.0						
Approach LOS		A														

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HCS7 Two-Way Stop-Control Report

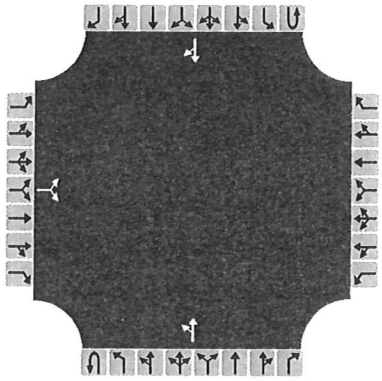
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Bighorn
Jurisdiction	Washoe County
East/West Street	Bighorn Drive
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		1		68						18	343				1022	1
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			75							20						
Capacity, c (veh/h)			251							628						
v/c Ratio			0.30							0.03						
95% Queue Length, Q_{95} (veh)			1.2							0.1						
Control Delay (s/veh)			25.4							10.9						
Level of Service, LOS			D							B						
Approach Delay (s/veh)		25.4								1.0						
Approach LOS		D														

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HCS7 Two-Way Stop-Control Report

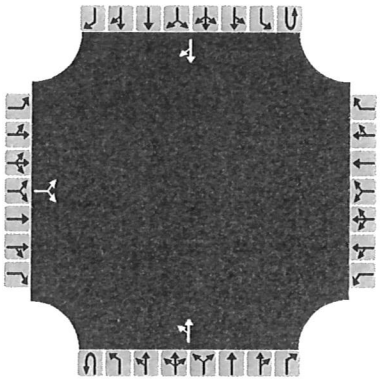
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Bighorn
Jurisdiction	Washoe County
East/West Street	Bighorn Drive
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		0		29						70	985				548	1
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			32							76						
Capacity, c (veh/h)			503							979						
v/c Ratio			0.06							0.08						
95% Queue Length, Q_{95} (veh)			0.2							0.3						
Control Delay (s/veh)			12.6							9.0						
Level of Service, LOS			B							A						
Approach Delay (s/veh)		12.6								2.2						
Approach LOS		B														

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HCS7 Two-Way Stop-Control Report

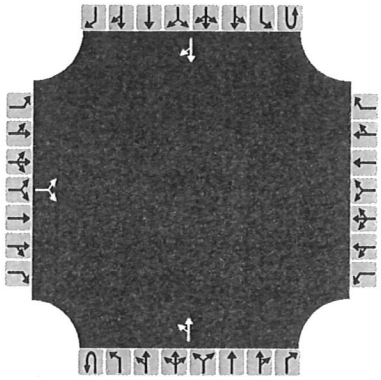
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	AM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Bighorn
Jurisdiction	Washoe County
East/West Street	Bighorn Drive
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		5		25						5	205				435	5
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			33							5						
Capacity, c (veh/h)			545							1084						
v/c Ratio			0.06							0.01						
95% Queue Length, Q_{95} (veh)			0.2							0.0						
Control Delay (s/veh)			12.0							8.3						
Level of Service, LOS			B							A						
Approach Delay (s/veh)		12.0								0.2						
Approach LOS		B														

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HCS7 Two-Way Stop-Control Report

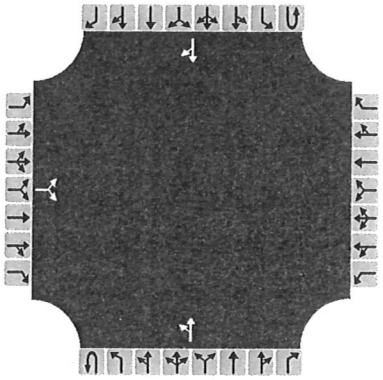
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Bighorn
Jurisdiction	Washoe County
East/West Street	Bighorn Drive
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		5		5						30	505				215	5
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			11							33						
Capacity, c (veh/h)			460							1327						
v/c Ratio			0.02							0.02						
95% Queue Length, Q_{95} (veh)			0.1							0.1						
Control Delay (s/veh)			13.0							7.8						
Level of Service, LOS			B							A						
Approach Delay (s/veh)		13.0								0.7						
Approach LOS		B														

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HCS7 Two-Way Stop-Control Report

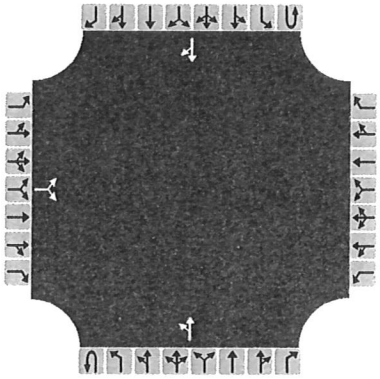
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Bighorn
Jurisdiction	Washoe County
East/West Street	Bighorn Drive
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		5		68						19	477				1250	5
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			79							21						
Capacity, c (veh/h)			164							504						
v/c Ratio			0.48							0.04						
95% Queue Length, Q_{95} (veh)			2.3							0.1						
Control Delay (s/veh)			46.1							12.5						
Level of Service, LOS			E							B						
Approach Delay (s/veh)		46.1								1.2						
Approach LOS		E														

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HCS7 Two-Way Stop-Control Report

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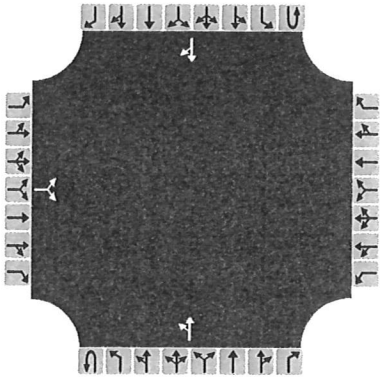
Project Description	

Site Information

Intersection	Red Rock & Bighorn
Jurisdiction	Washoe County
East/West Street	Bighorn Drive
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		5		29						71	1274				667	5
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			37							77						
Capacity, c (veh/h)			178							874						
v/c Ratio			0.21							0.09						
95% Queue Length, Q_{95} (veh)			0.8							0.3						
Control Delay (s/veh)			30.5							9.5						
Level of Service, LOS			D							A						
Approach Delay (s/veh)		30.5								4.0						
Approach LOS		D														

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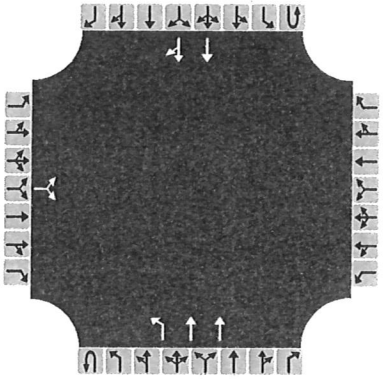
Site Information

Intersection	Red Rock & Bighorn
Jurisdiction	Washoe County
East/West Street	Bighorn Drive
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		5		68						19	477				1250	5
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			79							21						
Capacity, c (veh/h)			314							500						
v/c Ratio			0.25							0.04						
95% Queue Length, Q_{95} (veh)			1.0							0.1						
Control Delay (s/veh)			20.3							12.5						
Level of Service, LOS			C							B						
Approach Delay (s/veh)		20.3								0.5						
Approach LOS		C														

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HCS7 Two-Way Stop-Control Report

General Information

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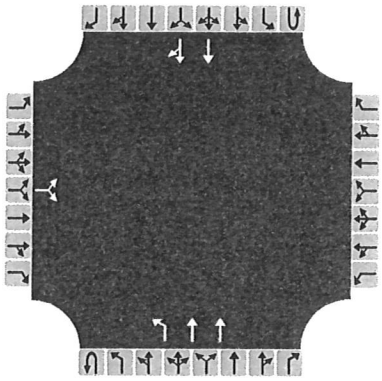
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Bighorn
Jurisdiction	Washoe County
East/West Street	Bighorn Drive
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		5		29						71	1274				667	5
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			37							77						
Capacity, c (veh/h)			339							870						
v/c Ratio			0.11							0.09						
95% Queue Length, Q_{95} (veh)			0.4							0.3						
Control Delay (s/veh)			16.9							9.5						
Level of Service, LOS			C							A						
Approach Delay (s/veh)		16.9								0.5						
Approach LOS		C														

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HCS7 Two-Way Stop-Control Report

General Information

Analyst	MSH
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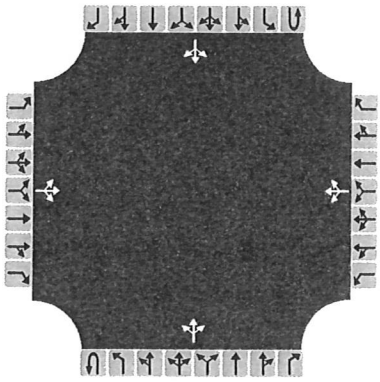
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	AM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Knolls
Jurisdiction	Washoe County
East/West Street	Silver Knolls Boulevard
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		0	0	1		16	0	0		1	38	2		0	110	0
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			1				17			1				0		
Capacity, c (veh/h)			931				798			1467				1564		
v/c Ratio			0.00				0.02			0.00				0.00		
95% Queue Length, Q_{95} (veh)			0.0				0.1			0.0				0.0		
Control Delay (s/veh)			8.9				9.6			7.5				7.3		
Level of Service, LOS			A				A			A				A		
Approach Delay (s/veh)		8.9				9.6				0.2				0.0		
Approach LOS		A				A										

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HCS7 Two-Way Stop-Control Report

General Information

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Date Performed	7/2/2018
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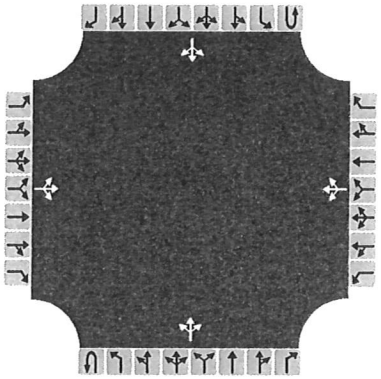
Time Analyzed	PM Existing
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Knolls
Jurisdiction	Washoe County
East/West Street	Silver Knolls Boulevard
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		0	0	1		10	0	0		0	133	5		0	61	0
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			1				11			0				0		
Capacity, c (veh/h)			997				742			1535				1430		
v/c Ratio			0.00				0.01			0.00				0.00		
95% Queue Length, Q_{95} (veh)			0.0				0.0			0.0				0.0		
Control Delay (s/veh)			8.6				9.9			7.3				7.5		
Level of Service, LOS			A				A			A				A		
Approach Delay (s/veh)	8.6				9.9				0.0				0.0			
Approach LOS	A				A											

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HCS7 Two-Way Stop-Control Report

General Information

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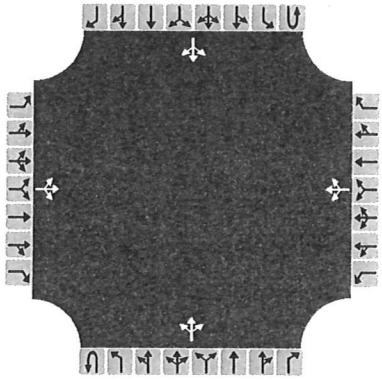
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Knolls
Jurisdiction	Washoe County
East/West Street	Silver Knolls Boulevard
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		8	0	473		16	0	0		158	153	2		0	453	3
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			523				17			172				0		
Capacity, c (veh/h)			556				13			1067				1409		
v/c Ratio			0.94				1.29			0.16				0.00		
95% Queue Length, Q_{95} (veh)			12.1				2.8			0.6				0.0		
Control Delay (s/veh)			52.0				739.8			9.0				7.6		
Level of Service, LOS			F				F			A				A		
Approach Delay (s/veh)		52.0				739.8				5.3				0.0		
Approach LOS		F				F										

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Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Knolls
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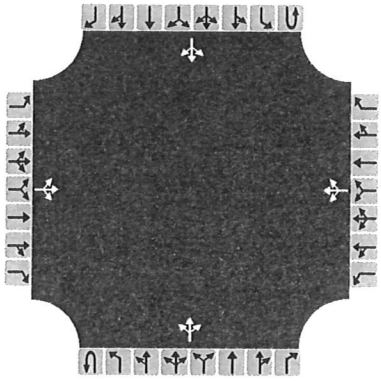
East/West Street	Silver Knolls Boulevard
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		5	0	262		10	0	0		445	457	5		0	251	8
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			290				11			484				0		
Capacity, c (veh/h)			568				20			1280				1062		
v/c Ratio			0.51				0.55			0.38				0.00		
95% Queue Length, Q_{95} (veh)			2.9				1.5			1.8				0.0		
Control Delay (s/veh)			17.8				322.1			9.5				8.4		
Level of Service, LOS			C				F			A				A		
Approach Delay (s/veh)		17.8				322.1				7.2				0.0		
Approach LOS		C				F										

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HCS7 Two-Way Stop-Control Report

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Project Description	

Site Information

Intersection	Red Rock & Silver Knolls
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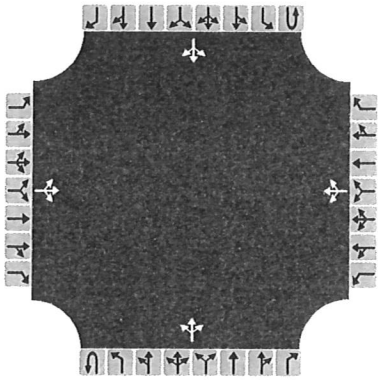
East/West Street	Silver Knolls Boulevard
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		5	0	5		15	0	5		5	105	5		5	325	5
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			11				22			5				5		
Capacity, c (veh/h)			563				543			1199				1467		
v/c Ratio			0.02				0.04			0.00				0.00		
95% Queue Length, Q_{95} (veh)			0.1				0.1			0.0				0.0		
Control Delay (s/veh)			11.5				11.9			8.0				7.5		
Level of Service, LOS			B				B			A				A		
Approach Delay (s/veh)		11.5				11.9				0.4				0.1		
Approach LOS		B				B										

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HCS7 Two-Way Stop-Control Report

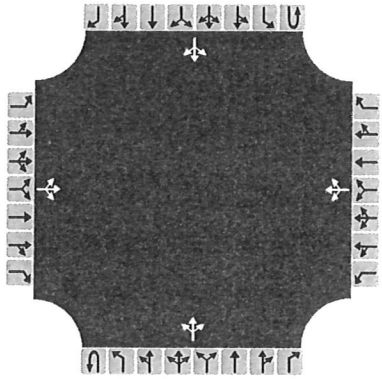
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	PM Base
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Knolls
Jurisdiction	Washoe County
East/West Street	Silver Knolls Boulevard
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		5	0	5		10	0	5		5	325	5		5	145	5
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			11				16			5				5		
Capacity, c (veh/h)			592				505			1415				1199		
v/c Ratio			0.02				0.03			0.00				0.00		
95% Queue Length, Q_{95} (veh)			0.1				0.1			0.0				0.0		
Control Delay (s/veh)			11.2				12.4			7.6				8.0		
Level of Service, LOS			B				B			A				A		
Approach Delay (s/veh)		11.2				12.4				0.1				0.3		
Approach LOS		B				B										

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HCS7 Two-Way Stop-Control Report

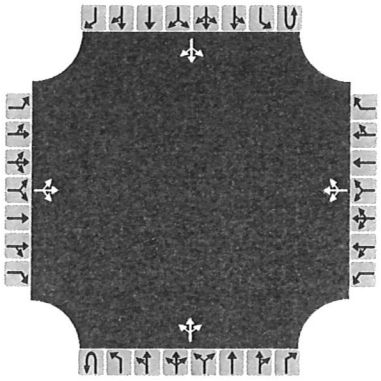
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Knolls
Jurisdiction	Washoe County
East/West Street	Silver Knolls Boulevard
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		13	0	477		15	0	5		162	220	5		5	668	8
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			533				22			176				5		
Capacity, c (veh/h)			391							870				1320		
v/c Ratio			1.36							0.20				0.00		
95% Queue Length, Q_{95} (veh)			25.5							0.8				0.0		
Control Delay (s/veh)			206.6							10.2				7.7		
Level of Service, LOS			F							B				A		
Approach Delay (s/veh)		206.6								5.7				0.1		
Approach LOS		F														

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HCS7 Two-Way Stop-Control Report

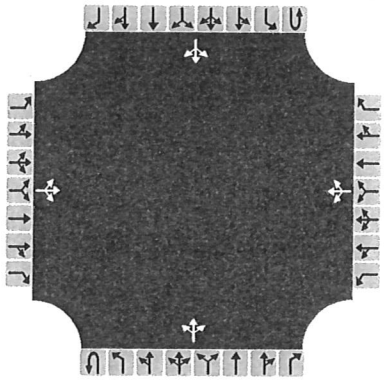
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Knolls
Jurisdiction	Washoe County
East/West Street	Silver Knolls Boulevard
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume, V (veh/h)		10	0	267		10	0	5		450	649	5		5	335	13
Percent Heavy Vehicles (%)		2	2	2		2	2	2		2				2		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			301				16			489				5		
Capacity, c (veh/h)			285				12			1180				888		
v/c Ratio			1.06				1.38			0.41				0.01		
95% Queue Length, Q_{95} (veh)			11.7				2.8			2.1				0.0		
Control Delay (s/veh)			108.4				841.4			10.2				9.1		
Level of Service, LOS			F				F			B				A		
Approach Delay (s/veh)	108.4				841.4				8.3				0.2			
Approach LOS	F				F											

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HCS7 Two-Way Stop-Control Report

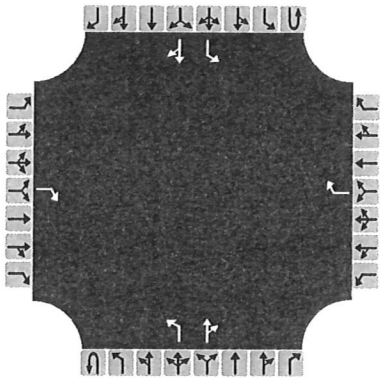
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Knolls
Jurisdiction	Washoe County
East/West Street	Silver Knolls Boulevard
North/South Street	Red Rock Road
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	1	1	0	0	1	1	0
Configuration				R				R		L		TR		L		TR
Volume, V (veh/h)				473				16		158	153	2		0	453	3
Percent Heavy Vehicles (%)				2				2		2				2		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				498				17		166				0		
Capacity, c (veh/h)				587				882		1082				1415		
v/c Ratio				0.85				0.02		0.15				0.00		
95% Queue Length, Q_{95} (veh)				9.2				0.1		0.5				0.0		
Control Delay (s/veh)				36.2				9.2		8.9				7.5		
Level of Service, LOS				E				A		A				A		
Approach Delay (s/veh)	36.2				9.2				4.5				0.0			
Approach LOS	E				A											

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HCS7 Two-Way Stop-Control Report

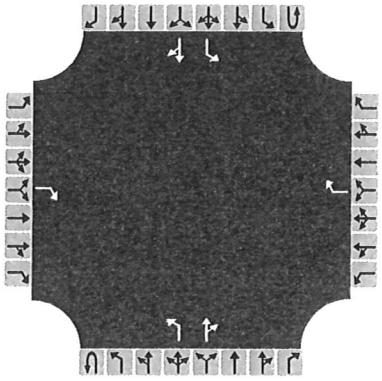
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Knolls
Jurisdiction	Washoe County
East/West Street	Silver Knolls Boulevard
North/South Street	Red Rock Road
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	1	1	0	0	1	1	0
Configuration				R				R		L		TR		L		TR
Volume, V (veh/h)				262				10		445	457	5		0	251	8
Percent Heavy Vehicles (%)				2				2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				276				11		468				0		
Capacity, c (veh/h)				770				583		1289				1076		
v/c Ratio				0.36				0.02		0.36				0.00		
95% Queue Length, Q_{95} (veh)				1.6				0.1		1.7				0.0		
Control Delay (s/veh)				12.3				11.3		9.4				8.3		
Level of Service, LOS				B				B		A				A		
Approach Delay (s/veh)		12.3				11.3				4.6				0.0		
Approach LOS		B				B										

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HCS7 Two-Way Stop-Control Report

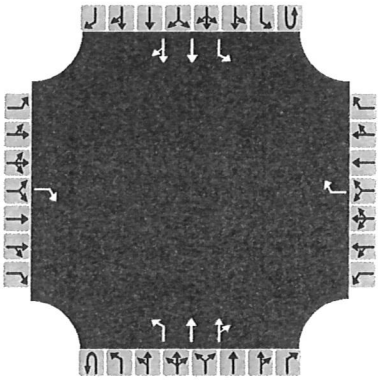
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Knolls
Jurisdiction	Washoe County
East/West Street	Silver Knolls Boulevard
North/South Street	Red Rock Road
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	1	2	0	0	1	2	0
Configuration				R				R		L	T	TR		L	T	TR
Volume, V (veh/h)				477				20		162	220	5		5	668	8
Percent Heavy Vehicles (%)				2				2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				502				21		171				5		
Capacity, c (veh/h)				641				912		884				1327		
v/c Ratio				0.78				0.02		0.19				0.00		
95% Queue Length, Q_{95} (veh)				7.6				0.1		0.7				0.0		
Control Delay (s/veh)				27.9				9.0		10.0				7.7		
Level of Service, LOS				D				A		B				A		
Approach Delay (s/veh)		27.9				9.0				4.2				0.1		
Approach LOS		D				A										

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HCS7 Two-Way Stop-Control Report

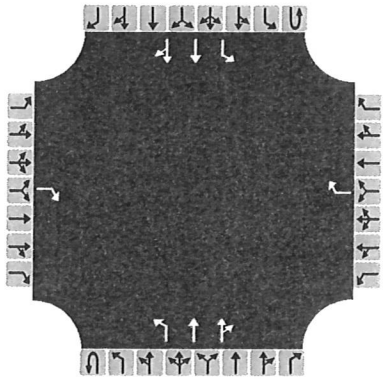
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Silver Knolls
Jurisdiction	Washoe County
East/West Street	Silver Knolls Boulevard
North/South Street	Red Rock Road
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	1		0	0	1	0	1	2	0	0	1	2	0
Configuration				R				R		L	T	TR		L	T	TR
Volume, V (veh/h)				267				15		450	649	5		5	335	13
Percent Heavy Vehicles (%)				2				2		2				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)				281				16		474				5		
Capacity, c (veh/h)				828				652		1189				902		
v/c Ratio				0.34				0.02		0.40				0.01		
95% Queue Length, Q_{95} (veh)				1.5				0.1		1.9				0.0		
Control Delay (s/veh)				11.6				10.7		10.0				9.0		
Level of Service, LOS				B				B		B				A		
Approach Delay (s/veh)		11.6				10.7				4.1				0.1		
Approach LOS		B				B										

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HCS7 Two-Way Stop-Control Report

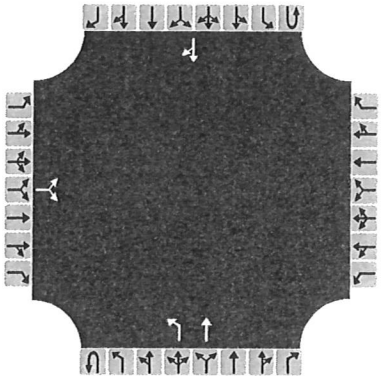
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	AM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Access
Jurisdiction	Washoe County
East/West Street	Project Access
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume, V (veh/h)		10		343						115	46				113	3
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			384							125						
Capacity, c (veh/h)			908							1459						
v/c Ratio			0.42							0.09						
95% Queue Length, Q_{95} (veh)			2.1							0.3						
Control Delay (s/veh)			11.8							7.7						
Level of Service, LOS			B							A						
Approach Delay (s/veh)		11.8								5.5						
Approach LOS		B														

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HCS7 Two-Way Stop-Control Report

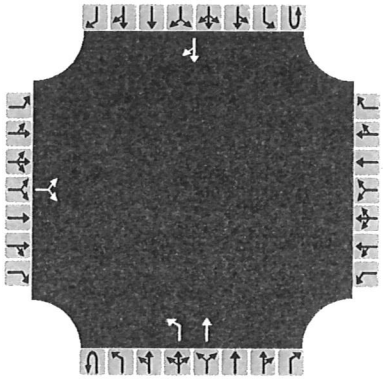
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2018
Time Analyzed	PM Existing + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Access
Jurisdiction	Washoe County
East/West Street	Project Access
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume, V (veh/h)		5		190						324	138				69	9
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			212							352						
Capacity, c (veh/h)			903							1510						
v/c Ratio			0.23							0.23						
95% Queue Length, Q_{95} (veh)			0.9							0.9						
Control Delay (s/veh)			10.2							8.1						
Level of Service, LOS			B							A						
Approach Delay (s/veh)		10.2								5.7						
Approach LOS		B														

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HCS7 Two-Way Stop-Control Report

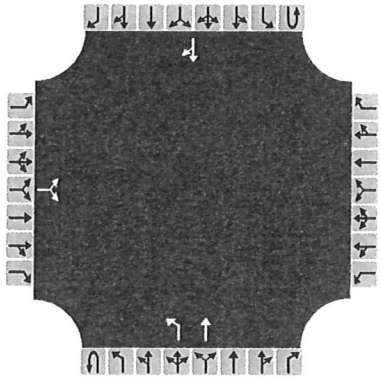
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	AM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Access
Jurisdiction	Washoe County
East/West Street	Project Access
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume, V (veh/h)		10		343						115	123				338	3
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			384							125						
Capacity, c (veh/h)			658							1187						
v/c Ratio			0.58							0.11						
95% Queue Length, Q_{95} (veh)			3.8							0.4						
Control Delay (s/veh)			17.9							8.4						
Level of Service, LOS			C							A						
Approach Delay (s/veh)		17.9								4.1						
Approach LOS		C														

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HCS7 Two-Way Stop-Control Report

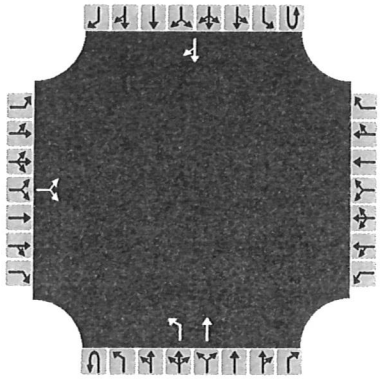
General Information

Analyst	MSH
Agency/Co.	Solaegui Engineers
Date Performed	7/2/2018
Analysis Year	2028
Time Analyzed	PM Base + Project
Intersection Orientation	North-South
Project Description	

Site Information

Intersection	Red Rock & Access
Jurisdiction	Washoe County
East/West Street	Project Access
North/South Street	Red Rock Road
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	1	0	0	0	1	0
Configuration			LR							L	T					TR
Volume, V (veh/h)		5		190						324	340				163	9
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			212							352						
Capacity, c (veh/h)			761							1386						
v/c Ratio			0.28							0.25						
95% Queue Length, Q_{95} (veh)			1.1							1.0						
Control Delay (s/veh)			11.5							8.5						
Level of Service, LOS			B							A						
Approach Delay (s/veh)		11.5								4.1						
Approach LOS		B														

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SOLAEGUI
ENGINEERS

May 10, 2019

Mr. Roger Pellham.
Washoe County
P.O. Box 11130
Reno, Nevada 89520

Re: Silver Hills Supplemental Traffic Letter

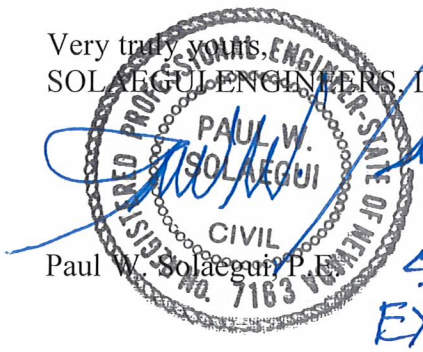
Dear Roger:

Per your request this letter contains a summary of when traffic counts were taken for the Silver Hills traffic studies. As you know the initial Silver Hills traffic study was dated September 11, 2017 for 2,340 homes. On July 9, 2018 an updated study was issued for 1,654 homes. On March 8, 2019 an updated trip generation summary letter was issued for 1,882 homes. All of these studies were based on Red Rock Road traffic counts published in the North Valley Multimodal Transportation Study prepared by the Regional Transportation Commission of Washoe County or supplemented by counts our staff conducted August 15th and 16th, 2017. This information is documented on page 8 under the Existing and Projected Traffic Volumes sections of the two full studies. During citizen's meetings questions arose about when the counts were performed. After one of those meetings I sat down with some of those citizens and reviewed how they got the troublesome dates from our reports. We found that the citizens were challenging dates printed on the intersection capacity calculation worksheets in the appendices of the reports. The dates they were concerned about were the dates when the capacity calculations were performed in our office and when the sheet was printed. The only information regarding when counts were performed was specified on page 8 of the two studies.

In summary, all of the traffic count data was collected per local agency traffic study guidelines.

We trust that this information will be adequate for your review. Please contact us if you have questions or comments.

Very truly yours,
SOLAEGUI ENGINEERS, LTD.



Paul W. Solaegui P.E.

5-10-19
EXP 6-30-20

Enclosures
Letters/ Silver Hills Supplemental Traffic Letter

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