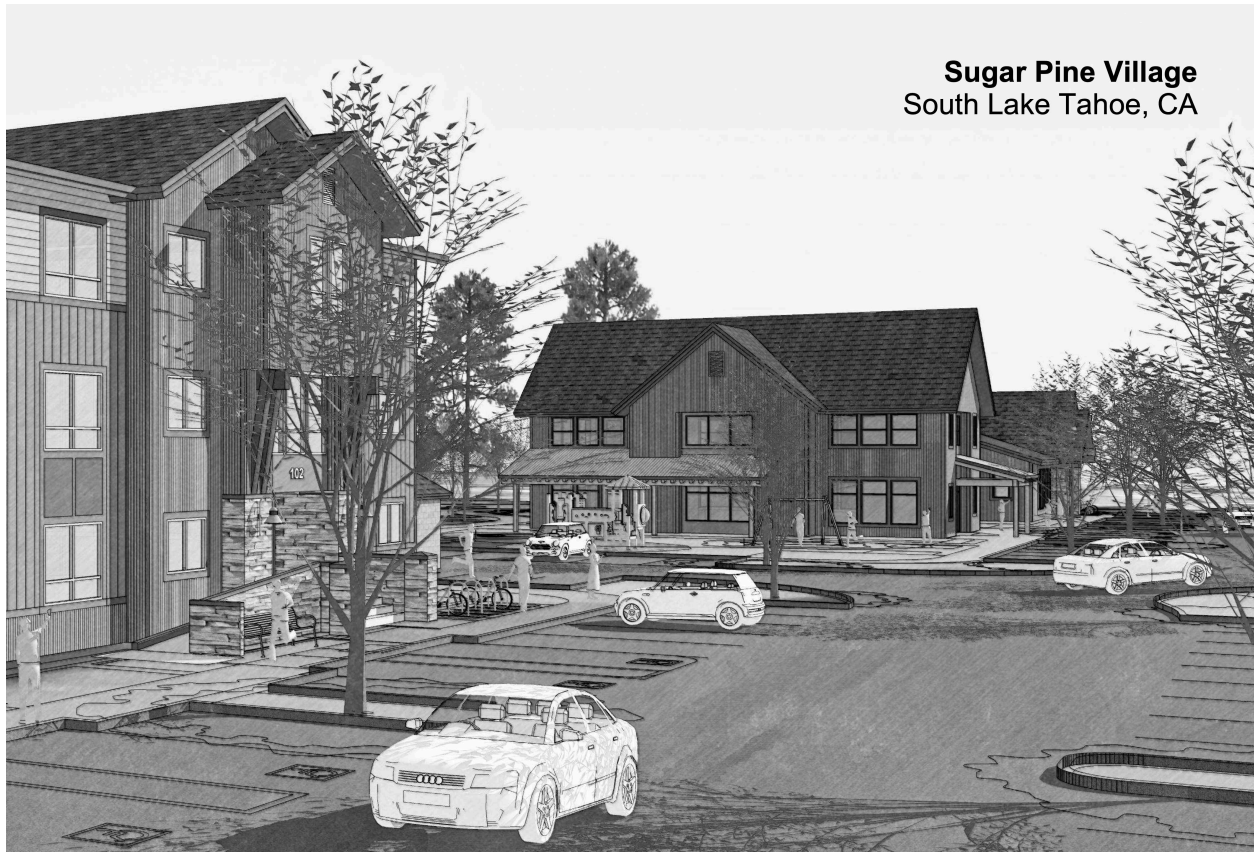


SUGAR PINE VILLAGE PROJECT

TAHOE REGIONAL PLANNING AGENCY INITIAL ENVIRONMENTAL CHECKLIST



JANUARY 2021

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1.0 INTRODUCTION

1.1 INITIAL ENVIRONMENTAL CHECKLIST

This Tahoe Regional Planning Agency (TRPA) Initial Environmental Checklist (IEC) has been prepared to address the potential environmental effects of constructing and operating the Sugar Pine Village affordable housing project (West and East Village), all located in the City of South Lake Tahoe, California. Sugar Pine Village is envisioned to be a new residential community that fits into the existing neighborhood while also preserving native species, sensitive land and providing residents with new high quality, sustainable housing designed to support active transportation, the local workforce and their families. The Village proposal will maximize the state of California's goal of leveraging surplus state-owned land to address the housing crisis by quickly facilitating the delivery of 248 units of affordable multi-family housing. To support the residents and non-profit entities that support affordable housing development, Sugar Pine Village will also include office space/conference rooms and childcare facilities in a clubhouse designed for residents. The housing will provide studio, one, two- and three-bedroom apartments targeted to households earning between 30 to 80 percent of Area Median Income.

An Initial Environmental Checklist (IEC) is a preliminary environmental analysis that is used for determining whether an Environmental Impact Statement (EIS), an Environmental Assessment (EA), a Mitigated Finding of No Significant Effect, or a Finding of No Significant Effect is required for a project under TRPA Rules of Procedure. Compliance with the California Environmental Quality Act (CEQA) includes preparation of a Notice of Exemption by the City of South Lake Tahoe, as required by California Senate Bill (SB) 35, which exempts the Sugar Pine Village from CEQA review (as documented in the Streamlined Ministerial Approval Process Guidelines issued by California Department of Housing and Community Development, November 29, 2018).

The TRPA IEC contains a project description, description of environmental setting, identification and explanation of environmental effects, discussion of mitigation for potentially significant environmental effects, evaluation of the proposed project's consistency with existing, applicable land use controls, and the names of persons who prepared the study. The IEC has been prepared pursuant to the requirements of Article VI of the TRPA Rules of Procedures and Chapter 3 of TRPA's Code of Ordinances. TRPA serves as lead agency pursuant to its own regulations.

1.2 TIERING PROCESS

The TRPA concept of "tiering" refers to the coverage of general matters in a broader EIS (Program EIS) and subsequent documents incorporating by reference the general discussions and concentrating solely on the issues specific to the document subsequently prepared. Therefore, when an EIS has been certified for a project or matter, TRPA shall limit the analysis for a later related or consistent project or matter, to effects which were not examined as significant effects in the prior EIS or which are susceptible to substantial reduction or avoidance by revisions in the project or matter through conditions of approval or mitigation. Tiering is limited to situations where a later project or matter is consistent with a program, plan, policy or ordinance for which an EIS was prepared, is consistent with applicable TRPA plans, and a supplemental EIS is not required.

This IEC is tiered from the TRPA 2012 RPU EIS in accordance with Section 6.12 of the TRPA Rules of Procedures. The 2012 RPU EIS is a Program EIS that was prepared pursuant to Article VI of TRPA Rules of Procedure (Environmental Impact Statements) and Chapter 3 (Environmental Documentation) of the TRPA Code of Ordinances. The 2012 RPU is a comprehensive land use plan that guides physical development within the Lake Tahoe Region through 2035. The 2012 RPU EIS analyzes full implementation

of uses and physical development proposed under the 2012 RPU, and it identifies measures to mitigate the significant adverse program-level and cumulative impacts associated with that growth. The proposed project is an element of the growth that was anticipated in the 2012 RPU and evaluated in the 2012 RPU EIS. By tiering from the 2012 RPU EIS, this IEC will rely on the 2012 RPU EIS for the following:

- a discussion of general background and setting information for environmental topic areas;
- overall growth-related issues;
- issues that were evaluated in sufficient detail in the 2012 RPU EIS for which there is no significant new information or change in circumstances that would require further analysis; and
- assessment of cumulative impacts.

This IEC evaluates the potential environmental impacts of the proposed project with respect to the 2012 RPU EIS to determine what level of additional environmental review, if any, is appropriate. As shown in the Determination in Section 5.3 of this document, and based on the analysis contained in this IEC, it has been determined that the proposed project would not have significant effects on the environment. Therefore, a Finding of No Significant Effect will be prepared.

This IEC concludes that many potentially significant project impacts are addressed by the measures that have been adopted as part of the approval of the 2012 RPU. Therefore, those 2012 RPU EIS mitigation measures that are related to, and may reduce the impacts of, this project will be identified in this IEC. These mitigation measures will be incorporated into the approval for this project. Nothing in this IEC in any way alters the obligations of the City or TRPA to implement the mitigation measures adopted as part of the RPU.

1.3 BACKGROUND

All of the land within the Lake Tahoe Basin falls under the jurisdiction of the TRPA. This includes land under the local jurisdiction of the City of South Lake Tahoe. In order to be responsive to the unique needs and opportunities of the Region and local communities, the TRPA Regional Plan encourages and authorizes local jurisdictions to develop and adopt individual Area Plans that provide more specific development objectives and standards that are adapted to the needs of the specified area. Local jurisdictions are permitted to develop, adopt, and implement regulations so long as they are consistent with the TRPA Regional Plan. The General Plan and Zoning Ordinances are the City's primary policy documents that guide land use, transportation, infrastructure, community design, housing, environmental, and other decisions in a manner consistent with the planning statutes for the State of California. The project is located within the Tahoe Valley Area Plan (TVAP) boundary. The TVAP is designed to supplement the City's General Plan and Zoning Ordinance by designating zoning districts and providing specific guidance for the area included within the new Area Plan boundaries. The Area Plan is considered a specific plan pursuant to California State Law.

The TVAP serves as a comprehensive land use plan, consistent with the Lake Tahoe Regional Plan (Regional Plan) and the City of South Lake Tahoe General Plan (General Plan). The plan is intended to realize the area vision, assist in achieving and maintaining TRPA's Environmental Threshold Carrying Capacities, implement the Tahoe Metropolitan Planning Organization's Sustainable Communities Strategy, and implement the policy direction of both the Regional Plan and General Plan. The TVAP Vision Statement was developed by the community through a series of public workshops, and the first paragraph is stated below:

“We shall transform the Tahoe Valley area into a strong and vibrant business district, creating a community that includes continuous and complimentary developments. We shall embrace outdoor enthusiasts and provide a healthy balance of commerce, employment, entertainment, and livability. Our Area Plan will create smaller, safer pedestrian-friendly districts that encourage patrons to visit multiple destinations for each vehicle trip. Our plan shall encourage retail businesses and services that meet local needs, encourage local ownership, and appeal to visitors seeking to mix with the local community.”

1.4 PROJECT LOCATION, SETTING AND SURROUNDING LAND USES

The approximately 11.62-acre project area is comprised of two parcels (APNs 032-291-028 and 032-291-031) adjacent to Lake Tahoe Boulevard, and near its intersection with Tata and Julie Lanes (Figure 1-1). The project area consists of 10.04 acres at 1860 Lake Tahoe Boulevard (West Village location) and approximately 1.58 acres at 1029 Tata Lane (East Village location). The West Village location is vacant with several informal trails. The East Village location contains an old, unused parking lot and an informal trail. Access to both sites is provided from Lake Tahoe Boulevard and Tata Lane. The West Village site also includes access from Julie Lane. Adjacent land uses include residential neighborhoods to the west and south, and commercial buildings to the north and east. Office/commercial uses are located between the two sites on Tata Lane. The South Y Center (to the east) includes shopping (e.g., Raley’s grocery store) and other retail uses (e.g., fast food and banking). The project area is located within the Town Center Mixed-Use Corridor (TC-MUC) District of the TVAP. This district is intended to facilitate the transformation of the eastern and western portions of Lake Tahoe Boulevard into a multi-modal, mixed-use corridor. The TC-MUC District allows up to 25 multiple family dwelling units per acre, 40 hotel units per acre, up to 70 percent land coverage within land capability districts 4-7, and up to 42 feet in building height (capped at 3 stories).

1.5 PROJECT OBJECTIVES/PURPOSE AND NEED

Sugar Pine Village is envisioned to be a new residential community that fits into the existing neighborhood while also preserving native species, sensitive land and providing residents with new high quality, sustainable housing designed to support active transportation, the local workforce and their families. The Village proposal will maximize the state of California’s goal of leveraging surplus state-owned land (currently owned by California Tahoe Conservancy) to address the housing crisis by facilitating the delivery of 248 units of affordable multi-family housing in a short time frame. The Project also provides the opportunity to execute on vital planning work that has been undertaken by the City of South Lake Tahoe and TRPA through the Tahoe Valley Area Plan. Sugar Pine Village will offer a mix of uses that include residential, office space for non-profit partners and childcare. The housing will provide studio, one, two- and three-bedroom apartments targeted to households earning between 30 to 80 percent of Area Median Income.

Figure 1-1 Project Location



Table 1-1: Existing Project Area Land Capability and Land Coverage

APN	Use/Existing Development	Acreage	Existing Land Capability			Existing Land Coverage			
			Class 7 (sf)	Class 1b (sf)	Total Area	Class 7	Class 1b	Total	% Covered
032-291-028	Vacant, informal dirt trails	10.04	386,000	51,225	437,225	12,925	1,384	14,309	3.3
032-291-031	Vacant, informal dirt trail and paved parking lot	1.58	68,718	0	68,718	8,562	0	8,562	12.5
	TOTAL PROJECT AREA	11.62	454,718	51,225	505,943	21,487	1,384	22,871	4.5

Notes: Existing land coverage numbers as reported by LIDAR data and TRPA Land Capability Verification File numbers VBOC2020-0889 and VBOU2020-0890.

1.6 DOCUMENT ORGANIZATION

This IEC includes the standard content for environmental documents under TRPA Code of Ordinances and Rules of Procedures. An EA or EIS was determined to be unnecessary, as there are no potentially significant environmental effects associated with the implementation of proposed project. This IEC is a full disclosure document, describing the Project and its environmental effects in sufficient detail to aid decision-making.

Chapter 1 includes a description of the IEC process, the tiering process, project background, the location of the Project and surrounding land uses, Project Objectives and Purpose and Needs Statement, and the public involvement process and history.

Chapter 2 contains a description of the Project.

Chapter 3 provides the baseline conditions for the environmental analysis.

Chapter 4 contains the methods and assumptions used to analyze the potential environmental effects of the Project.

Chapter 5 contains a detailed analysis of the environmental effects and necessary mitigation measures if applicable.

1.7 PUBLIC INVOLVEMENT

Opportunities for public participation in the project development process were offered by the California Tahoe Conservancy during public meetings held to consider housing needs and solutions using Conservancy asset lands near the South Tahoe “Y” (US 50 and SR 89 intersection). The Conservancy Board designated the Project Area (1860 Lake Tahoe Boulevard and 1029 Tata Lane) as asset lands that could support sustainable development consistent with local planning. The Conservancy and its partners, which also include the City of South Lake Tahoe and the Tahoe Regional Planning Agency, held a public meeting in December 2019 and a virtual public meeting on April 23, 2020. On July 14, 2020, the Conservancy announced the State had selected Related California (Project proponent) to partner with Tahoe-based St. Joseph Community Land Trust to build South Lake Tahoe’s first modular multi-family housing development now known as Sugar Pine Village.

Pursuant to the requirements of CEQA, the City’s Notice of Exemption will be filed with the El Dorado County Clerk for posting and submitted to the California State Clearinghouse via their online web portal.

Pursuant to the TRPA’s Rules of Procedure and Chapter 3 of the TRPA Code of Ordinances, the Agency’s IEC will be made available for public review along with the project staff report at least 7 days prior to the hearing (which will be noticed 14 days prior) held to consider approval of the Project permit. TRPA staff will prepare an agenda item for the TRPA Governing Board consideration. If it is determined that no significant adverse impacts would result from the proposed project, the TRPA Governing Board may issue a Finding of No Significant Effect and approve the Project.

2.0 PROJECT DESCRIPTION

Sugar Pine Village (“The Village”) is envisioned to be a new residential community that fits into the existing neighborhood while also preserving native species, sensitive land and providing residents with new high quality, sustainable housing designed to support active transportation, the local workforce and their families.

The Village proposal will maximize the state of California’s goal of leveraging surplus state-owned land to address the housing crisis by quickly facilitating the delivery of affordable multi-family housing. Moreover, the Village provides the opportunity to execute on vital planning work that has been undertaken by the City of South Lake Tahoe and TRPA and defined in the TVAP vision and guiding principles. In alignment with the State’s priority, the Village realizes housing density permitted by the TVAP, while maximizing affordability, parking and preservation of sensitive land and open space. The residential Village will also offer a mix of public service uses to support the community, including office space for non-profit entities and childcare (e.g., day care center) in the community center. The housing will provide studio, one, two- and three-bedroom apartments targeted to households earning between 30 to 80 percent of Area Median Income.

The Village proposes a total of 248 units on two separate sites as shown in Figure 2-1 and detailed in Table 2-1:

- 1) Approximately 10-acre Sugar Pine Village West (“West Village”) at 1860 Lake Tahoe Boulevard, and
- 2) Approximately 1.6-acre Sugar Pine Village East (“East Village”) at 1029 Tata Lane.

The West Village is organized around seven residential buildings and includes a network of roads, trails, open space, and parking. The Community Center building and the residential buildings are set back from property lines, placing the development and open space in the center of the site. While the main vehicle entrance is off of Lake Tahoe Boulevard; the property also includes access from Julie and Tata Lanes.

The East Village has two buildings organized around community open space and trails and between two parking areas accessed from Tata Lane.

The Community Center, comprised of two 37-foot tall buildings, visible from Lake Tahoe Boulevard, will serve as a welcoming representation of Sugar Pine Village to the larger South Lake Tahoe community (Figure 2-2). This Center will be the Village gathering hub, welcoming guests, users and residents. The approximately 4,900 square foot Community Hall will include a multi-purpose room and kitchen positioned near open green space with views looking out to Lake Tahoe Boulevard, and space for Village management and maintenance personnel. Bike welcome areas and curb parking for vehicles have been designed for drop-off and short-term parking. A second Community Center building, approximately 5,200 square feet in two stories, will house Village amenities such as a childcare, office space for non-profits/social services, a children’s play area, and restrooms.

Modular Building Prototype

The Village will utilize a series of efficient residential building modules that can be produced in an offsite factory and quickly assembled onsite, resulting in an ability to accommodate Tahoe’s condensed construction season. This building “prototype” has been designed to meet all regulatory guidelines, building codes and energy standards. The prototype is a 30-unit three-story building that includes a standard floor

plan of 10 units per floor with two internal staircases, common hallway, laundry and locker storage (Figure 2-3). Building height is 41 feet, 6 inches to meet the TRPA standard of no more than 42 feet. All of the ground floor units would be located on accessible pathways. The project is designed to provide a minimum of 5 percent housing accessible for persons with mobility disabilities in accordance with the Uniform Federal Accessibility Standards (UFAS) and an additional 2 percent of the dwelling units accessible for persons with hearing or visual disabilities. The unit plans are designed to provide livable apartments while maximizing light and natural ventilation.

The West Village includes seven prototype buildings with a total of 210 units with an average density of 21 units/acre, an auto parking ratio of 1.39 spaces/unit and bike parking ratio of 2 spaces/unit. Proposed land coverage within the land capability class 7 portion of the West Village project area is 66 percent, less than the 70 percent permitted by the TVAP.

The East Village includes two buildings, one prototype building and one 2-story 4-plex building that provides a total of eight units. The East Village includes 38 units and achieves a density of 23.75 units/acre with an auto parking ratio of 1.47 spaces/unit and bike parking ratio of 2.2 spaces/unit. Proposed land coverage within the East Village project area (all land capability class 7) is 57%, less than the 70 percent permitted by the TVAP.

Both Village sites utilize the same building design standard yet have distinctive decorative themes and features with a focus on attractive mountain architecture, bike, pedestrian, transit and open space connections.

Outdoor/Recreation and Community Spaces

The Village includes several common outdoor spaces: the “Village Green,” “Sugar Pine Meadow” and the “Community Plaza Commons.” The Village Green is an intentionally flexible space, designed as both a space for respite and relaxation, but will also function as an adaptable gathering and activity space for residents. The space has been designed for both passive and active seating areas including a BBQ patio and community gardens for growing local produce as well as an area for a playground. The Village Green will serve as a sanctum, a space which is protected from surrounding traffic noise and will provide a pleasant environment for residents.

The Sugar Pine Meadow is located across the central parking lot from the Village Green and will include a visual connection to the rest of the community along with a trail that borders the stream environment zone. The Sugar Pine Meadow is a generous outdoor space focused around the Community Center – it will utilize a mapped stream environment zone (SEZ) that will be protected from active use/development. An eight-foot-wide shared use asphalt pathway complying with American Association of State Highway and Transportation Officials (AASHTO) standards serves as the central circulation spine within the West Village and will connect the Village Green to Sugar Pine Meadow and other amenities. Designed for walking, jogging, or low speed cycling, this publicly accessible all-weather pathway will also connect the neighborhood to the south of Sugar Pine Village with the newly constructed bike path and sidewalk along Lake Tahoe Boulevard. This trail will be kept open and usable year-round.

The Community Plaza Commons, located in the East Village along Tata Lane, will be open to the Village residents and will include landscaped seating areas and activity spaces for residents.

The Community Center will include property management offices, resident services space, as well as a kitchen and flexible space that will be used for on-going events and programs and will also be available to residents for private events. The Community Center also includes office space intended for use by a non-profit collaborative and a childcare facility planned to include an adjacent children’s playground. The

playground will be exclusively used by the childcare facility during regular operating hours and open to the residents for all other times.

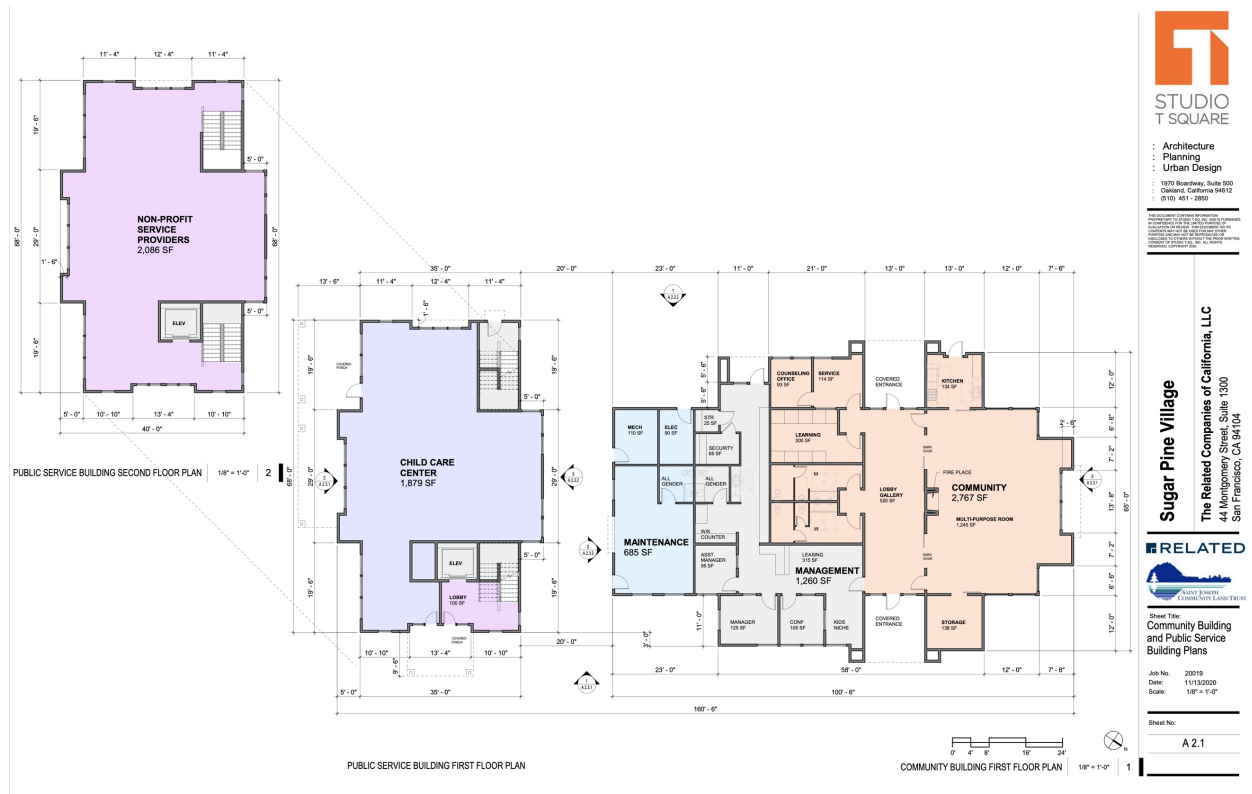
Parking

The proposed summer parking supply for Sugar Pine Village is 311 parking spaces at the West Village (including 22 spaces adjacent to the Community Center uses) and 56 parking spaces at the East Village. A total of 345 spaces are provided for the use of the residential occupants and their guests in the summer. During winter months, 6 of the West Village parking spaces may be used for snow storage. In addition, outdoor bike parking will be provided under eaves near entrances of buildings. Indoor bike parking is located in the shared locker storage on each floor. In total, the Village will provide approximately 2 secured bike parking spaces per unit. The Village proposes that the City of South Lake approve an overall parking supply of approximately 1.4 spaces/unit, less than the 2 spaces/unit currently required in City Code. All parking will be surface parking, and will include a tree planting plan to provide shade.

Figure 2-1 – Sugar Pine Village Site Plan



Figure 2-2 – Sugar Pine Village Community Center Floor Plan and Perspective (viewed from Lake Tahoe Blvd.)



VIEW TO SOUTH AT COMMUNITY BUILDING AND PLAZA

STUDIO T SQUARE
 : Architecture
 : Planning
 : Urban Design
 : 1875 Broadway, Suite 500
 : Oakland, California 94612
 : (510) 451-2850

Sugar Pine Village
 The Related Companies of California, LLC
 44 Montgomery Street, Suite 1300
 San Francisco, CA 94104

RELATED
 Sugar Pine Village
 Community Building and Public Service Building Plans

Job No: 20019
 Date: 11/23/2020
 Scale:

Figure 2-3 – Sugar Pine Village Prototype Building Floor Plan (10 units per floor) and Elevations

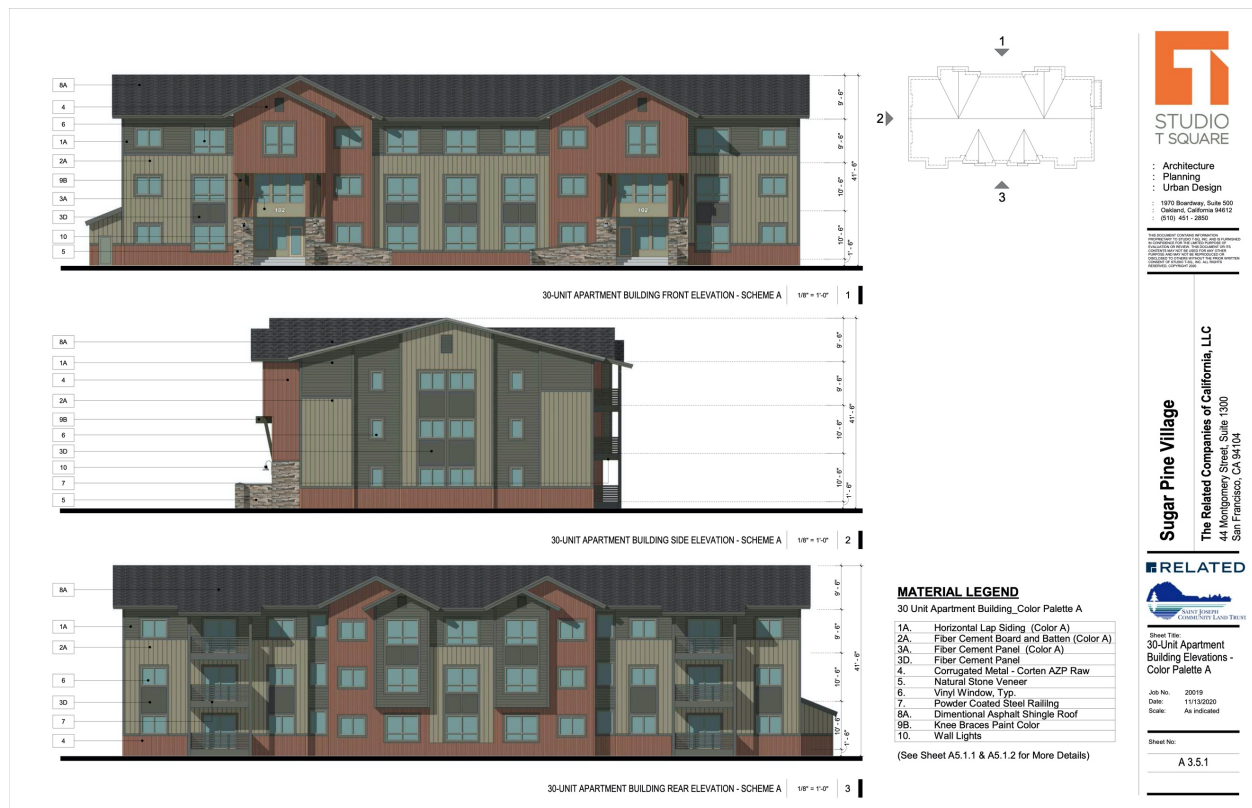


Table 2-1: Sugar Pine Village Residential Unit Mix

WEST VILLAGE

1860 Lake Tahoe Blvd, South Lake Tahoe, CA 96150

SUGAR PINE VILLAGE - RESIDENTIAL				TYPE VA (3 Story Walk-Ups)				
Units	Quan.	Unit sq.ft	Unit mix	Proposed Pkg.Ratio ¹	Total per Proposed Ratio	Parking per SB 35 Standard	Parking per City Code	Parking Provided
STUDIO_A	42	422	20%					
Total Studio Units	42	17,724	20%	1.07	45	42		
1BR_A	42	686	20%					
Total 1-Bedroom Units	42	28,812	20%	1.07	45	42		
2BR_A	42	803	20%					
2BR_B	28	876	13%					
Total 2-Bedroom Units	70	58,254	33%	1.07	75	70		
3BR_A	42	1,229	20%					
3BR_B	14	1,162	7%					
Total 3-Bedroom Units	56	67,886	27%	1.57	88	56		
Total Units	210	172,676	100%	1.20	253	210²	420	291³

SUGAR PINE VILLAGE - NON-RESIDENTIAL								
Community Building	1	4,921					Included in Residential	
Public Service Building	1	5,218					22	22

Total Parking Provided_West Village	311 Summer Use / 305 Winter Use
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Total Parking Bike Indoor Racks	336
Total Parking Bike Outdoor Racks	94

¹ Estimated parking demand based upon approximately 1,148 daily one-way vehicle trips (or "DVTE" per TRPA). Per LSC Transportation Consultant Traffic Report.²SB 35 parking standard is 1 space per unit³Total non-assigned parking provided on-site to be shared with Community Building

BUILDING GROSS AREA	Quan.	1st Floor SF	2nd Floor SF	3rd Floor SF	Total
30-Apartment Building	7	70,579	70,490	71,431	212,500
Community Building	1	4,921			4,921
Public Services Building	1	2,609	2,609		5,218
Total Gross Square Footage		78,109	73,099	71,431	222,639

EAST VILLAGE

1029 Tata Ln., South Lake Tahoe, CA 96150

SUGAR PINE VILLAGE - RESIDENTIAL				TYPE VA (2 & 3 Story Walk-Ups)				
Units	Quan.	Unit sq.ft	Unit mix	Proposed Pkg.Ratio ¹	Total per Proposed Ratio	Parking per SB 35 Standard	Parking Per City Code	Parking Provided
STUDIO_A	6	422	16%					
Total Studio Units	6	2,532	16%	1.07	6	6		
1BR_A	6	686	16%					
Total 1-Bedroom Units	6	4,116	16%	1.07	6	6		
2BR_A	6	803	16%					
2BR_B	7	876	18%					
Total 2-Bedroom Units	13	10,950	34%	1.07	14	13		
3BR_A	10	1,229	26%					
3BR_B	3	1,162	8%					
Total 3-Bedroom Units	13	15,776	34%	1.57	20	13		
Total Units	38	33,374	100%	1.24	47	38²	72	56³

Total Parking Provided_East Village	56
--	-----------

Total Parking Bike Indoor Racks	64
Total Parking Bike Outdoor Racks	20

¹ Estimated parking demand based upon approximately 1,148 daily one-way vehicle trips (or "DVTE" per TRPA).²SB 35 parking standard is 1 space per unit³Total non-assigned parking provided on-site

BUILDING GROSS AREA	Quan.	1st Floor SF	2nd Floor SF	3rd Floor SF	Total
30-Apartment Building	1	10,083	10,070	10,204	30,357
8-Apartment Building	1	5,423	5,321		10,744
Total Gross Square Footage		15,505	15,391	10,204	41,101

3.0 BASELINE

As specified in Section 13.3.1 of the TRPA Code, all plans, policies, and regulations in the Regional Plan and the TRPA Code shall remain in effect unless superseded by the provisions of an adopted conforming Area Plan. Thus, existing baseline conditions for the purposes of this IEC reflect current environmental conditions with the updated Regional Plan, TRPA Code, City of South Lake Tahoe General Plan and Zoning Ordinance in effect, and the existing TRPA plans, maps, and ordinances also in effect. The TVAP has approximately 15 years left of a 20-year planning horizon.

4.0 METHODOLOGY AND ASSUMPTIONS

This IEC was prepared to evaluate the potential environmental effects of the Project using the TRPA IEC questions, responses, and supporting narrative. The analysis tiers and incorporates by reference specific analyses contained in the following environmental review documents, as appropriate:

- TRPA, *Regional Plan Update EIS*, certified by the TRPA Governing Board on December 12, 2012 (RPU EIS)
- TRPA/Tahoe Metropolitan Planning Organization (TMPO), *2017 Linking Tahoe: Regional Transportation Plan/Sustainable Communities Strategy IS/MND/IEC/FONSE*, certified by the TMPO Board and the TRPA Governing Board in April 2017 (RTP IS/IEC)
- City of South Lake Tahoe, *General Plan Update EIR*, certified by the City Council on May 17, 2011 (City GP EIR)
- City of South Lake Tahoe, *Tahoe Valley Area Plan IS/ND/IEC/FONSE*, first certified by the City Council on June 2, 2015 and adopted by TRPA on July 22, 2015. As amended January 2021.

These program-level environmental documents include a regional and city-wide scale analysis and a framework of mitigation measures that provide a foundation for subsequent environmental review at a project level. These documents serve as first-tier documents for the TRPA review of the proposed project. All future projects within the TVAP boundary are subject to project-level environmental review and permitting by the City of South Lake Tahoe and/or TRPA, with the permitting agency determined based on the size, nature and location of the project (Section 13.7.3 of the TRPA Code). This IEC includes identification of, and proposed mitigation for any potentially significant environmental impacts.

5.0 ENVIRONMENTAL CHECKLIST AND IMPACT ANALYSIS

1. Project title: Sugar Pine Village

2. Lead agency name and address:

The City of South Lake Tahoe is the California Environmental Quality Act (CEQA) lead agency responsible for preparing a Notice of Exemption (NOE) pursuant to California Senate Bill 35 and the Tahoe Regional Planning Agency (TRPA) will serve as the lead agency for the Initial Environmental Checklist (IEC) under the Tahoe Regional Planning Compact.

City of South Lake Tahoe
1052 Tata Lane
South Lake Tahoe, California 96150

Tahoe Regional Planning Agency
P.O. Box 5310
Stateline, Nevada 89449

3. Contact person(s) and phone number(s):

City of South Lake Tahoe: John Hitchcock, Planning Manager, (530) 542-7472,
jhitchcock@cityofslt.us

Tahoe Regional Planning Agency: Karen Fink, Housing Program Coordinator, (775) 589-5258,
kfink@trpa.org

4. Project location:

Sugar Pine Village is located within the City of South Lake Tahoe and the TVAP boundary, specifically in the vicinity of Lake Tahoe Boulevard and its intersection with Julie and Tata Lanes as shown on Figure 1-1.

5. Project sponsor's name and address:

The Related Companies of California, LLC
44 Montgomery Street, Suite 1300
San Francisco, CA 94104

6. General Plan designation: Town Center.

7. Zoning: Town Center Mixed-Use Corridor

8. Description of project: Refer to Chapter 2 of this document.

9. Surrounding land uses and setting:

Refer to Section 1.4 in Chapter 1 of this document.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

California Tahoe Conservancy

5.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

If environmental factors are checked below, there would be at least one impact that is considered a “Potentially Significant Impact” as indicated by the checklist on the following pages. As discussed in the IEC checklist, there are no potentially significant impacts associated with the Project. Applicable mitigation measures for general and cumulative impacts associated with the City’s General Plan and the TRPA RPU are incorporated into the project approval.

<input type="checkbox"/> Aesthetics	<input type="checkbox"/> Agriculture/Forest Resources	<input type="checkbox"/> Air Quality
<input type="checkbox"/> Biological Resources	<input type="checkbox"/> Cultural Resources	<input type="checkbox"/> Energy
<input type="checkbox"/> Geology Resources	<input type="checkbox"/> Greenhouse Gas Emissions	<input type="checkbox"/> Hazards/Hazardous Materials
<input type="checkbox"/> Hydrology/Water Quality	<input type="checkbox"/> Land Use/Planning	<input type="checkbox"/> Mineral Resources
<input type="checkbox"/> Noise	<input type="checkbox"/> Population/Housing	<input type="checkbox"/> Public Services
<input type="checkbox"/> Recreation	<input type="checkbox"/> Transportation/Traffic	<input type="checkbox"/> Tribal Cultural Resources
<input type="checkbox"/> Utilities/Service Systems	<input type="checkbox"/> Wildfire	<input type="checkbox"/> Mandatory Findings of Significance
	<input checked="" type="checkbox"/> None	<input type="checkbox"/> None with Mitigation Incorporated

5.2 SECTION NOT APPLICABLE

5.3 TRPA ENVIRONMENTAL DETERMINATION (TO BE COMPELTED BY TRPA)

On the basis of this TRPA Initial Environmental Checklist:

- | | | | | |
|---|-------------------------------------|-----|-------------------------------------|----|
| a. The proposed project could not have a significant effect on the environment and a finding of no significant effect shall be prepared in accordance with TRPA's Rules of Procedures | <input checked="" type="checkbox"/> | Yes | <input type="checkbox"/> | No |
| b. The proposed project could have a significant effect on the environment, but due to the listed mitigation measures which have been added to the project, could have no significant effect on the environment and a mitigated finding of no significant effect shall be prepared in accordance with TRPA's Rules of Procedures. | <input type="checkbox"/> | Yes | <input checked="" type="checkbox"/> | No |
| c. The proposed project may have a significant effect on the environment and an environmental impact statement shall be prepared in accordance with this chapter and TRPA's Rules of Procedures. | <input type="checkbox"/> | Yes | <input checked="" type="checkbox"/> | No |

Signature of Evaluator

Local Government Coordinator

Title of Evaluator

Date

5.4 EVALUATION OF ENVIRONMENTAL IMPACTS

The following environmental analysis has been prepared using the TRPA Initial Environmental Checklist (IEC) form found at: http://www.trpa.org/wp-content/uploads/Initial_Environmental_Checklist.pdf.

5.4.1 SECTION NOT APPLICABLE

5.4.2 TRPA

Article VI of the TRPA Rules of Procedures presents the rules governing the preparation and processing of environmental documents pursuant to Article VII of the Compact and Chapter 3 of the Revised TRPA Code of Ordinances.

TRPA uses an IEC, in conjunction with other available information, to determine whether an EIS will be prepared for a project or other matter. This could include preparation of an Environmental Assessment, in accordance with Section 3.4 of the TRPA revised Code, when TRPA determines that an IEC will not provide sufficient information to make the necessary findings for a project.

The IEC includes a series of questions categorized by and pertaining to resources regulated by TRPA. Each checklist item requires a checked response of “Yes,” “No,” “No, with Mitigation,” or “Data Insufficient.” A checked response of “Data Insufficient” or a determination that a project may have a significant effect on the environment (Section 3.3.2 of the TRPA Code) indicates that additional environmental review in the form of an Environmental Assessment (EA) or Environmental Impact Statement (EIS) would be required. The IEC form indicates that all “Yes” and “No, with Mitigation” responses require written explanations. This IEC provides supporting narrative for all responses. Where a checked response may not be intuitive or easily understood by the reader, that response has been marked with an asterisk (*) and a brief clarifying statement supporting the rationale for the checked response is included. Based on an initial review of the Project, TRPA and City staff determined that an IEC would provide sufficient information regarding the Project to make one of the findings below. As set forth in Code Subsection 3.3.1, based on the information submitted in the IEC, and other information known to TRPA, TRPA shall make one of the following findings and take the identified action:

1. The proposed project could not have a significant effect on the environment and a finding of no significant effect shall be prepared in accordance with TRPA’s Rules of Procedure.
2. The proposed project could have a significant effect on the environment, but due to the listed mitigation measures which have been added to the project, could have no significant effect on the environment and a mitigated finding of no significant effect shall be prepared in accordance with TRPA’s Rules of Procedure.
3. The proposed project may have a significant effect on the environment and an environmental impact statement shall be prepared in accordance with this Chapter and TRPA’s Rules of Procedure.

When completed, TRPA reviews the IEC to determine the adequacy and objectivity of the responses. When appropriate, TRPA consults informally with federal, state, or local agencies with jurisdiction over the project or with special expertise on applicable environmental impacts.

5.4.3 Aesthetics, Scenic Resources/Community Design and Light and Glare

This section presents the analyses for potential impacts to aesthetics, scenic resources/community design and light and glare. Table 5-2 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-2: Aesthetics, Scenic Resources/Community Design and Light and Glare				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.3-1. Be visible from any state or federal highway, Pioneer Trail or from Lake Tahoe? (TRPA item 18a)				X
5.4.3-2. Be visible from any public recreation area or TRPA designated bicycle trail? (TRPA item 18b)	X			
5.4.3-3. Block or modify an existing view of Lake Tahoe or other scenic vista seen from a public road or other public area? (TRPA item 18c)				X
5.4.3-4. Be inconsistent with the height and design standards required by the applicable ordinance or Community Plan? (TRPA item 18d)	X			
5.4.3-5. Be inconsistent with the TRPA Scenic Quality Improvement Program (SQIP) or Design Review Guidelines? (TRPA item 18e)				X
5.4.3-6. Include new or modified sources of exterior lighting? (TRPA item 7a)	X			
5.4.3-7. Create new illumination which is more substantial than other lighting, if any, within the surrounding area? (TRPA item 7b)				X
5.4.3-8. Cause light from exterior sources to be cast off-site or onto public lands? (TRPA item 7c)				X
5.4.3-9. Create new sources of glare through the siting of the improvements or through the use of reflective materials? (TRPA item 7d)				X

5.4.3-1. Would the Project be visible from any state or federal highway, Pioneer Trail or from Lake Tahoe? (TRPA 18a)

The project location is not visible from Lake Tahoe, SR 89, US Highway 50, or Pioneer Trail, which are each designated as TRPA urban scenic corridors in the project vicinity. Urban Scenic Corridors are

generally urbanized where man-made development is the dominant visual feature, but development still blends with the natural environment (TRPA Code Chapter 66, Scenic Quality). As such, the Project would have no impact to these scenic corridors or Lake Tahoe.

Environmental Analysis: *Not Visible from SR 89, US Highway 50 or Pioneer Trail/No Impact.*

Required Mitigation: **None.**

5.4.3-2. Would the Project be visible from any public recreation area or TRPA designated bicycle trail? (TRPA 18b)

The Project area is not visible from a public recreation area, but will be visible from a newly constructed TRPA bike trail corridor (Lake Tahoe Blvd. Class 1 Bike Trail from US 50 to Viking Way). A Class I shared-use trail is planned for construction along the south side of Lake Tahoe Blvd. immediately adjacent to the project area, but this trail is not designated in the 1993 Lake Tahoe Basin Scenic Resource Evaluation. Changes to the built environment will occur along the newly constructed Lake Tahoe Blvd. shared-use trail; however, existing visual conditions are only considered fair at present due to the age and quality of the existing built environment.

Future development of Sugar Pine Village would be consistent with the TVAP's Design Standards and Chapter 66 (Scenic Quality) of the TRPA Code of Ordinances that prohibit buildings to protrude above the forest canopy or ridgeline, require site-specific design features that minimize ground disturbance, incorporate screening, and use of earth tone colors, materials and architectural style that complements the Tahoe landscape. Thus, development within the project area would not result in adverse impacts to views from a public recreation area or a TRPA designated bicycle trails.

Environmental Analysis: *Visible from Planned Bicycle Trail/No Impact.*

Required Mitigation: **None.**

5.4.3-3. Would the Project block or modify an existing view of Lake Tahoe or other scenic vista seen from a public road or other public area? (TRPA 18c)

The project location is not visible from Lake Tahoe, and is not adjacent to a scenic roadway corridor or other public gathering area. Thus, the Project would not result in obstructed views to and from Lake Tahoe or other scenic vistas.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.3-4. Would the Project be inconsistent with the height and design standards required by the applicable ordinance or Community Plan? (TRPA 18d)

The TVAP includes development and design standards intended to ensure that no aesthetic/scenic impacts result from future development/redevelopment within the plan area. Current TRPA and City design standards are fully reflected in the TVAP. The Project proposes to utilize maximum building heights (42 feet) provided for in the TVAP TC-MUC District but does not meet the minimum roof slope (5:12) required in the existing TVAP standards (Table 7, page C-25). The proposed building design utilizes 3:12 roof slopes for the primary roof pitch and the height of the roof is not 40 percent of the height of the building (another requirement of the TVAP design standards). The City has reviewed the applicable TVAP building

height design standard as it relates to the Sugar Pine Village project and concluded that consistency with this standard for multi-family projects is not required to protect aesthetics and the quality of built environment. As part of their review for the Project, the City will make findings that roof pitches of at least 3:12 and roof heights of less than 40 percent of the total building height (for multi-family residential developments) will meet the intent of the TVAP design standards to achieve the desired community vision and urban form. Concurrent with their review of the Sugar Pine Village Project application, TRPA is processing an amendment to the TVAP Design Standards to allow a minimum 3:12 roof slope for multi-family residential land uses and eliminate the roof height requirement (40% of the height of the building). By eliminating the minimum 5:12 roof slope requirement and minimum roof height for multi-family projects, the Sugar Pine Village can maximize density and meet goals for the provision of affordable multi-family dwelling units in the District, creating a beneficial social impact. Should the proposed amendment not be approved, the Project would be required to redesign non-compliant buildings to meet the current TVAP building height standards.

Pursuant to Chapter 13 of the TRPA Code of Ordinances, the TVAP incorporates height standards permitted in Table 13.5.3-1: Minimum Development Standards for Area Plans (TRPA Code, page 13-3). Table 13.5.3-1 permits up to a maximum of 56 feet (four stories) in areas designated as Town Centers. Though the project area is within a town center, the TVAP assigned maximum heights of 42 feet (3 stories) in the TC-MUD District. As discussed in the Regional Plan Update EIS, there are benefits to increased height and density within Town Centers. Additional height incentivizes development, and by concentrating development in a Town Center, development is removed from less desirable locations, creating a more compact development pattern to decrease use intensity outside of the area. The restrictive height limit of 42 feet for town center areas, combined with other protective TVAP Design Standards will protect visual quality and character of the adjacent residential and commercial area; therefore, no significant impact would result from applying alternative roof pitch and percentage of roof height standards to the multi-family Sugar Pine Village project.

TRPA requires structures of up to 56 feet in Town Centers to meet height findings 1, 3, 5, and 9 as indicated in Section 37.7 of the TRPA Code of Ordinances. The TVAP also requires these findings to utilize the maximum number of stories (3) in the TC-MUD District. These findings (see below) ensure the additional height does not dominate views, particularly within the shoreline, is appropriately screened from public views, minimizes interference with existing views, and does not reduce the scenic threshold travel route rating. If the finding cannot be made, the additional height would not be permitted. This ensures no significant impact would result from the increased height allowance within the TVAP.

37.7.1 Finding 1: When viewed from major arterials, scenic turnouts, public recreation areas, or the waters of Lake Tahoe, from a distance of 300 feet, the additional height will not cause a building to extend above the forest canopy, when present, or a ridgeline. For height greater than that set forth in Table 37.4.1-1 for a 5:12 roof pitch, the additional height shall not increase the visual magnitude beyond that permitted for structures in the shoreland as set forth in subsection 66.3.7, Additional Visual Magnitude, or Appendix H, Visual Assessment Tool, of the Design Review Guidelines.

Sugar Pine Village is not visible from state highways, scenic turnouts, public recreation areas or Lake Tahoe.

37.7.3. Finding 3: With respect to that portion of the building that is permitted the additional height, the building has been designed to minimize interference with existing views within the area to the extent practicable.

The Sugar Pine Village project site is within a forested neighborhood that does not offer views of background ridgelines or other scenic resources from adjacent roadways.

37.7.5. Finding 5: The portion of the building that is permitted additional building height is adequately screened, as seen from major arterials, the waters of lakes, and other public areas from which the building is frequently viewed. In determining the adequacy of screening, consideration shall be given to the degree to which a combination of the following features causes the building to blend or merge with the background: a) the horizontal distance from which the building is viewed; b) the extent of screening; and c) proposed exterior colors and building materials.

Views into the Sugar Pine Village site from adjacent residential roadways will be partially screened by existing trees and buildings. Views of the 3-story residential buildings from Lake Tahoe Boulevard will be screened by the 1- and 2-story Community Center buildings and existing trees within the stream environment zone that runs adjacent to the Lake Tahoe Boulevard right-of-way. In addition, the landscape plan includes proposed tree planting within the development that will offer additional screening as they mature.

37.7.9. Finding 9: When viewed from a TRPA scenic threshold travel route, the additional building height granted a building or structure shall not result in the net loss of views to a scenic resource identified in the 1982 Lake Tahoe Basin Scenic Resource Inventory. TRPA shall specify the method used to evaluate potential view loss.

Sugar Pine Village is not visible from scenic threshold travel routes.

Environmental Analysis: *Inconsistent with Building Design Standards/No Impact.*

Required Mitigation: **None.**

5.4.3-5. Would the Project be inconsistent with the TRPA Scenic Quality Improvement Program (SQIP) or Design Review Guidelines? (TRPA 18e)

The Lake Tahoe Boulevard corridor west of the “Y” intersection is not located within a TRPA travel route and not included in the analysis prepared for the TRPA Scenic Quality Improvement Program. As such, the SQIP does not apply to the project area.

The evaluation presented above for Questions 5.4.3-1 through 5.4.3-4 concludes that development within the project area would be subject to TVAP Design Standards, as well as TRPA and City standards and ordinances and development activity would not result in significant impacts when the design standards and protective measures of the TVAP are implemented. The Project is consistent with each of the applicable design standards except for roof pitch, which is being addressed as described in question 5.4.3-4 above.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.3-6. Would the Project include new or modified sources of exterior lighting? (TRPA 7a)

The parcels to be developed currently include no buildings or other sources of exterior lighting. Development of the parcels includes new sources of exterior lighting that comply with adopted TVAP design standards regarding light and glare (TVAP Appendix C Development and Design Standards) and are subject to City and TRPA review. The existing lighting standards are found in Section H of the

Substitute Design Standards and address exterior, pedestrian zone, street, and safety/security lighting. The standards require all lighting to be directed downward and fitted with cutoff shields to reduce light pollution, protect nighttime views, and reduce light splay onto adjoining parcels. Further, the TVAP requires the use of a variety of natural-appearing material and colors that blend in with the natural setting and prohibits the use of flood lighting, reflective materials, or lighting strips, including neon/fluorescent tubing to minimize reflectivity and glare. Compliance with the standards will ensure that the new sources of exterior lighting do not create an adverse impact on adjacent development.

Environmental Analysis: *New sources of exterior lighting/No Impact.*

Required Mitigation: **None.**

5.4.3-7. Would the Project create new illumination, which is more substantial than other lighting, if any, within the surrounding area? (TRPA 7b)

See discussions and analysis for Question 5.4.3-6, which concludes no significant impact.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.3-8. Would the Project cause light from exterior sources to be cast off-site or onto public lands? (TRPA 7c)

See discussions and analysis for Question 5.4.3-6, which concludes no significant impact.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.3-9 Would the Project create new sources of glare through the siting of the improvements or through the use of reflective materials? (TRPA 7d)

See discussion and analysis for Question 5.4.3-6, which concludes no significant impact.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.4 Air Quality

This section presents the analyses for potential impacts to air quality. Table 5-3 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-3: Air Quality				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.4-1. Substantial air pollutant emissions? (TRPA 2a)				X
5.4.4-2. Deterioration of ambient (existing) air quality? (TRPA 2b)				X
5.4.4-3. Creation of objectionable odors? (TRPA 2c)				X

5.4.4-1. Would the Project result in substantial air pollutant emissions? (TRPA 2a)

The Project would develop multi-family residential in a District of the TVAP that allows up to 25 units/acre. While the number of residential units would increase in the Tahoe Valley as a result, limits on overall growth in the Region through the TRPA's regional growth management system remain in place, so the overall regional development potential remains the same. The new development is within one-quarter mile of transit, commercial and public service uses, and will include trails and pedestrian walkways to the services, indicating that new development in this area is in the appropriate location to generate the shorter trip lengths and lower vehicle-miles traveled needed to meet the air quality goals of the Regional Plan and City's General Plan.

The Region is designated by the state of California as non-attainment for PM₁₀, as presented in Table 5-4. A significant cumulative impact results if the Project causes a considerable increase in PM₁₀.

Table 5-4: Federal and State Attainment Status for the Lake Tahoe Air Basin		
Pollutant	CA Status	Federal Status
1-Hour Ozone	Attainment	--
8-Hour Ozone	Attainment	Attainment/Unclassified
PM ₁₀	Nonattainment	Attainment/Unclassified
PM _{2.5}	Attainment	Attainment/Unclassified
CO	Attainment	Maintenance
NO ₂	Attainment	Attainment/Unclassified
SO ₂	Attainment	Attainment/Unclassified
All Others	Attainment (Sulfates, Lead)/Unclassified (Hydrogen Sulfide and Visibility Reducing Particles)	--
Source: CARB 2019 (https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations) and US EPA 2020 (https://www.epa.gov/green-book)		

The Project is required to comply with Chapter 65 (Air Quality/Transportation) of the TRPA Code of Ordinances. Chapter 65 includes standards that apply to mobile and direct sources of air pollution in the Tahoe Region, including certain motor vehicles registered in the region (vehicle inspection and maintenance program), combustion appliances and heaters installed in the region, open burning, stationary sources of air pollution, and idling combustion engines. El Dorado County and TRPA threshold standards are applied for this analysis, which limits emissions to no more than 82 pounds per day of ROG, NO_x, or PM₁₀ emissions, to determine whether a violation of air quality standards would occur.

The Lake Tahoe Region is in attainment or designated as unclassified for each National Ambient Air Quality Standard (NAAQS) except CO (Maintenance), and is in attainment of all California ambient air quality standards (CAAQS) except PM₁₀ (Nonattainment).

Construction emissions would result from the use of heavy mobile equipment for site preparation, grading, and construction of the paved facilities, modular housing and Community Center buildings, and from production and delivery of building materials. Such construction sources emit criteria pollutants (PM₁₀, PM_{2.5}, CO, NO_x, and ROG), air toxics, and GHGs from combustion of diesel fuel, and fugitive dust from the motion of wheels and tracks. Emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and the prevailing weather. Construction is anticipated to occur over a two-year period beginning in summer 2022, with most active construction occurring during the two summer building seasons (May 1 to October 15), allowing for seasonal restrictions on construction activity. Demolition, site preparation and grading would occur over two five-month periods (Phase 1 summer 2022 and Phase 2 summer 2023), overlapped by a 20-month period for building construction, paving and architectural coatings. Equipment used during construction includes concrete saws, excavators, dozers, tractors, loaders, backhoes, graders, scrapers, cranes, forklifts, generators, welders, pavers, rollers, and air compressors.

As shown in Appendix B (specifically Tables 1 and 2), Project construction and operation would not generate emissions that exceed applicable daily standards/thresholds or deteriorate air quality or conflict with adopted air quality plans. The Project benefits from air quality best management practices that are required under the TRPA Code.

Environmental Analysis: *No Impact*

Required Mitigation: **None.**

5.4.4-2. Would the Project result in deterioration of ambient (existing) air quality? (TRPA 2b)

See analysis for Question 5.4.4-1.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.4-3. Would the Project result in creation of objectionable odors? (TRPA 2c)

The occurrence and severity of odor effects depend on the nature, frequency, and intensity of the odor source, wind speed and direction, and the presence of sensitive receptors. Offensive odors rarely cause physical harm, but odors can be unpleasant and generate citizen complaints to regulatory agencies and local governments. Typical sensitive receptors include residences, hospitals, and schools. Barton Hospital and

South Tahoe high school are located within ¼ mile of the Project area and residences are located adjacent to the development parcels.

As a general matter, the types of land use development that pose potential odor problems include wastewater treatment plants, refineries, landfills, composting facilities and transfer stations, none of which are proposed in the Project. Further, the land uses in the TVAP TC-MUC are not characteristic of the types of uses that would result in the development of a major source of objectionable odor.

In the short-term, odor impacts occur from the use of diesel engines and asphalt concrete paving during construction. These odors are both temporary and localized, affecting only the area immediately adjacent to the active construction area. Diesel exhaust emissions and asphalt concrete paving odors dissipate rapidly away from the source and cease upon completion of construction activities and would be addressed by the Chapter 65 (Air Quality/Transportation) of the TRPA Code of Ordinances idling restrictions. Therefore, construction of the Project does not result in substantial direct or indirect exposure of sensitive receptors to offensive odors.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.5 Biological Resources (Stream Environment Zones, Wetlands, Wildlife and Vegetation)

This section presents the analyses for potential impacts to biological resources, including impacts to SEZs, wetlands, wildlife and vegetation. Table 5-5 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-5: Biological Resources				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.5-1. Removal of native vegetation in excess of the area utilized for the actual development permitted by the land capability/IPES system? (TRPA 4a)				X
5.4.5-2. Removal of riparian vegetation or other vegetation associated with critical wildlife habitat, either through direct removal or indirect lowering of the groundwater table? (TRPA 4b)				X
5.4.5-3. Introduction of new vegetation that will require excessive fertilizer or water, or will provide a barrier to the normal replenishment of existing species? (TRPA 4c)				X
5.4.5-4. Change in the diversity or distribution of species, or number of any species of plants (including trees, shrubs, grass, crops, micro flora and aquatic plants)? (TRPA 4d)				X
5.4.5-5. Reduction of the numbers of any unique, rare or endangered species of plants? (TRPA 4e)				X
5.4.5-6. Removal of streambank and/or backshore vegetation, including woody vegetation such as willows? (TRPA 4f)				X
5.4.5-7. Removal of any native live, dead or dying trees 30 inches or greater in diameter at breast height (dbh) within TRPA's Conservation or Recreation land use classifications? (TRPA 4g)				X

5.4.5-8. A change in the natural functioning of an old growth ecosystem? (TRPA 4h)				X
5.4.5-9. Change in the diversity or distribution of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects, mammals, amphibians or microfauna)? (TRPA 5a)				X
5.4.5-10. Reduction of the number of any unique, rare or endangered species of animals? (TRPA 5b)				X
5.4.5-11. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals? (TRPA 5c)				X
5.4.5-12. Deterioration of existing fish or wildlife habitat quantity or quality? (TRPA 5d)				X

5.4.5-1. Would the Project result in removal of native vegetation in excess of the area utilized for the actual development permitted by the land capability/IPES system? (TRPA 4a)

The Project area is partially developed with native vegetation on the undeveloped portions of the parcels. The Project would not alter or revise the regulations pertaining to native vegetation protection during construction. Protection of vegetation surrounding the footprint of Sugar Pine Village buildings, driveways and parking lots would be required to comply with TRPA Code Section 33.6, Vegetation Protection During Construction. Protective requirements include installation of temporary construction fencing, standards for tree removal and tree protection, standards for soil and vegetation protection, and revegetation of disturbed areas.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.5-2. Would the Project result in removal of riparian vegetation or other vegetation associated with critical wildlife habitat, either through direct removal or indirect lowering of the groundwater table? (TRPA 4b)

The Project would not result in the removal of riparian vegetation or other vegetation associated with critical wildlife habitat. Water supply within the area is obtained from groundwater sources through the South Tahoe Public Utility District. Consistent with existing conditions, projects permitted in accordance with the TVAP would be required to meet TRPA requirements for water supply. TRPA regulations prohibit the approval of any development requiring water unless there is adequate water supply within an existing water right (Section 32.4.1 of the TRPA Code). Additionally, Section 33.3.6 (Excavation Limitations) of the TRPA Code of Ordinances prohibits excavation that intercepts or interferes with groundwater except under specific circumstances and with prior approval by TRPA (Section 33.3.6.A.2). For these reasons, Sugar Pine Village construction and operation would not directly or indirectly lower the groundwater table.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.5-3. Would the Project result in introduction of new vegetation that will require excessive fertilizer or water, or will provide a barrier to the normal replenishment of existing species? (TRPA 4c)

Sugar Pine Village landscaping plans comply with the TRPA Code provisions (e.g., Section 61.4, Revegetation) and Goals and Policies that prohibit the release of non-native species in the Tahoe Region. The landscape plant palette (plan sheet L2.3) draws from the Tahoe Regional Planning Agency's (TRPA) plant list and Best Management Practice (BMP) handbook. Using native species throughout the site for groundcover and seasonal interest, flowers and foliage encourage a healthy population of birds and pollinators.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.5-4. Would the Project result in change in the diversity or distribution of species, or number of any species of plants (including trees, shrubs, grass, crops, micro flora and aquatic plants)? (TRPA 4d)

See discussion in questions 5.4.5-3 and 5.4.5-7.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.5-5. Would the Project result in reduction of the numbers of any unique, rare or endangered species of plants? (TRPA 4e)

The Project area is mostly undeveloped with the exception of an existing parking lot located on the East Village parcel, east of Tata Lane. Neither the East or West Village parcels contain records of unique, rare, or endangered plant species.

Environmental Analysis: *No Impact.*

Required Mitigation: **None**

5.4.5-6. Would the Project result in removal of streambank and/or backshore vegetation, including woody vegetation such as willows? (TRPA 4f)

The Project area does not include any streambank or backshore vegetation.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.5-7. Would the Project result in removal of any native live, dead or dying trees 30 inches or greater in diameter at breast height (dbh) within TRPA's Conservation or Recreation land use classifications? (TRPA 4g)

The project area is not within TRPA's Conservation or Recreation land use classifications. A certified arborist prepared an Arborist Report (December 18, 2020) for the project and indicates that seven trees 30 inches dbh or greater will be removed for the East Village site and 12 trees 30 inches dbh or greater will be removed for the West Village site. California Tahoe Conservancy professional forestry staff prepared a Tree Harvest Plan for the West Village site because the project includes the removal of over 100 trees 14 inches dbh or greater on a parcel that is greater than three acres in size, which is defined in TRPA Code as substantial tree removal (TRPA Code, Section, 61.1.8). TRPA Code requires that the TRPA forester approve a Tree Harvest Plan for projects with substantial tree removal, prepared by a Registered Professional Forester, prior to Governing Board review and consideration. With the Harvest Plan approval, tree removal will comply with existing regulations.

Environmental Analysis: *No Impact.*

Required Mitigation: **None**

5.4.5-8. Would the Project result in a change in the natural functioning of an old growth ecosystem? (TRPA 4h)

The Project area does not include any forested lands considered old growth ecosystems.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.5-9. Would the Project result in change in the diversity or distribution of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects, mammals, amphibians or microfauna)? (TRPA 5a)

The Project will not directly change the diversity or distribution of species, or the numbers of any species. Though currently forested, the Project area has been included in the TVAP TC-MUD District for urban land use development, and common bird species that may be utilizing onsite trees for nesting or foraging would likely utilize other nearby habitat.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.5-10. Would the Project result in reduction of the number of any unique, rare or endangered species of animals? (TRPA 5b)

The Project area was reviewed against 1) the California Department of Fish and Wildlife's California Natural Diversity Database (CNDDDB), 2) the U.S. Fish and Wildlife Service's online Planning and Conservation System (IPaC) database, and 3) TRPA's Special Interest Species Map to identify potential habitat for candidate, sensitive, or special status species.

The IPaC database identified the following: North American Wolverine (*Gulo gulo luscus*) (proposed threatened), Sierra Nevada yellow-legged frog (*Rana sierrae*) (federal endangered), and Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) (threatened). Seven migratory birds were also listed in the IPaC

database: bald eagle (*Haliaeetus leucocephalus*), Cassin's finch (*Carpodacus cassinii*), golden eagle (*Aquila chrysaetos*), olive-sided flycatcher (*Contopus cooperi*), rufous hummingbird (*selasphorus rufus*), Williamson's sapsucker (*Sphyrapicus thyroideus*), and willow flycatcher (*Empidonax traillii*).

The CNDDDB database identified the following species within the South Lake Tahoe quadrangle: Sierra Nevada yellow-legged frog (*Rana sierrae*) (state threatened), and willow flycatcher (*Empidonax traillii*) (state endangered).

Suitable habitat for wolverine, Sierra Nevada yellow-legged frog, and Lahontan cutthroat trout is not present in the Project area. Willow flycatcher have not been observed in the area according to the CNDDDB records and do not have suitable habitat within the Project Area. In summary, the development of the Project site will not result in reductions of unique, rare, or endangered animal species.

Environmental Analysis: *No Impact*.

Required Mitigation: **None**.

5.4.5-11. Would the Project result in introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals? (TRPA 5c)

The Project does not create habitat for new species of animals, nor create a barrier to the migration or movement of animals.

Environmental Analysis: *No Impact*.

Required Mitigation: **None**.

5.4.5-12. Would the Project result in deterioration of existing fish or wildlife habitat quantity or quality? (TRPA 5d)

See discussion in question 5.4.5-10.

Environmental Analysis: *No Impact*.

Required Mitigation: **None**.

5.4.6 Cultural Resources and Archaeological/Historical

This section presents the analyses for potential impacts to cultural, archaeological and historical resources, discussing the Project impacts on cultural resources related to the disturbance of archaeological, historical, architectural resources. The section also addresses disturbance of unknown archaeological resources, as well as paleontological resources (fossils). Table 5-6 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-6: Cultural Resources and Archaeological/Historical				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.6-1. Will the proposal result in an alteration of or adverse physical or aesthetic effect to a significant archaeological or historical site, structure, object or building? (TRPA 20a)				X
5.4.6-2. Is the proposed project located on a property with any known cultural, historical, and/or archaeological resources, including resources on TRPA or other regulatory official maps or records? (TRPA 20b)				X
5.4.6-3. Is the property associated with any historically significant events and/or sites or persons? (TRPA 20c)				X

5.4.6-1. Will the Project result in an alteration of or adverse physical or aesthetic effect to a significant archaeological or historical site, structure, object or building? (TRPA 20a)

As reported in the TVAP (page 31), eight archaeological and historical investigations were previously conducted within the Tahoe Valley plan area. These investigations identified two historic sites: CA-Eld-721- H is a portion of the Pony Express Trail that generally follows the alignment of U.S. Highway 50 and CA-Eld-2240-H is a historic road that passes through the Tahoe Valley plan area. In addition, the Barton Ranch was formerly located within the plan area at 1080 Emerald Bay Road and is listed on TRPA's Historic Sites Maps (1984). The Ranch buildings were demolished under permit in 2015. These known resources are not located within the Project area.

Within the Project area, there is no evidence of intact, potentially significant prehistoric, archaeological or Washoe cultural sites. The potential exists within the Project area, like elsewhere in the Tahoe Basin and consistent with existing conditions, for previously undiscovered archaeological or historic resources to be discovered during any earth-moving activities. Federal and state regulations, TRPA Code (Chapter 67) and General Plan policies address protection of these resources and provide processes to avoid or minimize impacts to historic and archaeological resources. As such, the Project would not alter or adversely affect archeological or historical resources.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.6-2. Is the Project located on a property with any known cultural, historical, and/or archaeological resources, including resources on TRPA or other regulatory official maps or records? (TRPA 20b)

See discussion in Question 5.4.6-1.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.6-3. Is the Project associated with any historically significant events and/or sites or persons? (TRPA 20c)

See discussion in Question 5.4.6-1.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.7 Energy

This section presents the analyses for potential impacts to energy. Table 5-7 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-7: Energy				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.7-1. Use of substantial amounts of fuel or energy? (TRPA 15a)				X
5.4.7-2. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy? (TRPA 15b)				X

5.4.7-1. Would the Project use substantial amounts of fuel or energy? (TRPA 15a)

This potential impact was previously analyzed as part of the TRPA Regional Plan Update, and therefore this analysis incorporates by reference the RPU EIS. While any new construction would require electric and natural gas service as part of the basic services (Chapter 32, Basic Services of the TRPA Code of Ordinances) the entire project area is currently served by existing electric and gas infrastructure. Sugar Pine Village's new connections would be subject to the requirements and fees of the applicable utility providers. The utility companies project that, based on their forecasting and recent growth trends, the available capacity would far exceed the demand generated at build-out of the Regional Plan (TRPA 2012a, page 3.13-20).

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.7-2. Will the Project substantially increase the demand upon existing sources of energy, or require the development of new sources of energy? (TRPA 15b)

This potential impact was previously analyzed as part of the TRPA Regional Plan Update, and therefore this analysis incorporates by reference the RPU EIS. See discussion in Question 5.4.7-1 above that concludes that the available capacity would far exceed the demand generated at build-out of the TRPA Regional Plan; therefore, demand created by the Project would not exceed available capacity, or require the development of new sources of energy.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.8 Geology and Soils, and Land

This section presents the analyses for potential impacts to geology, soils and land. Table 5-8 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-8: Geology and Soils, and Land				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.8-1. Compaction or covering of the soil beyond the limits allowed in the land capability or Individual Parcel Evaluation System (IPES)? (TRPA 1a)				X
5.4.8-2. A change in the topography or ground surface relief features of site inconsistent with the natural surrounding conditions? (TRPA 1b)				X
5.4.8-3. Unstable soil conditions during or after completion of the proposal? (TRPA 1c)				X
5.4.8-4. Changes in the undisturbed soil or native geologic substructures or grading in excess of 5 feet? (TRPA 1d)				X
5.4.8-5. The continuation of or increase in wind or water erosion of soils, either on or off the site? (TRPA 1e)				X
5.4.8-6. Changes in deposition or erosion of beach sand, or changes in siltation, deposition or erosion, including natural littoral processes, which may modify the channel of a river or stream or the bed of a lake? (TRPA 1f)				X
5.4.8-7. Exposure of people or property to geologic hazards such as earthquakes, landslides, backshore erosion, avalanches, mud slides, ground failure, or similar hazards? (TRPA 1g)				X

5.4.8-1. Would the Project result in compaction or covering of the soil beyond the limits allowed in the land capability or Individual Parcel Evaluation System (IPES)? (TRPA 1a)

This potential impact was previously analyzed as part of the TRPA Regional Plan Update, and therefore this analysis incorporates by reference the RPU EIS. The land coverage limitations for the Project area as specified in the adopted Regional Plan (Chapter 30 of the TRPA Code) and TVAP Town Center allow up to 70 percent land coverage on high capability lands (Class 4 through 7). The Project's proposed development footprint is located entirely within the land capability Class 7 boundary shown in Figure 5-1. The area of Class 1b (SEZ) in the northwest corner of the project area will be left undeveloped. The potential environmental effects of the TRPA's Town Center land coverage transfer policy were analyzed in the RPU EIS (TRPA 2012, page 3.7-40) and were found to be less than significant.

"The additional coverage allowed in higher capability lands within Town Centers, the Regional Center, and the High Density Tourist District would be directly offset by coverage transferred from sensitive land or more than offset on an acre-by-acre basis by transfers from higher capability land, resulting in an overall reduction in coverage for the Region and, importantly, reduction in coverage from SEZs and other sensitive lands."

Within the land capability Class 7 lands, the Project proposes land coverage of approximately 66 percent within the West Village parcel (255,390 sf) and 57 percent within the East Village parcel (39,324 sf). As a whole for the Project Area, proposed land coverage (294,714 sf) would equal approximately 65 percent within the Class 7 portions of the Project Area. Therefore, the Project complies with the 70 percent maximum land coverage transfer limit. No land coverage is proposed within the land capability Class 1b (SEZ) lands within the West Village parcel. Existing SEZ land coverage verified as a compacted dirt trail (1,384 sf) will be restored and relocated outside of the SEZ boundary to construct a proposed walkway for residents and the public to utilize. The existing compacted dirt trail will be restored and restricted from future use.

The Project Area would permit approximately 136,400 sf of base allowable land coverage within the Class 7 lands at 30 percent land coverage. To meet the needs for the Project's proposed land coverage transfer, approximately 157,800 sf of land coverage must be transferred to the Project Area. The Project applicant is working with City of South Lake Tahoe and California Tahoe Conservancy staff to identify a source of land coverage needed to meet the transfer requirements. Pursuant to TRPA Code Section 30.4.3.A.2.c, land coverage transferred for multi-residential facilities of five or more units and public service facilities may be transferred at a ratio of 1:1, until the total land coverage reaches the maximum allowed. Pursuant to TRPA Code Section 30.4.3.B, hard land coverage, soft land coverage, or base (potential) land coverage are eligible for transfer to receiving parcels for multi-residential facilities. With TRPA approval of the proposed land coverage transfer described above, the Project would fall within land coverage limits of the Regional Plan and TVAP TC-MUD District.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.8-4. Will the Project result in changes in the undisturbed soil or native geologic substructures or grading in excess of 5 feet? (TRPA 1d)

Excavation depths for buildings and other physical project facilities will not exceed 5 feet.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.8-5. Will the Project result in the continuation of or increase in wind or water erosion of soils, either on or off the site? (TRPA 1e)

See discussion and analysis for Question 5.4.8-3 above.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.8-6. Will the Project result in changes in deposition or erosion of beach sand, or changes in siltation, deposition or erosion, including natural littoral processes, which may modify the channel of a river or stream or the bed of a lake? (TRPA 1f)

The Project area is not within a beach, lake, or riparian area.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.8-7. Will the Project result in exposure of people or property to geologic hazards such as earthquakes, landslides, backshore erosion, avalanches, mudslides, ground failure, or similar hazards? (TRPA 1g)

This potential effect is the same as those analyzed in the TRPA Regional Plan Update, and therefore this analysis incorporates by reference the RPU EIS. The Project would not alter or revise the regulations pertaining to geologic hazards. Chapter 35, Natural Hazard Standards, of the TRPA Code includes provisions addressing avalanche, floodplains, and wildfire and Chapter 6.15 of the City Code, addresses CBC and IBC building standards that include protections for persons and property from seismic and geologic hazards. Sugar Pine Village is required to meet applicable building codes and standards and has undergone site-specific geotechnical analysis as specified by Section 33.4 (Special Information Reports and Plans) of the TRPA Code of Ordinances and Chapter 7.20 of the City Code. As such, the Project would not expose people or property to geologic hazards.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.9 Greenhouse Gas Emissions

This section presents the analyses for potential impacts to greenhouse gas (GHG) emissions. Table 5-9 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-9: Greenhouse Gas Emissions				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.9-1. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally? (TRPA 2d)				X
5.4.9-2. Increased use of diesel fuel? (TRPA 2e)				X

5.4.9-1. Would the Project result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally? (TRPA 2d)

Based on the modeling conducted and documented in Appendix B, the total annual GHG emissions from construction activities and operations would be less than the quantitative threshold selected from SMAQMD standards. Total MTCO₂e emissions over the combined 2 years of construction would result in approximately 820 MTCO₂e, with a maximum annual construction output of 450 MTCO₂e during the second full year of construction in 2023. When combined with all other construction phases and amortized over the life of the project (conservatively assigned at 25 years), total annual construction emissions (32.8 MTCO₂e) would not exceed applicable thresholds of 1,100 MTCO₂e (2020 target) or 660 MTCO₂e (2030 target). CalEEMod modeling shown in Appendix B indicates operation of the Project is anticipated to generate 896 MTCO₂e annually, on average, with application of the energy efficiency measures (e.g., no gas service, energy efficient appliances and building construction) proposed for the Project. For modeling purposes, new trip generation and VMT (340 MTCO₂e) are excluded from the Project calculations based on TRPA and state of California exemptions for affordable housing developments. As such, the Project's annual MTCO₂e generation (556 MTCO₂e) will not exceed the 660 MTCO₂e 2030 target.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.9-2. Would the Project result in increased use of diesel fuel? (TRPA 2e)

Project construction requires the use of diesel fuel for the operation of construction equipment. From an air quality perspective, one of the primary concerns related to diesel fuel consumption is the resultant exposure of sensitive receptors to emissions of toxic air contaminants (TACs) that can occur during both the construction and operational phases of a project. The Project would not include the construction or operation of a major source of TAC emissions such as power-generating plants or other heavy industrial uses.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.10 Hazards and Hazardous Materials and Risk of Upset and Human Health

This section presents the analyses for potential impacts to hazards and hazardous materials and risk of upset and human health. Table 5-10 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-10: Hazards and Hazardous Materials and Risk of Upset and Human Health				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.10-1. Involve a risk of an explosion or the release of hazardous substances including, but not limited to, oil, pesticides, chemicals, or radiation in the event of an accident or upset conditions? (TRPA 10a)				X
5.4.10-2. Involve possible interference with an emergency evacuation plan? (TRPA 10b)				X
5.4.10-3. Creation of any health hazard or potential health hazard (excluding mental health)? (TRPA 17a)				X
5.4.10-4. Exposure of people to potential health hazards? (TRPA 17b)				X

5.4.10-1. Will the Project involve a risk of an explosion or the release of hazardous substances including, but not limited to, oil, pesticides, chemicals, or radiation in the event of an accident or upset conditions? (TRPA 10a)

Construction would involve the storage, use, and transport of hazardous materials typical of construction and operation of multi-family residential land uses projects. Commonly used hazardous materials expected to be used during construction and operation of the Project include asphalt, gasoline, diesel, lubricants, paints, and solvents. CHP and Caltrans regulate transportation of hazardous materials on area roadways, and the use of these materials is regulated by the DTSC as outlined in CCR 22.

The Project Applicant, builders, contractors, business owners, and others would be required to use, store, and transport hazardous materials in compliance with local, State, and federal regulations during construction and operation. Compliance with mandatory State and federal standards for the transport and use of hazardous materials will reduce potential hazardous materials impacts to less than significant. The Project Applicant will be required to prepare a Hazardous Materials Business Plan and inventory of hazardous materials under the State of California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act, California Health and Safety Code, Division 20, Chapter 6.95, Article 1). The Hazardous Materials Business Plan includes:

- An inventory of hazardous materials handled;

- Facility floor plans showing where hazardous materials are stored;
- An emergency response plan, and;
- Provisions for employee training in safety and emergency response procedures.

The types of uses that will operate following construction (residential and accessory public service) are not of the nature that would involve storage, use, and transport of large quantities of hazardous substances that would increase the risk of explosion or wide-spread hazardous materials incident.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.10-2. Will the Project involve possible interference with an emergency evacuation plan? (TRPA 10b)

The City is responsible for emergency operations within the city limits, which includes the Project area. The City's Natural Hazard Mitigation Plan was approved by the Federal Emergency Management Agency (FEMA) and included as a local appendix to the El Dorado County Natural Hazard Mitigation Plan. This plan provides guidance for the development of pre-mitigation and post-mitigation recovery for disasters in all hazard classification. Title 1 of the City Code addresses plans for the protection of persons and property within the City in the event of an emergency and the coordination of the emergency functions of the City with all other public agencies, corporations, organizations, and affected private persons. The City's Disaster Council is responsible for reviewing and recommending emergency operation plans for adoption by the City Council, and is also responsible for the review and potential amendments to the Emergency Management Plan. Moreover, the City's adopted General Plan policies in the Health and Safety Element include: Policy HS-1.1 requires the City to periodically review and update the City's Local Emergency Operations Plan; Policy HS-1.3 requires the City to maintain a reverse 911 system; and HS- 1.4 requires the City to identify pre-planned areas for disaster staging and evacuations (CSLT 2011b, page HS-2).

The Project would not impair the implementation of or physically interfere with the City Natural Hazard Management Plan or Emergency Management Plan and therefore results in no impact.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.10-3. Will the Project result in creation of any health hazard or potential health hazard (excluding mental health)? (TRPA 17a)

See discussion and analysis for Question 5.4.10-1.

No hazardous waste facilities or contaminated sites are identified within the project area parcels (EnviroStor and GeoTracker, 2020). One open remediation case is located at 1855 Lake Tahoe Boulevard (north of Lake Tahoe Blvd from the project area) and involves soil contamination from a leaking underground storage fuel tank. This remediation site would pose no danger to the Sugar Pine Village residents as it is a localized contamination of soils.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.10-4. Will the Project result in exposure of people to potential health hazards? (TRPA 17b)

The Project area is mostly undeveloped and forested. Development of multi-family housing is currently allowed on the subject parcels and under the proposed Project would be developed at densities near the 25 unit/acre limit to facilitate an affordable housing community. Because the Project area is within a very high wildfire severity zone, future development of the parcels must be consistent with and implement state (e.g., Title 24 California Code of Regulations, California Building Code, Part 2, Chapter 7A), regional, and local regulations designed to reduce the risk of wildfire. All new structures are required to comply with the California Fire Code, which establishes minimum standards for materials and material assemblies to provide a reasonable level of exterior wildfire exposure protection for buildings in wildland-urban interface areas. Chapter 5.05 of the City Code, which is currently applicable to the Project area, contains fire regulations adopted to safeguard life and property from fire and explosion hazards. City General Plan policies require the use of fire-resistant building materials, installation and maintenance of defensible space, and meeting fire flow requirements in new or rehabilitated structures. Implementation of these policies, in conjunction with the existing California Fire Code and City Code requirements, would avoid exposing people to potential health hazards.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.11 Hydrology and Water Quality

This section presents the analyses for potential impacts to hydrology and water quality. Table 5-11 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-11: Hydrology and Water Quality				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.11-1. Changes in currents, or the course or direction of water movements? (TRPA 3a)				X
5.4.11-2. Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff so that a 20 yr. 1 hr. storm runoff (approximately 1 inch per hour) cannot be contained on the site? (TRPA 3b)				X
5.4.11-3. Alterations to the course or flow of 100-year flood waters? (TRPA 3c)				X
5.4.11-4. Change in the amount of surface water in any water body? (TRPA 3d)				X
5.4.11-5. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity? (TRPA 3e)				X
5.4.11-6. Alteration of the direction or rate of flow of ground water? (TRPA 3f)				X
5.4.11-7. Change in the quantity of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations? (TRPA 3g)				X
5.4.11-8. Substantial reduction in the amount of water otherwise available for public water supplies? (TRPA 3h)				X
5.4.11-9. Exposure of people or property to water related hazards such as flooding and/or wave				X

action from 100-year storm occurrence or seiches? (TRPA 3i)				
5.4.11-10. The potential discharge of contaminants to the groundwater or any alteration of groundwater quality? (TRPA 3j)				X
5.4.11-11. Is the Project located within 600 feet of a drinking water source? (TRPA 3k)				X

5.4.11-1. Will the Project result in changes in currents, or the course or direction of water movements? (TRPA 3a)

There are no surface waters in the Project area, and Project stormwater runoff will be retained onsite as required by TRPA and Lahontan Codes.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.11-2. Will the Project result in changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff so that a 20 yr. 1 hr. storm runoff (approximately 1 inch per hour) cannot be contained on the site? (TRPA 3b)

Project stormwater treatment plans are documented on project design sheets C6.0 to C6.5 and calculate the contributing drainage areas including building/roofs and parking lots. Treatment is proposed using “infiltration at the source” concepts for storm water management throughout the project with strategically located “Rain Gardens” and infiltration trenches/basins for collection of building runoff. Rain Gardens are distributed throughout the site as a Best Management Practice (BMP) to promote infiltration of stormwater runoff from paved driveway/parking lot areas. Designed with the appropriate amended soils and carefully selected shrubs, grasses, and flowering perennials, these landscape and stormwater treatment features will improve water quality, detain runoff so as to not adversely affect downstream conditions, provide wildlife habitat, and offer a vibrant visual element throughout the site. The stormwater treatment will capture a minimum of the 20-year, 1 hour storm runoff event.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.11-3. Will the Project result in alterations to the course or flow of 100-year floodwaters? (TRPA 3c)

The Project area is not within the 100-year floodplain.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.11-4. Will the Project result in change in the amount of surface water in any water body? (TRPA 3d)

The Project would not alter or revise the regulations pertaining to surface water management. Surface water and water rights in California are managed by the California State Water Resources Control Board. The potential impact of development and redevelopment within the Tahoe Region on the availability of public water supplies was analyzed in the RPU EIS (TRPA 2012a, page 3.13-11). Because the regional water demand at build-out of the RPU would be less than the regional surface water allocation, and because TRPA Code of Ordinances Section 32.4 requires demonstration of adequate available water supply within an existing water right prior to permit approval (e.g., STPUD will serve letter), Project development would not result in a substantial reduction in the amount of surface water or the water available for public water supplies.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.11-5. Will the Project result in discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity? (TRPA 3e)

See discussions and analyses for Questions 5.4.11-1 and 5.4.11-2 above. There are no surface waters within the Project area. Chapter 60 (Water Quality) of the TRPA Code of Ordinances includes standards for discharge limits to surface and ground waters and Chapter 7.15 of the City Code regulates urban runoff and stormwater quality. Sugar Pine Village has been designed to meet the discharge standards of the Lahontan Regional Water Quality Control Board and applicable stormwater discharge permits. And since the Project would create more than one acre of disturbance, it will be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) in compliance with the City's Stormwater Management Plan.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.11-6. Will the Project result in alteration of the direction or rate of flow of ground water? (TRPA 3f)

Section 33.3 (Grading Standards) of the TRPA Code of Ordinances prohibits excavations, except under certain defined and permitted conditions, that interfere with or intercept the high water table by: altering the direction of groundwater flow; altering the rate of flow of groundwater; intercepting groundwater; adding or withdrawing groundwater; or raising or lowering the groundwater table. Additionally, excavation in excess of 5 feet below ground surface (or less in areas of known high groundwater) is generally prohibited because of the potential to intercept or interfere with groundwater (Section 33.3.6 Excavation Limitations, TRPA Code of Ordinances). With the exception of excavation depths for proposed rainwater collection facilities, Sugar Pine Village excavations would not exceed 5 feet in depth, and geotechnical data do not indicate that groundwater would be impacted by proposed site work.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.11-7. Will the Project result in change in the quantity of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations? (TRPA 3g)

The Project does not propose facilities to withdraw groundwater, nor does it propose underground facilities that would intercept an aquifer. The Project includes “rain garden” stormwater treatment facilities (see question 5.4.11-2) that are designed to collect and infiltrate stormwater runoff from paved parking areas. The proposed stormwater treatment plan will be reviewed during the TRPA and the Lahontan Regional Water Quality Control Board permitting process to ensure that collected runoff does not result in an adverse change to groundwater levels or groundwater quality.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.11-8. Will the Project result in substantial reduction in the amount of water otherwise available for public water supplies? (TRPA 3h)

Construction of the Project will result in increased demand for water supply from STPUD. However current surface water allocation to the Tahoe Region pursuant to the Truckee River Operating Agreement (TROA) is 34,000 acre feet/year (afy), and Region-wide demand reported in the TRPA RPU EIS is approximately 28,079 afy (TRPA 2012, page 3.13.-11). Water supply demand generated by the buildout of the TRPA Regional Plan is estimated to equal 1,725 afy which, given remaining water supply availability, could be accommodated with existing supplies. The increased density associated with the Project is consistent with the Regional Plan and TVAP land use and design standards. Thus, it is reasonable to assume that sufficient water supply capacity would be available to accommodate the Project.

Furthermore, all redevelopment permitted by the TVAP would be required to comply with Section 32.4 (Water Service) of the TRPA Code of Ordinances, which requires that a project applicant demonstrate the availability of adequate water quantity and quality for both domestic consumption and fire protection prior to project permit approval. This is demonstrated at a project-permit level through the acquisition of a Will Serve Letter from the applicable water purveyor.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.11-9. Will the Project result in exposure of people or property to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches? (TRPA 3i)

The Project area is not within the 100-year floodplain or adjacent to any water body.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.11-10. Will the Project result in potential discharge of contaminants to the groundwater or any alteration of groundwater quality? (TRPA 3j)

See discussions and analyses for Questions 5.4.11-6 and 5.4.11-7 above.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.11-11. Is the Project located within 600 feet of a drinking water source? (TRPA 3k)

The amendment area is not located within 600 feet of active drinking water sources and is outside the mapped source water protection zones for existing wells near the “Y” intersection. (TRPA, 2000).

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.12 Land Use and Planning

This section presents the analyses for potential impacts to land use and planning. Table 5-12 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-12: Land Use and Planning				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.12-1. Include uses which are not listed as permissible uses in the applicable Plan Area Statement, adopted Community Plan, or Master Plan? (TRPA 8a)				X
5.4.12-2. Expand or intensify an existing non-conforming use? (TRPA 8b)				X

5.4.12-1. Will the Project include uses which are not listed as permissible uses in the applicable Plan Area Statement, adopted Community Plan, or Master Plan? (TRPA 8a)

Multi-family residential and public service uses are listed as permissible in the TVAP TC-MUC District.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.12-2. Will the Project expand or intensify an existing non-conforming use? (TRPA 8b)

There are no existing non-conforming uses within the project area, nor are any non-conforming land uses proposed as part of the Project.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.13 Mineral Resources and Natural Resources

This section presents the analyses for potential impacts to mineral resources and natural resources. Table 5-13 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-13: Mineral Resources and Natural Resources				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.13-1. A substantial increase in the rate of use of any natural resources? (TRPA 9a)				X
5.4.13-2. Substantial depletion of any non-renewable natural resource? (TRPA 9b)				X

5.4.13-1. Will the Project result in a substantial increase in the rate of use of any natural resources? (TRPA 9a)

This potential effect is the same as those analyzed in the TRPA Regional Plan Update, and therefore this analysis incorporates by reference the RPU EIS. The use of natural resources, such as construction materials (e.g., concrete, wood or metals) and fuel (e.g., diesel, natural gas and gasoline) would occur during project construction and to some extent, long-term operation of the Project (fuel and public utilities). The RPU EIS (TRPA 2012a, page 5-3) acknowledged the potential increase in the use of natural resources resulting from increased development and redevelopment within the Tahoe Region. However, any increase in the long-term rate of use of natural resources for the Project would be negligible and would not be in quantities that would result in a significant effect.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.13-2. Will the Project result in a substantial depletion of any non-renewable natural resource? (TRPA 9b)

Non-renewable natural resources such as gasoline and diesel are consumed during the construction and long-term operation of development projects; however, because any Project in the TVAP will be subject to TRPA's regional growth management system, no additional development beyond what was already analyzed in the Regional Plan EIS would occur. Therefore, the Project would not substantially increase depletion of non-renewable natural resources.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.14 Noise

This section presents the analyses for potential impacts related to noise. Table 5-14 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-14: Noise				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.14-1. Increases in existing Community Noise Equivalency Levels (CNEL) beyond those permitted in the applicable Plan Area Statement, Community Plan or Master Plan? (TRPA 6a)				X
5.4.14-2. Exposure of people to severe noise levels? (TRPA 6b)				X
5.4.14-3. Single event noise levels greater than those set forth in the TRPA Noise Environmental Threshold? (TRPA 6c)				X
5.4.14-4. The placement of residential or tourist accommodation uses in areas where the existing CNEL exceeds 60 dBA or is otherwise incompatible? (TRPA 6d)				X
5.4.14-5. The placement of uses that would generate an incompatible noise level in close proximity to existing residential or tourist accommodation uses? (TRPA 6e)				X
5.4.14-6. Exposure of existing structures to levels of ground vibration that could result in structural damage? (TRPA 6f)				X

5.4.14-1. Would the Project result in increases in existing Community Noise Equivalency Levels (CNEL) beyond those permitted in the applicable Plan Area Statement, Community Plan or Master Plan? (TRPA 6a)

The Project does not alter the CNEL standards set forth in the TVAP for the TC-MUC district.

Policy HNS-2.3 of the TVAP requires an acoustical analysis as part of the environmental review process when noise-sensitive land uses are proposed in areas exposed to existing or anticipated exterior noise levels exceeding the levels shown in Table HS-1 and HS-2 of the City General Plan. Table HS-1 identifies uses that may exceed noise limits, including industrial facilities, trucking operations, metal fabricating shops, etc. These types of uses are not located adjacent to the Project area and therefore the Project would not require an acoustical analysis.

TRPA Code Section 68.8.3 requires all substantial transportation projects in transportation corridors that are not in attainment of adopted CNEL standards incorporate mitigating design features to achieve adopted standards. As documented in Appendix A, the Project would result in a small increase in vehicle travel and traffic volumes on roadways; however, the potential increase in traffic would not result in a noticeable increase in traffic noise, particularly given the location of the Project area to nearby services, and the presence of existing transit services, which would reduce individual vehicle trips associated with new development. A noticeable increase in traffic noise (e.g., 3 dB) requires a doubling of traffic in the measurement area and the potential increase in vehicle trips would be a very small percentage of the existing baseline; therefore, no noticeable increase in traffic-related noise would occur as a result of the Project.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.14-2. Would the Project result in exposure of people to severe noise levels? (TRPA 6b)

No land uses that result in severe noise levels are immediately adjacent to the Project area. Therefore, the Project would not expose residents of Sugar Pine Village to severe noise levels.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.14-3. Will the Project result in single event noise levels greater than those set forth in the TRPA Noise Environmental Threshold? (TRPA 6c)

Single-event noise standards are set forth in Section 68.3.1 of the TRPA Code of Ordinances for aircraft, water craft, motor vehicles, motorcycles, off-road vehicles, and over-snow vehicles. Residential and public service uses proposed in the Project would not create single event noise levels in excess of TRPA standards.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.14-4. Will the Project result in the placement of residential or tourist accommodation uses in areas where the existing CNEL exceeds 60 dBA or is otherwise incompatible? (TRPA 6d)

The Project proposes residential uses in a TVAP District with a CNEL standard of 60 dBA. Based on TRPA threshold evaluation monitoring (TRPA, 2015) for tourist and commercial land use areas (with an assigned CNEL standard of 60), existing TVAP commercial areas meet threshold targets and would not expose new residents to noise levels that exceed standards.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.14-5. Will the Project result in the placement of uses that would generate an incompatible noise level in close proximity to existing residential or tourist accommodation uses? (TRPA 6e)

The Project includes residential land uses that would be compatible with adjacent residential and public service/commercial land uses.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.14-6. Will the Project expose existing structures to levels of ground vibration that could result in structural damage? (TRPA 6f)

Project construction activities could potentially expose adjacent noise-sensitive receptors to noise levels that exceed TRPA noise standards and/or expose noise-sensitive receptors to excessive noise levels. Construction activities include site preparation (e.g., demolition, clearing, excavation, grading), foundation work, paving, building construction, utility connections, finishing, and cleanup. These activities typically involve the use of noise-generating equipment such as cranes, excavators, dozers, graders, dump trucks, generators, backhoes, compactors, and loaders. Noise levels associated with these types of equipment are typically between 70 and 85 dBA L_{max} at 50 feet. During construction, adjacent residents could be exposed to noise levels that exceed TRPA standards between the exempt hours of 8:00 a.m. and 6:30 p.m. TRPA and the City exempt construction noise from existing standards during these hours. Noise levels outside of the exempt construction period could expose people to severe and/or nuisance noise levels unless measures are incorporated on a project-specific basis. To address this issue, TRPA adopted (November 20, 2013) additional best construction practices policies and revisions to the Initial Environmental Checklist (IEC) to address these issues. The TRPA Standard Conditions of Approval for Grading Projects (TRPA Permit Attachment Q) and Standard Conditions of Approval for Residential Projects (TRPA Permit Attachment R) include construction provisions that call for the location of construction staging areas as far as feasible from sensitive air pollution receptors (e.g. schools or hospitals), closure of engine doors during operation except for engine maintenance, location of stationary equipment (e.g. generators or pumps) as far as feasible from noise-sensitive receptors and residential areas, installation of temporary sound barriers for stationary equipment, and use of sonic pile driving instead of impact pile driving, wherever feasible.

The TVAP incorporates the City's General Plan noise policies and provides expanded protection from groundborne vibration and groundborne noise levels. Policy LU7-3 requires an analysis of a vibration impact be conducted for all construction activities that include impact equipment and activities such as pile driving, soil compaction, or vibratory hammers that occur within 200 feet of existing structures. These policies ensure that construction operations are designed to avoid or mitigate for vibrations above 0.02 inches/second (0.5 mm/second). With implementation of applicable TRPA and General Plan policies and regulations, the Project would not result in significant groundborne vibration or noise levels to existing structures.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.15 Population and Housing

This section presents the analyses for potential impacts to population and housing. Table 5-15 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-15: Population and Housing				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.15-1. Alter the location, distribution, density, or growth rate of the human population planned for the Region? (TRPA 11a)				X
5.4.15-2. Include or result in the temporary or permanent displacement of residents? (TRPA 11b)				X
5.4.15-3. Affect existing housing, or create a demand for additional housing? To determine if the proposal will affect existing housing or create a demand for additional housing, please answer the following questions: (1) Will the proposal decrease the amount of housing in the Tahoe Region? (2) Will the proposal decrease the amount of housing in the Tahoe Region historically or currently being rented at rates affordable by lower and very-low-income households? (TRPA 12a)				X
5.4.15-4. Will the proposal result in the loss of housing for lower-income and very-low-income households? (TRPA 12b)				X

5.4.15-1. Will the Project alter the location, distribution, density, or growth rate of the human population planned for the Region? (TRPA 11a)

The proposed density for multiple family dwellings (approximately 21.4 units/acre) would increase population in the TVAP TC-MUC District. However, this growth is consistent with TRPA Regional Plan goals, as it concentrates development in town centers, and overall population growth in the Region would still be limited by the available development rights allowable under the Regional Plan.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.15-2. Will the Project include or result in the temporary or permanent displacement of residents? (TRPA 11b)

No existing housing will be removed for the Project.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.15-3. Will the Project affect existing housing, or create a demand for additional housing?

(1) Will the proposal decrease the amount of housing in the Tahoe Region? (2) Will the proposal decrease the amount of housing in the Tahoe Region historically or currently being rented at rates affordable by lower and very-low-income households? (TRPA 12a)

- (1) See discussion and analysis for Question 5.4.15-1 above. The Project would increase the amount of housing available in the Tahoe Region, and would help the City and TRPA meet affordable housing goals.
- (2) The Project would increase the amount of housing affordable by lower and very-low-income households. Sugar Pine Village will provide studio, one, two- and three-bedroom apartments targeted to households earning between 30 to 80 percent of Area Median Income.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.15-4. Will the Project result in the loss of housing for lower-income and very-low-income households? (TRPA 12b)

See discussion and analysis for Question 5.4.15-3 above.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.16 Public Services

This section presents the analyses for potential impacts to public services. Table 5-16 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-16: Public Services				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
Will the proposal have an unplanned effect upon, or result in a need for new or altered governmental services in any of the following areas?				
5.4.16-1. Fire protection? (TRPA 14a)				X
5.4.16-2. Police protection? (TRPA 14b)				X
5.4.16-3. Schools? (TRPA 14c)				X
5.4.16-4. Parks or other recreational facilities? (TRPA 14d)				X
5.4.16-5. Maintenance of public facilities, including roads? (TRPA 14e)				X
5.4.16-6. Other governmental services? (TRPA 14f)				X

5.4.16-1. Will the Project have an unplanned effect upon, or result in a need for new or altered governmental services: fire protection? (TRPA 14a)

South Lake Tahoe Fire Rescue (SLTFR) is a municipal fire department that is primarily organized, equipped, and trained to perform fire suppression duties in structural firefighting, initial attack wildland firefighting, vehicular fires, traffic collisions and any other call for service. Additionally, SLTFR provides Advanced Life Support (ALS) paramedic level medical care and responds to all medical aid calls within the city as well as outside of the city when requested through mutual aid. ALS transport is not handled by the fire department--it is run by Cal Tahoe Ambulance through the Cal Tahoe Joint Powers Authority which operates out of private facilities in the City. The department currently operates three staffed fire stations including Fire Station One (at Ski Run Blvd and Pioneer Trail), Fire Station Two (2951 Lake Tahoe Blvd), and Fire Station Three (2101 Lake Tahoe Blvd). A training center at 1195 Rufus Allen Blvd is also maintained by the fire department. Listed equipment includes a ladder truck and two engine companies staffed 24/7. Two reserve engines, two type III brush engines, a light duty rescue squad, an air trailer, and a marine unit are all available for cross staffing when needed. Three battalion vehicles are staffed by the three Battalion Chiefs and a vehicle is also assigned to the Fire Chief. Currently the fire department operates a daily schedule of 9 suppression personnel plus a Battalion Chief for a total of 10 on duty as minimum daily staffing. The department has the capability to ladder buildings at a maximum height of 107 feet from our ladder truck. Ground ladders have a maximum reach of just over 30 feet. As of late fall 2020 our ladder truck is staffed every day with a minimum of three personnel. Fire Prevention duties are shared between the fire department and the building department. One full time fire inspector is now assigned to the fire

department and handles daily prevention/inspection duties. Total staffing for the department is 34 line personnel, 4 chief officers (Fire Chief and 3 Battalion Chiefs), one fire inspector and one administrative assistant to the Fire Chief.

The Project implements allowable multi-family residential density in the TVAP TC-MUD District and is required to ensure adequate fire protection services per the City's General Plan and permitting process. The Project complies with General Plan policies that require the installation of fire-resistant materials, and incorporation of fire safe landscaping and defensible space in all new construction. The Project includes structures of up to three stories, as is currently allowed in the TVAP TC-MUC. Since the Project does not propose a height increase beyond what is already allowed in the TVAP, this does not represent a new impact to public services.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.16-2. Will the Project have an unplanned effect upon, or result in a need for new or altered governmental services: police protection? (TRPA 14b)

The Project area is currently served by the South Lake Tahoe Police Department, CHP, and County jail. The Project would construct multiple family residential units permitted by TVAP land use and design standards, and increase the population by approximately 600-700 residents (2.5 persons/unit). The City's public service policies ensure that the City provides adequate law enforcement services and the necessary funding to ensure adequate law enforcement services and future facilities to meet demands.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.16-3. Will the Project have an unplanned effect upon, or result in a need for new or altered governmental services: schools? (TRPA 14c)

The Lake Tahoe Unified School District (LTUSD) serves a 10.1 square mile area that includes the entire City of South Lake Tahoe. LTUSD operates eight schools, but has had to close schools in the recent past due to declining enrollment. Given the current facilities and stagnant enrollment, LTUSD is not experiencing any capacity issues and does not expect any such issue to occur in the future. With the limited growth allowed by the TRPA Regional Plan that results in a projected growth rate of 10.8% for the next twenty years or 0.58% a year (TRPA 2012a, page 3.12-12) the residential housing included in the Project will not exceed the existing capacity or result in a need for new or physically altered school facilities.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.16-4. Will the Project have an unplanned effect upon, or result in a need for new or altered governmental services: parks or other recreational facilities? (TRPA 14d)

Residential development associated with the Project generates recreation demand by increasing the number of residents, however, the population increase is consistent with what is planned under the current Regional Plan, TVAP and City General Plan. As documented in the TVAP Initial Study (2015, pages 198-201), recreation opportunities in South Lake Tahoe are numerous and can meet the anticipated increase in demand

within and in the immediate vicinity of the TVAP. Because of the wide range of public recreation opportunities within the City and surrounding region, use is spread out, avoiding demand that causes substantial deterioration of any single facility. Therefore, the increased use of existing neighborhood and regional parks or other recreational facilities (e.g., school play grounds) as a result of Project development is not expected to result in or accelerate substantial physical deterioration of recreation facilities.

Environmental Analysis: *No Impact*

Required Mitigation: **None.**

5.4.16-5. Will the Project have an unplanned effect upon, or result in a need for new or altered governmental services in maintenance of public facilities, including roads? (TRPA 14e)

The Project includes new driveways that access public roadways, but does not require changes to existing roads or other public facilities.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.16-6. Will the Project have an unplanned effect upon, or result in a need for other new or altered governmental services? (TRPA 14f)

There are no other known governmental services that would be directly affected by the Project.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.17 Recreation

This section presents the analyses for potential impacts to recreation. Table 5-17 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-17: Recreation				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.17-1. Create additional demand for recreation facilities? (TRPA 19a)				X
5.4.17-2. Create additional recreation capacity? TRPA 19b)				X
5.4.17-3. Have the potential to create conflicts between recreation uses, either existing or proposed? (TRPA 19c)				X
5.4.17-4. Result in a decrease or loss of public access to any lake, waterway, or public lands? (TRPA 19d)				X

5.4.17-1. Will the Project create additional demand for recreation facilities? (TRPA 19a)

As discussed in Question 5.4.16-4, existing recreation opportunities are abundant in the south shore area and can meet an increase in demand from multi-family residential development planned for the TVAP TC-MUC District. In addition, the TVAP includes expansion of public recreation opportunities within the Tahoe Valley Greenbelt and the project includes onsite recreational amenities for residents. Any increase in demand is expected to be easily met by existing, onsite, and future recreation facilities planned for in the TVAP.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.17-2. Will the Project create additional recreation capacity? (TRPA 19b)

The Project includes onsite recreational amenities for residents, but does not construct public recreational capacity.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.17-3. Will the Project have the potential to create conflicts between recreation uses, either existing or proposed? (TRPA 19c)

The Project does not physically impact existing or planned recreational facilities. Increased demand for recreational facilities is addressed in Question 5.4.17-1 above.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.17-4. Will the Project result in a decrease or loss of public access to any lake, waterway, or public lands? (TRPA 19d)

Public access to Lake Tahoe or other publicly owned recreational lands is not located within the Project area. Existing informal trails that cross the project area will be replaced with formal trails open for public access, thereby improving public access across the project site.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.18 Transportation (Traffic and Circulation)

This section presents the analyses for potential impacts to transportation, traffic and circulation. Table 5-18 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level. A technical memorandum regarding transportation impacts of the proposed boundary amendment is attached (Appendix A).

Table 5-18: Transportation (Traffic and Circulation)				
TRPA Initial Environmental Checklist Item	Yes,	No, With Mitigation	Data Insufficient	No
5.4.18-1. Generation of 100 or more new Daily Vehicle Trip Ends (DVTE)? (TRPA 13a)	X			
5.4.18-2. Changes to existing parking facilities, or demand for new parking? (TRPA 13b)	X			
5.4.18-3. Substantial impact upon existing transportation systems, including highway, transit, bicycle or pedestrian facilities? (TRPA 13c)				X
5.4.18-4. Alterations to present patterns of circulation or movement of people and/or goods? (TRPA 13d)				X
5.4.18-5. Alterations to waterborne, rail or air traffic? (TRPA 13e)				X
5.4.18-6. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians? (TRPA 13f)				X

5.4.18-1. Will the Project result in generation of 100 or more new Daily Vehicle Trip Ends (DVTE)? (TRPA 13a)

As discussed in Appendix A (Sugar Pine Village Traffic and Air Quality Study, LSC), the Project would generate more than 100 new daily vehicle trip ends (DVTE). The land use quantities (e.g., number and type of residential units and public service uses) proposed by the Project were multiplied by trip rates assigned to those uses and then reduced for trips internal to the Project area and trips that would be made with modes of travel other than automobile (e.g, pedestrian, bike, transit). As shown in Appendix A Table 3, the proposed land uses are forecasted to generate a total of approximately 1,148 DVTE at the site driveways, including 110 AM peak-hour vehicle-trips (34 inbound plus 76 outbound) and 132 PM peak-hour vehicle-trips (79 inbound plus 53 outbound). TRPA requires new DVTE to be mitigated with the payment of an air quality mitigation fee. Pursuant to existing TRPA Code Section 65.2.4.D, the project applicant shall pay an air quality mitigation fee of \$338,438.60 to mitigate new DVTE.

In addition to mitigating new trips, the traffic and circulation analysis must determine if new DVTE will result in impacts to nearby study area intersections. Appendix A demonstrates that study intersections (Lake

Tahoe Boulevard and its intersection with Tata Lane, proposed Site Access, Julie Lane, and Viking Way) currently meet LOS thresholds during the existing year condition without the project. The stop-controlled intersection of Lake Tahoe Blvd and Tata Lane operates at LOS D. The stop-controlled intersection of Lake Tahoe Blvd and Julie Lane operates at a LOS C. The all-way stop-controlled intersection of Lake Tahoe Blvd/Viking Road/D Street operates at a LOS C. With implementation of the Project, average delays would increase by up to approximately 8.9 seconds per vehicle, but LOS would not degrade to an unacceptable level at any study area intersection. Consequently, no LOS impacts would occur with the project.

Traffic queues at specific intersections that exceed the storage capacity of turn lanes, or that block turn movements at important nearby intersections or driveways, can cause operational problems beyond those identified in the LOS analysis. The 95th-percentile traffic queue length (the queue length that is only exceeded 5 percent of the time) was reviewed at locations where queuing could potentially cause traffic concerns. Based on this review, no intersection queuing concerns are identified with implementation of the Project.

Environmental Analysis: *Yes/No Impact.*

Required Mitigation: **None.**

5.4.18-2. Will the Project result in changes to existing parking facilities, or demand for new parking? (TRPA 13b)

Analysis of parking demand for the Project is provided in a LSC Technical Memo dated December 1, 2020. Development projects are subject to the existing parking requirements in the TVAP, City parking ordinance (e.g., South Lake Tahoe City Code Article VII. Parking, Driveway and Loading Spaces), and TRPA Code, and are reviewed by the City and/or TRPA prior to issuance of permits. For affordable housing projects, state, City and TRPA laws and regulations allow for reduced parking supply that recognize parking demand for other similar housing developments and the constraints of the Tahoe land capability system. The City of South Lake Tahoe Code (the applicable Code) does not provide a parking rate for affordable housing units. A parking rate is provided for the “Multi-Family Dwelling” land use, which is 2 spaces per unit.

The Julie Lane site access point is located about 500 feet from the nearest Tahoe Transportation District bus stop. However, there are existing informal walking trails that connect the West Village directly to the bus stop. In addition, a Class 2 trail (bike lane) parallels Lake Tahoe Boulevard along the site frontage. The bike lane begins at the intersection of Viking Road and Lake Tahoe Boulevard and connects the site to the “Y” intersection. As discussed below, studies have shown that affordable housing units have a lower parking demand than market rate units. Consequently, the parking rate for multi-family dwelling in the City Code is considered to be too high, as it doesn’t pertain specifically to affordable units.

Review of other parking data indicates that affordable housing projects in the Tahoe Basin do not require similar parking supply as market rate multi-family residential projects.

- Parking counts were conducted at Sierra Garden Apartments located at 1801 Lake Tahoe Boulevard (opposite and west of the Sugar Pine Village site) in South Lake Tahoe, California in April of 2016. At the time of the counts, the complex consisted of 24 one-bedroom units and 52 two-bedroom units, for a total of 76 units. The counts were conducted by property staff every evening at 11 PM for a week. The maximum observed parking demand was approximately 1.07 vehicles per unit. The Sierra Garden site is located roughly 1,000 feet from the nearest bus stop on Lake Tahoe Boulevard (near Julie Lane).

- Parking observations made at the Kings Beach Housing Now site (77 affordable housing units) located in the northeast corner of the SR 28/Chipmunk Street intersection in North Tahoe indicate a lower parking demand rate than Sierra Garden, even though nearly half of the Kings Beach units are larger (3-bedroom) units.
- The Institute of Transportation Engineers (ITE) Parking Generation manual provides a standard parking rate for “Affordable Housing – Income Limits” of 0.99 spaces per unit. This is lower than the average rate for “Multi-Family (Low-Rise)” units, which includes market rate units.

The Project has similar income requirements as Sierra Garden, and the proposed unit sizes and unit mix are similar. To determine parking demand for the residential units, the observed parking rate at Sierra Garden (1.07 vehicles per unit) is applied to the smaller units (studio, 1- and 2-bedroom) at Sugar Pine Village and an increased rate of 1.57 vehicles per unit (1.07 plus 0.5) is applied to the proposed 3- bedroom units. This calculation yields a total parking demand of approximately 253 spaces for the West Village residences and 46 spaces for the East Village residences.

In addition to the parking demand for the residential units, standard parking rates must be applied to the office, childcare center and Community Hall uses. The proposed Community Hall will be used for on-going events and programs specific to Sugar Pine Village and will also be available to residents for private events. Large events (such as weddings) are not anticipated. A total of 2 employees are assumed to report to the Community Hall on a day with an event. These employees are in addition to the employees that typically report to work at the on-site property management offices. Parking needs for the commercial uses will be reduced by the “captive market” factor – the fact that some users of the commercial space will also reside on the site. As their parking is already reflected in the residential demand, these onsite patrons will not generate demand for additional parking spaces. The captive market reductions are estimated as follows:

- The captive market factor for the office space (a 3% reduction) is estimated using the ITE’s internal trip capture estimation tool.
- For the Community Hall, as all event attendees would make trips internal to the project site, they would not generate additional parking demand. The employees associated with the event, however, would require additional parking spaces.
- For the childcare center, the project proponent expects that at least half of the children would reside in Sugar Pine Village, and potentially up to 100 percent if the childcare is subsidized. To remain conservatively high with respect to parking needs, this analysis assumes only 33 percent of the children reside on the site (and would therefore not generate additional parking demand).

With the internal reductions applied, total parking demand for the non-residential uses equates to approximately 23 spaces. Adding this to the West Village residential parking demand (253) yields a total of 276 spaces required for the West Village. Overall, 322 spaces (276 in West Village plus 46 in East Village) are needed for the Project.

The proposed parking supply for Sugar Pine Village is 311 parking spaces at the West Village and 56 parking spaces at the East Village. During the winter, 6 spaces in the West Village in front of the community building may be used for snow storage leaving 305 available parking spaces in the West Village. As the anticipated parking demand is 276 and 46 spaces, respectively, the proposed project is expected to result in a surplus of 35 spaces in the West Village during summer, 29 spaces in the West Village during winter and 10 spaces in the East Village. As such, the proposed parking supply is adequate for both Villages

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.18-3. Will the Project result in substantial impact upon existing transportation systems, including highway, transit, bicycle or pedestrian facilities? (TRPA 13c)

See discussions and analyses for Questions 5.4.18-1 and 5.4.18-4. The Project proposes improvements to pedestrian and bicycle facilities with onsite walkways, a shared-use trail, and sidewalks along Tata Lane and Julie Lane. Access to existing transit services is provided, and the development may benefit transit service by providing additional riders to meet route funding requirements.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.18-4. Will the Project result in alterations to present patterns of circulation or movement of people and/or goods? (TRPA 13d)

As discussed in Question 5.4.18-1 and Appendix A, no significant impacts to the present patterns of circulation would result from Project operations. The analysis in Appendix A looked at driver sight distance conditions at proposed access intersections, the proposed spacing of driveways along Lake Tahoe Boulevard, and operation of the exiting central two-way left turn lane (TWLTL) along Lake Tahoe Boulevard. In summary, Appendix A analysis of site access plans concludes the following:

- No driver sight distance concerns are identified at the site access points, so long as the proposed Lake Tahoe Bike Trail improvements are constructed, and the final Sugar Pine Village landscaping plans provide at least 440 feet of corner sight distance at the proposed site access point on Lake Tahoe Boulevard.
- Ideally the proposed Lake Tahoe Boulevard driveway would be aligned with one of the DIY Home Center driveways located on the north side of Lake Tahoe Boulevard. However, the potential for conflicts between vehicles turning left from the site driveway and the DIY Home Center driveway simultaneously is low, given the relatively low left-turn volumes exiting the site driveway, and considering that the large majority of traffic exiting the DIY Home Center uses its western driveway (which is located about 245 feet west of the proposed Project driveway).

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.18-5. Will the Project result in alterations to waterborne, rail or air traffic? (TRPA 13e)

No alterations to waterborne, rail or air traffic are proposed.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.18-6. Will the Project result in increase in traffic hazards to motor vehicles, bicyclists, or pedestrians? (TRPA 13f)

See Questions 5.4.18-1, 5.4.18-3, and 5.4.18-4.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.19 Tribal Cultural Resources

This section presents the analyses for potential impacts to tribal cultural resources, discussing the Project impacts on tribal cultural resources related to the disturbance of Native American/traditional heritage resources. Table 5-19 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-19: Tribal Cultural Resources				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.20-3. Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values? (TRPA 20d)				X
5.4.20-4. Will the proposal restrict historic or pre-historic religious or sacred uses within the potential impact area? (TRPA 20e)				X

5.4.19-1. Does the Project have the potential to cause a physical change which would affect unique ethnic cultural values? (TRPA 20d)

There is no evidence of intact, potentially significant tribal/Washoe cultural sites within the Project area. Pursuant to AB 52, the City of South Lake Tahoe contacted the Washoe Tribe, Ione Band of Miwok Indians, Shingle Springs Band of Miwok Indians, and the United Auburn Indian Community on October 27, 2020. No response has been received to date from the tribes. Since the timeline for response established in AB 52 (30 days) has been exceeded, no further consultation action is required.

Federal and state regulations, the TRPA Code (Chapter 67) and City General Plan policies address protection of cultural resources and provide processes to avoid or minimize impacts to such resources. Included in the existing Codes and policies are measures to identify cultural resources discovered during ground disturbing construction activities, and protect those deemed to be potentially eligible for the National Register or of unique ethnic value.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.19-2. Will the Project restrict historic or pre-historic religious or sacred uses within the potential impact area? (TRPA 20e)

See discussion for Question 5.4.19-1 above.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.20 Utilities and Service Systems

This section presents the analysis for potential impacts to utilities and service systems. Table 5-20 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-20: Utilities and Service Systems				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
Except for planned improvements, will the proposal result in a need for new systems, or substantial alterations to the following utilities:				
5.4.20-1. Power or natural gas? (TRPA 16a)				X
5.4.20-2. Communication systems? (TRPA 16b)				X
5.4.20-3. Utilize additional water which amount will exceed the maximum permitted capacity of the service provider? (TRPA 16c)				X
5.4.20-4. Utilize additional sewage treatment capacity which amount will exceed the maximum permitted capacity of the sewage treatment provider? (TRPA 16d)				X
5.4.20-5. Storm water drainage? (TRPA 16e)				X
5.4.20-6. Solid waste and disposal? (TRPA 16f)				X

5.4.20-1. Except for planned improvements, will the Project result in a need for new systems, or substantial alterations to power or natural gas? (TRPA 16a)

Analysis in Questions 5.4.7-1 and 5.4.7-2 conclude that the available capacity would far exceed the demand generated at build-out of the TRPA Regional Plan; therefore, demand created by construction of the Project would not result in a need for new or altered power or natural gas systems.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.20-2. Except for planned improvements, will the Project result in a need for new systems, or substantial alterations to communication systems? (TRPA 16b)

Communication systems are not listed as a required basic service by TRPA Code of Ordinances; however, the City Code requires any communication systems to be installed underground (Chapter 6.15 SLTCC). Project connections would be located within existing right-of-way areas dedicated for communication systems providers.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.20-3. Except for planned improvements, will the Project result in a need for new systems, or substantial alterations to utilize additional water which amount will exceed the maximum permitted capacity of the service provider? (TRPA 16c)

Water service is provided by the South Tahoe Public Utility District. At present, the District provides service to 14,000 connections and has a 7 million gallon per day production capacity. Water is provided 100 percent from 13 groundwater wells. All drinking water is pumped from underground aquifers through an intricate system of wells and water booster stations interspersed through the service area. No water is taken from Lake Tahoe. To ensure that adequate amounts of water are delivered safely to homes and businesses, the system also maintains 23 tanks and 26 pressure-reducing underground valves. The District provides water to over 13,000 homes and over 625 commercial and governmental sites, supplying more than 2.5 billion gallons of water annually.

Projects within the TVAP are required to comply with Section 32.4 (Water Service) of the TRPA Code of Ordinances, which requires that a project applicant demonstrate the availability of adequate water quantity and quality for both domestic consumption and fire protection prior to project approval. This is demonstrated at a project-level through the acquisition of a Will Serve Letter from the applicable water purveyor. Submittal of the will serve letter will ensure that Project water demand does not exceed maximum capacity of the District's storage and distribution system.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.20-4. Except for planned improvements, will the Project result in a need for new systems, or substantial alterations to utilize additional sewage treatment capacity which amount will exceed the maximum permitted capacity of the sewage treatment provider? (TRPA 16d)

Wastewater would be collected and treated by the South Tahoe Public Utility District, who reports existing average wastewater flow rates are little more than half of the total export capacity (see Table 5-21 below). The area surrounding the Project is already developed and connected to/served by the wastewater treatment system. Although residential density would increase with the Project, wastewater flow rates in the area would not double, thus, it is reasonable to assume that sufficient capacity is available in the wastewater collection system in the project vicinity.

All development permitted by the TVAP is required to comply with Section 32.5 (Waste Water Treatment Service) of the TRPA Code of Ordinances, which requires that all projects be served by facilities that provide treatment and export of wastewater from the Tahoe Region. Section 50.5.1(C.4) of the TRPA Code of Ordinances prohibits distribution of allocations to jurisdictions with insufficient wastewater capacity to support residential development.

Table 5-21: Average Flow Rates and Total Capacity			
Export District	Average Flow (mgd)	Total Capacity (mgd)	Average Remaining Capacity (mgd)
South Tahoe Public Utility District	4.0	7.7	3.7

Source: STPUD 2020 (<https://stpud.us/about/district-facilities/>)

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.20-5. Except for planned improvements, will the Project result in a need for new systems, or substantial alterations to storm water drainage? (TRPA 16e)

All Projects permitted through the TVAP are required to meet TRPA BMP standards to reduce runoff and pollutant loading from impervious cover. As specified in Section 60.4.6 (Standard BMP Requirements) of the TRPA Code of Ordinances, except where special conditions exist and are approved by TRPA, infiltration facilities designed to accommodate the volume of runoff generated by a 20-year, one-hour storm are required for approval of all projects. Therefore, there would be no unplanned alterations or improvements required for existing stormwater drainage systems in the Project vicinity.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.20-6. Except for planned improvements, will the Project result in a need for new systems, or substantial alterations to solid waste and disposal? (TRPA 16f)

South Tahoe Refuse (STR) is under contract with the City to collect solid waste from area households and businesses as well as to process and transfer all solid waste for disposal or recycling. STR's main facility, which consists of a materials recovery facility (MRF) and resource recovery facility (RRF), are located at the transfer station at 2140 Ruth Avenue. The MRF has a total permitted capacity of 370 tons per day, but currently receives approximately 275 tons per day. The remaining capacity of 95 tons per day is sufficient to serve the potential growth within the area proposed for amendment. The RRF began operation in 2009 and handles wood, yard waste and other green waste. It has a capacity of 400 cubic yards per day. Any additional staffing or equipment required to increase service to the area would be funded through the additional service rates that would be collected by STR from the new development. Solid waste is disposed of at the Lockwood Regional Landfill in Sparks, Nevada. This landfill has a total capacity of approximately 302 million cubic yards as a result of recent expansion, currently contains 32.8 million cubic yards of waste and is not expected to reach capacity for over 100 years, with implementation of approved expansions (NDEP, 2013 and Washoe County, 2016). Both the STR main facility and the Lockwood Regional Landfill have sufficient capacity to manage additional growth.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.21 Mandatory Findings of Significance

This section presents the analyses for mandatory findings of significance. Table 5-22 identifies the applicable impacts, anticipated level of impact, and whether mitigation measures are required to reduce impacts to a less than significant level.

Table 5-22: Mandatory Findings of Significance				
TRPA Initial Environmental Checklist Item	Yes	No, With Mitigation	Data Insufficient	No
5.4.21-1. Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California or Nevada history or prehistory? (TRPA 21a)				X
5.4.21-2. Does the Project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.) (TRPA 21b)				X
5.4.21-3. Does the Project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environmental is significant?) (TRPA 21c)				X
5.4.21-4. Does the Project have environmental impacts which will cause substantial adverse effects on human being, either directly or indirectly? (TRPA 21d)				X

5.4.21-1. Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California or Nevada history or prehistory? (TRPA 21a)

Fish and Aquatic Habitat

The Project would not directly affect or alter/revise any TRPA Regional Plan or City General Plan policies pertaining to the Shorezone and Lakezone, management of aquatic resources, or permitting of projects affecting these habitats.

Rare, Threatened, or Endangered Species and Communities

The Project would not directly affect or alter/revise TRPA Regional Plan policies regarding the protection of rare, endangered, or sensitive plant and animal communities.

Cultural, Historical, and Archeological Resources

The Project would not directly affect or alter/revise TRPA Regional Plan policies regarding the protection of cultural, historical, or archeological resources.

The Project is consistent with plan guidance contained in the TVAP, TRPA Regional Plan and City General Plan, which achieve environmental improvement and maintain environmental threshold carrying capacities. Since no changes to existing policies regarding habitats, special status plant or animal communities, or to cultural, historical, and archeological resources are proposed by the Project, and federal, state, and TRPA protections are already in place, construction of the Project would not result in the degradation of these resources.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.21-2. Does the Project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (TRPA 21b)

The TVAP implements the TRPA Regional Plan's policies, ordinances, and land use controls designed specifically to achieve long-term environmental goals, and the City's policies, ordinances, and land use controls which are also designed to achieve long-term goals and guide City development over a period of decades. The TVAP and the Project implement these policies, which promote concentrating development and redevelopment in urban centers, such as the Mixed-Use Corridor, combined with transfer of land coverage and development rights from sensitive lands and lands more distant from community center, and restoration of those areas (TRPA 2012a). The Project is consistent with this long-term goal and helps achieve long-term goals, such as increasing affordable housing.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.21-3. Does the Project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environmental is significant?) (TRPA 21c)

The adopted TVAP is a collection of both short- and long-term goals, policies, and measures designed to guide the development of the plan area and support the Region in attaining environmental thresholds and other important objectives. These goals, policies, and measures are inherently cumulative in nature as they are applied over a long-term basis, for the planning area as a whole, and in compliance with City and TRPA goals, policies, measures, and thresholds. The Project does not propose new policies or alterations to existing policies that would be cumulatively considerable. Cumulative projects contemplated in the RPU EIS (TRPA 2012a) include Environmental Enhancement, Land Management Plans, TTD/TMPO projects and programs, and other development projects. These projects and programs also apply to the TVAP, and therefore, the Project area. Other probable future projects in the south shore vicinity include the TCAP and B/ATCP amendments to amend the TCAP boundary to incorporate the Beach Retreat and Lakeshore Lodge properties, the US 50 South Shore Community Revitalization Project (e.g., Loop Road), the Tahoe Douglas Visitor's Authority Tahoe South Events Center Project, and other housing projects including Pioneer Trail/Ski Run, and 2070 Lake Tahoe Blvd.

Air Quality/GHG Emissions

Although development could occur that could increase development density from existing conditions, this is a localized impact and would not contribute to any increase in overall growth or associated greenhouse gas (GHG) emissions beyond what was considered in the Regional Plan or City General Plan.

Traffic

Although development would increase land use density, and thereby increase vehicle trips, the area is small compared to the existing south shore built environment, and the number of units that could be developed is consistent with TVAP buildout assumptions. Consistent with the Regional Plan, for new trips that are generated (regardless of whether they are associated with an affordable housing project), TRPA requires an applicant to offset the potential regional traffic and air quality effects of the new trips by requiring an applicant either to: (1) contribute to the Air Quality Mitigation Fund, or (2) implement regional and cumulative mitigation measures equivalent or greater in cost than the calculated Air Quality Mitigation Fee. Regional and cumulative mitigation measures may include, but are not limited to transit facility construction; transportation system management measures (such as bicycle and pedestrian facilities and use of alternative fuels in fleet vehicles); or transfer and retirement of offsite development rights. The air quality mitigation fee amount would be assessed in accordance with the current or a future mitigation fee schedule in the TRPA Rules of Procedure. As such, cumulative development that includes the Sugar Pine Village would not result in significant impacts.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.4.21-4. Does the Project have environmental impacts which will cause substantial adverse effects on human being, either directly or indirectly? (TRPA 21d)

The Project area is surrounded by urban land uses, located in the TVAP town center and consistent with land use and design standards of the TC-MUC District. Therefore, the potential for adverse impacts to human beings is very low.

Environmental Analysis: *No Impact.*

Required Mitigation: **None.**

5.5 CERTIFICATION [TRPA ONLY]

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Tahoe Regional Planning Agency

Date

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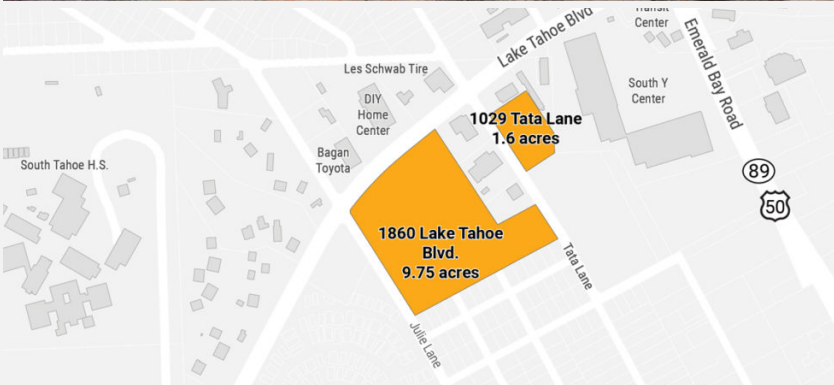
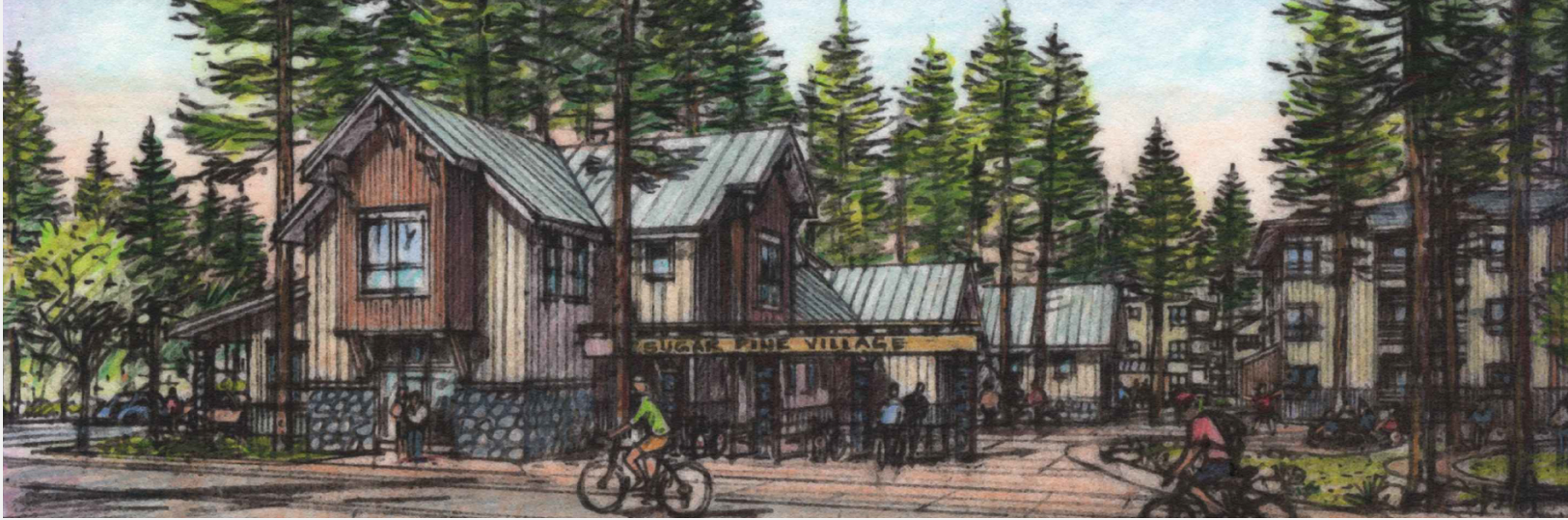
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APPENDIX A LSC TRAFFIC AND PARKING REPORTS



RELATED COMPANIES OF CALIFORNIA

SUGAR PINE VILLAGE AT SOUTH LAKE TAHOE

Traffic and Air Quality Analysis

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Sugar Pine Village
Traffic and Air Quality Study

Prepared for:

The Related Companies of California, LLC

Prepared by:

LSC Transportation Consultants, Inc.

Project Number # 207420

November 12, 2020

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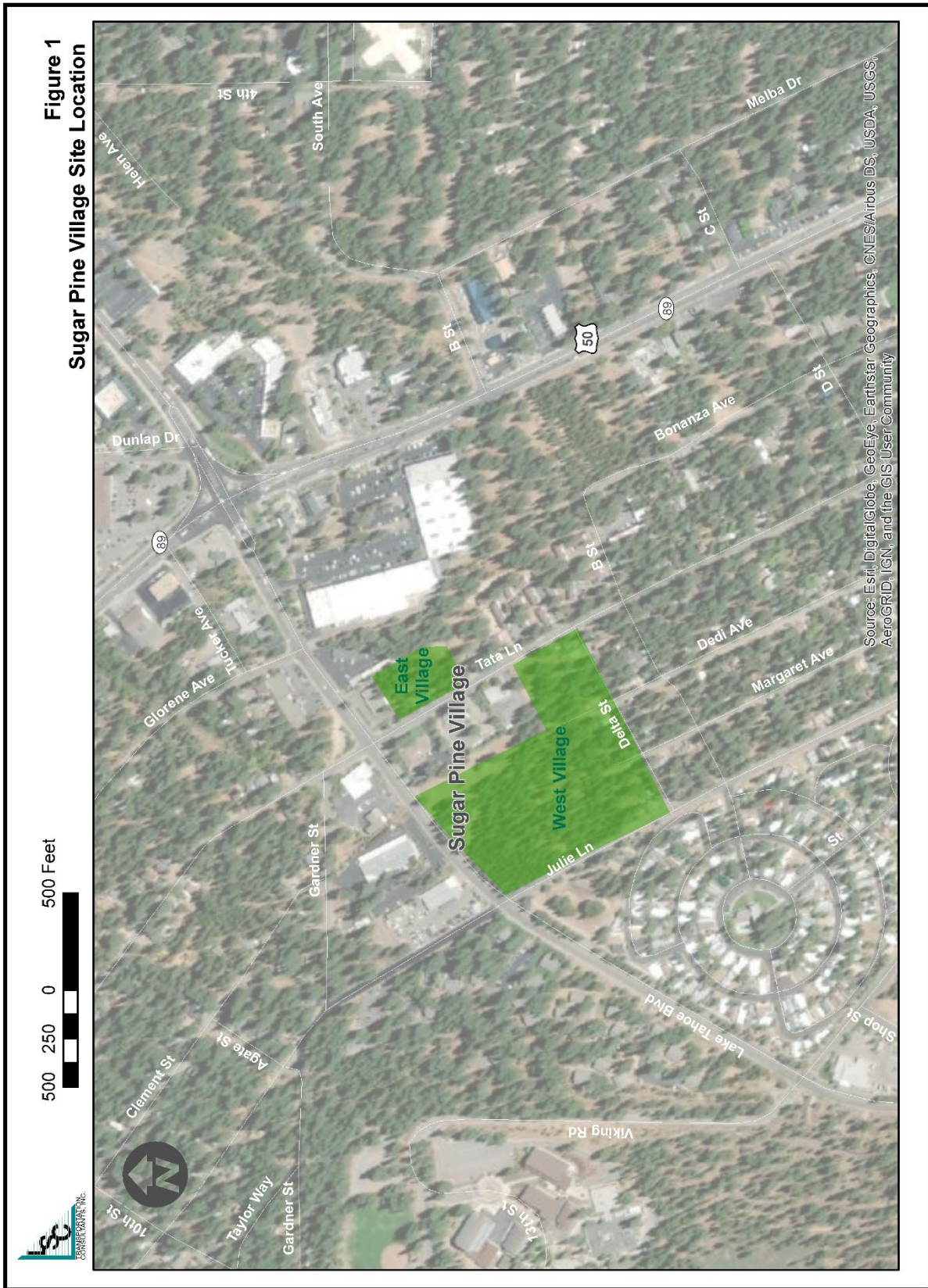
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The Sugar Pine Village Affordable Housing project is split into two areas. The “West Village” is located between Julie Lane and Tata Lane, south of Lake Tahoe Boulevard in South Lake Tahoe, California. The “East Village” is located just east of Tata Lane and south of Lake Tahoe Boulevard in South Lake Tahoe, California. The West Village would consist of 210 Residential Units as well as a Community Hall, a Property Management Building, some small offices, and a Child Care Center. The East Village would be composed of 38 Residential Units. The site location is shown in Figure 1.

The purpose of this report is to present an analysis of the traffic and air quality impacts associated with the proposed project. Initially, existing traffic and air quality conditions near the proposed site are discussed. The proposed land uses associated with the project are then assessed in terms of the generation of new traffic. An appropriate distribution of traffic onto the adjacent roadway system is then identified. Using this distribution pattern, the forecasted generated trips are assigned to the nearby roadway system to identify the impact on intersection Level of Service (LOS). In addition, the following areas of impact are evaluated:

1. Intersection queuing analysis
2. Analysis of the need for new or expanded turn lanes at the study intersections
3. Review of the proposed site access conditions
4. Project impact on regional VMT (qualitative)
5. Air quality impacts

Finally, the need for potential transportation-related mitigation measures are identified.



The following discussion presents information regarding existing transportation conditions in the study area.

ROADWAY CHARACTERISTICS

The project site is served by the following existing roadways:

US Highway 50 is the primary highway serving Lake Tahoe's south shore. As part of its transcontinental route, within the region it connects Carson City on the east with Sacramento on the west. Between the "Y" and Stateline, Nevada, it is the primary east-west roadway, turning south at the "Y" towards Echo Summit. Within the vicinity of the site, this undivided highway contains two travel lanes in each direction plus a central two-way left-turn lane (TWLTL), and exclusive left-turn lanes at major intersections.

Lake Tahoe Boulevard is generally a four-lane roadway that connects the "Y" to N. Upper Truckee Road. However, the segment of Lake Tahoe Boulevard between Viking Road and Glorene Avenue is currently striped with a three-lane configuration, including two travel lanes and a central two-way left-turn lane (TWLTL). Lake Tahoe Boulevard provides a means of travel to the high school. Within the vicinity of the project site, the posted speed limit on Lake Tahoe Boulevard is 35 miles per hour.

Tata Lane is a two-lane roadway that intersects Lake Tahoe Boulevard and provides access to primarily residential neighborhoods to the north and south, as well as government offices to the south. The posted speed limit on Tata Lane is 25 miles per hour.

Julie Lane is a two-lane roadway that intersects Lake Tahoe Boulevard and provides access to residential neighborhoods to the north and south. It also provides an alternative access to the high school. The posted speed limit on Julie Lane is 25 miles per hour.

Planned Major Roadway Projects

The City's approved Lake Tahoe Blvd Bike Trail Project modifies the roadway network. This project is currently under construction. The segment of Lake Tahoe Boulevard between Viking Road and Glorene Avenue has been re-striped to provide a reduced (three-lane) configuration, including two travel lanes and a central two-way left-turn lane (TWLTL). As a part of this City Project, a new Class I trail will be constructed along the south side of Lake Tahoe Boulevard, between Viking Road and the Transit Center at the Y. This study addresses conditions in the study area assuming completion of the Lake Tahoe Blvd Bike Trail Project under existing year conditions.

EXISTING TRAFFIC VOLUMES

This study is based on typical (pre-Covid-19 pandemic) school-season traffic conditions. Continuous turning-movement counts were conducted by the City at the Lake Tahoe Boulevard/Viking Road study intersection from 6:45 AM to 5:30 PM on Tuesday, May 3, 2016 (during the school season). The AM peak hour occurred from 7:30 AM to 8:30 AM, and the PM peak hour occurred from 2:30 PM to 3:30 PM. For purposes of this study, an average annual growth rate of 1.7 percent was applied to the volumes to

reflect 2020 conditions. This adjustment was derived based upon a review of Caltrans traffic volumes on US 50 south of and east of its junction with SR 89 North (the closest available count location) for the years 2014-2018. AM and PM turning-movement Counts at the Lake Tahoe Boulevard/Julie Lane and Lake Tahoe Boulevard/Tata Lane intersections were performed in September 2020. Because of the Covid-19 pandemic, through volumes at these intersections are lower than they would be under normal school-season conditions. The eastbound and westbound through volumes were adjusted based on the counts at Lake Tahoe Boulevard/Viking Road. The resulting 'existing no project' peak-hour traffic volumes are shown in Figure 2.

EXISTING TRANSIT CONDITIONS

Transit services in the South Shore area are provided through the Tahoe Transportation District. The bus services in this area are Local South Shore Service. South Shore Daily, Routes 55 and 50 services the area where the project is located. Route 50 runs through South Lake Tahoe. It serves the U.S. 50 corridor between Kingsbury Transit Center in the east, the Stateline Transit Center in the casino core and the "Y" Transit Center in the west. It operates between 6:30 AM and 8:28 PM, providing two runs per hour in each direction between the 8 AM and 5 PM hours and hourly service in other times. Route 55 connects the Kingsbury Transit Center on the east with the South Y Transit Center on the west but serves areas south of the U.S. 50 corridor (such as Lake Tahoe Community College) between the South Y Transit Center and Stateline Transit Center. This route operates hourly between 6:00 AM and 6:50 PM.

Existing bus stops are conveniently located along Julie Lane, D Street and Lake Tahoe Boulevard within the vicinity of the project site.

EXISTING BICYCLE AND PEDESTRIAN CONDITIONS

Bicycle Facilities

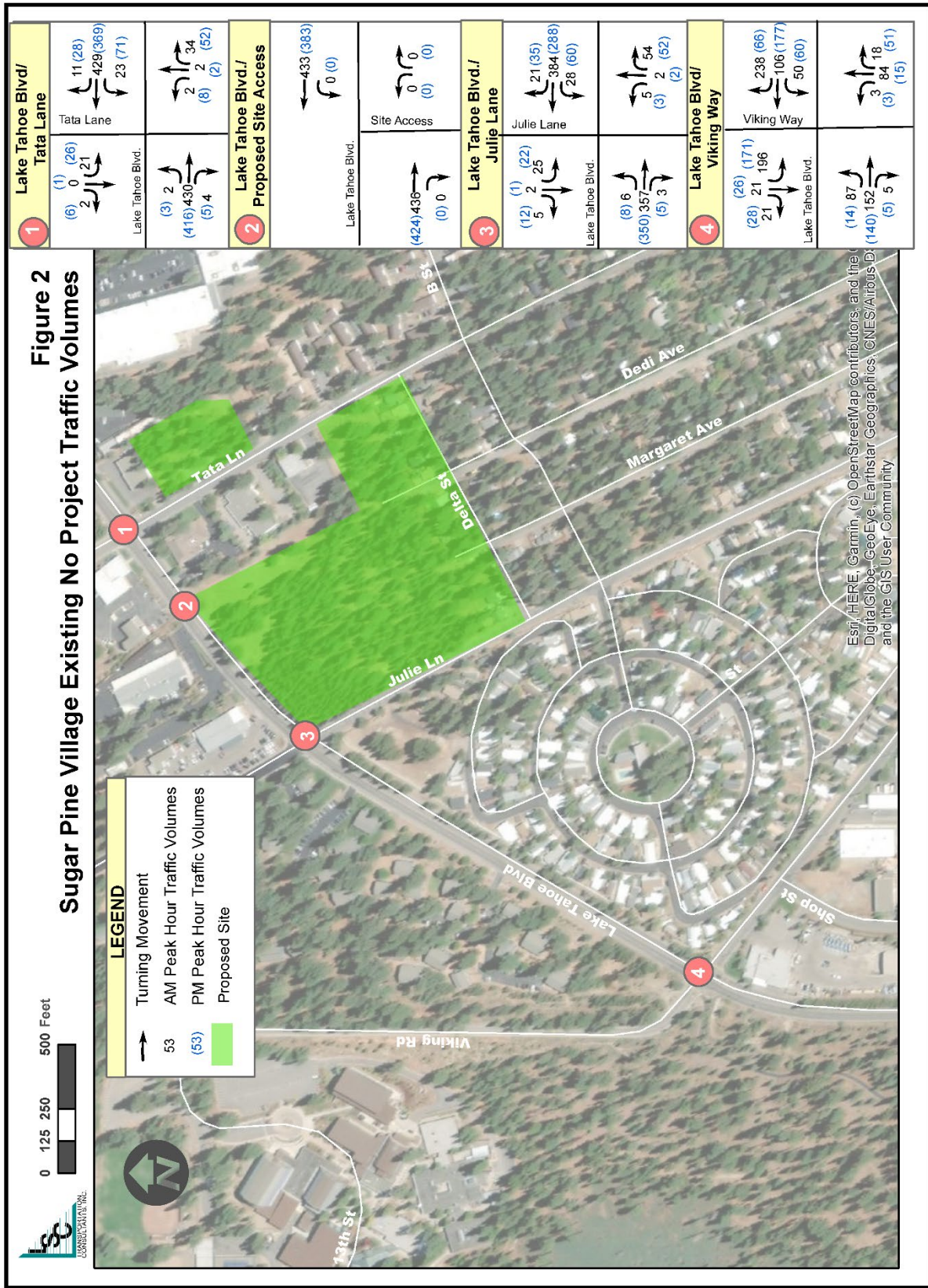
Bicycle paths and bicycle lanes are provided in the vicinity of the project. A Class I bikeway (bike path) can be found along Lake Tahoe Blvd from Viking Road to Sawmill Road. Class II bikeways (bike lanes) can be found along Lake Tahoe Blvd from D Street to the "Y."

Pedestrian Facilities

Within the vicinity of the site, sidewalks are provided along portions of the North side of Lake Tahoe Blvd, and along the East and West sides of Tata Lane. Crosswalks are provided along the East, North and South side of the Lake Tahoe Boulevard/Viking Road/D Street intersection. Though not currently striped, crosswalks are to be striped along the North and South sides of the Lake Tahoe Boulevard/Tata Lane and Lake Tahoe Boulevard/Julie Lane intersections in accordance with the Lake Tahoe Boulevard Bike Trail Project.

EXISTING AIR QUALITY CONDITIONS

Several important factors determine local and regional air quality, with the most critical being the quantity, type, and location of pollution sources. Climatic conditions, such as wind speed and direction, temperature gradients, and inversions and precipitation interact with the physical features of the landscape to determine the movement and dispersion of air pollutants.



Climate

The Lake Tahoe Air Basin is surrounded by various mountain ranges within the Sierra Nevada. The Tahoe Basin's climate is cool and dry in the summer and cold and wet in the winter. Temperatures can vary from a daily mean of 60 degrees Fahrenheit (15.6 degrees Celsius) in the summer to about 20 degrees Fahrenheit (-6.7 degrees Celsius) in the winter. Diurnal temperature ranges combine to form characteristics which affect air quality on a daily and seasonal basis. Temperature inversions within the region are generally caused by nighttime cooling of the land surface, which occurs at a faster rate than the cooling of the overlying air. These inversions can trap air pollutants near their source by limiting vertical mixing. These conditions occur most frequently in the winter with good ventilation causing weaker, less persistent inversions during the summer.

The enclosed nature of the basin and the large diurnal temperature range combine to form specific air basin characteristics which affect air pollution concentrations on a daily and seasonal basis. Relevant to the present discussion are the issues of mixing height and temperature inversions. The "mixing height" is the height or thickness of the air blanket available for dispersion of airborne pollutants emitted near the ground surface.

Normally, air temperature decreases with an increase in elevation. When a "temperature inversion" occurs, however, temperatures within a layer of air increase with height. The two issues are related in that the presence of a temperature inversion reduces or lowers the mixing height normally available, thereby lessening the dispersion potential for pollutants in the air basin. Inversions will trap pollutants near their emission source by precluding vertical mixing processes from dispersing the pollutants. Consequently, potential for high pollutant concentrations is greatest during strong, persistent, low level radiation inversion conditions, which generally occur in the Lake Tahoe region during the winter months.

In the Lake Tahoe Air Basin, inversions are generally caused by nocturnal radiational cooling of the land surface, which occurs at a rate slower than the cooling of the overlying air. During summer months, the morning inversion is broken up by strong surface heating, usually by 9:00 AM to 10:45 AM. Thus, by early morning, mixing heights have typically increased to over 5,000 feet with strong vertical mixing. By mid-evening, the inversion slowly begins to form again. During winter months, surface heating is less pronounced and the morning inversion may persist until noon (~50 percent of the time) or later. Consequently, the Lake Tahoe Basin exhibits a high potential for air pollution during the early morning hours, especially during the winter.

Standards and Thresholds

Federal, State, and regional standards exist for ambient air quality in the Tahoe Basin. In addition to these standards, TRPA has also established thresholds and ordinances to regulate air quality standards in the Tahoe Basin. The various Federal, State of California, and TRPA standards are listed in Table 1.

Pollutants

The main pollutants of concern in the Tahoe region are: ozone (O₃), carbon monoxide (CO), oxides of nitrogen (NO_x), coarse particulates (PM₁₀) and fine particulates (PM_{2.5}). The major pollutant sources are automobiles, combustion heaters, suspended roadway dust, and upwind areas. Increases in these pollutants afford reduced visibility and higher air-related health risks, especially for the elderly and individuals with respiratory ailments. Also, concern has been expressed regarding the contributions from atmospheric deposition (mainly nitrates) toward the accelerated eutrophication of Lake Tahoe.

TABLE 1: Applicable Ambient Air Quality Standards

Pollutant	Averaging Time	National Standards ²		California Standards ¹	TRPA Standards
		Primary ^{3,5}	Secondary ^{3,6}	Concentration ³	Concentration
Ozone (O ₃) ⁸	1 Hour	No Standard	No Standard	0.09 ppm (180 µg/m ³)	0.08 ppm
	8 Hour	0.070 ppm (137 µg/m ³)	Same as Primary	0.070 ppm (137 µg/m ³)	No Standard
Carbon Monoxide (CO) (Lake Tahoe)	8 Hour	No Standard	No Standard	6 ppm (7 mg/m ³)	6 ppm
Nitrogen Dioxide (NO ₂) ¹⁰	Annual Arithmetic Mean	0.053 ppm (100 µg/m ³)	Same as Primary	0.030 ppm (57 µg/m ³)	Maintain NO _x emissions at or below 1981 levels
	1 Hour	100 ppb (188 µg/m ³)	No Standard	0.18 ppm (339 µg/m ³)	No Standard
Sulfur Dioxide (SO ₂) ¹¹	Annual Arithmetic Mean	0.030 ppm (for certain areas) ¹¹	No Standard	No Standard	No Standard
	24 Hour	0.14 ppm (for certain areas) ¹¹	No Standard	0.04 ppm (105 µg/m ³)	No Standard
	3 Hour	No Standard	0.5 ppm (1,300 µg/m ³)	No Standard	No Standard
	1 Hour	75 ppb (196 µg/m ³)	No Standard	0.25 ppm (655 µg/m ³)	No Standard
Particulate Matter (PM ₁₀) ⁹	Annual Arithmetic Mean	No Standard		20 µg/m ³	20 µg/m ³ note 15
	24 Hour	150 µg/m ³	Same as Primary	50 µg/m ³	50 µg/m ³ note 15
Fine Particulate Matter (PM _{2.5}) ⁹	Annual Arithmetic Mean	12 µg/m ³	15 µg/m ³	12 µg/m ³	12 µg/m ³
	24 Hour	35 µg/m ³	Same as Primary	No Standard	35 µg/m ³
Sulfates	24 Hour	No Standard	No Standard	25 µg/m ³	No Standard
Lead ^{12,13}	30-day Average	No Standard	No Standard	1.5 µg/m ³	No Standard
	Calendar Quarter	1.5 µg/m ³ (for certain areas) ¹²	Same as Primary	No Standard	No Standard
	Rolling 3-Month Average	1.5 µg/m ³	Same as Primary	No Standard	No Standard
Hydrogen Sulfide	1 Hour	No Standard	No Standard	0.03 ppm (42 µg/m ³)	No Standard
Vinyl Chloride ¹²	24 Hour	No Standard	No Standard	0.01 ppm (26 µg/m ³)	No Standard
Visibility Reducing Particles ¹⁴	8 Hour	No Standard	No Standard	See Footnote 14	Regional 156 km, 50% of the year 115 km, 90% of the year Sub-regional 78 km, 50% of the year 31 km, 90% of the year
<p>NOTES:</p> <p>California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM₁₀, PM_{2.5}, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.</p> <p>National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.</p> <p>5 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.</p> <p>6 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.</p> <p>8 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.</p> <p>9 On December 14, 2012, the national annual PM_{2.5} primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour PM_{2.5} standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standard of 15 µg/m³. The existing 24-hour PM₁₀ standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.</p> <p>10 To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.</p> <p>11 On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.</p> <p>12 The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.</p> <p>13 The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.</p> <p>14 In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.</p> <p>15 For regions within California</p>					
Source: <i>Ambient Air Quality Standards</i> , California Resources Board (5/4/16). TRPA 2017 Regional Plan.					

Ozone

Ozone (O₃) is one of a group of complex oxidants found in ambient air. Ozone is not directly produced by combustion, but rather is a secondary pollutant that results from high hydrocarbon levels. Automobile emissions represent the principal, although an indirect source of this pollutant. Ozone is not emitted directly into the air. It is produced by a series of photochemical (sunlight requiring) reactions involving hydrocarbons and oxides of nitrogen. To control ozone pollution, it is necessary to control emissions of all of these pollutants. Because ozone is a secondary pollutant it may not be particularly evident near pollution sources. Peak concentrations may be found miles downwind of source areas of precursor emissions (hydrocarbons and oxides of nitrogen).

Ozone is the primary constituent of what is commonly referred to as smog. It is an oxidant that can irritate eyes, nose, throat, and lungs and in relatively low concentrations can cause damage to vegetation. Ozone concentrations are typically quite low in the winter months but increase dramatically during the summer season. Ozone is classified as a secondary pollutant. This means that ozone is not directly emitted into the atmosphere by cars or factories but is produced by photochemical reactions between nitrogen oxides (NO_x) and reactive organic gases (ROG). Solar radiation is the driving force in this reaction. NO_x and ROG are referred to as “precursor pollutants.” Ozone levels are influenced by many factors, such as local precursor pollutant levels, ozone transport from metropolitan areas, solar radiation duration and intensity, inversion heights and strengths, vertical mixing, and wind patterns. Obviously, weather plays an important role in ozone formation. Although weather typically does not create pollution, it certainly can exacerbate an existing pollution problem. The Tahoe Basin is classified as impacted by overwhelming transport from upwind areas. The primary source of the area’s ozone pollution is from the greater Sacramento Area and the San Francisco Bay Area.

Carbon Monoxide

Carbon monoxide (CO) is a tasteless, odorless, and colorless gas, which is slightly lighter than air. It affects humans by replacing oxygen in the bloodstream and, therefore, reduces the availability of oxygen to the body. The principal source of carbon monoxide is motor vehicle emissions. Peak carbon monoxide concentrations occur when there is a strong nocturnal temperature inversion accompanied by heavy traffic congestions, especially with slow travel speeds. Combustion heaters also contribute to CO levels.

Existing traffic activity on arterial roadways through the Tahoe Basin may result in localized carbon monoxide (CO) hot spots during worst case conditions. However, CO levels monitored over the last few years have not exceeded federal or state standards. Although these areas or periods of high pollutant levels are of concern, they are not expected to result in constraints to development within the project area.

Oxides of Nitrogen

Oxides of nitrogen (NO_x), a precursor to the formation of ozone, are a source of atmospheric deposition of nitrogen to Lake Tahoe. Nitric oxide is a component of vehicle emissions and is typically converted to nitrogen dioxide in the atmosphere.

Particulate Matter 10

Airborne particulate matter (PM₁₀) is caused by a combination of sources including fugitive dust, combustion from automobiles and heating, road salt, and others. Constituents that comprise suspended particulates include organic, sulfate, and nitrate aerosols, which are formed in the air from emitted

hydrocarbons; also, other constituents are present such as chloride, sulfur oxides, and oxides of nitrogen. Particulates reduce visibility and pose a health hazard by causing respiratory and related problems. PM₁₀ continues to be the primary pollutant of concern within the Basin because of known high local emissions. Major contributors to the PM₁₀ problem are wood-burning stoves, forestry management burns, residential open burning, vehicle traffic and windblown dust. These problems can be relieved or exacerbated by meteorology, for example, winds dispersing or inversions concentrating air pollutants. The Tahoe Basin is subject to strong inversions and stagnant conditions in the wintertime. Those conditions, coupled with intensive residential wood burning, may result in very high PM₁₀ levels.

Particulate Matter 2.5

In July 1997, the United States Environmental Protection Agency (EPA) promulgated a new particulate matter standard that addressed particles smaller than 2.5 microns, or PM_{2.5}. The PM_{2.5} standard is 15 micrograms per cubic meter based on an annual arithmetic mean, and 35 micrograms per cubic meter based on a 24-hour average. The PM_{2.5} standard complements the existing Federal and State standards of PM₁₀. Sources of PM_{2.5} emissions, or fine particles, originate from fuel combustion from a variety of sources, such as motor vehicles, power generating stations, other industrial facilities, and residential fireplaces and wood-burning stoves. Fine particles also form from the interaction of chemicals, such as sulfur dioxide, nitrogen oxides, and volatile organic compounds with other compounds in the air.

Attainment Designations

Air quality in the Lake Tahoe Air Basin is in attainment of the standards for most pollutants. As shown in Table 2, the basin meets (or is unclassified for) all of the National standards. The Lake Tahoe Air Basin, however, is in non-attainment for particulate matter (PM₁₀) as of 2019. It should be noted that almost every county in California is also in non-attainment with the State PM₁₀ standard. Based on the *2015 Tahoe Regional Planning Agency Threshold Evaluation Report*, areas of Lake Tahoe were in non-attainment for Particulate Matter (PM₁₀) and 8-hour Ozone standards.

TABLE 2: Lake Tahoe Air Basin Attainment Designations

Pollutant	Federal	State	TRPA
Ozone (8 hour)	Unclassified/Attainment	Attainment	Non-attainment
Carbon Monoxide	Unclassified/Attainment	Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment	Attainment
Sulfur Dioxide	Unclassified/Attainment	Attainment	–
Particulate Matter (PM10)	Unclassified	Non-attainment	Non-attainment
Particulate Matter (PM2.5)	Unclassified/Attainment	Attainment	Attainment
Sulfates	–	Attainment	–
Lead	Unclassified/Attainment	Attainment	–
Hydrogen Sulfide	–	Unclassified	–
Visibility	–	Unclassified	Attainment

Source: California Air Resources Board Ambient Air Quality Standards and Area Designations (2019).

Source: Tahoe Regional Planning Agency (TRPA) Thresholds Report, 2015.

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Chapter 3

Trip Generation, Distribution, and Assignment

TRIP GENERATION

The first step in the analysis of future traffic impacts is to prepare an estimate of the number of trips generated by the existing site and the proposed project. Trip generation is the evaluation of the number of vehicle-trips that will either have an origin or destination at the project site. Daily Vehicle-Trip Ends (DVTE) and Peak Hour Vehicle-Trip Ends (PHVTE) need to be determined in order to analyze the potential impacts from the proposed project.

Full Buildout includes construction of 210 multi-family units in the West Village and 38 multi-family units in the East Village, for a total of 248 dwelling units. In addition, the West Village would also include construction of a Community Hall, a property management building, non-profit offices and a childcare center. The trip generation analysis for the proposed project land uses is summarized in Table 3.

Standard daily trip generation rates are provided in the Tahoe Regional Planning Agency's (TRPA) *Trip Table* (TRPA, 2019) and peak-hour rates are provided in the Institute of Transportation Engineers (ITE) *Trip Generation, 10th Edition Manual* (ITE, 2017). These standard rates are shown in Table 3. The ITE "Affordable Housing" land use category only has two data points for the AM and PM peak hours. The ITE cautions about using a small sample size, as the results can be skewed. Due to this fact, and considering that there is local data available, the ITE affordable housing trip rates are not used for this analysis.

The proposed Community Hall will be used for on-going events and programs specific to Sugar Pine Village and will also be available to residents for private events. Large events (such as weddings) are not anticipated. As all event attendees would make trips internal to the project site, it is only necessary to estimate the trip generation of the employees associated with the Community Hall. The following assumptions are made about the Community Hall employees:

- A total of 2 employees are assumed to report to the Community Hall on a day with an event. These employees are in addition to the employees that typically report to work at the on-site property management offices.
- Both employees are assumed to arrive during the PM peak hour.

Local Trip Generation Data

Given the importance of traffic issues in the Tahoe/Truckee Region, there is a concern that the standard ITE trip generation rates (based on nationwide observations, much of which are made in larger urban areas) do not necessarily reflect traffic generation characteristics of the Tahoe/Truckee area. This analysis uses ITE trip generation rates, which are supported by local data as described below. An analysis of trip generation rates in the North Tahoe/Truckee area was recently conducted by LSC (under the direction of Placer County) as an element of the North Tahoe Resort Triangle Transportation Plan. Traffic, bicyclist, and pedestrian counts were conducted at lodging, multi-family residential and single-family residential sites. Incorporating the locally observed trip generation rates into the trip generation analysis for the

TABLE 3: Sugar Pine Affordable Housing Trip Generation

					Trip Generation Rates ¹							Reduction for Internal Trips	Reduction for External Non- Auto Access	Vehicle Trips at Site Driveways								
Description	Quantity	Units	ITE Land Use Category	ITE Land Use Code	Daily	AM Peak Hour			PM Peak Hour					Daily	AM Peak Hour			PM Peak Hour				
						In	Out	Total	In	Out	Total				In	Out	Total	In	Out	Total		
Sugar Pine Village West (West Village)																						
Multi Family Residence	210	DU	Multi Family Housing (Mid-Rise)	221	5.44	Fitted Curve			Fitted Curve			5%	20%	868	17	57	74	54	33	87		
Community Hall - Patrons	1.95	KSF	Recreational Community Center	495	28.82	1.16	0.60	1.76	1.09	1.22	2.31	100%	N/A	0	0	0	0	0	0	0		
Community Hall - Employees	2	Employees	Recreational Community Center									0%	0%	4	0	0	0	2	0	2		
Property Management and Non-Profit Offices	3.6	KSF	Small Office Building	712	16.19	1.59	0.33	1.92	0.78	1.67	2.45	3%	10%	51	5	1	6	3	5	8		
Child Care Center	2.25	KSF	Day Care Center	565	47.62	5.83	5.17	11.00	5.23	5.89	11.12	33%	5%	68	9	7	16	8	8	16		
Total Sugar Pine Village West														991	31	65	96	67	46	113		
Sugar Pine Village East (East Village)																						
Multi Family Residence	38	DU	Multi Family Housing (Mid-Rise)	221	5.44	Fitted Curve			Fitted Curve			5%	20%	157	3	11	14	12	7	19		
Total Project														1,148	34	76	110	79	53	132		
DU= Dwelling Unit. KSF = 1000 Square Feet																						
Note 1: TRPA daily rates follow ITE for these land uses. ITE Peak hour rate.																						
Source: LSC Transportation Consultants, Inc., Tahoe Regional Planning Agency (TRPA) Trip Table, and Institute of Transportation Engineers Trip Generation (10th Edition)																						

South Lake Tahoe Sugar Pine Affordable Housing project is considered herein for the proposed multi-family uses.

Daily trip generation data was only collected at one multi-family residential site (Frishman Hollow, a very-low-income housing development in Truckee that consists of 16 two-bedroom and 16 three-bedroom units). The observed daily trip rates were about 50%-70% higher than the standard ITE rates for multi-family housing. The *Trip Generation Handbook* provides guidance on the use of local data to estimate trip generation. Data should be collected at a minimum of three sites. Given that daily trip generation data is only available from one local site, the observed daily trip rates at Frishman Hollow do not appear to be applicable to the proposed project.

PM peak-hour trip generation data was only collected at one market-rate multi-family site (Lake Forest Glen condominiums in Tahoe City). The observed PM peak-hour rate was approximately 43% lower than the standard ITE rate for multi-family housing. Because Sugar Pine does not have any market-rate apartments, the observed PM Peak Hour rates at Lake Forest Glen do not appear to be applicable to the proposed project.

PM peak-hour trip generation data was collected at four existing low-income and very-low income housing developments, as follows:

- Kings Beach Housing Now (1-, 2- and 3-bedroom units)
- Sawmill Heights (studios, 1-, 2-, 3- and 4-bedrooms)
- Henness Flat (2- and 3- bedrooms)
- Frishman Hollow (2- and 3-bedrooms)

The observed weighted average weekday PM peak-hour trip rate (approximately 0.59 vehicle trips per unit) was about 5% higher than the standard ITE rate for multi-family housing (0.56). Developments with larger units had significantly higher observed trip rates than those with more studio or 1-bedroom units. As the proposed Sugar Pine units have units from studio to 3-bedroom units, all four study sites are considered. As the Sawmill Heights, Henness Flat and Frishman Hollow sites are not located within a close proximity to commercial/retail attractions, their trip rates would need to be adjusted downwards to reflect the higher level of non-auto trips at Sugar Pine Village. However, the Kings Beach Housing Now site is located in a Town Center area, similar to the proposed Sugar Pine site. The observed average weekday PM peak-hour trip rate at Kings Beach Housing Now was approximately 0.51 vehicle trips per unit, or about 9% lower than the standard ITE rate.

After the 20% non-auto reduction (discussed below) is applied to the ITE rate, the effective trip rate is approximately 0.45 vehicle trips per unit. The *ITE Trip Generation Handbook* suggests that the weighted average rate for the local counted sites may be appropriate for use if it's at least 15% higher or lower than the comparative ITE standard rate. As the observed trip rate at the Kings Beach site (0.51) is within 15% of the effective ITE rate for multi-family housing, the observed PM rates are not applied to the proposed units. Rather, the ITE "Multi-Family Housing" trip rates are determined to be the most appropriate.

Reduction for Internal Trips

The proposed project is a mixed land use development. As such, some persons generating a trip at the site would visit more than one of the uses at the site during the same “trip.” Common traffic engineering practice dictates that a reduction in total trip generation can be applied to the project, as some of the persons generating trips at one of the land uses can generate a trip at another of the included land uses without generating an additional vehicle trip at the common site access point(s). For instance, some trips generated by the proposed residential units would be made internal to the property, as some residents would also patron the childcare center. The portion of the persons generating a trip at a mixed-use development that would visit two or more uses within the development is based on the types of uses within the development, the size of the individual uses, and the distances between them.

The internal trips are estimated using the ITE’s internal trip capture estimation tool. However, a day care center is not included in the ITE tool. The project proponent expects that at least half of the day care students would reside in Sugar Pine Village, and potentially up to 100 percent if the childcare is subsidized. To remain conservatively high with respect to trip generation, this analysis assumes 33 percent of the trips to/from the childcare center are made internal to the site. The resulting percent reductions are shown in the middle column of the table.

Reduction for Non-Auto Trips

Non-auto trips, such as trips made to/from the site via bike, walking or transit, reduce the number of vehicle trips generated by the project. *2018 Summer TRPA Travel Mode Share Survey* data and 2016 and 2012 Winter Travel Survey data was reviewed. Data from the surveys conducted at locations near the South Y Commercial and South Tahoe Recreation areas was isolated and sorted into full time residents. Based on responses from this group (with 92 data points), the non-automotive trip percentage of residential and lodging land uses in the project area is approximately 27 percent. Due to the project’s relatively remote location, to be conservative in this analysis, reductions of 20%, 10% and 5% non-auto travel are applied to the residential units, the offices and the daycare center, respectively.

Trip Generation at Site Driveways

Multiplying the land use quantities by the trip rates and applying reductions for non-auto trips yields the vehicle trips generated at the site driveways for proposed project conditions. As shown in Table 3, the proposed land uses are forecasted to generate a total of approximately 1,148 one-way daily vehicle trips (DVTE) at the site driveways, including 110 AM peak-hour vehicle-trips (34 inbound plus 76 outbound) and 132 PM peak-hour vehicle-trips (79 inbound plus 53 outbound).

TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of site-generated trips is defined based upon the following:

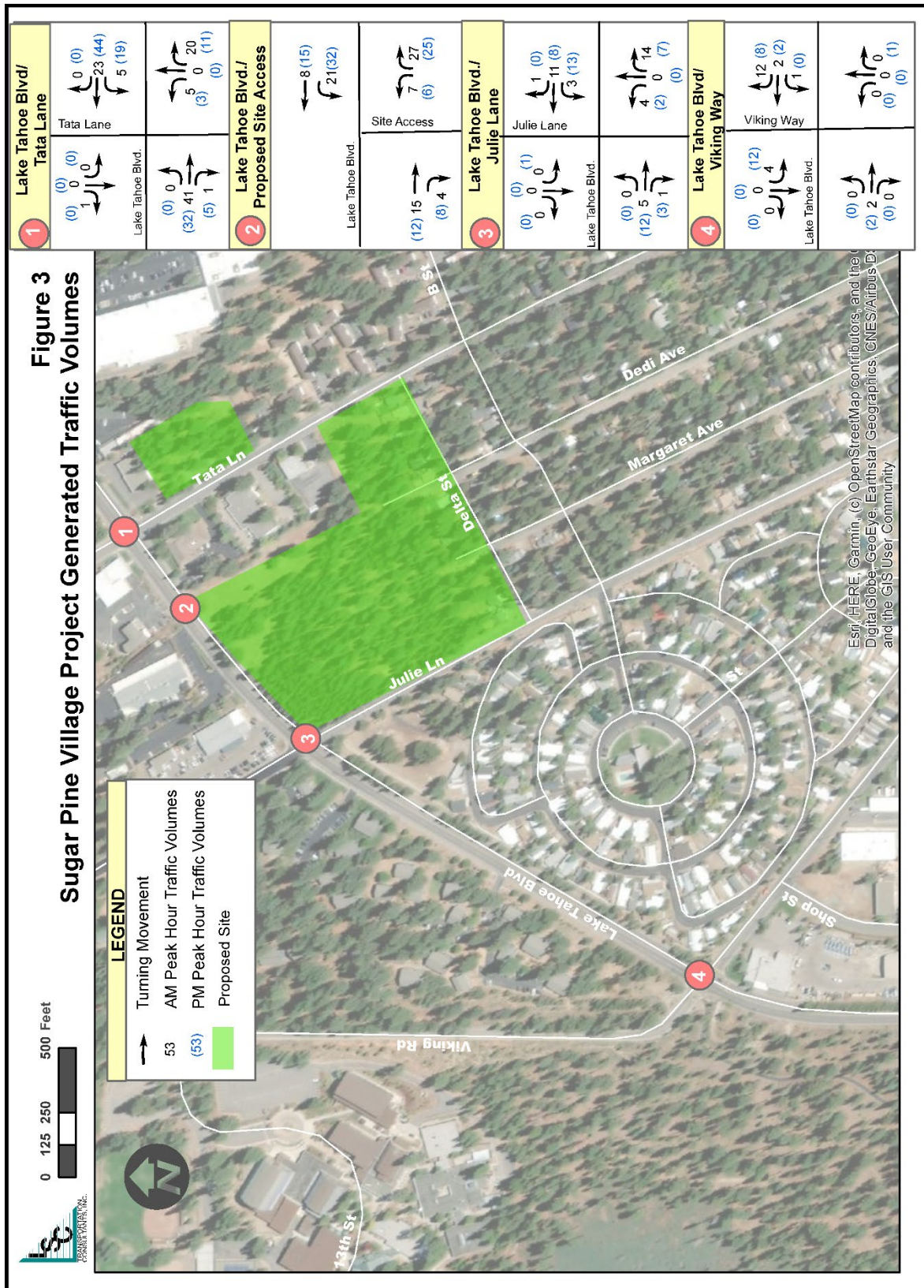
1. The site’s location relative to complementary land uses and regional access points.
2. The observed pattern of existing traffic movements.
3. The type of traffic generated. (Residential and Commercial.)

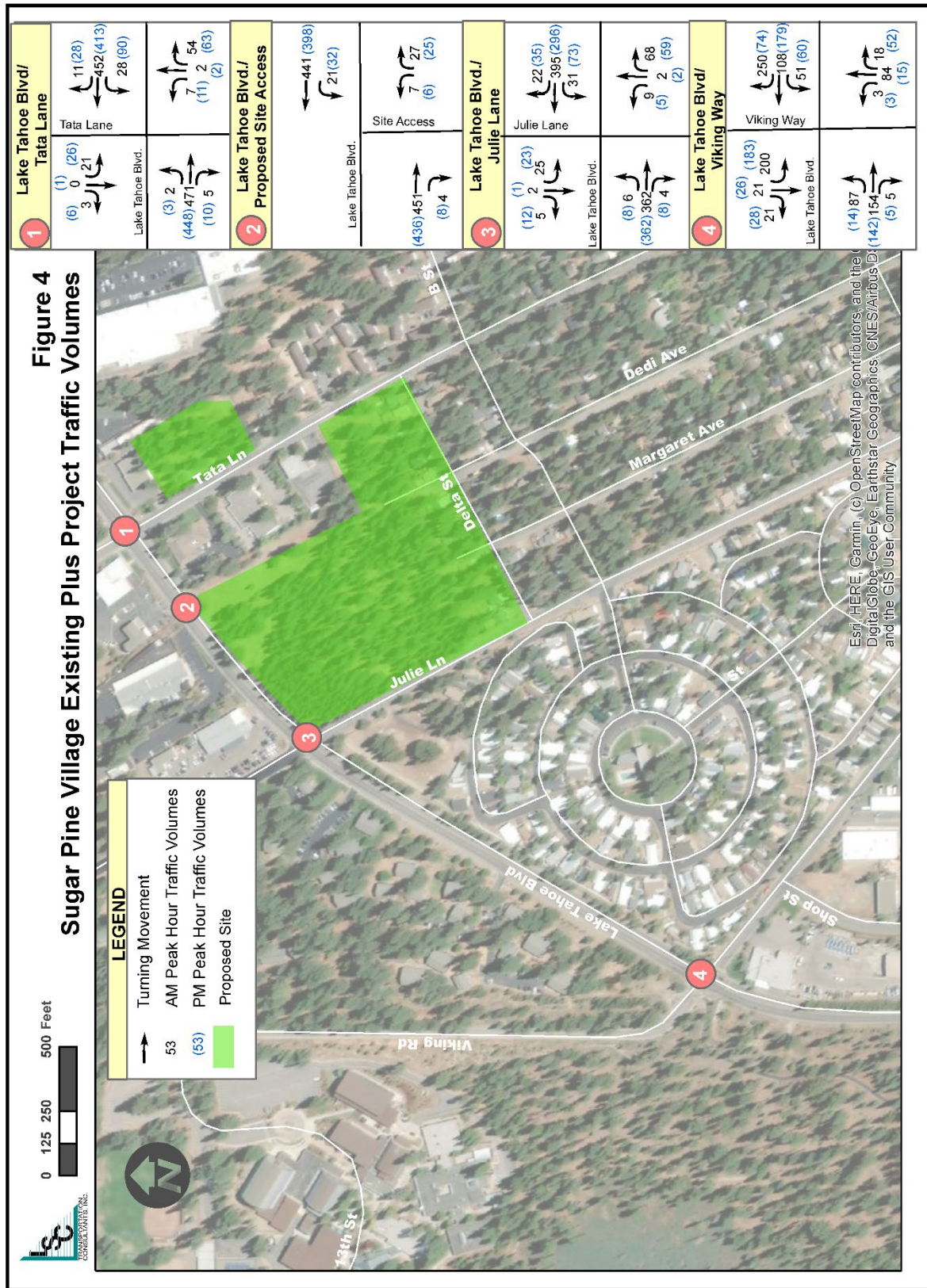
Trip distribution patterns for vehicle trips made to/from Sugar Pine Village are estimated for both the residential and commercial uses, and the results are shown in Table 4.

TABLE 4: Sugar Pine Village - Trip Distribution

Origin/Destination	Percent of Residential Project Trips	Percent of Commercial Project Trips
SR 89, north of the Y	4%	8%
US 50, east of the Y	46%	43%
SR 89/US 50, south of the Y	20%	22%
Lake tahoe Blvd, between Tata and the Y	9%	10%
Tata Lane, north of Lake Tahoe Blvd	1%	2%
Julie Lane, north of Lake Tahoe Blvd	1%	2%
Viking Road, south Tahoe High School	17%	5%
D Street, south of Lake Tahoe Blvd	1%	3%
Lake Tahoe Blvd, west of Viking Rd	1%	5%
Total	100%	100%

The site-generated traffic volumes are assigned through the study intersections by applying the distribution percentages to the peak-hour vehicle trips. The resulting AM and PM peak-hour traffic volumes estimated to be generated by the full buildout of the project are shown in Figure 3. The project-generated peak-hour intersection turning movement volumes are then added to the “no-project” volumes, yielding the ‘existing with project’ peak-hour intersection traffic volumes presented in table 1 and Figure 4.





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LEVEL OF SERVICE

LOS is a quantitative and qualitative measure of traffic conditions on isolated sections of roadway or intersections. LOS ranges from “A” (with no congestion) to “F” (where the system fails with gridlock or stop-and-go conditions prevailing). Detailed LOS definitions are included in Appendix A. As is the standard for traffic engineering analyses, intersection LOS is analyzed based upon the procedures presented in the *Highway Capacity Manual* (Federal Highways Administration, 2016) using the Synchro software application (Version 10.3, Trafficware). The LOS calculations are contained in Appendix B for further reference.

LOS Standards

TRPA LOS Standards

The LOS standards for the Lake Tahoe Basin, established by the Tahoe Regional Planning Agency (TRPA), are set forth in the 2019 Regional Transportation Plan with the intent that the Region’s highway system and signalized intersections during peak periods shall not exceed the following:

1. LOS C on rural scenic/recreational roads,
2. LOS D in rural developed areas,
3. LOS D on urban roads, or
4. LOS D for signalized intersections - LOS E may be acceptable during peak periods not to exceed four hours per day

The Regional Transportation Plan Mobility 2035 (TMPO/TRPA, 2012) also states that: “These vehicle LOS standards may be exceeded when provisions for multimodal amenities and/ or services (such as transit, bicycling, and walking facilities) are adequate to provide mobility for users at a level that is proportional to the project-generated traffic in relation to overall traffic conditions on affected roadways.” (pp. 2 – 10). While the Tahoe Regional Planning Compact looks to “reduce the dependency on the private automobile”, there are currently no adopted requirements or standards regarding the quality of service of other travel modes (i.e. transit, biking, or walking) that could potentially reduce the demand on the roadway system.

The TRPA does not have a specific adopted standard for unsignalized intersections.

Tahoe Valley Area Plan

Level of Service Policy T-1.1 in the Tahoe Valley Area Plan states:

Strive to maintain a level of service (LOS) D or better on all arterial and collector roads, and signalized intersections. This LOS standard may be exceeded during peak periods, not

to exceed 4 hours per day when provisions for multi-modal amenities and/or services (such as transit, bicycling, and walking facilities) are adequate to provide mobility for users (*Tahoe Valley Area Plan*).

City LOS Standards

Policy TC-1.2 in the South Lake Tahoe General Plan sets forth that the City shall establish a minimum LOS standard of “D” for all City streets and intersections. Up to four hours per day of LOS “E” shall be considered acceptable. LOS shall be considered based on average delay for the intersection as a whole for signalized intersections, and for the worst approach for intersections controlled by stop signs or roundabouts. LOS shall be evaluated for a busy, but not peak, traffic day in the peak seasons.

Existing Year Intersection Level of Service

As shown in Table 5, all study intersections currently attain the LOS thresholds during the existing year condition without the project. The stop-controlled intersection of Lake Tahoe Blvd and Tata Lane operates at a LOS D. The stop-controlled intersection of Lake Tahoe Blvd and Julie Lane operates at a LOS C. The all-way stop-controlled intersection of Lake Tahoe Blvd/Viking Road/D Street operates at a LOS C.

With implementation of the proposed project, although average delays would increase by up to approximately 8.9 seconds per vehicle, the LOS would not degrade any intersection to an unacceptable level. Consequently, no LOS concerns are identified with the project.

Additionally, according to the TRPA 2045 Regional Transportation Plan, the US 50/SR 89/Lake Tahoe Blvd (the “Y”) intersection currently operates at an acceptable LOS C during the summer PM peak hour. The proposed project is estimated to generate approximately 89 trips through the Y intersection during the AM peak hour and 106 during the PM peak hour. This equates to an increase in the total intersection volume of less than 5 percent during the summer PM. Considering the relatively low level of traffic volumes generated by the proposed project, the project would not be expected to trigger any LOS concerns at the Y intersection. Consequently, LOS calculations are not performed at this intersection.

Table 5: Sugar Pine Village - Existing Intersection LOS Summary									
Intersection	Control Type	LOS Threshold	AM Existing		AM Existing		PM Existing		PM Existing
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	
Lake Tahoe Boulevard / Tata Lane	TWSC	D	25.4	D	29.7	D	28.3	D	37.2 E
Lake Tahoe Boulevard / Proposed Site Access	TWSC	D	0.0	A	12.5	B	0.0	A	12.3 B
Lake Tahoe Boulevard / Julie Lane	TWSC	D	22.5	C	24.2	C	19.4	C	21.5 C
Lake Tahoe Boulevard / Viking Way	AWSC	D	20.8	C	21.8	C	14.2	B	15.1 C
BOLD text indicates that LOS standard is exceeded. OVF = Overflow. Overflow indicates a delay greater than 200 seconds per vehicle, which cannot be accurately calculated using HCM methodology. TWSC = Two-Way Stop-Control; AWSC = All-Way Stop-Control NOTE 1: Level of service for signalized intersections is reported for the total intersection. NOTE 2: Level of service for roundabouts and other unsignalized intersections is reported for the worst movement. Source: LSC Transportation Consultants, Inc.									



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Chapter 5

Transportation Impacts

The project would generate approximately 1,148 new daily one-way vehicle trips, 110 AM peak-hour vehicle trips (34 inbound plus 76 outbound) and 132 PM peak-hour vehicle trips (79 inbound plus 53 outbound) at the site access driveways. The following areas of transportation impacts are evaluated in this section:

- Intersection Level of Service (LOS)
- Intersection Queuing Analysis
- Analysis of the Need for New Turn Lanes on Lake Tahoe Blvd
- Site Access Plans
- Vehicle Miles Traveled (qualitative discussion)
- Air Quality Impacts

INTERSECTION LEVEL OF SERVICE (LOS)

All intersections operate at an acceptable LOS with and without the project. As such, no LOS mitigation is required.

INTERSECTION QUEUING ANALYSIS

Traffic queues at specific intersections that exceed the storage capacity of turn lanes, or that block turn movements at important nearby intersections or driveways, can cause operational problems beyond those identified in the LOS analysis. The 95th-percentile traffic queue length (the queue length that is only exceeded 5 percent of the time) was reviewed at locations where queuing could potentially cause traffic concerns. Based on this review, no intersection queuing concerns are identified with implementation of the project.

TURN LANE WARRANTS

Traffic volumes at the site access intersections were reviewed regarding the need for new turn lanes along Lake Tahoe Boulevard. The need for new left-turn lanes at the project site driveways is evaluated using the American Association of State Highway Transportation Officials (AASHTO) guidelines. The warrant chart is contained in Appendix C. According to the chart, a westbound left-turn treatment is warranted for the 'Existing Plus Project PM' condition along Lake Tahoe Boulevard. As a TWLTL is currently provided, no additional turn lanes are necessary.

Right-turn lane warrants are based on a comparison of right-turning vehicles compared to the total volume of advancing vehicles (traveling in the same direction). The right-turn lane warrant criteria chart is included in Appendix C. The peak-hour traffic volumes do not meet the warrant for the addition of a right-turn lane on Lake Tahoe Boulevard.

SITE ACCESS PLANS

First, driver sight distance conditions are evaluated at the site access points. Next, the proposed driveway spacing along Lake Tahoe Boulevard is evaluated. Finally, the operation of the TWLTL along Lake Tahoe Boulevard is reviewed.

Driver Sight Distance

Driver sight distance is evaluated at the existing and proposed access intersections. According to the Caltrans Highway Design Manual, there are two types of sight distance standards that should be met at driveways or intersections: stopping sight distance and corner sight distance. Corner sight distance requirements are meant to ensure that adequate time is provided for the waiting driver at an unsignalized intersection or driveway to either cross all lanes of through traffic, cross the near lanes and turn left, or turn right, without requiring through traffic to radically alter their speed. Corner sight distance requirements are based upon the need for a driver to discern a gap of up to 7.5 seconds in oncoming traffic to safely choose an adequate gap. The corner sight distance requirements are set forth in City of South Lake Tahoe Standard Drawing SD 14, which specifies corner sight distances of 330 feet based upon a design speed of 30 miles per hour and 440 feet based upon 40 miles per hour.

Stopping sight distance is the distance an oncoming driver on the major roadway needs to perceive an object in the travel lane (such as a turning vehicle), react to the object, and come to a safe stop. Based on the Caltrans Highway Design Manual, the stopping sight distance requirement for drivers approaching the site along residential neighborhood streets is 150 feet assuming a 25 miles per hour design speed, 200 feet assuming 30 miles per hour, and 300 feet for drivers on Lake Tahoe Boulevard assuming 40 miles per hour.

Driver Sight Distance at Proposed Site Access

The proposed driveways on Julie Lane and on Tata Lane are expected to provide adequate driver sight distance, so long as the final landscaping plans do not hinder the corner sight distance.

The driver sight distance evaluation assumes completion of the bike trail improvements along the south side of Lake Tahoe Boulevard. More than 500 feet of corner sight distance is estimated to be provided at the proposed driveway location, with implementation of the Lake Tahoe Boulevard Bike Trail Project improvements. This exceeds the minimum corner sight distance value of 440 feet. The stopping sight distance provided for drivers on Lake Tahoe Boulevard approaching the proposed site access is at least 400 feet from either direction. This exceeds the minimum stopping sight distance value of 300 feet. As such, adequate driver sight distance conditions are expected to be provided at the proposed driveway, so long as the final landscaping plans for the Lake Tahoe Boulevard Bike Trail Project do not hinder the corner sight distance.

Driver Sight Distance at Tata Lane

At least 450 feet of corner sight distance is estimated to be provided for drivers looking east from the northbound Tata Lane approach to Lake Tahoe Boulevard, with implementation of the Lake Tahoe Boulevard Bike Trail Project improvements. Looking west, one can see more than 500 feet of corner sight distance is estimated to be provided. As the corner sight distance exceeds the minimum value (440 feet),

no corner sight distance deficiencies are expected, so long as the final landscaping plans do not hinder the sight distance.

The stopping sight distance provided for drivers approaching Tata Lane on Lake Tahoe Boulevard is at least 400 feet in either direction. The minimum stopping sight distance value based on a speed of 40 miles per hour is 300 feet. As the minimum requirement is exceeded by at least 100 feet, adequate stopping sight distance is provided.

Driver Sight Distance at Julie Lane

At least 500 feet of corner sight distance is estimated to be provided for drivers looking east and west from the northbound Julie Lane approach to Lake Tahoe Boulevard, with implementation of the Lake Tahoe Boulevard Bike Trail Project improvements. As the corner sight distance exceeds the minimum value (440 feet), no corner sight distance deficiencies are expected, so long as the final landscaping plans for the bike trail improvements do not hinder the sight distance.

The stopping sight distance provided for drivers on Lake Tahoe Boulevard approaching Julie Lane is at least 400 feet in either direction. The minimum stopping sight distance value based on a speed of 40 miles per hour is 300 feet. As the minimum requirement is exceeded by at least 100 feet, adequate stopping sight distance is provided.

Driveway Spacing

The proposed driveway spacing along Lake Tahoe Boulevard is reviewed. According to the City's Standard Drawing #13, the minimum allowable distance between commercial driveways is 20 feet. Based on a review of the current site plans, the distance between the proposed driveway and the adjacent driveway on the east meets this requirement.

Additionally, according to the City's standards (*City of South Lake Tahoe Public Improvement and Engineering Standards*, Section 4.02, 2009), local streets and commercial driveways entering on opposite sides of any given street shall have their centerline directly opposite or shall be offset by at least 150 feet. The proposed driveway would be located about 30 feet west of the Les Schwab Tire Center driveway and about 85 feet east of the DIY Home Center driveway on the opposite side of Lake Tahoe Blvd (centerline-to-centerline distance). Ideally, the proposed driveway would be aligned with one of the DIY Home Center driveways. However, the potential for conflicts between vehicles turning left from the site driveway and the DIY Home Center driveway simultaneously is low, given the relatively low left-turn volumes exiting the site driveway, and considering that the large majority of traffic exiting the DIY Home Center uses its western driveway (which is located about 245 feet west of the proposed site driveway). The volumes exiting its eastern driveway are relatively low. Although the proposed driveway spacing is not ideal, there is low potential that this would result in an undue safety issue, considering the low volumes using the central two-way left-turn lane (TWLTL), the moderately low speeds along Lake Tahoe Boulevard, and the 3-lane cross section (as opposed to a 4-lane section).

Site Access Summary

In summary, a review of the site access plans indicates the following:

1. No driver sight distance concerns are identified at the site access points, so long as the Lake Tahoe Bike Trail improvements are constructed, and the final landscaping plans provide at least 440 feet of corner sight distance.
2. Although the proposed driveway spacing does not meet City standards, there is low potential that this would result in an undue safety issue.

VEHICLE MILES TRAVELED

VMT is a computed value which correlates to the degree of an area's reliance on the private automobile for trip-making. Impact on Vehicle Miles Traveled (VMT) within the Tahoe Region can best be established based upon project trip generation and estimated average trip lengths. The TRPA TransCAD Travel Demand Model provides a forecast of the number of trips made on the roadway network and the distance between trip origins and destinations for each trip purpose within the Basin. Total VMT is the sum of all these trip lengths.

According to the Screening Criteria in the TRPA's "Guidance for Assessment of Vehicle Miles Traveled (VMT) Impacts of Projects in the Tahoe Basin" (TRPA, April 14, 2020), a project is exempt from an in-depth VMT evaluation if all of the following conditions are true:

- The project is deed-restricted 100% "affordable" residential housing (to be used exclusively for lower-income households and for very low-income households).
- The project is located in a Town Center.
- The project utilizes parking rates less than the minimum parking rates established by the local authority, unless those minimum parking rates already incorporate reduced parking demand for affordable housing or other design or locational elements.

The first two conditions are true for the proposed project. Regarding the third condition, the City Code (the applicable Code) does not provide a parking rate for affordable housing units. The parking rate provided for "Multi-Family Dwellings" is 2 spaces per unit. The project is proposed to provide less than 2 spaces per unit. As such, the third condition is true. As the project meets all of the above conditions, it is considered exempt from quantitative VMT analysis, and no VMT mitigation is required.

AIR QUALITY IMPACT

It is necessary to determine the impact from the proposed project on air quality. This impact considers air pollutants important on a regional and local level (NO_x, CO, and PM). With regard to regional air quality concerns, Table 6 reflects the total daily emissions in the Tahoe Basin.

TABLE 6: Sugar Pine Village - Total Daily Emissions

Description	VMT Impact	Total Daily Emissions (Kilograms)			
		CO	NOx	PM10	PM2.5
Rate (grams per VMT)	-	7.82	0.84	0.14	0.09
Total Tahoe Basin	1,937,070	15,148	1,627	271	174

NOTE: Daily emissions results have been converted to Kilograms.
Sources: California Air Resources Board 2020 Emissions Data

Air quality data was reviewed to assess ambient air quality. Table 7 displays the highest pollutant concentration levels recorded in the Lake Tahoe Air Basin in 2018/2019. Levels of Ozone and PM₁₀ are recorded at this location. As shown, pollutant levels in Lake Tahoe are below all existing federal and TRPA standards but above state standards for PM₁₀.

TABLE 7: Lake Tahoe Air Basin - Pollutant Concentration Levels Comparison

Pollutant ⁽¹⁾	Standards in (ppm)			Highest Concentration in 2019/2018 in Lake Tahoe Air Basin ⁽²⁾
	Federal	State (CA)	TRPA	
1 Hr. Ozone	--	0.09 ppm	0.08 ppm	0.072 ppm
8 Hr. Ozone	0.07 ppm	0.07 ppm	--	0.065 ppm
PM10 24 Hour	150 µg/m3	50 µg/m3	--	144.3 µg/m3
P2.5 24 Hour	35 µg/m3	--	--	71.6 µg/m3
<u>% of Existing Standard</u>				
1 Hr. Ozone	--	80.0%	90.0%	
8 Hr. Ozone	92.9%	92.9%	--	
PM10 24 Hour	96.2%	288.6%	--	

Note 1: The pollutants listed are the only pollutant concentrations reported for this area.
Note 2: Ozone reported for 2019, most recent complete year. PM10 for 2018, as 2019 data unavailable.

Sources: California Air Resources Board, 2020

Pursuant to Chapter 65.2.4.D of the TRPA Code of Ordinances, an air quality mitigation fee is assessed to offset the potential traffic and air quality impacts associated with the project. TRPA requires that the air quality impact mitigation fee be paid for any project that results in an increase of daily vehicle trips in the Tahoe Basin. The current fees are assessed at a rate of \$325.84 per daily vehicle trip-end resulting from

new residential units, and \$36.20 per daily vehicle trip resulting from new commercial floor area. Multiplying the expected increase in daily residential trips (1,025) by \$325.84, plus the expected increase in daily commercial trips (123) by \$36.20, yields an estimated air quality mitigation fee of \$338,438.60.

MITIGATION MEASURES

The following mitigation measures are recommended to be implemented to offset the impacts of the proposed project:

1. The final landscaping plans for both the proposed project and the Lake Tahoe Boulevard Bike Trail Project improvements should provide at least 440 feet of corner sight distance.; and
2. Pursuant to Chapter 65.2.4.D of the TRPA Code of Ordinances, the project applicant shall pay an air quality mitigation fee of \$338,438.60.

Appendix A: LOS Descriptions

DESCRIPTIONS OF LEVELS OF SERVICE

The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level of service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with level of service A representing the best operating conditions and level of service F the worst.

Level of Service Definitions







In general, the various levels of service are defined as follows for uninterrupted flow facilities:

- **Level of service A** represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.
- **Level of service B** is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.
- **Level of service C** is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.
- **Level of Service D** represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
- **Level of service E** represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to “give way” to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.
- **Level of service F** is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level of service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form, and level of service F is an appropriate designation for such points.

Appendix B: LOS Output

HCM 6th TWSC
1: Tata Lane & Lake Tahoe Blvd

10/19/2020




Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	430	4	23	429	11	2	2	34	21	0	2
Future Vol, veh/h	2	430	4	23	429	11	2	2	34	21	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	478	4	26	477	12	2	2	38	23	0	2
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	489	0	0	482	0	0	1020	1025	480	1039	1021	483
Stage 1	-	-	-	-	-	-	484	484	-	535	535	-
Stage 2	-	-	-	-	-	-	536	541	-	504	486	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1074	-	-	1081	-	-	215	235	586	209	236	584
Stage 1	-	-	-	-	-	-	564	552	-	529	524	-
Stage 2	-	-	-	-	-	-	529	521	-	550	551	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1074	-	-	1081	-	-	210	229	586	190	230	584
Mov Cap-2 Maneuver	-	-	-	-	-	-	210	229	-	190	230	-
Stage 1	-	-	-	-	-	-	563	551	-	528	511	-
Stage 2	-	-	-	-	-	-	514	508	-	512	550	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.4			12.9			25.4		
HCM LOS							B			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	498	1074	-	-	1081	-	-	202				
HCM Lane V/C Ratio	0.085	0.002	-	-	0.024	-	-	0.127				
HCM Control Delay (s)	12.9	8.4	-	-	8.4	-	-	25.4				
HCM Lane LOS	B	A	-	-	A	-	-	D				
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.4				

HCM 6th TWSC
2: West Village Access & Lake Tahoe Blvd

10/19/2020

Intersection

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	436	0	0	433	0	0
Future Vol, veh/h	436	0	0	433	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	484	0	0	481	0	0







Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	484
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1079
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1079
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1079	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

HCM 6th TWSC
3: Julie Lane & Lake Tahoe Blvd

10/19/2020

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	357	3	28	384	21	5	2	54	25	2	5
Future Vol, veh/h	6	357	3	28	384	21	5	2	54	25	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	397	3	31	427	23	6	2	60	28	2	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	450	0	0	400	0	0	918	925	399	945	915	439
Stage 1	-	-	-	-	-	-	413	413	-	501	501	-
Stage 2	-	-	-	-	-	-	505	512	-	444	414	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1110	-	-	1159	-	-	252	269	651	242	273	618
Stage 1	-	-	-	-	-	-	616	594	-	552	543	-
Stage 2	-	-	-	-	-	-	549	536	-	593	593	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1110	-	-	1159	-	-	242	260	651	213	264	618
Mov Cap-2 Maneuver	-	-	-	-	-	-	242	260	-	213	264	-
Stage 1	-	-	-	-	-	-	612	590	-	549	528	-
Stage 2	-	-	-	-	-	-	527	522	-	533	589	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.5			12.5			22.5		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	548	1110	-	-	1159	-	-	241
HCM Lane V/C Ratio	0.124	0.006	-	-	0.027	-	-	0.148
HCM Control Delay (s)	12.5	8.3	-	-	8.2	-	-	22.5
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.5

HCM 6th AWSC
4: D Street/Viking Rd & Lake Tahoe Blvd

10/19/2020

Intersection	
Intersection Delay, s/veh	17.4
Intersection LOS	C







Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Traffic Vol, veh/h	87	152	5	50	106	238	3	84	18	196	21	21
Future Vol, veh/h	87	152	5	50	106	238	3	84	18	196	21	21
Peak Hour Factor	0.70	0.90	0.90	0.90	0.90	0.70	0.90	0.70	0.90	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	124	169	6	56	118	340	3	120	20	280	30	30
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	18.1	15.9	13	20.8
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	36%	32%	0%	82%
Vol Thru, %	80%	62%	68%	0%	9%
Vol Right, %	17%	2%	0%	100%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	105	244	156	238	238
LT Vol	3	87	50	0	196
Through Vol	84	152	106	0	21
RT Vol	18	5	0	238	21
Lane Flow Rate	143	299	173	340	340
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.283	0.559	0.338	0.58	0.635
Departure Headway (Hd)	7.119	6.738	7.021	6.142	6.721
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	503	535	511	585	537
Service Time	5.194	4.8	4.779	3.899	4.776
HCM Lane V/C Ratio	0.284	0.559	0.339	0.581	0.633
HCM Control Delay	13	18.1	13.4	17.1	20.8
HCM Lane LOS	B	C	B	C	C
HCM 95th-tile Q	1.2	3.4	1.5	3.7	4.4

HCM 6th TWSC
1: Tata Lane & Lake Tahoe Blvd

10/19/2020

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	471	5	28	452	11	7	2	54	21	0	3
Future Vol, veh/h	2	471	5	28	452	11	7	2	54	21	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	523	6	31	502	12	8	2	60	23	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	514	0	0	529	0	0	1102	1106	526	1131	1103	508
Stage 1	-	-	-	-	-	-	530	530	-	570	570	-
Stage 2	-	-	-	-	-	-	572	576	-	561	533	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1052	-	-	1038	-	-	189	210	552	181	211	565
Stage 1	-	-	-	-	-	-	533	527	-	506	505	-
Stage 2	-	-	-	-	-	-	505	502	-	512	525	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1052	-	-	1038	-	-	183	203	552	156	204	565
Mov Cap-2 Maneuver	-	-	-	-	-	-	183	203	-	156	204	-
Stage 1	-	-	-	-	-	-	532	526	-	505	490	-
Stage 2	-	-	-	-	-	-	487	487	-	454	524	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.5			14.9			29.7		
HCM LOS							B			D		




Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	432	1052	-	-	1038	-	-	172
HCM Lane V/C Ratio	0.162	0.002	-	-	0.03	-	-	0.155
HCM Control Delay (s)	14.9	8.4	-	-	8.6	-	-	29.7
HCM Lane LOS	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0.5

HCM 6th TWSC
2: West Village Access & Lake Tahoe Blvd

10/19/2020

Intersection

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	451	4	21	441	7	27
Future Vol, veh/h	451	4	21	441	7	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	501	4	23	490	8	30







Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	505
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1060
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1060
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	517	-	-	1060	-
HCM Lane V/C Ratio	0.073	-	-	0.022	-
HCM Control Delay (s)	12.5	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

HCM 6th TWSC
3: Julie Lane & Lake Tahoe Blvd

10/19/2020

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	362	4	31	395	22	9	2	68	25	2	5
Future Vol, veh/h	6	362	4	31	395	22	9	2	68	25	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	402	4	34	439	24	10	2	76	28	2	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	463	0	0	406	0	0	941	949	404	976	939	451
Stage 1	-	-	-	-	-	-	418	418	-	519	519	-
Stage 2	-	-	-	-	-	-	523	531	-	457	420	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1098	-	-	1153	-	-	243	260	647	230	264	608
Stage 1	-	-	-	-	-	-	612	591	-	540	533	-
Stage 2	-	-	-	-	-	-	537	526	-	583	589	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1098	-	-	1153	-	-	233	251	647	196	255	608
Mov Cap-2 Maneuver	-	-	-	-	-	-	233	251	-	196	255	-
Stage 1	-	-	-	-	-	-	608	587	-	537	518	-
Stage 2	-	-	-	-	-	-	514	511	-	510	585	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.6			13.3			24.2		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	521	1098	-	-	1153	-	-	223
HCM Lane V/C Ratio	0.168	0.006	-	-	0.03	-	-	0.159
HCM Control Delay (s)	13.3	8.3	-	-	8.2	-	-	24.2
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0.6

HCM 6th AWSC
4: D Street/Viking Rd & Lake Tahoe Blvd

10/19/2020

Intersection	
Intersection Delay, s/veh	18.1
Intersection LOS	C







Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔	↔		↔			↔	
Traffic Vol, veh/h	87	154	5	51	108	250	3	84	18	200	21	21
Future Vol, veh/h	87	154	5	51	108	250	3	84	18	200	21	21
Peak Hour Factor	0.70	0.90	0.90	0.90	0.90	0.70	0.90	0.70	0.90	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	124	171	6	57	120	357	3	120	20	286	30	30
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	18.6	16.8	13.2	21.8
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	3%	35%	32%	0%	83%
Vol Thru, %	80%	63%	68%	0%	9%
Vol Right, %	17%	2%	0%	100%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	105	246	159	250	242
LT Vol	3	87	51	0	200
Through Vol	84	154	108	0	21
RT Vol	18	5	0	250	21
Lane Flow Rate	143	301	177	357	346
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.288	0.57	0.347	0.615	0.653
Departure Headway (Hd)	7.227	6.821	7.079	6.199	6.795
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	495	527	507	579	529
Service Time	5.309	4.89	4.843	3.962	4.856
HCM Lane V/C Ratio	0.289	0.571	0.349	0.617	0.654
HCM Control Delay	13.2	18.6	13.6	18.4	21.8
HCM Lane LOS	B	C	B	C	C
HCM 95th-tile Q	1.2	3.5	1.5	4.2	4.7

HCM 6th TWSC
1: Tata Lane & Lake Tahoe Blvd

10/19/2020

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	416	5	71	369	28	8	2	52	26	1	6
Future Vol, veh/h	3	416	5	71	369	28	8	2	52	26	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	462	6	79	410	31	9	2	58	29	1	7




Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	441	0	0	468	0	0	1059	1070	465	1085	1058	426
Stage 1	-	-	-	-	-	-	471	471	-	584	584	-
Stage 2	-	-	-	-	-	-	588	599	-	501	474	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1119	-	-	1094	-	-	202	221	597	194	225	628
Stage 1	-	-	-	-	-	-	573	560	-	498	498	-
Stage 2	-	-	-	-	-	-	495	490	-	552	558	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1119	-	-	1094	-	-	188	204	597	164	208	628
Mov Cap-2 Maneuver	-	-	-	-	-	-	188	204	-	164	208	-
Stage 1	-	-	-	-	-	-	571	558	-	497	462	-
Stage 2	-	-	-	-	-	-	453	455	-	495	556	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.3			14.6			28.3		
HCM LOS							B			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	445	1119	-	-	1094	-	-	191
HCM Lane V/C Ratio	0.155	0.003	-	-	0.072	-	-	0.192
HCM Control Delay (s)	14.6	8.2	-	-	8.5	-	-	28.3
HCM Lane LOS	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.5	0	-	-	0.2	-	-	0.7







HCM 6th TWSC
2: West Village Access & Lake Tahoe Blvd

10/19/2020

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	424	0	0	383	0	0
Future Vol, veh/h	424	0	0	383	0	0
Conflicting Peds, #/hr	0	0	0	0	14	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	471	0	0	426	0	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	471	0	911	471
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	440	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1091	-	304	593
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	649	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1091	-	300	593
Mov Cap-2 Maneuver	-	-	-	-	426	-
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	641	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1091	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 6th TWSC
3: Julie Lane & Lake Tahoe Blvd

10/19/2020

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	350	5	60	288	35	3	2	52	22	1	12
Future Vol, veh/h	8	350	5	60	288	35	3	2	52	22	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	389	6	67	320	39	3	2	58	24	1	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	359	0	0	395	0	0	891	903	392	914	887	340
Stage 1	-	-	-	-	-	-	410	410	-	474	474	-
Stage 2	-	-	-	-	-	-	481	493	-	440	413	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1200	-	-	1164	-	-	263	277	657	254	283	702
Stage 1	-	-	-	-	-	-	619	595	-	571	558	-
Stage 2	-	-	-	-	-	-	566	547	-	596	594	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1200	-	-	1164	-	-	245	259	657	219	265	702
Mov Cap-2 Maneuver	-	-	-	-	-	-	245	259	-	219	265	-
Stage 1	-	-	-	-	-	-	615	591	-	567	526	-
Stage 2	-	-	-	-	-	-	522	515	-	537	590	-






Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			1.3			12			19.4		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	575	1200	-	-	1164	-	-	288
HCM Lane V/C Ratio	0.11	0.007	-	-	0.057	-	-	0.135
HCM Control Delay (s)	12	8	-	-	8.3	-	-	19.4
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	0.2	-	-	0.5

HCM 6th AWSC
4: D Street/Viking Rd & Lake Tahoe Blvd







10/19/2020

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	140	5	60	177	66	3	15	51	171	26	28
Future Vol, veh/h	14	140	5	60	177	66	3	15	51	171	26	28
Peak Hour Factor	0.70	0.90	0.90	0.90	0.90	0.70	0.90	0.70	0.90	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	156	6	67	197	94	3	21	57	244	37	40
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0




Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	11.2	12.4	9.5	14.2
HCM LOS	B	B	A	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	4%	9%	25%	0%	76%
Vol Thru, %	22%	88%	75%	0%	12%
Vol Right, %	74%	3%	0%	100%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	159	237	66	225
LT Vol	3	14	60	0	171
Through Vol	15	140	177	0	26
RT Vol	51	5	0	66	28
Lane Flow Rate	81	181	263	94	321
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.126	0.291	0.447	0.138	0.501
Departure Headway (Hd)	5.583	5.788	6.107	5.269	5.616
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	639	619	590	680	640
Service Time	3.644	3.837	3.849	3.01	3.66
HCM Lane V/C Ratio	0.127	0.292	0.446	0.138	0.502
HCM Control Delay	9.5	11.2	13.7	8.9	14.2
HCM Lane LOS	A	B	B	A	B
HCM 95th-tile Q	0.4	1.2	2.3	0.5	2.8

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	448	10	90	413	28	11	2	63	26	1	6
Future Vol, veh/h	3	448	10	90	413	28	11	2	63	26	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	498	11	100	459	31	12	2	70	29	1	7
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	490	0	0	509	0	0	1189	1200	504	1221	1190	475
Stage 1	-	-	-	-	-	-	510	510	-	675	675	-
Stage 2	-	-	-	-	-	-	679	690	-	546	515	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1073	-	-	1056	-	-	165	185	568	157	188	590
Stage 1	-	-	-	-	-	-	546	538	-	444	453	-
Stage 2	-	-	-	-	-	-	441	446	-	522	535	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1073	-	-	1056	-	-	150	167	568	126	170	590
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	167	-	126	170	-
Stage 1	-	-	-	-	-	-	544	536	-	443	410	-
Stage 2	-	-	-	-	-	-	394	404	-	454	533	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.5			16.9			37.2		
HCM LOS							C			E		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	387	1073	-	-	1056	-	-	148				
HCM Lane V/C Ratio	0.218	0.003	-	-	0.095	-	-	0.248				
HCM Control Delay (s)	16.9	8.4	-	-	8.8	-	-	37.2				
HCM Lane LOS	C	A	-	-	A	-	-	E				
HCM 95th %tile Q(veh)	0.8	0	-	-	0.3	-	-	0.9				







HCM 6th TWSC
2: West Village Access & Lake Tahoe Blvd

10/19/2020

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	436	8	32	398	6	25
Future Vol, veh/h	436	8	32	398	6	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	484	9	36	442	7	28
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	493	0	1003	489
Stage 1	-	-	-	-	489	-
Stage 2	-	-	-	-	514	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1071	-	268	579
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1071	-	256	579
Mov Cap-2 Maneuver	-	-	-	-	388	-
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	573	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.6		12.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	529	-	-	1071	-	
HCM Lane V/C Ratio	0.065	-	-	0.033	-	
HCM Control Delay (s)	12.3	-	-	8.5	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	

HCM 6th TWSC
3: Julie Lane & Lake Tahoe Blvd






10/19/2020

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	362	8	73	296	35	5	2	59	23	1	12
Future Vol, veh/h	8	362	8	73	296	35	5	2	59	23	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	402	9	81	329	39	6	2	66	26	1	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	368	0	0	411	0	0	943	955	407	970	940	349
Stage 1	-	-	-	-	-	-	425	425	-	511	511	-
Stage 2	-	-	-	-	-	-	518	530	-	459	429	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1191	-	-	1148	-	-	243	258	644	233	264	694
Stage 1	-	-	-	-	-	-	607	586	-	545	537	-
Stage 2	-	-	-	-	-	-	541	527	-	582	584	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1191	-	-	1148	-	-	223	238	644	195	243	694
Mov Cap-2 Maneuver	-	-	-	-	-	-	223	238	-	195	243	-
Stage 1	-	-	-	-	-	-	602	581	-	541	499	-
Stage 2	-	-	-	-	-	-	492	490	-	517	579	-
Approach	EB		WB				NB		SB			
HCM Control Delay, s	0.2		1.5				12.7		21.5			
HCM LOS							B		C			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	539	1191	-	-	1148	-	-	258				
HCM Lane V/C Ratio	0.136	0.007	-	-	0.071	-	-	0.155				
HCM Control Delay (s)	12.7	8	-	-	8.4	-	-	21.5				
HCM Lane LOS	B	A	-	-	A	-	-	C				
HCM 95th %tile Q(veh)	0.5	0	-	-	0.2	-	-	0.5				

HCM 6th AWSC
4: D Street/Viking Rd & Lake Tahoe Blvd

10/19/2020

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

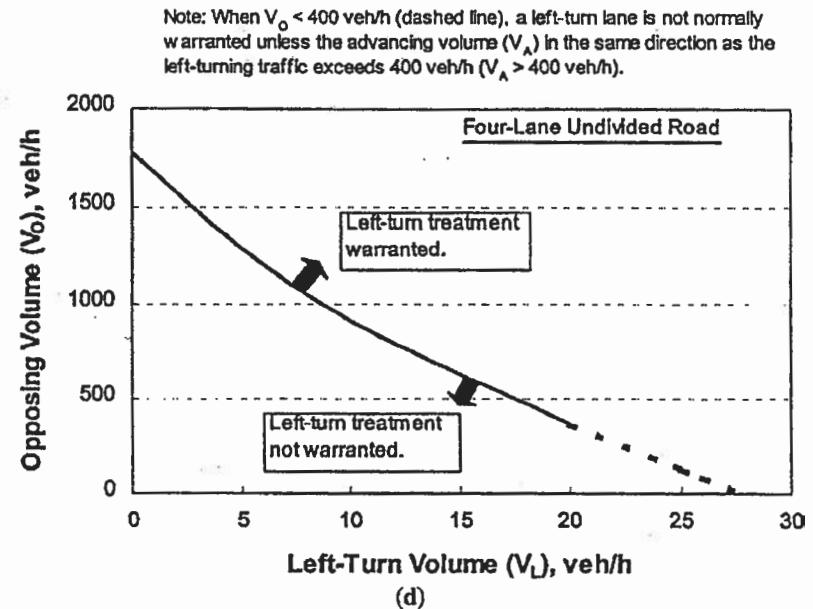
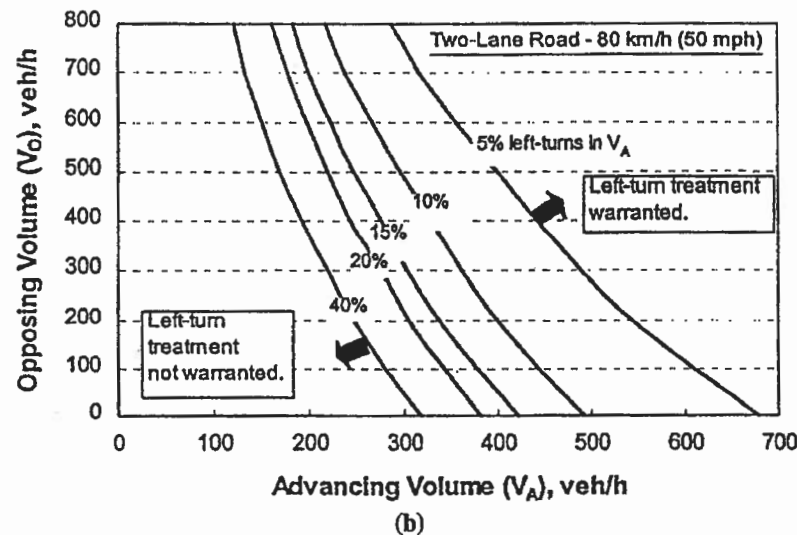
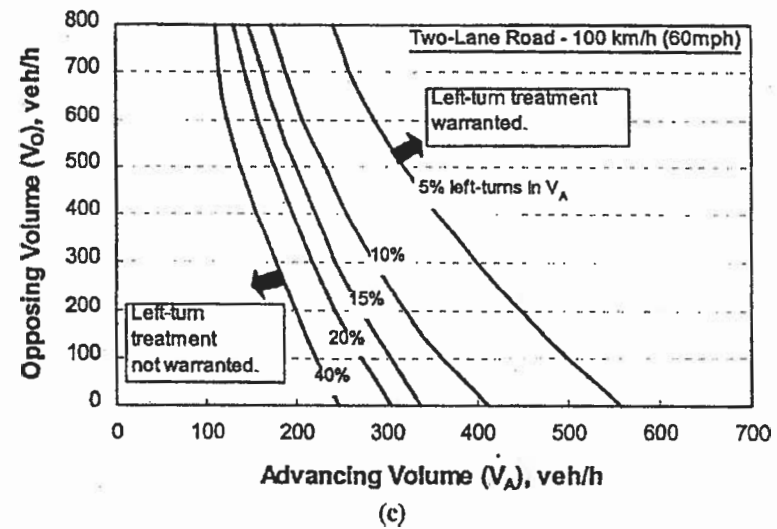
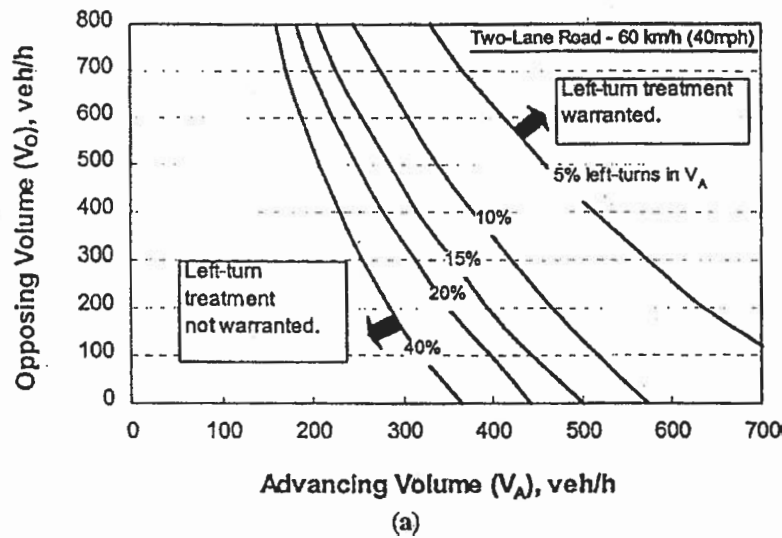
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	142	5	60	179	74	3	15	52	183	26	28
Future Vol, veh/h	14	142	5	60	179	74	3	15	52	183	26	28
Peak Hour Factor	0.70	0.90	0.90	0.90	0.90	0.70	0.90	0.70	0.90	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	158	6	67	199	106	3	21	58	261	37	40
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	11.4	12.6	9.6	15.1
HCM LOS	B	B	A	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	4%	9%	25%	0%	77%
Vol Thru, %	21%	88%	75%	0%	11%
Vol Right, %	74%	3%	0%	100%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	70	161	239	74	237
LT Vol	3	14	60	0	183
Through Vol	15	142	179	0	26
RT Vol	52	5	0	74	28
Lane Flow Rate	83	183	266	106	339
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.13	0.299	0.456	0.157	0.533
Departure Headway (Hd)	5.673	5.88	6.183	5.345	5.672
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	628	609	582	669	633
Service Time	3.74	3.937	3.931	3.093	3.719
HCM Lane V/C Ratio	0.132	0.3	0.457	0.158	0.536
HCM Control Delay	9.6	11.4	14	9.1	15.1
HCM Lane LOS	A	B	B	A	C
HCM 95th-tile Q	0.4	1.3	2.4	0.6	3.2

Appendix C: Turn Lane Warrants



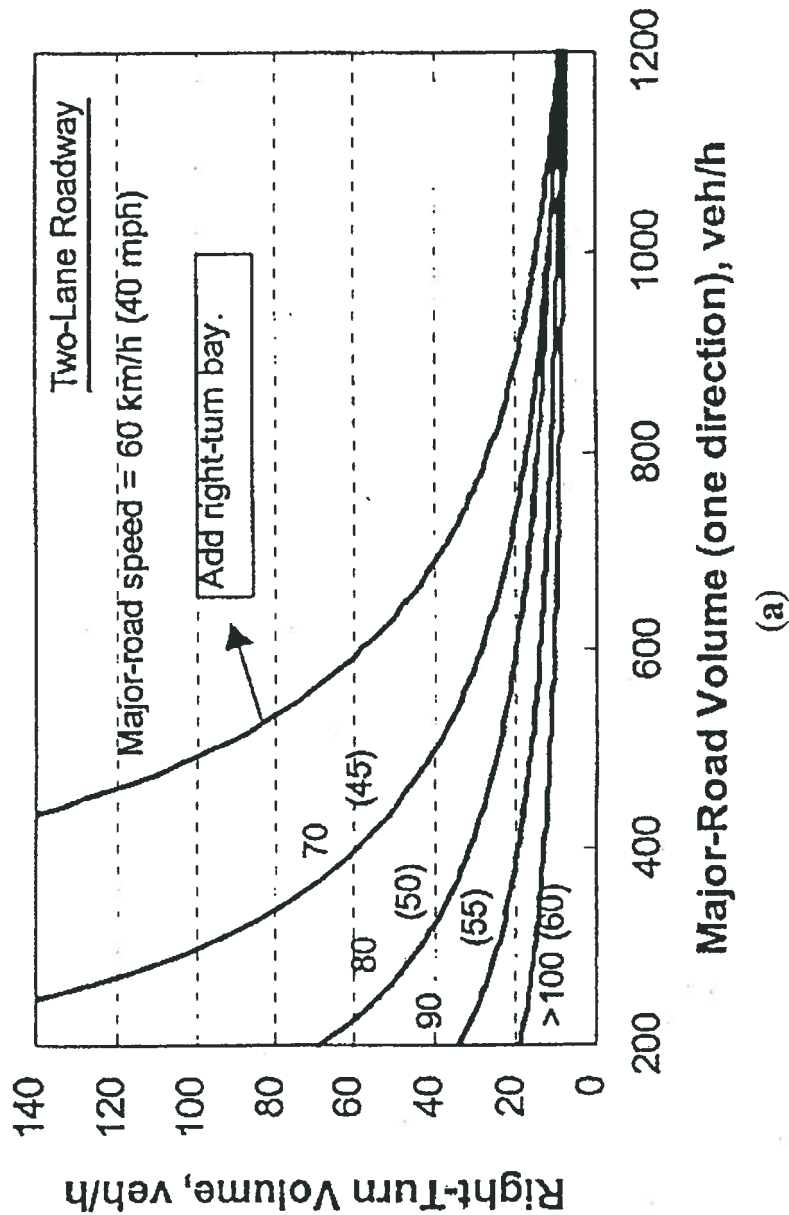


Note: When $V_O < 400$ veh/h (dashed line), a left-turn lane is not normally warranted unless the advancing volume (V_A) in the same direction as the left-turning traffic exceeds 400 veh/h ($V_A > 400$ veh/h).

NCHRP 457
Figure 2-5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

Application. The guidance stated in the preceding section defines the conditions that may justify the provision of a

be used or, as a more conservative approach, the operating speed can be rounded up to the nearest speed for which a



NCHRP 457

ie intersection. A vehicles that are les in the through urn-related colli- action-sideswipe) gh vehicles. ie major-road ap- he existing pave- ction. Sometimes al lane is available lowever, in down- e the removal of cent business sig- must be widened to h can be provided may be limited to



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TECHNICAL MEMORANDUM

Date: December 1, 2020

TO: Meea Kang, Related California

FROM: Sara Hawley, PE, LSC Transportation Consultants, Inc.

RE: Sugar Pine Village – Parking Analysis

This memorandum presents a parking analysis for the proposed Sugar Pine Village Affordable Housing Project located south of Lake Tahoe Boulevard between Julie Lane and Tata Lane in South Lake Tahoe, California. The proposed complex is split into two villages which will consist of a combined 248 new low-income (and/or very-low-income) affordable apartments. First, the land use assumptions are presented. Next, the parking rates based on the applicable code are discussed. Parking data from other similar developments is also reviewed. The parking demand of the proposed project is evaluated. Finally, the total parking demand is compared to the proposed parking supply to determine the overall parking balance.

Land Use Assumptions

The “East Village” complex will have 38 units with the following sizes:

- 6 studio units
- 6 one-bedroom units
- 13 two-bedroom units
- 13 three-bedroom units

The “West Village” complex will have 210 units with the following sizes:

- 42 studio units
- 42 one-bedroom units
- 70 two-bedroom units
- 56 three-bedroom units

In addition, the “West Village” will have a Community Hall, a property management building, some small offices, and a day care facility (with 25 students expected).

Parking Demand per Code

The City of South Lake Tahoe Code (the applicable Code) does not provide a parking rate for affordable housing units. A parking rate is provided for the “Multi-Family Dwelling” land use, which is 2 spaces per unit.

The Julie Lane site access point is located about 500 feet from the nearest Tahoe Transportation District bus stop. However, there are existing informal walking trails that connect the West Village directly to the bus stop. In addition, a Class 2 trail (bike lane) parallels Lake Tahoe Boulevard along the site frontage. The bike lane begins at the intersection of Viking Road and Lake Tahoe Boulevard and connects the site to the “Y” intersection. Hourly transit service is provided during the busy seasons, with service running into the evening (until about 7 PM). Because of the early time the bus service ends, this is not considered a viable substitution for a car. As such, no transit reduction is applied. As discussed below, studies have shown that affordable housing units have a lower parking demand than market rate units. Consequently, the parking rate in the Code is considered to be too high, as it doesn’t pertain specifically to affordable units.

Review of Other Parking Data

- Parking counts were conducted at Sierra Garden Apartments located at 1801 Lake Tahoe Boulevard (opposite and west of the Sugar Pine Village site) in South Lake Tahoe, California in April of 2016. At the time of the counts, the complex consisted of 24 one-bedroom units and 52 two-bedroom units, for a total of 76 units. The counts were conducted by property staff every evening at 11 PM for a week. The maximum observed parking demand was approximately 1.07 vehicles per unit. The Sierra Garden site is located roughly 1,000 feet from the nearest bus stop on Lake Tahoe Boulevard (near Julie Lane).
- Parking observations made at the Kings Beach Housing Now site (77 affordable housing units) located in the northeast corner of the SR 28/Chipmunk Street intersection in North Tahoe indicate a lower parking demand rate than Sierra Garden, even though nearly half of the Kings Beach units are larger (3-bedroom) units.
- The Institute of Transportation Engineers (ITE) *Parking Generation* manual provides a standard parking rate for “Affordable Housing – Income Limits” of 0.99 spaces per unit. This is lower than the average rate for “Multi-Family (Low-Rise)” units, which includes

market rate units.

Parking Demand of Proposed Project

The proposed Sugar Pine Village project has similar income requirements as Sierra Garden, and the proposed unit sizes and unit mix are similar. The parking demand analysis is summarized in Table A. As shown, applying the observed parking rate at Sierra Garden (1.07 vehicles per unit) to the proposed smaller units (studio, 1- and 2-bedroom units) at Sugar Pine and applying an increased rate of 1.57 (1.07 plus 0.5) to the proposed 3-bedroom units yields a total parking demand of approximately 253 spaces for the West Village residences and 46 spaces for the East Village. In addition, standard parking rates are applied to the offices, childcare center and Community Hall.

The proposed Community Hall will be used for on-going events and programs specific to Sugar Pine Village and will also be available to residents for private events. Large events (such as weddings) are not anticipated. A total of 2 employees are assumed to report to the Community Hall on a day with an event. These employees are in addition to the employees that typically report to work at the on-site property management offices.

Parking needs for the commercial uses will be reduced by the “captive market” factor – the fact that some users of the commercial space will also reside on the site. As their parking is already reflected in the residential line items, these onsite patrons will not generate additional parking spaces. The captive market reductions are estimated as follows:

- The captive market factor for the office space (a 3% reduction) is estimated using the ITE’s internal trip capture estimation tool.
- For the Community Hall, as all event attendees would make trips internal to the project site, they would not generate additional parking demand. The employees associated with the event, however, would require additional parking spaces.
- For the childcare center, the project proponent expects that at least half of the day care students would reside in Sugar Pine Village, and potentially up to 100 percent if the childcare is subsidized. To remain conservatively high with respect to parking needs, this analysis assumes only 33 percent of the childcare center students also reside on the site (and would therefore not generate additional parking demand).

The resulting percent reductions are shown in the right-hand side of the table. With the internal reductions applied, this yields a total parking demand for the non-residential uses of approximately 23 spaces. Adding this to the West Village residential parking demand (253)

yields a total of 276 spaces required for the West Village. Overall, 322 spaces (276 in West Village plus 46 in East Village) are needed for the proposed project.

Table A: Sugar Pine Village - Individual Use Peak Parking Demand						
Description	Quantity	Units	Parking Ratio Category	Parking Rate¹	Required Parking Spaces for Individual Use	Internal/ Captive Market Reduction Parking Spaces Required After Internal Reduction
WEST VILLAGE						
<u>Commercial</u>						
Office	2.25	KSF	Professional Office	4 per KSF	9	3% 9
Property Management	1.35	KSF	Professional Office	4 per KSF	5	3% 5
Community Hall	1.95	KSF	Assembly & Entertainment	6.67 per KSF	13	100% 0
Community Hall	2	Employees	Assembly & Entertainment	1 per employee	2	0% 2
Childcare Center	4	Employees	Day-Care Centers	1 per employee	4	0% 4
Childcare Center	25	Students	Day-Care Centers	0.2 per student	5	33% 3
<i>Subtotal Commercial</i>						23
<u>Affordable Housing</u>						
- Studio	42	DU		1.07 per Unit	45	0% 45
- 1 Bedroom	42	DU		1.07 per Unit	45	0% 45
- 2 Bedroom	70	DU		1.07 per Unit	75	0% 75
- 3 Bedroom	56	DU		1.57 per Unit	88	0% 88
<i>Subtotal Housing</i>	210	DU				253
TOTAL WEST VILLAGE						276
EAST VILLAGE						
<u>Affordable Housing</u>						
- Studio	6	DU		1.07 per Unit	6	0% 6
- 1 Bedroom	6	DU		1.07 per Unit	6	0% 6
- 2 Bedroom	13	DU		1.07 per Unit	14	0% 14
- 3 Bedroom	13	DU		1.57 per Unit	20	0% 20
<i>Subtotal Housing</i>	38	DU				46
TOTAL PROJECT	248	DU				322
NOTE: DU=Dwelling Units; KSF = 1,000 square feet Note 1: Parking Ratios from South Lake Tahoe Code - Section 6.10.410 and Sierra Garden local rate LSC Transportation Consultants, Inc.						

Shared Parking Analysis

Not all of the individual land uses generate peak parking needs at the same time of day. A “shared parking” analysis of parking needs for each hour of the day is therefore conducted. Using the methodology presented in the Urban Land Institute’s *Shared Parking* manual, this analysis applies a series of factors reflecting the proportion of parking demand in each hour to the parking demand during the peak hour. These proportions are shown in the lower portion of Table B. For the Community Hall employees, a peak parking demand was assumed for a 2-hour event occurring between 6 PM and 8 PM. The employees were assumed to arrive approximately 2 hours before the start of the event.

The period of peak parking demand for the site as a whole is expected to occur overnight (from 11 PM on, when almost all residents are assumed to be on-site), at 299 spaces. During the period of peak parking demand, a total of 253 parking spaces are required for the West Village residential units, while the commercial uses would not generate parking demand. That is, if the parking spaces are not designated for a specific use, then only 253 spaces would be needed at the West Village. A total of 46 parking spots are required for the East Village.

Proposed Parking Supply

The proposed parking supply for Sugar Pine Village is 311 parking spaces at the West Village and 56 parking spaces at the East Village. During the winter, 6 spaces in the West Village in front of the community building will be used for snow storage resulting in 305 parking spaces in the West Village. As the anticipated parking demand (without shared parking between the commercial and residential uses) is 276 and 46 spaces, respectively, the proposed project is expected to result in a surplus of 35 spaces in the West Village during summer, 29 spaces in the West Village during winter and 10 spaces in the East Village. As such, the proposed parking supply is adequate for both Villages.

TABLE B: Sugar Pine Village - Shared Parking Analysis																												
Description	Total Required Parking for Individual Land Use	Parking Demand by Hour for Shared Parking Analysis¹																									Parking Demand During Peak Period	
		6:00 AM												7:00 PM												11:00 PM		12:00 AM
		AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	PM	AM			
West Village	9	0	1	4	8	9	9	9	7	7	9	8	7	5	2	1	0	0	0	0	0	0	0	0	0	0		
Office Property																												
Management	5	0	1	2	4	5	5	4	4	4	5	5	4	3	1	1	0	0	0	0	0	0	0	0	0	0		
Community Hall - Employees	2	0	0	0	0	0	0	0	0	0	0	0	1	2	2	2	2	1	0	0	0	0	0	0	0	0		
Childcare Center	7	0	2	4	6	4	4	4	4	4	5	7	6	3	2	0	0	0	0	0	0	0	0	0	0	0		
Affordable Housing	253	235	201	172	144	132	120	108	108	108	108	108	120	135	162	192	216	228	251	253	253	253	253	253	253	253		
West Village Total	276																											
East Village																												
Affordable Housing	46	43	37	31	26	24	22	20	20	20	20	20	22	25	29	35	39	41	46	46	46	46	46	46	46	46		
Total: Proposed	322	279	243	215	189	175	160	144	144	144	146	146	162	176	200	233	259	271	298	299	299	299	299	299	299	299		
Shared Parking Factors – Percent of Peak Parking Demand by Hour (1)																												
Land Use		6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM	12:00 AM								
Office		3%	14%	48%	88%	100%	96%	79%	82%	95%	91%	79%	56%	23%	14%	5%	3%	1%	0%	0%								
Community Hall - Employees		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	100%	100%	100%	100%	50%	0%	0%	0%								
Residential	(2)	93%	80%	68%	57%	52%	47%	43%	43%	43%	43%	47%	53%	64%	76%	85%	90%	99%	100%	100%								
Day Care Center		0%	29%	54%	84%	60%	60%	60%	60%	60%	66%	100%	79%	43%	25%	6%	0%	0%	0%	0%								

Note 1: Source - Urban Land Institute's Shared Parking, 3rd Edition, 2020

Note 2: Residential factors were increased based on local parking count data at Sierra Garden at 11 PM.

Source: LSC Transportation Consultants, Inc.

Note 1: Source - Urban Land Institute's Shared Parking, 3rd Edition, 2020

Note 2: Residential factors were increased based on local parking count data at Sierra Garden at 11 PM.

Source: LSC Transportation Consultants, Inc.

APPENDIX B AIR QUALITY EMISSION MODELING RESULTS

Table 1**Sugar Pine Village – Unmitigated Daily Construction Emissions (lbs/day)**

Construction Year	NO_x	CO	ROG	SO₂	PM₁₀	PM_{2.5}
2022	10.53	10.40	1.26	0.023	2.26	1.14
2023	0.43	0.43	0.05	0.028	1.37	0.64
Maximum Daily Construction Emissions (rounded)	10.53	12.50	23.42	0.03	2.26	1.15
Significance Thresholds:	82	--a	82	--a	--a	None
Significant Impact?	No	No	No	No	No	No

Source: CALEEMOD, December 2020

Notes: lb/day = pounds per day; ROG = reactive organic gases; NO_x = oxides of nitrogen; SO₂ = sulfur dioxide; PM₁₀ = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; PM_{2.5} = respirable particulate matter with an aerodynamic diameter of 2.5 micrometers or less

^a The EDCAPCD considers these emissions less than significant if the NO_x and VOC/ROG emissions are quantitatively determined to be less than significant

Table 2**Sugar Pine Village – Unmitigated Maximum Daily Operation Emissions (lbs/day)**

	NO_x	CO	ROG	SO₂	PM₁₀	PM_{2.5}
Area	0.16	13.84	8.18	0.0007	0.076	0.077
Energy	0.05	0.04	0.005	0.0003	0.0038	0.0038
Mobile ¹	3.99	12.59	2.08	0.02	1.67	0.46
Waste	-	-	-	-	-	-
Water	-	-	-	-	-	-
Total Daily Emissions (rounded)	4.20	26.51	10.21	0.02	1.76	0.55
Significance Thresholds:	24.2	220.5^a	82	13.2^a	22.0^a	None
Significant Impact?	No	No	No	No	No	No

Source: CALEEMOD, December 2020

^a These emissions are less than significant if the NO_x and VOC/ROG emissions are quantitatively determined to be less than significant.

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1.0 Project Characteristics**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	240.00	Dwelling Unit	8.00	242,856.00	640
Apartments Low Rise	8.00	Dwelling Unit	0.50	5,423.00	30
General Office Building	2.60	1000sqft	0.00	2,600.00	0
Government (Civic Center)	4.90	1000sqft	0.11	4,900.00	0
Day-Care Center	2.60	1000sqft	0.06	2,600.00	0
Parking Lot	61.00	1000sqft	1.40	61,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.7	Precipitation Freq (Days)	70
Climate Zone	14	Operational Year	2024		
Utility Company	User Defined				
CO2 Intensity (lb/MW/hr)	714	CH4 Intensity (lb/MW/hr)	0.029	N2O Intensity (lb/MW/hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Liberty Utilities is not available from the pull down menu. The CO2 intensity factor is based on the local factor, while the CH4 and N2O are the same as all other utility providers

Land Use - Total lot is 11.6 acres with over an acre remaining in its natural state. Square footage includes total usable space, not just footprint. Daycare and civic center (apartment community center and managers office/Community Center) are used by residents and no additional parking is assigned. General Pffice is a second story above the daycare. Apartment populatin is estimated to be 670 persons total.

Construction Phase - No demolition needed

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Off-road Equipment - No demolition needed

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Vehicle Trips - Day care center trip rates will be lower than the default 74 trips/day as the daycare will be used primarily by residents. VMT is lower than the default rate due to the proximity to town center.

Woodstoves - No woodstoves or fireplaces are proposed in the apartment units

Landscape Equipment - 67 snow days > .1" per year taken from Current Results - Weather and Science Facts South Lake Tahoe Snowfall Totals and Snowstorm Averages based on NOAA's 1981-2010 Normals

Energy Use - Apartments are 100% electric

Water And Wastewater - Civic Center is community building for the apartments and offices for apartment management/maintenance/storage; therefore the water usage was reduced to the equivalent of an office.

Solid Waste - Civic Center is more of a community gathering center for the apartments with maintenance storage, management offices a lounge, recreation and dining area, and a kitchen for occasional events, so the solid waste generation rate is closer to that of the office rate. Mid rise apartments would generate the same per unit as the low-rise.

Land Use Change -

Sequestration -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation - The development may include solar based on grant funding; however, that has not been factored as mitigation as the grant has not yet been provided at this time

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstructionPhase	NumDays	20.00	1.00
tblConstructionPhase	PhaseEndDate	5/27/2022	5/2/2022

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tblEnergyUse	NT24NG	1,599.00	0.00
tblEnergyUse	NT24NG	1,599.00	0.00
tblEnergyUse	T24NG	9,200.58	0.00
tblEnergyUse	T24NG	2,290.03	0.00
tblFireplaces	NumberGas	4.40	0.00
tblFireplaces	NumberGas	132.00	0.00
tblFireplaces	NumberNoFireplace	0.80	0.00
tblFireplaces	NumberNoFireplace	24.00	0.00
tblFireplaces	NumberWood	2.80	0.00
tblFireplaces	NumberWood	84.00	0.00
tblLandscapeEquipment	NumberSnowDays	0	67
tblLandUse	LandUseSquareFeet	240,000.00	242,856.00
tblLandUse	LandUseSquareFeet	8,000.00	5,423.00
tblLandUse	LotAcreage	6.32	8.00
tblLandUse	LotAcreage	0.06	0.00
tblLandUse	Population	686.00	640.00
tblLandUse	Population	23.00	30.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblProjectCharacteristics	CH4IntensityFactor	0	0.029
tblProjectCharacteristics	CO2IntensityFactor	0	714
tblProjectCharacteristics	N2OIntensityFactor	0	0.006
tblSequestration	NumberOfNewTrees	0.00	53.00
tblSequestration	NumberOfNewTrees	0.00	74.00
tblSequestration	NumberOfNewTrees	0.00	64.00
tblSolidWaste	SolidWasteGenerationRate	27.93	4.84
tblTripsAndVMT	WorkerTripNumber	8.00	15.00

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tblVehicleTrips	CC_TL	7.30	1.00
tblVehicleTrips	CC_TL	7.30	1.00
tblVehicleTrips	CC_TL	7.30	1.00
tblVehicleTrips	CC_TL	7.30	1.00
tblVehicleTrips	CNW_TL	7.30	1.00
tblVehicleTrips	CNW_TL	7.30	1.00
tblVehicleTrips	CNW_TL	7.30	1.00
tblVehicleTrips	CNW_TL	7.30	1.00
tblVehicleTrips	CW_TL	9.50	2.00
tblVehicleTrips	CW_TL	9.50	2.00
tblVehicleTrips	CW_TL	9.50	2.00
tblVehicleTrips	CW_TL	9.50	2.00
tblVehicleTrips	HO_TL	7.50	1.00
tblVehicleTrips	HO_TL	7.50	1.00
tblVehicleTrips	HS_TL	7.30	1.00
tblVehicleTrips	HS_TL	7.30	1.00
tblVehicleTrips	HW_TL	10.80	2.00
tblVehicleTrips	HW_TL	10.80	2.00
tblWater	IndoorWaterUseRate	973,432.46	462,107.74
tblWater	OutdoorWaterUseRate	596,619.90	283,227.33
tblWoodstoves	NumberCatalytic	0.40	0.00
tblWoodstoves	NumberCatalytic	12.00	0.00
tblWoodstoves	NumberNoncatalytic	0.40	0.00
tblWoodstoves	NumberNoncatalytic	12.00	0.00

2.0 Emissions Summary

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2.1 Overall Construction**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2309	1.9227	1.8979	4.1600e-003	0.3319	0.0808	0.4127	0.1336	0.0754	0.2090	0.0000	368.6402	368.6402	0.0671	0.0000	370.3185
2023	4.2736	1.8021	2.2804	5.0500e-003	0.1788	0.0723	0.2511	0.0481	0.0680	0.1161	0.0000	448.6143	448.6143	0.0621	0.0000	450.1663
Maximum	4.2736	1.9227	2.2804	5.0500e-003	0.3319	0.0808	0.4127	0.1336	0.0754	0.2090	0.0000	448.6143	448.6143	0.0671	0.0000	450.1663

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2309	1.9227	1.8979	4.1600e-003	0.2107	0.0808	0.2915	0.0766	0.0754	0.1520	0.0000	368.6399	368.6399	0.0671	0.0000	370.3182
2023	4.2736	1.8021	2.2804	5.0500e-003	0.1788	0.0723	0.2511	0.0481	0.0680	0.1161	0.0000	448.6141	448.6141	0.0621	0.0000	450.1660
Maximum	4.2736	1.9227	2.2804	5.0500e-003	0.2107	0.0808	0.2915	0.0766	0.0754	0.1520	0.0000	448.6141	448.6141	0.0671	0.0000	450.1660

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	23.74	0.00	18.26	31.36	0.00	17.53	0.00	0.00	0.00	0.00	0.00	0.00

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Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-2-2022	8-1-2022	0.9084	0.9084
2	8-2-2022	11-1-2022	0.7574	0.7574
3	11-2-2022	2-1-2023	0.7358	0.7358
4	2-2-2023	5-1-2023	0.6624	0.6624
5	5-2-2023	8-1-2023	0.6809	0.6809
6	8-2-2023	9-30-2023	0.3947	0.3947
		Highest	0.9084	0.9084

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4913	0.0291	2.5267	1.3000e-004		0.0140	0.0140		0.0140	0.0140	0.0000	4.1293	4.1293	3.9600e-003	0.0000	4.2284
Energy	9.9000e-004	9.0100e-003	7.5700e-003	5.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	421.2208	421.2208	0.0169	3.6400e-003	422.7272
Mobile	0.3719	0.7290	2.2985	3.7400e-003	0.3012	4.5500e-003	0.3058	0.0807	4.2400e-003	0.0850	0.0000	339.6471	339.6471	0.0162	0.0000	340.0524
Waste						0.0000	0.0000		0.0000	0.0000	25.3170	0.0000	25.3170	1.4962	0.0000	62.7219
Water						0.0000	0.0000		0.0000	0.0000	5.4548	42.6452	48.1001	0.5620	0.0136	66.1990
Total	1.8642	0.7672	4.8328	3.9200e-003	0.3012	0.0192	0.3205	0.0807	0.0189	0.0997	30.7719	807.6425	838.4144	2.0953	0.0172	895.9289

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2.2 Overall Operational**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.4158	0.0291	2.5267	1.3000e-004		0.0140	0.0140		0.0140	0.0140	0.0000	4.1293	4.1293	3.9600e-003	0.0000	4.2284
Energy	8.9000e-004	8.1200e-003	6.8200e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	372.8107	372.8107	0.0150	3.2200e-003	374.1442
Mobile	0.3616	0.6611	2.0371	2.6900e-003	0.1958	3.6400e-003	0.1994	0.0525	3.3800e-003	0.0559	0.0000	243.9382	243.9382	0.0138	0.0000	244.2835
Waste						0.0000	0.0000		0.0000	0.0000	20.2536	0.0000	20.2536	1.1970	0.0000	50.1775
Water						0.0000	0.0000		0.0000	0.0000	4.3639	35.8556	40.2195	0.4497	0.0109	54.7048
Total	1.7783	0.6983	4.5706	2.8700e-003	0.1958	0.0183	0.2141	0.0525	0.0180	0.0705	24.6175	656.7338	681.3513	1.6794	0.0141	727.5384

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	4.61	8.97	5.42	26.79	35.00	5.09	33.21	35.00	4.91	29.28	20.00	18.69	18.73	19.85	18.17	18.80

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2.3 Vegetation**Vegetation**

	CO2e
Category	MT
New Trees	166.3460
Vegetation Land Change	-788.1000
Total	-621.7540

3.0 Construction Detail**Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/2/2022	5/2/2022	5	1	
2	Site Preparation	Site Preparation	5/28/2022	6/10/2022	5	10	
3	Grading	Grading	6/11/2022	7/22/2022	5	30	
4	Building Construction	Building Construction	7/23/2022	9/15/2023	5	300	
5	Paving	Paving	9/16/2023	10/13/2023	5	20	
6	Architectural Coating	Architectural Coating	10/14/2023	11/10/2023	5	20	

Acres of Grading (Site Preparation Phase): 0**Acres of Grading (Grading Phase): 75****Acres of Paving: 1.4**

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Residential Indoor: 502,765; Residential Outdoor: 167,588; Non-Residential Indoor: 15,150; Non-Residential Outdoor: 5,050; Striped Parking Area: 3,660 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	1	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

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Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	3	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	208.00	38.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	42.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.0000e-004	6.6900e-003	5.2500e-003	1.0000e-005		3.3000e-004	3.3000e-004		3.1000e-004	3.1000e-004	0.0000	0.8708	0.8708	2.1000e-004	0.0000	0.8760
Total	7.0000e-004	6.6900e-003	5.2500e-003	1.0000e-005		3.3000e-004	3.3000e-004		3.1000e-004	3.1000e-004	0.0000	0.8708	0.8708	2.1000e-004	0.0000	0.8760

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3.2 Demolition - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0493	0.0493	0.0000	0.0000	0.0493
Total	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0493	0.0493	0.0000	0.0000	0.0493

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.0000e-004	6.6900e-003	5.2500e-003	1.0000e-005		3.3000e-004	3.3000e-004		3.1000e-004	3.1000e-004	0.0000	0.8708	0.8708	2.1000e-004	0.0000	0.8760
Total	7.0000e-004	6.6900e-003	5.2500e-003	1.0000e-005		3.3000e-004	3.3000e-004		3.1000e-004	3.1000e-004	0.0000	0.8708	0.8708	2.1000e-004	0.0000	0.8760

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3.2 Demolition - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0493	0.0493	0.0000	0.0000	0.0493
Total	3.0000e-005	2.0000e-005	2.1000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0493	0.0493	0.0000	0.0000	0.0493

3.3 Site Preparation - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	0.0159	0.1654	0.0985	1.9000e-004	0.0903	8.0600e-003	0.0984	0.0497	7.4200e-003	0.0571	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549

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3.3 Site Preparation - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.2000e-004	2.4700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5911	0.5911	2.0000e-005	0.0000	0.5915
Total	4.0000e-004	2.2000e-004	2.4700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5911	0.5911	2.0000e-005	0.0000	0.5915

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	0.0159	0.1654	0.0985	1.9000e-004	0.0407	8.0600e-003	0.0487	0.0223	7.4200e-003	0.0298	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549

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3.3 Site Preparation - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-004	2.2000e-004	2.4700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5911	0.5911	2.0000e-005	0.0000	0.5915
Total	4.0000e-004	2.2000e-004	2.4700e-003	1.0000e-005	7.1000e-004	1.0000e-005	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5911	0.5911	2.0000e-005	0.0000	0.5915

3.4 Grading - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0540	0.0000	0.0540	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.5827	0.4356	9.3000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	81.8019	81.8019	0.0265	0.0000	82.4633
Total	0.0544	0.5827	0.4356	9.3000e-004	0.1301	0.0245	0.1546	0.0540	0.0226	0.0765	0.0000	81.8019	81.8019	0.0265	0.0000	82.4633

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3.4 Grading - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	7.5000e-004	8.2400e-003	2.0000e-005	2.3600e-003	2.0000e-005	2.3800e-003	6.3000e-004	2.0000e-005	6.4000e-004	0.0000	1.9704	1.9704	5.0000e-005	0.0000	1.9718
Total	1.3300e-003	7.5000e-004	8.2400e-003	2.0000e-005	2.3600e-003	2.0000e-005	2.3800e-003	6.3000e-004	2.0000e-005	6.4000e-004	0.0000	1.9704	1.9704	5.0000e-005	0.0000	1.9718

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0586	0.0000	0.0586	0.0243	0.0000	0.0243	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0544	0.5827	0.4356	9.3000e-004		0.0245	0.0245		0.0226	0.0226	0.0000	81.8018	81.8018	0.0265	0.0000	82.4632
Total	0.0544	0.5827	0.4356	9.3000e-004	0.0586	0.0245	0.0831	0.0243	0.0226	0.0468	0.0000	81.8018	81.8018	0.0265	0.0000	82.4632

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3.4 Grading - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	7.5000e-004	8.2400e-003	2.0000e-005	2.3600e-003	2.0000e-005	2.3800e-003	6.3000e-004	2.0000e-005	6.4000e-004	0.0000	1.9704	1.9704	5.0000e-005	0.0000	1.9718
Total	1.3300e-003	7.5000e-004	8.2400e-003	2.0000e-005	2.3600e-003	2.0000e-005	2.3800e-003	6.3000e-004	2.0000e-005	6.4000e-004	0.0000	1.9704	1.9704	5.0000e-005	0.0000	1.9718

3.5 Building Construction - 2022**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0981	0.8979	0.9409	1.5500e-003		0.0465	0.0465		0.0438	0.0438	0.0000	133.2420	133.2420	0.0319	0.0000	134.0400
Total	0.0981	0.8979	0.9409	1.5500e-003		0.0465	0.0465		0.0438	0.0438	0.0000	133.2420	133.2420	0.0319	0.0000	134.0400

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3.5 Building Construction - 2022**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1500e-003	0.2392	0.0781	5.8000e-004	0.0142	6.8000e-004	0.0149	4.1000e-003	6.5000e-004	4.7500e-003	0.0000	54.8417	54.8417	9.1000e-004	0.0000	54.8646
Worker	0.0529	0.0299	0.3287	8.7000e-004	0.0942	6.9000e-004	0.0949	0.0251	6.4000e-004	0.0257	0.0000	78.5533	78.5533	2.1500e-003	0.0000	78.6071
Total	0.0601	0.2691	0.4068	1.4500e-003	0.1084	1.3700e-003	0.1097	0.0292	1.2900e-003	0.0304	0.0000	133.3950	133.3950	3.0600e-003	0.0000	133.4717

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0981	0.8979	0.9409	1.5500e-003		0.0465	0.0465		0.0438	0.0438	0.0000	133.2419	133.2419	0.0319	0.0000	134.0399
Total	0.0981	0.8979	0.9409	1.5500e-003		0.0465	0.0465		0.0438	0.0438	0.0000	133.2419	133.2419	0.0319	0.0000	134.0399

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3.5 Building Construction - 2022**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.1500e-003	0.2392	0.0781	5.8000e-004	0.0142	6.8000e-004	0.0149	4.1000e-003	6.5000e-004	4.7500e-003	0.0000	54.8417	54.8417	9.1000e-004	0.0000	54.8646
Worker	0.0529	0.0299	0.3287	8.7000e-004	0.0942	6.9000e-004	0.0949	0.0251	6.4000e-004	0.0257	0.0000	78.5533	78.5533	2.1500e-003	0.0000	78.6071
Total	0.0601	0.2691	0.4068	1.4500e-003	0.1084	1.3700e-003	0.1097	0.0292	1.2900e-003	0.0304	0.0000	133.3950	133.3950	3.0600e-003	0.0000	133.4717

3.5 Building Construction - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1455	1.3306	1.5026	2.4900e-003		0.0647	0.0647		0.0609	0.0609	0.0000	214.4194	214.4194	0.0510	0.0000	215.6946
Total	0.1455	1.3306	1.5026	2.4900e-003		0.0647	0.0647		0.0609	0.0609	0.0000	214.4194	214.4194	0.0510	0.0000	215.6946

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3.5 Building Construction - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.3200e-003	0.3120	0.1164	9.1000e-004	0.0228	6.7000e-004	0.0235	6.6000e-003	6.4000e-004	7.2400e-003	0.0000	86.3247	86.3247	1.2500e-003	0.0000	86.3560
Worker	0.0803	0.0433	0.4831	1.3500e-003	0.1515	1.0800e-003	0.1526	0.0403	1.0000e-003	0.0413	0.0000	121.6851	121.6851	3.0900e-003	0.0000	121.7625
Total	0.0896	0.3552	0.5996	2.2600e-003	0.1743	1.7500e-003	0.1761	0.0469	1.6400e-003	0.0485	0.0000	208.0098	208.0098	4.3400e-003	0.0000	208.1185

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1455	1.3306	1.5026	2.4900e-003		0.0647	0.0647		0.0609	0.0609	0.0000	214.4191	214.4191	0.0510	0.0000	215.6943
Total	0.1455	1.3306	1.5026	2.4900e-003		0.0647	0.0647		0.0609	0.0609	0.0000	214.4191	214.4191	0.0510	0.0000	215.6943

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3.5 Building Construction - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.3200e-003	0.3120	0.1164	9.1000e-004	0.0228	6.7000e-004	0.0235	6.6000e-003	6.4000e-004	7.2400e-003	0.0000	86.3247	86.3247	1.2500e-003	0.0000	86.3560
Worker	0.0803	0.0433	0.4831	1.3500e-003	0.1515	1.0800e-003	0.1526	0.0403	1.0000e-003	0.0413	0.0000	121.6851	121.6851	3.0900e-003	0.0000	121.7625
Total	0.0896	0.3552	0.5996	2.2600e-003	0.1743	1.7500e-003	0.1761	0.0469	1.6400e-003	0.0485	0.0000	208.0098	208.0098	4.3400e-003	0.0000	208.1185

3.6 Paving - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	1.8300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0122	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888

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3.6 Paving - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	3.4000e-004	3.7700e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9487	0.9487	2.0000e-005	0.0000	0.9493
Total	6.3000e-004	3.4000e-004	3.7700e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9487	0.9487	2.0000e-005	0.0000	0.9493

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888
Paving	1.8300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0122	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888

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3.6 Paving - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	3.4000e-004	3.7700e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9487	0.9487	2.0000e-005	0.0000	0.9493
Total	6.3000e-004	3.4000e-004	3.7700e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	0.9487	0.9487	2.0000e-005	0.0000	0.9493

3.7 Architectural Coating - 2023**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	4.0240	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571

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3.7 Architectural Coating - 2023**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7500e-003	9.4000e-004	0.0106	3.0000e-005	3.3100e-003	2.0000e-005	3.3300e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.6563	2.6563	7.0000e-005	0.0000	2.6580
Total	1.7500e-003	9.4000e-004	0.0106	3.0000e-005	3.3100e-003	2.0000e-005	3.3300e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.6563	2.6563	7.0000e-005	0.0000	2.6580

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.0221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	4.0240	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571

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3.7 Architectural Coating - 2023**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7500e-003	9.4000e-004	0.0106	3.0000e-005	3.3100e-003	2.0000e-005	3.3300e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.6563	2.6563	7.0000e-005	0.0000	2.6580
Total	1.7500e-003	9.4000e-004	0.0106	3.0000e-005	3.3100e-003	2.0000e-005	3.3300e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	2.6563	2.6563	7.0000e-005	0.0000	2.6580

4.0 Operational Detail - Mobile**4.1 Mitigation Measures Mobile**

Increase Density

Increase Diversity

Improve Destination Accessibility

Increase Transit Accessibility

Integrate Below Market Rate Housing

Limit Parking Supply

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3616	0.6611	2.0371	2.6900e-003	0.1958	3.6400e-003	0.1994	0.0525	3.3800e-003	0.0559	0.0000	243.9382	243.9382	0.0138	0.0000	244.2835
Unmitigated	0.3719	0.7290	2.2985	3.7400e-003	0.3012	4.5500e-003	0.3058	0.0807	4.2400e-003	0.0850	0.0000	339.6471	339.6471	0.0162	0.0000	340.0524

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	52.72	57.28	48.56	24,370	15,841
Apartments Mid Rise	1,596.00	1,533.60	1406.40	720,348	468,226
Day-Care Center	192.56	16.15	15.16	25,483	16,564
General Office Building	28.68	6.40	2.73	8,655	5,626
Government (Civic Center)	136.81	0.00	0.00	36,984	24,040
Parking Lot	0.00	0.00	0.00		
Total	2,006.76	1,613.42	1,472.85	815,840	530,296

4.3 Trip Type Information

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Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	2.00	1.00	1.00	42.60	21.00	36.40	86	11	3
Apartments Mid Rise	2.00	1.00	1.00	42.60	21.00	36.40	86	11	3
Day-Care Center	2.00	1.00	1.00	12.70	82.30	5.00	28	58	14
General Office Building	2.00	1.00	1.00	33.00	48.00	19.00	77	19	4
Government (Civic Center)	2.00	1.00	1.00	75.00	20.00	5.00	50	34	16
Parking Lot	2.00	1.00	1.00	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Apartments Mid Rise	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Day-Care Center	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
General Office Building	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Government (Civic Center)	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219
Parking Lot	0.542923	0.036563	0.224970	0.128073	0.025383	0.005498	0.017257	0.009562	0.001621	0.001069	0.005080	0.000783	0.001219

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

Exceed Title 24

Install High Efficiency Lighting

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	363.9672	363.9672	0.0148	3.0600e-003	365.2482
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	411.4080	411.4080	0.0167	3.4600e-003	412.8560
NaturalGas Mitigated	8.9000e-004	8.1200e-003	6.8200e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	8.8435	8.8435	1.7000e-004	1.6000e-004	8.8961
NaturalGas Unmitigated	9.9000e-004	9.0100e-003	7.5700e-003	5.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	9.8129	9.8129	1.9000e-004	1.8000e-004	9.8712

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5.2 Energy by Land Use - NaturalGas**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Day-Care Center	37336	2.0000e-004	1.8300e-003	1.5400e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	1.9924	1.9924	4.0000e-005	4.0000e-005	2.0042
General Office Building	50804	2.7000e-004	2.4900e-003	2.0900e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	2.7111	2.7111	5.0000e-005	5.0000e-005	2.7272
Government (Civic Center)	95746	5.2000e-004	4.6900e-003	3.9400e-003	3.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004	0.0000	5.1094	5.1094	1.0000e-004	9.0000e-005	5.1397
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		9.9000e-004	9.0100e-003	7.5700e-003	5.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	9.8129	9.8129	1.9000e-004	1.8000e-004	9.8712

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5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Day-Care Center	33826	1.8000e-004	1.6600e-003	1.3900e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.3000e-004	1.3000e-004	0.0000	1.8051	1.8051	3.0000e-005	3.0000e-005	1.8158
General Office Building	45723.6	2.5000e-004	2.2400e-003	1.8800e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.4400	2.4400	5.0000e-005	4.0000e-005	2.4545
Government (Civic Center)	86171.4	4.6000e-004	4.2200e-003	3.5500e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.5984	4.5984	9.0000e-005	8.0000e-005	4.6258
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		8.9000e-004	8.1200e-003	6.8200e-003	5.0000e-005		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	8.8435	8.8435	1.7000e-004	1.5000e-004	8.8961

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5.3 Energy by Land Use - Electricity**Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	38072.4	12.3303	5.0000e-004	1.0000e-004	12.3737
Apartments Mid Rise	1.11028e+006	359.5810	0.0146	3.0200e-003	360.8466
Day-Care Center	17654	5.7175	2.3000e-004	5.0000e-005	5.7376
General Office Building	28756	9.3131	3.8000e-004	8.0000e-005	9.3458
Government (Civic Center)	54194	17.5515	7.1000e-004	1.5000e-004	17.6133
Parking Lot	21350	6.9145	2.8000e-004	6.0000e-005	6.9389
Total		411.4080	0.0167	3.4600e-003	412.8560

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5.3 Energy by Land Use - Electricity**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	34051.6	11.0281	4.5000e-004	9.0000e-005	11.0669
Apartments Mid Rise	993690	321.8212	0.0131	2.7000e-003	322.9539
Day-Care Center	13395.2	4.3382	1.8000e-004	4.0000e-005	4.3535
General Office Building	24224.2	7.8454	3.2000e-004	7.0000e-005	7.8730
Government (Civic Center)	45653.3	14.7855	6.0000e-004	1.2000e-004	14.8375
Parking Lot	12810	4.1487	1.7000e-004	3.0000e-005	4.1633
Total		363.9672	0.0148	3.0500e-003	365.2482

6.0 Area Detail**6.1 Mitigation Measures Area**

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.4158	0.0291	2.5267	1.3000e-004		0.0140	0.0140		0.0140	0.0140	0.0000	4.1293	4.1293	3.9600e-003	0.0000	4.2284
Unmitigated	1.4913	0.0291	2.5267	1.3000e-004		0.0140	0.0140		0.0140	0.0140	0.0000	4.1293	4.1293	3.9600e-003	0.0000	4.2284

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4022					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.0130					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0760	0.0291	2.5267	1.3000e-004		0.0140	0.0140		0.0140	0.0140	0.0000	4.1293	4.1293	3.9600e-003	0.0000	4.2284
Total	1.4913	0.0291	2.5267	1.3000e-004		0.0140	0.0140		0.0140	0.0140	0.0000	4.1293	4.1293	3.9600e-003	0.0000	4.2284

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6.2 Area by SubCategory**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4022					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0760	0.0291	2.5267	1.3000e-004		0.0140	0.0140		0.0140	0.0140	0.0000	4.1293	4.1293	3.9600e-003	0.0000	4.2284
Total	1.4158	0.0291	2.5267	1.3000e-004		0.0140	0.0140		0.0140	0.0140	0.0000	4.1293	4.1293	3.9600e-003	0.0000	4.2284

7.0 Water Detail**7.1 Mitigation Measures Water**

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	40.2195	0.4497	0.0109	54.7048
Unmitigated	48.1001	0.5620	0.0136	66.1990

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7.2 Water by Land Use**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.521232 / 0.328603	1.4513	0.0170	4.1000e-004	1.9999
Apartments Mid Rise	15.637 / 9.85809	43.5380	0.5111	0.0124	59.9974
Day-Care Center	0.111513 / 0.286747	0.5558	3.6500e-003	9.0000e-005	0.6741
General Office Building	0.462108 / 0.283227	1.2775	0.0151	3.7000e-004	1.7638
Government (Civic Center)	0.462108 / 0.283227	1.2775	0.0151	3.7000e-004	1.7638
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		48.1001	0.5620	0.0136	66.1990

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7.2 Water by Land Use**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.416986 / 0.308558	1.2128	0.0136	3.3000e-004	1.6519
Apartments Mid Rise	12.5096 / 9.25674	36.3837	0.4089	9.9000e-003	49.5566
Day-Care Center	0.0892103 / 0.269256	0.4899	2.9300e-003	7.0000e-005	0.5846
General Office Building	0.369686 / 0.26595	1.0666	0.0121	2.9000e-004	1.4559
Government (Civic Center)	0.369686 / 0.26595	1.0666	0.0121	2.9000e-004	1.4559
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		40.2195	0.4497	0.0109	54.7048

8.0 Waste Detail**8.1 Mitigation Measures Waste**

Institute Recycling and Composting Services

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Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	20.2536	1.1970	0.0000	50.1775
Unmitigated	25.3170	1.4962	0.0000	62.7219

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8.2 Waste by Land Use**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	3.68	0.7470	0.0442	0.0000	1.8507
Apartments Mid Rise	110.4	22.4102	1.3244	0.0000	55.5203
Day-Care Center	3.38	0.6861	0.0406	0.0000	1.6998
General Office Building	2.42	0.4912	0.0290	0.0000	1.2170
Government (Civic Center)	4.84	0.9825	0.0581	0.0000	2.4340
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		25.3170	1.4962	0.0000	62.7219

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8.2 Waste by Land Use**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	2.944	0.5976	0.0353	0.0000	1.4805
Apartments Mid Rise	88.32	17.9282	1.0595	0.0000	44.4163
Day-Care Center	2.704	0.5489	0.0324	0.0000	1.3599
General Office Building	1.936	0.3930	0.0232	0.0000	0.9736
Government (Civic Center)	3.872	0.7860	0.0465	0.0000	1.9472
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		20.2536	1.1970	0.0000	50.1775

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

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Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	-621.7540	0.0000	0.0000	-621.7540

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11.1 Vegetation Land Change**Vegetation Type**

	Initial/Final	Total CO2	CH4	N2O	CO2e
	Acres	MT			
Trees	11.6 / 4.5	-788.1000	0.0000	0.0000	-788.1000
Total		-788.1000	0.0000	0.0000	-788.1000

11.2 Net New Trees**Species Class**

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Hardwood Maple	74	77.1080	0.0000	0.0000	77.1080
Pine	53	33.8140	0.0000	0.0000	33.8140
Soft Maple	64	55.4240	0.0000	0.0000	55.4240
Total		166.3460	0.0000	0.0000	166.3460