Town of Truckee
Planning Division

Frishman Hollow Phase II Project

Initial Study/Mitigated Negative Declaration

January 2020

Prepared by

RANEY PLANNING & MANAGEMENT, INC.
1501 Sports Drive, Suite A, Sacramento, CA 95834

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APPENDICES:

INITIAL STUDY

January 2020

A. BACKGROUND

1.	Project Title:	Frishman Hollow Phase II Project
2.	Lead Agency Name and Address:	Town of Truckee Planning Division 10183 Truckee Airport Road Truckee, CA 96161
3.	Contact Person and Phone Number:	Yumie Dahn Associate Planner (530) 582-2918
4.	Project Location:	11200 Rue Ivy Truckee, CA 96161 APNs: 019-410-041 and -046
6.	Project Sponsor's Name and Address:	The Pacific Companies 430 East State Street, Suite 100 Eagle, ID 83616
7.	Existing Land Use Designation:	High Density Residential, 6-12 du/acre
8.	Proposed Land Use Designation:	High Density Residential, 16-18 du/acre
9.	Existing Zoning Designation:	Multi-Family Residential, 10 du/acre (RM-10)
10.	Proposed Zoning Designation:	Multi-Family Residential, 18 du/acre (RM-18)
11.	Potentially Required Approvals from Other Public Agencies:	California Department of Forestry and Fire Protection (Timber Harvest Plan)

12. Surrounding Land Uses and Setting:

The project site consists of 9.34 acres located at 11200 Rue Ivy in the Town of Truckee, CA, within Nevada County. The site is comprised of two separate parcels, identified by Assessor's Parcel Numbers (APNs) 019-410-041 and -046, respectively, as well as the Rue Ivy right-of-way, which loops around Parcel 019-410-041 in the center of the property. Parcel 019-410-041, which includes a total of 2.24 acres, is currently developed with Phase I of the Frishman Hollow affordable housing project (Phase I area). The remainder of the project site outside of the Rue Ivy right-of-way consists primarily of trees and native grasses, with a paved pedestrian trail extending through the site along the western boundary. The project site is surrounded by trees, with an unnamed drainage and Alder Creek Middle School to the west, and State Route (SR) 89 bordering the project site to the east. The project site is currently designated High Density Residential, 6-12 dwelling units per acre (du/acre) by the Town of Truckee 2025 General Plan, and is zoned Multi-Family Residential, 10 du/acre (RM-10).

13. Project Description Summary:

The Frishman Hollow Phase II affordable housing project (proposed project) would include development of 68 affordable residential units spread between four buildings (A1, A2, B1, and B2) to be located on approximately 4.87-acres within Parcel 019-410-046, outside of the Rue Ivy roadway loop. Building A1 would be located southeast of the Phase I area, A2 would be located directly southwest of the Phase I area, and B1 and B2 would be located directly north of the Phase I area. The proposed project would include four different unit layouts for each individual building. The layouts would comprise a total of 12 studio units, 12 one-bedroom units, 28 two-bedroom units, and 16 three-bedroom units.

Currently, the Town of Truckee is the property owner for the project site, and the Town is partnering with an affordable housing developer to complete the project. The proposed project would include a General Plan Amendment (GPA) to amend the land use of Parcel 019-410-046 from High Density Residential, 6-12 du/acre, to High Density Residential, 16-18 du/acre, and a Zoning Map Amendment to change the Parcel 019-410-046 zoning from RM-10 to RM-18. Additionally, the proposed project would require approval of a Use Permit for disturbance of slopes greater than 20 percent and a Development Permit.

14. Status of Native American Consultation Pursuant to Public Resources Code Section 21080.3.1:

Assembly Bill (AB) 52 (Public Resources Code 21080.3.1) requires lead agencies to provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a proposed project early in the CEQA process if they have requested notice of projects proposed within that area. The Town of Truckee has only received requested notice per AB 52 from the United Auburn Indian Community (UAIC); however, the Town also notifies the Washoe Tribe of Nevada and California and the T'si Akim Maidu as a courtesy, due to their prevalence in the area.

In accordance with AB 52 requirements, the Town of Truckee sent a consultation letter to the UAIC. In addition, letters were sent to the Washoe Tribe of Nevada and California and the T'si Akim Maidu. The UAIC responded initially requesting a visit to the project area and copies of archaeological reports and records search results for the proposed project. In a follow-up correspondence, UAIC indicated that a site visit would be difficult due to the pending winter storms. Rather than a site visit at this time, UAIC indicated that they would like the opportunity to conduct a post-ground disturbance visit, at which ground visibility would be better.

The Washoe Tribe responded on January 8, 2020 indicating their knowledge of a potential archaeological site in the project vicinity and also requesting the opportunity to review any cultural studies prepared for the project. The Cultural Resources Study prepared for the proposed project by Far Western Anthropological Group was provided to the Washoe Tribe, who requested additional information referenced in the project-specific study. The additional information has been provided. The Washoe Tribe is currently reviewing the additional material and may provide further input.

B. SOURCES

The following documents are referenced information sources used for the purposes of this Initial Study:

1. California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective.* April 2005.
2. California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* November 2017.
3. California Building Standards Commission. *California Green Building Standards Code*. 2019.
4. California Department of Conservation. *California Important Farmland Finder.* Available at: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed December 2019.
5. California Department of Forestry and Fire Protection. *Truckee, Very High Fire Hazard Severity Zones in LRA*. November 24, 2008.
6. California Department of Transportation. *California Scenic Highway Mapping System*. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed November 2019.
7. Department of Toxic Substances Control. *Hazardous Waste and Substances Site List (Cortese).* Available at: https://www.envirostor.dtsc.ca.gov/public/. Accessed November 19, 2019.
8. Far Western. *RE: Cultural Resources Study and AB 52 Native American Consultation for the Frishman Hollow Project.* January 9, 2020.
9. j.c. brennan & associates, Inc. *Frishman Hollow Phase II, Environmental Noise Assessment, Town of Truckee, California.* December 23, 2019.
10. Kelly Biological Consulting, Inc. *Biological Summary, Frishman Hollow Phase 2, Truckee, CA.* June, 2019.
11. Kelly Biological Consulting, Inc. *Special Status Plant Survey, Frishman Hollow Phase 2, Truckee, CA.* September, 2019.
12. LSC Transportation Consultants, Inc. *RE: Frishman Hollow Phase II – Traffic Study.* January 3, 2020.
13. Natural Resources Conservation Service. *Web Soil Survey.* Available at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed November 2019.
14. Northern Sierra Air Quality Management District. *Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects.* August 15, 2019.
15. Town of Truckee. *Town of Truckee 2025 General Plan Environmental Impact Report.* July 2006.
16. Town of Truckee. *Town of Truckee General Plan.* Adopted November 16, 2006.
17. Town of Truckee. *Major Development Projects, Frishman Hollow.* Available at: https://www.townoftruckee.com/government/community-development/planning-division/growth-and-development/major-development-projects/frishman-hollow. Accessed November 2019.
18. Town of Truckee. *Truckee Trails and Bikeway Master Plan*. September 2015.
19. Town of Truckee. *Truckee Population and Housing Estimates.* Available at: https://www.townoftruckee.com/government/community-development/planning-division/growth-and-development/truckee-population-and-housing-estimates. Accessed November 19, 2019.
20. Truckee Donner Public Utilities District. *Truckee Water System 2015 Urban Water Management Plan*. June 2016.
21. Truckee Tahoe Airport Land Use Commission. *Truckee Tahoe Airport Land Use Compatibility Plan*. October 27, 2016.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐	**Aesthetics**	☐	**Agriculture and Forest Resources**	✖	**Air Quality**
✖	**Biological Resources**	✖	**Cultural Resources**	☐	**Energy**
✖	**Geology and Soils**	☐	**Greenhouse Gas Emissions**	☐	**Hazards and Hazardous Materials**
✖	**Hydrology and Water Quality**	☐	**Land Use and Planning**	☐	**Mineral Resources**
☐	**Noise**	☐	**Population and Housing**	☐	**Public Services**
☐	**Recreation**	✖	**Transportation**	✖	**Tribal Cultural Resources**
☐	**Utilities and Service Systems**	☐	**Wildfire**	☐	**Mandatory Findings of Significance**

D. DETERMINATION

On the basis of this initial study:

☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

✕ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_______________________________ _______________________________
Signature Date

Yumie Dahn, Associate Planner, AICP Town of Truckee
Printed Name For

E. BACKGROUND AND INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) identifies and analyzes the potential environmental impacts of the Frishman Hollow Phase II Project (proposed project). The information and analysis presented in this document is organized in accordance with the order of the California Environmental Quality Act (CEQA) checklist in Appendix G of the CEQA Guidelines. Where the analysis provided in this document identifies potentially significant environmental effects of the project, mitigation measures are prescribed.

The mitigation measures prescribed for environmental effects described in this IS/MND would be implemented in conjunction with the project, as required by CEQA. The mitigation measures would be incorporated into the project through conditions of approval. The Town of Truckee would adopt a Mitigation Monitoring/Reporting Program for the project in conjunction with approval of the project.

On November 16, 2006, the Town of Truckee adopted a comprehensive update to the City's General Plan and certified an associated Environmental Impact Report (EIR).[1] The General Plan EIR is a program EIR, prepared pursuant to Section 15168 of the CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.). The General Plan EIR analyzed full implementation of the General Plan and identified measures to mitigate the significant adverse impacts associated with the General Plan to the maximum extent feasible.

The Town of Truckee adopted an IS/MND in 2006 for the Frishman Hollow Phase I development project. The Frishman Hollow Phase I development project included construction of the Rue Ivy access roadway, the Class I trail located within the western portion of the project site, and buildout of the 2.24-acre parcel within the center of the roadway loop (Parcel 019-410-041) with eight multi-family apartment buildings, one community building, and associated improvements. The IS/MND analyzed implementation of the Frishman Hollow Phase I development project and identified measures to mitigate the significant adverse impacts associated with the project to the maximum extent feasible.

F. PROJECT DESCRIPTION

The following provides a description of the project site's current location and setting, as well as the proposed project components and discretionary actions required for the project.

Project Location and Setting

The project site is located at 11200 Rue Ivy in the Town of Truckee, California (see Figure 1 and Figure 2). The 9.34-acre project site is comprised of two separate parcels, identified by APNs 019-410-041 and -046, as well as the Rue Ivy right-of-way (2.23 acres), which loops around Parcel 019-410-041 in the center of the property. Parcel 019-410-041, which includes a total of 2.24 acres, is developed with Phase I of the Frishman Hollow affordable housing project. The remainder of the project site outside of the Rue Ivy right-of-way (Parcel 019-410-46) consists primarily of trees and native grasses, with a paved pedestrian trail extending through the site along the western boundary. A public utilities easement runs through the project site, paralleling the western boundary. Rue Ivy extends southward from the project site, connecting to Donner Pass Road west of the Donner Pass Road/SR 89/Henness Road roundabout. It should be noted that the overall site acreage is 9.34 acres, given that the proposed project includes an amendment to the previous approval associated with Phase I of the Frishman Hollow project; however, the specific site acreage for the proposed Phase II development area is 4.87, excluding Rue Ivy.

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1 Town of Truckee. *Town of Truckee General Plan.* Adopted November 16, 2006.
Town of Truckee. *Town of Truckee Draft Environmental Impact Report.* July 2006.

Figure 1
Regional Project Location

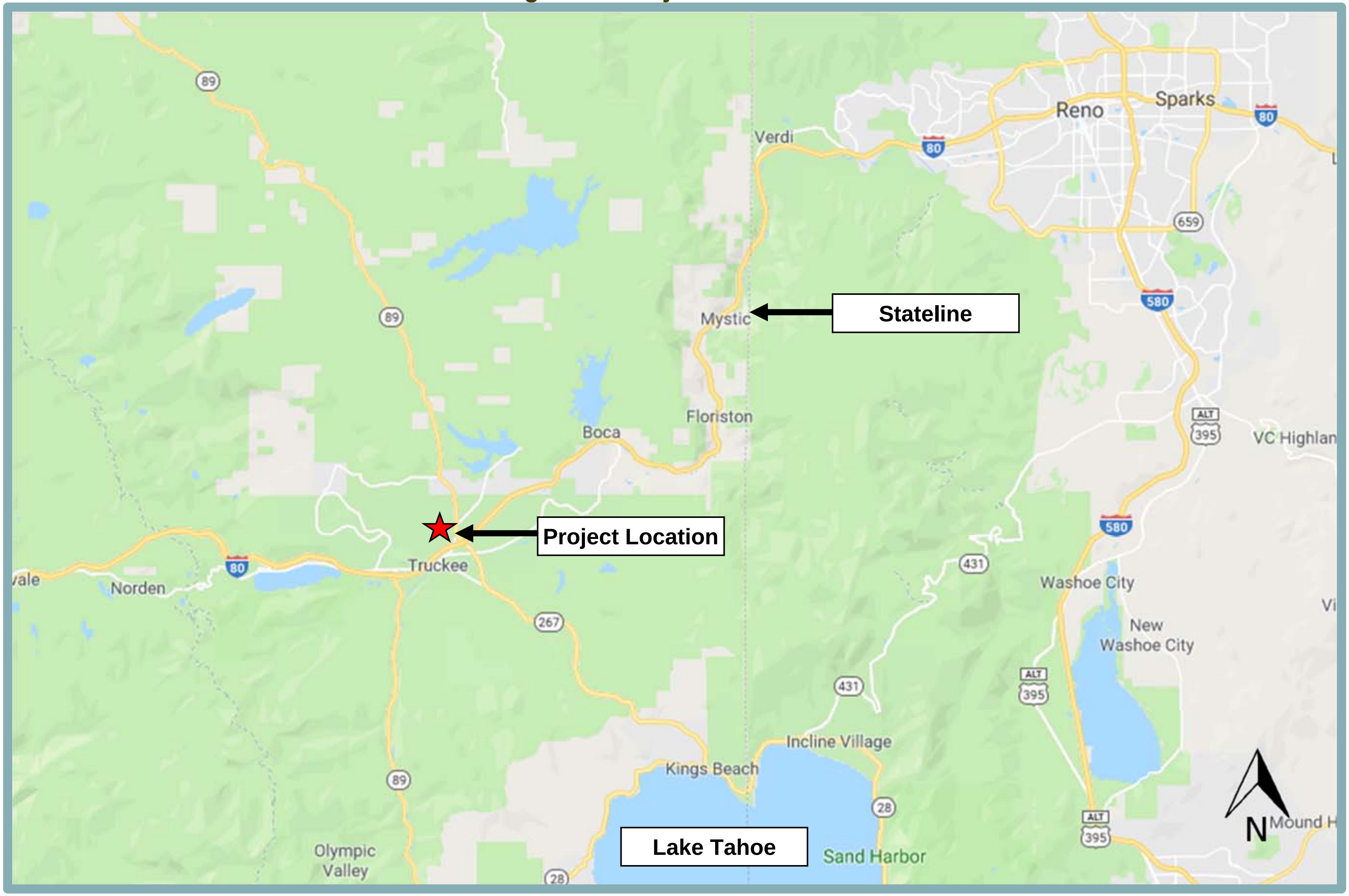
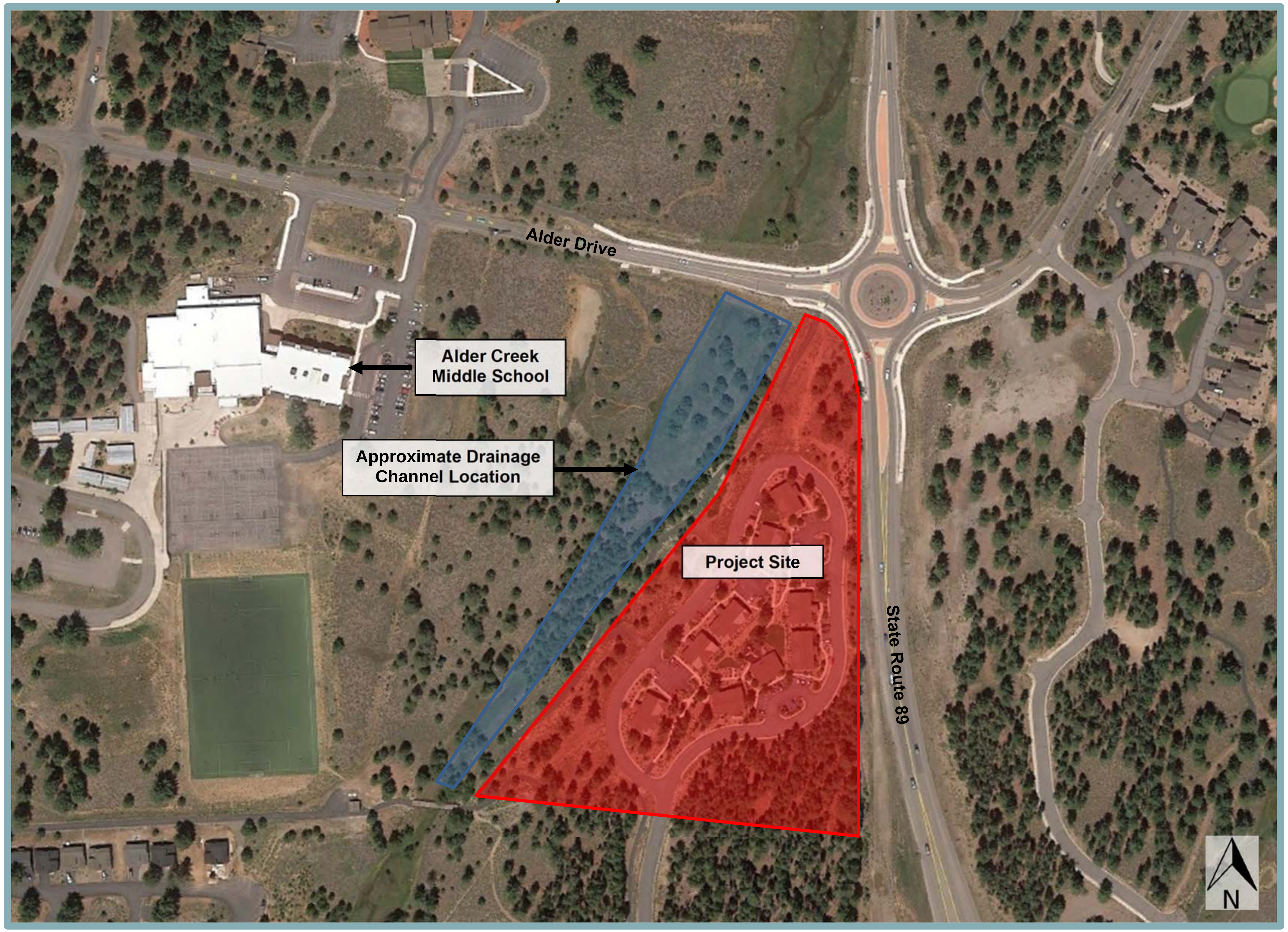


Figure 2
Project Site Boundaries



The site is surrounded by trees, with an unnamed drainage bordering the site to the west, and SR 89 bordering the site to the east.

Alder Drive is also located north of the project site, with sparsely developed land located further north, beyond the roadway. Other surrounding uses include a golf course located to the east of the site, across SR 89, Coachland RV park and recreation center located to the south of the site, and an apartment complex (Henness Flats Apartments) located to the southeast of the site, across SR 89. Alder Creek Middle School is located to the west of the site, beyond the unnamed drainage feature.

Additionally, Assumption Catholic Church is located to the north of the school, across Alder Drive. A trail easement runs south along the existing drainage, eventually connecting to the existing Class I trail that connects to both Alder Creek Middle School and the residential uses to the south of the school.

The project site is currently designated High Density Residential, 6-12 du/acre, by the Town of Truckee 2025 General Plan, and is zoned RM-10 (Multi-Family Residential, 10 du/acre).

Project Components

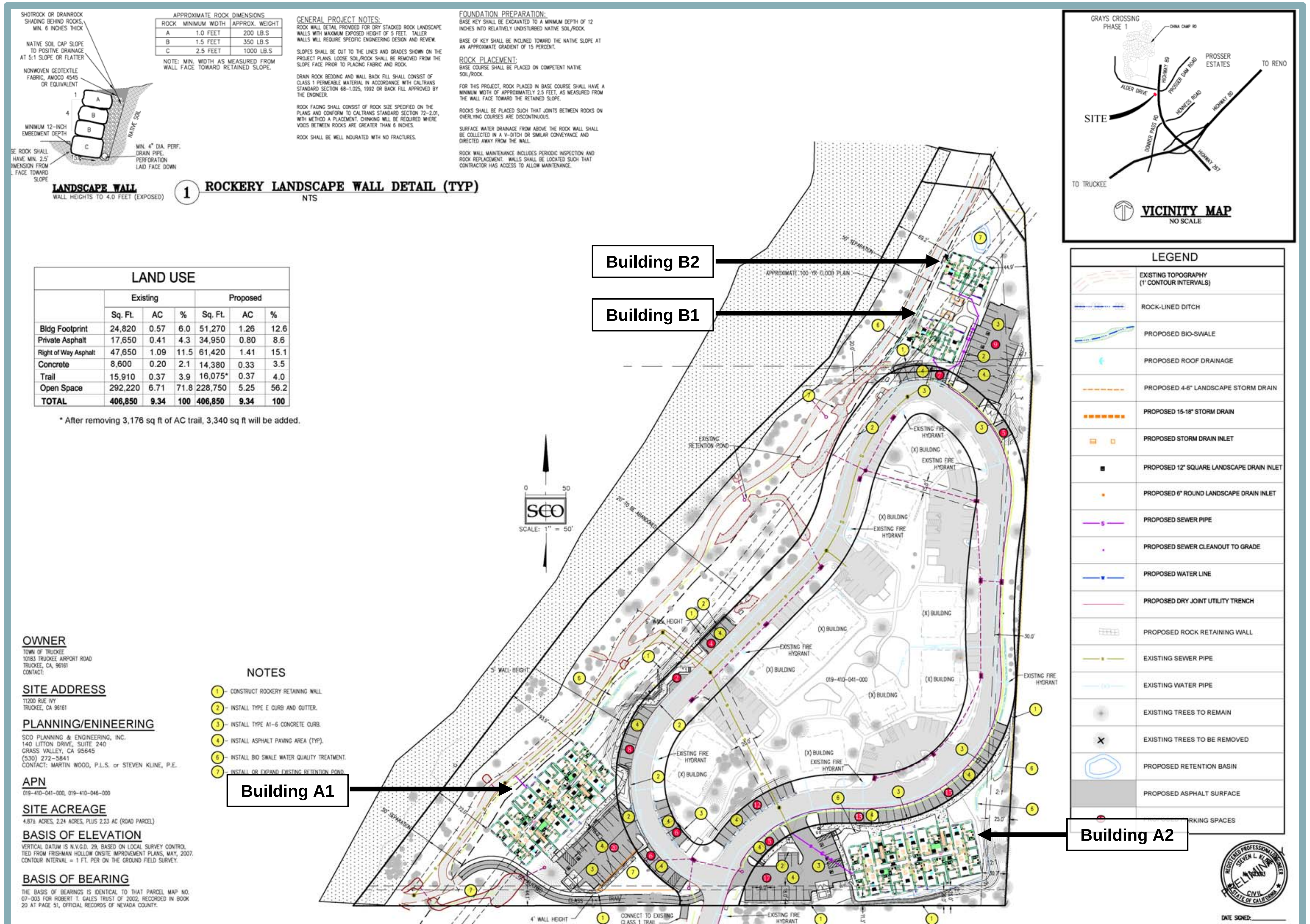
The proposed project would include development of 68 affordable residential units spread between four buildings (A1, A2, B1, and B2) to be located outside of the existing Rue Ivy loop, surrounding the existing Phase I development. Access to the proposed project would be provided by the existing Rue Ivy roadway. Building A1 would be located southwest of the Phase I area, Building A2 would be located directly southeast of the Phase I area, and Buildings B1 and B2 would be located directly north of the Phase I development (see Figure 3). The proposed project would consist of four different unit layouts for each individual building. The layouts would comprise a total of 12 studio units, 12 one-bedroom units, 28 two-bedroom units, and 16 three-bedroom units.

Buildings A1 and A2 would include six studio units, six one-bedroom units, 14 two-bedroom units, and four three-bedroom units, for a total of 60 units between the two buildings. Buildings B1 and B2 would include an additional eight units, each consisting of four three-bedroom units. Buildings A1 and A2 would be three stories, while Buildings B1 and B2 would be two stories. It should be noted that the proposed project would include a setback of at least 50-feet from the drainage to the west of the site.

Each of the proposed buildings would have an associated new parking lot to accommodate the additional residents. In addition, new parking areas along Rue Ivy are proposed, as shown in Figure 3. The proposed project would include 136 additional parking spaces, resulting in a total of 201 parking spaces for the entire site. One parking area would be constructed directly east of Building A1 and another parking area would be constructed directly west Building A2. The third parking area would be developed directly east of Buildings B1 and B2.

Landscaping proposed for the project would include evergreen trees, deciduous trees, various types of shrubs and perennials, as well as native grasses to be located around the proposed buildings and parking areas (see Figure 4). A “natural” play area with climbing rocks, as well as a covered picnic area, would be located in the southern portion of the site, east of Building A1 and associated parking lot. A community garden would be located near Building A2, in the southeastern portion of the site. A community gathering and covered picnic area would be located in the northern portion of the project site, near Buildings B1 and B2.

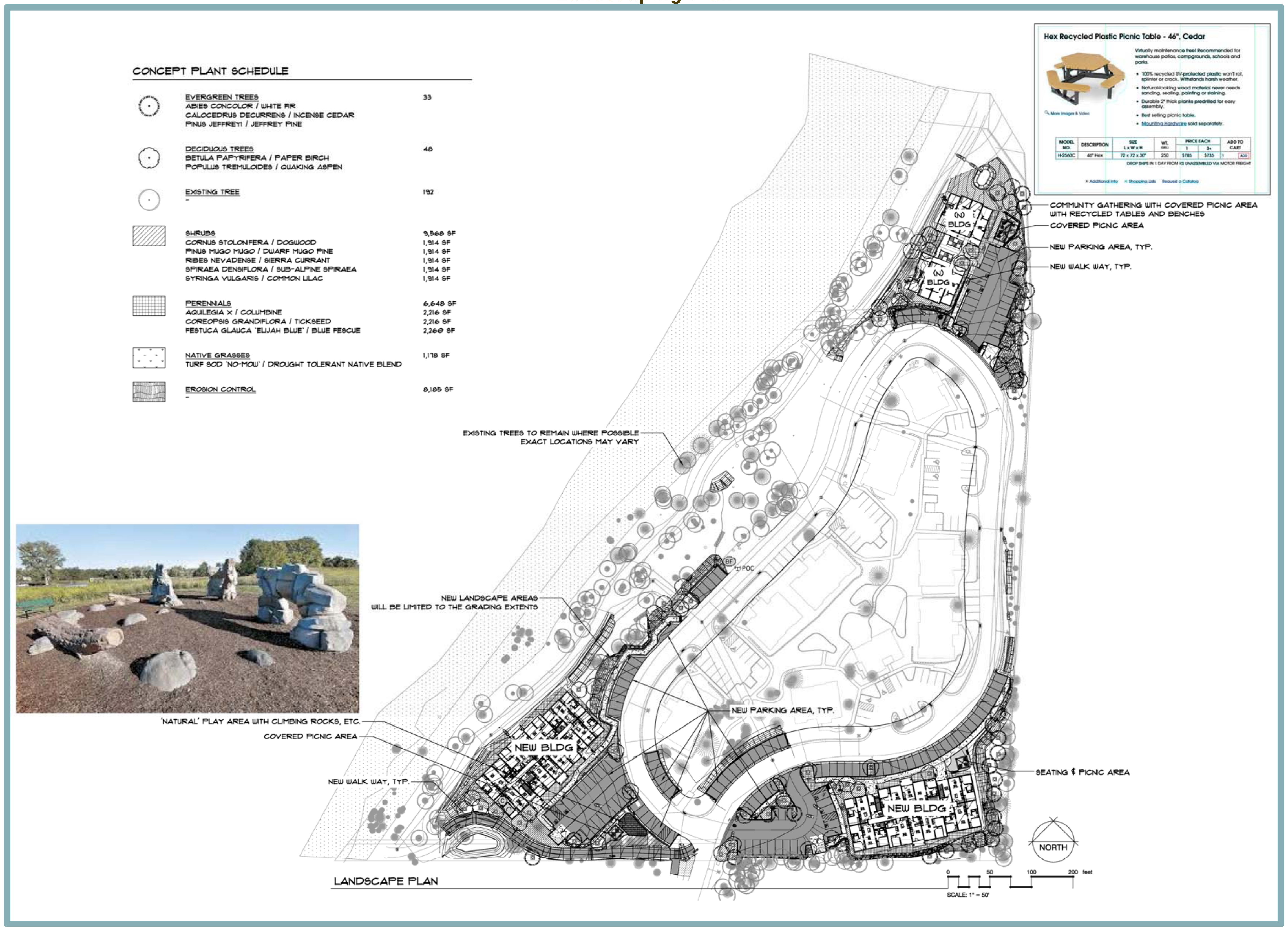
Figure 3
Site Plan



LAND USE	Existing			Proposed		
	Sq. Ft.	AC	%	Sq. Ft.	AC	%
Bldg Footprint	24,820	0.57	6.0	51,270	1.26	12.6
Private Asphalt	17,650	0.41	4.3	34,950	0.80	8.6
Right of Way Asphalt	47,650	1.09	11.5	61,420	1.41	15.1
Concrete	8,600	0.20	2.1	14,380	0.33	3.5
Trail	15,910	0.37	3.9	16,075*	0.37	4.0
Open Space	292,220	6.71	71.8	228,750	5.25	56.2
TOTAL	**406,850**	**9.34**	**100**	**406,850**	**9.34**	**100**

* After removing 3,176 sq ft of AC trail, 3,340 sq ft will be added.

Figure 4
Landscaping Plan



A covered picnic area would also be provided on-site within the open space area associated with the drainage to the west, on the western side of the existing trail. New walkways associated with the proposed buildings would be provided. Rockery landscape walls would be included in various areas of the project site, as noted in Figure 3 for development along steep slopes. Additionally, the proposed project would include construction of a realigned trail along the southwestern portion of the project site, south of Building A1 and associated parking area, that would connect to the existing trail that runs along the western portion of the project site.

The proposed project would connect to existing utility lines within the Phase I area (see Figure 3). Five new bio swales would be installed to adequately treat stormwater from the project site. Of the five bio swales, two would be located along the western border of the site (one north of Building A1 and one southwest of Buildings B1 and B2), and three would be located in the southeast corner of the site, near Building A2. The proposed project would also include the expansion or installation of four retention ponds in the southwestern and northern portions of the project site.

The proposed project would include a General Plan Amendment (GPA), Zoning Map Amendment, Use Permit, and Development Permit, which are discussed in further detail below.

General Plan Amendment and Zoning Map Amendment

The proposed project would include a GPA to change the land use designation of Parcel 019-410-046 from High Density Residential, 6-12 du/acre, to High Density Residential, 16-18 du/acre. In addition, the proposed project would also include a Zoning Map Amendment to rezone Parcel 019-410-046 from RM-10 to RM-18. The existing land use and zoning designations for Parcel 019-410-041 applies to the Rue Ivy right-of-way, which would not be altered. Although the proposed project is consistent with the current RM-10 zoning due to its qualification for density bonus provisions under State law, a rezone to RM-18 and GPA would ensure the Town maintains consistency with its certified Housing Element in terms of the amount and type of residentially-zoned land available within the Town.

Use Permit

The proposed project would require approval of a Use Permit from the Town of Truckee. According to Section 18.36.020(c) of the Development Code, hillside developments, including roads, streets and driveways proposed on slopes of 20 percent or greater, are subject to the approval of a Use Permit in compliance with Chapter 18.76 and the criteria set forth in Section 18.36.060. The proposed project would include development on slopes greater than 20 percent on the western portion of the site, near Building A1, Building B1, at the parking area located at the southwest portion of the site near Building A2, and near the proposed parking areas on the western portion of the Rue Ivy loop.

Development Permit

Development permits are required for all permitted commercial, industrial, and public uses that include 7,500 square feet (sf) of floor area (5,000 sf in Downtown zoning districts) or disturb more than 26,000 sf of ground area, and for all permitted multi-family residential projects with 11 or more dwelling units. Because the proposed project would include a multi-family residential project with more than 11 dwelling units and disturbance of more than 26,000 sf of ground area, a Development Permit would be required.

Discretionary Actions

The proposed project is seeking the following approvals from the Town of Truckee:

- GPA to amend the land use designation of the proposed Phase II development area from High Density Residential, 6-12 du/acre, to High Density Residential, 16-18 du/acre;
- Zoning Map Amendment to change the zoning designation of the proposed Phase II development area from RM-10 to RM-18;
- Use Permit for disturbance of slopes 20 percent or greater; and
- Development Permit for 68 multi-family residential dwelling units, 71,200 sf of gross floor area, and disturbance of over 26,000-sf of ground area.
- Project Amendment to ensure a comprehensive review of Frishman Hollow Phase I with Frishman Hollow Phase 2.

The proposed project is also anticipated to require the following approval from CAL FIRE:

- Approval of a Timber Harvest Plan for the removal of mixed-conifer trees on the project site.

G. ENVIRONMENTAL CHECKLIST

The following checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

I. AESTHETICS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	✖	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	✖	☐
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	✖	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	✖	☐

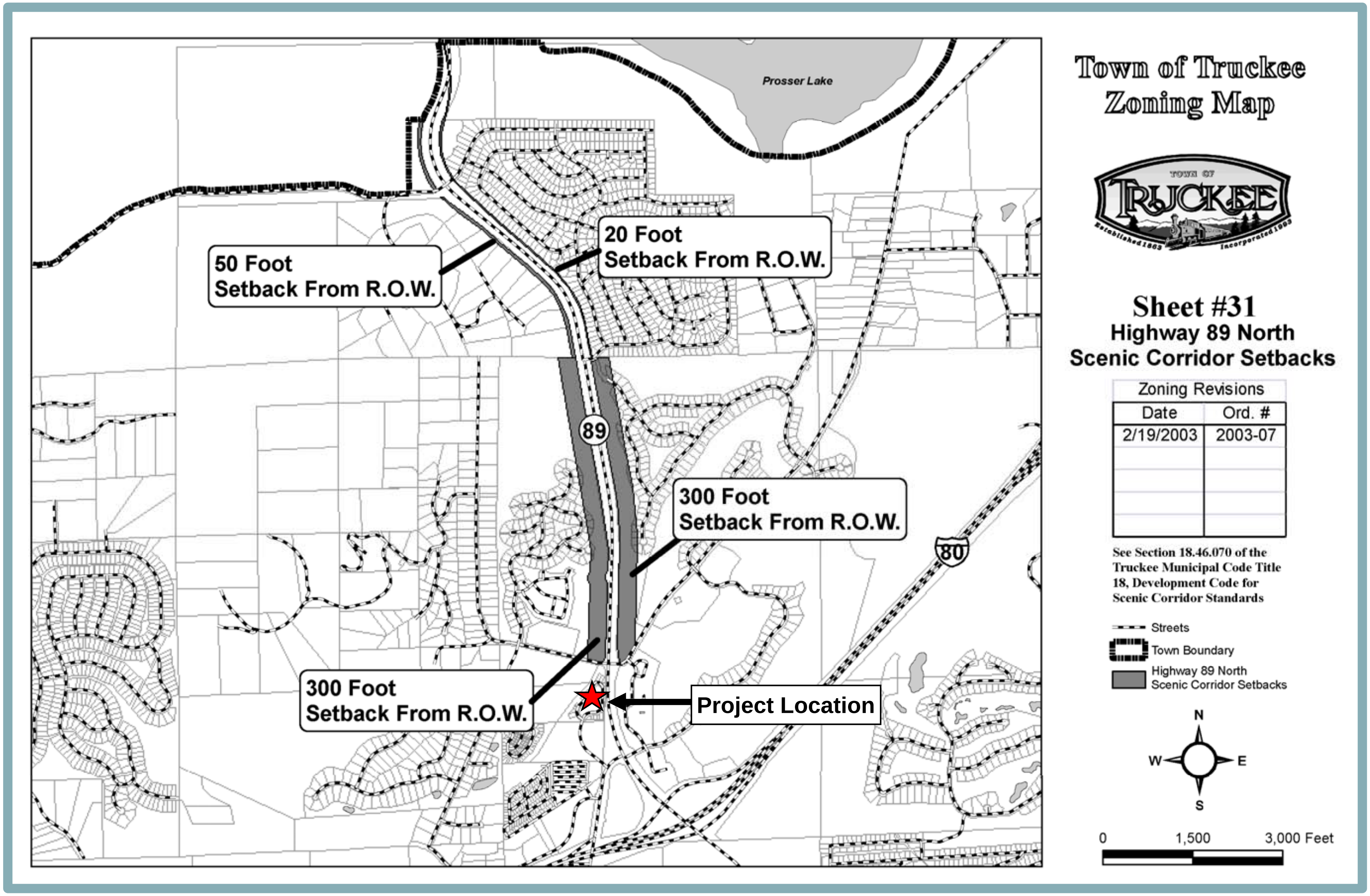
Discussion

a,b. Examples of typical scenic vistas include mountain ranges, ridgelines, or bodies of water as viewed from a highway, public space, or other area designated for the express purpose of viewing and sightseeing. The mountain landscape dominates the built environment in Truckee. Scenic views in the area include surrounding mountain peaks and ridgelines, and sweeping vistas of the forested hillsides, meadows, and the river valley in which the Town lies.

Figure CC-1 of the General Plan identifies a scenic vista located east of SR 89, across Prosser Dam Road. As such, development of Buildings B1 and B2 would block views of the scenic vista from the Phase I development. In addition, the scenic vista can be seen from the northern portion of the project site; however, due to the existing Frishman Hollow Phase I development and the topography of the area, the scenic vista cannot be seen from areas directly south of the site. Although the scenic vista could be seen from the Frishman Hollow Phase I development, CEQA does not consider a project's effects on itself to result in a significant impact. Furthermore, views of the scenic vista from SR 89 would continue to be available as the proposed project is located to the west of SR 89 and the vista is located northeast of SR 89. Therefore, development of the proposed project would not obstruct views of the scenic vista, including mountain ranges, ridgelines, or bodies of water as viewed from a highway, public space, or other area designated for the express purpose of viewing and sightseeing.

The Truckee Development Code, Section 18.46.080, Scenic Corridor Standards, identifies areas that are subject to the Town's Scenic Corridor Development Standards. The Town of Truckee's Scenic Corridor Development Standards apply to certain areas along SR 89 and I-80. According to Figure 5, the project site is located just south of the required 300-foot setback area along SR 89. As such, the proposed project would not be subject to the Town's Scenic Corridor Development Standards.

Figure 5
SR 89 Scenic Corridor Setbacks



The Truckee General Plan designates the portion of I-80, where it passes through the Town limits, as a scenic corridor (see Figure CC-1, pg. 3-5); however, this portion of I-80 is not officially designated as a State Scenic Highway.[2] The Town's scenic corridor designation recognizes the high scenic value of the landscape along this thoroughfare, and the need to actively protect the corridor from the encroachment of visually incompatible development and advertising signage that could impair the scenic quality within the roadway's viewshed.[3] However, the project site is not visible from I-80 due to the sloping terrain and existing vegetation within the project area. Additionally, intervening development obstructs views of the project site from I-80. Furthermore, while the Town's scenic corridor designation recognizes areas within 300-feet of I-80, the site is located well outside of the 300-foot corridor range. Thus, the proposed project would not have a significant impact on a State Scenic Highway.

Based on the above, development of the proposed project would not have a substantial adverse effect on a scenic vista and would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway. Thus, a ***less-than-significant*** impact would occur.

c. The project site proposed for development currently consists primarily of trees and native grasses, with a paved pedestrian trail extending through the site along the western site boundary. The project site is surrounding by trees, with an unnamed drainage and Alder Creek Middle School to the west, and SR 89 bordering the project site to the east. The project site has been anticipated for residential development by the Town.

Currently, the central portion of the project site includes the Phase I development, located within the loop of Rue Ivy. The proposed project would consist of the Phase II affordable housing development. As such, the proposed project would be consistent with the existing Phase I development. The proposed project would be designed in a manner which is similar to that of the Phase I development. Thus, the existing visual character of the project site would not be substantially altered or degraded.

In addition, the proposed project would be required to comply with Section 18.24, Design Guidelines, of the Town's Development Code, which sets forth design standards and guidelines governing scenic quality. Compliance with such would ensure that the proposed project does not conflict with applicable zoning and other regulations governing scenic quality.

Based on the above, the proposed project would not conflict with applicable zoning or other regulations governing scenic quality, and a ***less-than-significant*** impact would occur.

d. Development of the proposed uses would involve new sources of light and glare associated with lighting fixtures within the proposed buildings and parking areas. Headlights from vehicles driving within the project site would also result in sources of light and glare. However, such sources of light and glare would not be substantially more intensive than what currently occurs on the project site associated with the existing Phase I development. Additionally, light and glare is generated by vehicles traveling on SR 89 and Alder Drive in the project vicinity, as well as Alder Creek Middle School to the west, and the existing Coachland RV Park to the south.

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[2] California Department of Transportation. *California Scenic Highway Mapping System*. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed November 2019.

[3] Town of Truckee. *Town of Truckee 2025 General Plan* [pg 3-9]. Adopted November 16, 2016.

All outdoor lighting would be required to comply with the Town's Development Code, Section 18.30.060, Exterior Lighting and Night Sky, which outlines safe lighting practices while minimizing light pollution. Section 18.30.060 requires the project to use shielded lighting fixtures, and pedestrian-scale lighting fixtures. Furthermore, Section G, Outdoor Lighting Standards, states, "All light fixtures, including security lighting, shall be aimed and shielded so that the direct illumination shall be confined to the property boundaries of the source. Particular care is to be taken to assure that the direct illumination does not fall onto or across any public or private street or road." Compliance with the Town's standards would ensure that project effects on the nighttime lighting environment are minimized.

Given the general consistency of the proposed project with surrounding development and compliance with the Town's lighting standards, implementation of the proposed project would result in a ***less-than-significant*** impact related to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

II. AGRICULTURE AND FOREST RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	✖	☐
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	✖
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	✖	☐
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	✖	☐
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	✖	☐

Discussion

a,e. The central portion of the site is developed with the Frishman Hollow Phase I development, while the southern portion of the site, where buildings A1 and A2 are proposed, primarily consists of trees. The northern portion of the site also consists of various types of trees with ruderal vegetation. As such, the site is not currently being used for agricultural purposes.

Per the California Department of Conservation Farmland Mapping and Monitoring Program, the project site is located in an area which has not been mapped for agricultural resources. According to the Town of Truckee's General Plan Land Use map, the Town does not currently include any areas designated for agricultural uses.

In addition, the project site is located near existing development and the on-site terrain is sloped, thereby precluding any potential agricultural uses on the site. Due to the lack of farmland mapping or designated agricultural areas, as well as the developed nature of the area, the project site is not considered Farmland. Therefore, the proposed project would not convert Prime Farmland, Unique Farmland or Farmland of Statewide importance to a non-agricultural use, or otherwise result in the loss of Farmland to non-agricultural use, and a ***less-than-significant*** impact would occur.

b. As noted above, the project site is currently zoned RM-10 and designated High Density Residential by the Town's General Plan. Agricultural production is not considered a permitted or conditionally permitted use under either the RM-10 zoning or High Density Residential land use designation. In addition, the project site is not under a Williamson Act contract. Therefore, the proposed project would not conflict with existing zoning for agricultural use, or a Williamson Act contract, and ***no impact*** would occur.

c,d. The project site is not currently zoned forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), or zoned Timberland Production (as defined by Government Code section 51104[g]).Therefore, the proposed project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.

According to Public Resources Code section 12220[g], “forest land” is land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. Because the project site includes 700 trees, 359 of which would be removed, the area could be considered forest land, per Public Resources Code section 12220[g]. As such, the proposed project would require preparation of a Timber Harvest Plan to be submitted and approved by CAL FIRE, which would account for the loss of the 359 trees.

Additionally, as indicated on Figure 2, a substantial number of trees would remain in the immediate vicinity of the project site. Although the project site consists of trees, some of which would require removal, the area is not currently used or zoned for Timberland Production. The project site is currently zoned and designated by the General Plan for residential land uses.

Furthermore, the proposed project is considered the second phase of the Frishman Hollow development and has been anticipated for development. The site’s surrounding land uses primarily consist of residential development, Alder Creek Middle School, and other recreational facilities. Therefore, timberland production at the project site would be incompatible with the site and the surrounding area.

Based on the above, the proposed project would be considered to result in a ***less-than-significant*** impact related to the loss of forest land or conversion of forest land to non-forest use.

III. AIR QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	✖	☐	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	✖	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	✖	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	✖	☐

Discussion

a,b. The Town of Truckee is located in the Mountain Counties Air Basin (MCAB), and is under the jurisdiction of the Northern Sierra Air Quality Management District (NSAQMD). In addition to the Truckee area, the NSAQMD has jurisdiction over an area encompassing Nevada, Plumas, and Sierra counties. Topography and meteorological conditions vary widely in the areas under the NSAQMD's jurisdiction and air quality conditions can be heavily influenced by local factors. Consequently, air quality conditions within the MCAB vary, resulting in differing attainment status designations for State and federal ambient air quality standards (AAQS) within various portions of the MCAB. The attainment status for ozone, fine particulate matter 2.5 microns in diameter ($PM_{2.5}$), respirable particulate matter 10 microns in diameter (PM_{10}), and Carbon Monoxide (CO), AAQS are presented in Table 1.

Ozone is a secondary pollutant generated from ozone precursor gases, primarily oxides of nitrogen (NO_X) and reactive organic gases (ROG), which react with sunlight to create ozone. Reductions in ozone are accomplished through reducing precursor emissions. Western Nevada County is designated as being in nonattainment for the federal 8-hour ozone standard and all of Nevada County is designated as being in nonattainment for the State 1-hour ozone standard. Ozone exceedances in Nevada County are primarily due to transport of emissions from the broader Sacramento area and San Francisco Bay Area. As a result, the NSAQMD has jurisdiction over a relatively small portion of the pollutants causing nonattainment within the MCAB. Nevertheless, because portions of the MCAB have been designated as nonattainment, NSAQMD is preparing a federally enforceable State Implementation Plan (SIP) for western Nevada County in accordance with the Clean Air Act. The only current attainment plan adopted by NSAQMD is for the City of Portola. The attainment plan demonstrates that the City of Portola $PM_{2.5}$ nonattainment area will reach attainment by December of 2021. Given that the attainment plan only applies to the City of Portola and surrounding areas of Plumas County, the proposed project would not affect implementation of the attainment plan.

The SIP is an air quality attainment plan designed to reduce emissions of ozone precursors sufficient to attain the federal ozone standard by the earliest practicable date. The SIP under preparation will include various pollution control strategies. Overall emissions of ozone precursors must be reduced in western Nevada County (consistent with Reasonable Further Progress requirements specified in the Clean Air Act) until attainment is reached. Most of the reductions are expected to come from motor vehicles throughout the MCAB, Sacramento region, and San Francisco Bay Area becoming cleaner and from State regulations mandating further emissions reductions. Failure to submit and implement the SIP in a timely manner could result in federal sanctions, including the loss of federal highway funds, greater emission offset ratios for new sources, and other requirements that the U.S. Environmental Protection Agency (USEPA) may deem necessary.

Table 1
Attainment of AAQS within NSAQMD

Pollutant	State Designation	Federal Designation
Ozone (O_3)	Nevada County: Nonattainment (due to overwhelming transport) Sierra and Plumas County: Unclassified	**2008 Standard** Western Nevada County: Serious Nonattainment Sierra, Plumas, and Eastern Nevada County: Unclassifiable **2015 Standard** Western Nevada County: Moderate Nonattainment Sierra Plumas, Eastern Nevada County: Unclassifiable
PM_{10}	Nevada, Sierra, and Plumas Counties: Nonattainment	Unclassified
$PM_{2.5}$	Portola area in Plumas County: Nonattainment Nevada, Sierra, and remainder of Plumas County: Unclassified	**2012 Annual Standard** Portola area in Plumas County: Nonattainment Nevada, Sierra, and Remainder of Plumas County: Unclassifiable/Attainment **2012 24-hour Standard** Unclassifiable/Attainment
CO	Plumas County: Attainment Nevada, Sierra County: Unclassified	Unclassifiable/Attainment
Source: NSAQMD. Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects. August 15, 2019.		

The NSAQMD has established significance thresholds associated with development projects for emissions of the ozone precursors ROG and NO_x, as well as for PM_{10}. Adopted NSAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment. The thresholds, expressed in pounds per day (lbs/day), are listed in Table 2 below.

Table 2
NSAQMD Thresholds (lbs/day)

NO_X	ROG	PM_{10}
Level A		
<24 lbs/day	<24 lbs/day	<79 lbs/day
Level B		
24-136 lbs/day	24-136 lbs/day	79-136 lbs/day
Level C		
>136 lbs/day	>136 lbs/day	>136 lbs/day
Source: NSAQMD. Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use projects. August 15, 2019.		

As shown in the table, NSAQMD has developed a tiered approach to determine significance levels based on a range of emissions levels. All projects, Level A or greater, are required to implement the following basic measures recommended by NSAQMD:

- Alternatives to open burning of vegetative material will be used unless otherwise deemed infeasible by the NSAQMD. Among suitable alternatives are chipping, mulching, or conversion to biomass fuel; and
- Grid power shall be used (as opposed to diesel generators) for job site power needs where feasible during construction.

Projects that fall within the Level B emissions level thresholds require implementation of additional measures recommended by NSAQMD for consideration in order to result in a less-than-significant impact. Projects that exceed Level C emission level thresholds are required to implement further additional measures sufficient to reduce emissions to a level below significant. If, even after implementation of all such mitigation measures, a project would result in emissions in excess of the Level C thresholds, impacts would be considered significant and unavoidable.

The proposed project's construction and operational emissions were quantified using the California Emissions Estimator Model (CalEEMod) software version 2016.3.2 – a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including greenhouse gas (GHG) emissions, from land use projects. The model applies inherent default values for various land uses, including construction data, trip generation rates, vehicle mix, trip length, average speed, compliance with the California Building Standards Code (CBSC), etc. Version 2016.3.2 of CalEEMod is based on assumed compliance with the 2016 CBSC. While the proposed project may be subject to the updated 2019 CBSC, which includes more stringent standards for energy efficiency than the 2016 CBSC, the project applicant has indicated that the potential exists for the State to accept compliance with the 2016 CBSC for the proposed project due to the timing of the submission of plans to the State. In order to provide a worst-case emissions scenario, the project modeling assumes compliance with the 2016 CBSC, rather than the 2019 CBSC.

Where project-specific information is available, such information should be applied in the model. Accordingly, the proposed project's modeling assumes the following inherent site design features and project-specific information:

- Construction would begin in May 2020;
- Construction would occur over an approximately nine-month period;

- A total of 1,520 cubic yards of soil/material would be exported during site preparation, grading activities, and tree removal;
- Approximately four acres would be disturbed during grading activities, with an approximate daily disturbance of one acre;
- The proposed residences would not include hearths/fireplaces;
- The project would include pedestrian/bicycle network connections throughout the site and connecting off-site; and
- The vehicle trip rate was adjusted based on project-specific information provided by LSC Transportation Consultants, Inc.

The proposed project's estimated emissions associated with construction and operations are presented and discussed in further detail below. A discussion of the proposed project's contribution to cumulative air quality conditions is provided below as well. All emissions modeling results are included as Appendix A to this IS/MND.

Construction Emissions

According to the CalEEMod results, the proposed project would result in maximum unmitigated construction emissions as shown in Table 3. As shown in the table, the proposed project's construction emissions would be within the Level A thresholds for ROG and PM_{10} and the Level B thresholds for NO_X.

Table 3
Maximum Unmitigated Construction Emissions (lbs/day)

Pollutant	Proposed Project Emissions	Threshold Level
ROG	16.50	Level A
NO_X	31.28	Level B
PM_{10}	7.38	Level A
Source: CalEEMod, January 2020 (see Appendix A).		

As stated and presented above, all projects, including the proposed project, are required to comply with the basic measures recommended by NSAQMD, which would help to reduce the construction emissions from the levels presented in Table 3. In addition, all development projects under the jurisdiction of the NSAQMD are required to prepare a Dust Control Plan pursuant to Rule 226 (Dust Control). The proposed project's required implementation of the Dust Control Plan would help to further minimize construction-related emissions of fugitive dust, which is a component of PM_{10}, from the levels presented in Table 3. With implementation of the Dust Control Plan, the actual emissions of PM_{10} would be lower than the levels presented in Table 3.

Nonetheless, due to the Level B emissions of NO_X, pursuant to the NSAQMD guidelines, the proposed project would be required to implement additional NSAQMD recommended mitigation measures in order to be considered to reduce the impact to a less-than-significant level.

Operational Emissions

According to the CalEEMod results, the proposed project would result in maximum unmitigated operational criteria air pollutant emissions as shown in Table 4. As shown in the table, the proposed project's operational emissions would be within threshold Level A. With implementation of the basic measures recommended by NSAQMD, as discussed above, the proposed project would be considered to result in a less-than-significant impact related to operational emissions.

Table 4
Maximum Unmitigated Operational Emissions (lbs/day)

Pollutant	Proposed Project Emissions	Threshold Level
ROG	4.31	Level A
NO_X	10.08	Level A
PM_{10}	3.79	Level A

Source: CalEEMod, December 2019 (see Appendix A).

Cumulative Emissions

A cumulative impact analysis considers a project over time in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed. Due to the dispersive nature and regional sourcing of air pollutants, air pollution is already largely a cumulative impact. The nonattainment status of regional pollutants, including ozone and PM, is a result of past and present development, and, thus, cumulative impacts related to these pollutants could be considered cumulatively significant.

To improve air quality and attain the health-based standards, reductions in emissions are necessary within nonattainment areas. Adopted NSAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with applicable air quality plans. As future attainment of AAQS is a function of successful implementation of NSAQMD's planning efforts, by exceeding the NSAQMD's Level C thresholds for construction or operational emissions, a project could contribute to the region's nonattainment status for ozone and PM emissions and could be considered to conflict with or obstruct implementation of the NSAQMD's air quality planning efforts.

As discussed above, the proposed project would result in construction emissions that could be mitigated to less-than-significant levels. Additionally, the proposed project would result in operational emissions that would be within the Level A threshold. Therefore, the proposed project would not be considered to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment, and the project's incremental contribution to cumulative emissions would be considered less than significant.

Conclusion

Because the proposed project would result in Level B construction-related emissions of NO_X, pursuant to NSAQMD guidelines, the proposed project could be considered to result in emissions that would conflict with or obstruct implementation of the applicable regional air quality plans. Thus, a ***potentially significant*** impact could occur during construction of the proposed project.

Mitigation Measure(s)

Consistent with NSAQMD's Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects, implementation of the following mitigation measure would reduce the above impact to a *less-than-significant* level.

III-1. *The following language shall be included, via written notation, on project improvement plans, subject to review and approval by the Town of Truckee:*

- *Temporary traffic control shall be provided during all phases of the construction to improve traffic flow as deemed appropriate by local transportation agencies and/or Caltrans; and*
- *Construction activities shall be scheduled to direct traffic flow to off-peak hours as much as practicable.*

c. Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Sensitive receptors are typically defined as facilities where sensitive receptor population groups (i.e., children, the elderly, the acutely ill, and the chronically ill) are likely to be located. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The nearest existing sensitive receptors to the project site would be the existing Frishman Hollow Phase I residences, generally located approximately 50 feet from the proposed construction areas. The next nearest sensitive receptors are Alder Creek Middle School, located approximately 650 feet west of the project site, and the existing residences along Wolverine Circle, approximately 385 feet southwest of the site.

The major pollutant concentrations of concern are localized carbon monoxide (CO) emissions and toxic air contaminant (TAC) emissions, which are addressed in further detail below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. High levels of localized CO concentrations are only expected where background levels are high, and traffic volumes and congestion levels are high. Emissions of CO are of potential concern, as the pollutant is a toxic gas that results from the incomplete combustion of carbon-containing fuels such as gasoline or wood.

Although NSAQMD does not have an established threshold for CO emissions, daily maximum CO emissions are provided in order to inform the public. Maximum unmitigated daily construction and operational emissions of CO are provided in Table 5 below.

Table 5
Maximum Unmitigated Emissions of CO (lbs/day)

Project Phase	CO Emissions
Construction	21.22
Operations	25.45
Source: CalEEMod, December 2019 (see Appendix A).	

Although NSAQMD does not have an established threshold for CO, the nearby air pollution control district, Placer County Air Pollution Control District (PCAPCD), who has authority over a portion of the MCAB, has a screening level for localized CO impacts. According to the PCAPCD screening levels, a project could result in a significant impact if the project would result in CO emissions from vehicle operations in excess of 550 lbs/day, as well as increase vehicle trips such that the peak hour level of service (LOS) at an intersection would degrade from an acceptable LOS to an unacceptable LOS or substantially worsen (i.e., increase delay by 10 seconds or more) at an intersection that already operates at an unacceptable LOS. As discussed in Section XVII, Transportation, of this IS/MND, the addition of project traffic to local roadways would not result in any conflicts with established operations standards for the study intersections in the project vicinity. Based on the nearby PCAPCD's screening levels for localized CO impacts, the proposed project would not be expected to result in substantial localized CO concentrations. Therefore, the proposed project would not be considered to expose sensitive receptors to substantial concentrations of localized CO.

TAC Emissions

Another category of environmental concern is TACs. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommended setback distances for sensitive land uses from major sources of TACs, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk.

The proposed project does not include any operational activities that would be considered a substantial source of TACs. Accordingly, operations of the proposed project would not expose sensitive receptors to excess concentrations of TACs.

Short-term, construction-related activities could result in the generation of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions. Construction is temporary and occurs over a relatively short duration in comparison to the operational lifetime of the proposed project. Health risks are typically associated with exposure to high concentrations of TACs over extended periods of time (e.g., 30 years or greater), whereas the construction period associated with the proposed project would likely be limited to approximately nine months. All construction equipment and operation thereof would be regulated per the In-Use Off-Road Diesel Vehicle Regulation, which is intended to help reduce emissions associated with off-road diesel vehicles and equipment, including DPM. Because construction equipment on-site would not operate for long periods of time and would be used at varying locations within each site, associated emissions of DPM would not occur at the same location (or be evenly spread throughout the entire project site) for long periods of time. Due to the temporary nature of construction and the relatively short duration of potential exposure to associated emissions, the potential for any one sensitive receptor in the area to be exposed to concentrations of pollutants for a substantially extended period of time would be low. Thus, construction of the proposed project would not be expected to expose any nearby sensitive receptors to substantial pollutant concentrations.

Conclusion

Based on the above discussion, the proposed project would not expose any sensitive receptors to substantial concentrations of pollutants, including localized CO or TACs, during construction or operation. Therefore, the proposed project would result in a ***less-than-significant*** impact related to the exposure of sensitive receptors to substantial pollutant concentrations.

d. Emissions of principal concern include emissions leading to odors, emission that have the potential to cause dust, or emissions considered to constitute air pollutants. Air pollutants have been discussed in sections “a” through “c” above. Therefore, the following discussion focuses on emissions of odors and dust.

Emissions such as those leading to odor have the potential to adversely affect people. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative analysis to determine the presence of a significant odor impact is difficult. Typical odor-generating land uses include, but are not limited to, wastewater treatment plants, landfills, and composting facilities. The proposed project would not introduce any such land uses.

Diesel fumes from construction can be found to be objectionable; however, construction is temporary and construction equipment would operate intermittently throughout the course of a day, and would likely only occur over portions of the site at a time. In addition, all construction equipment and operation thereof would be regulated per the In-Use Off-Road Diesel Vehicle Regulation. Project construction would also be required to comply with all applicable NSAQMD rules and regulations, particularly associated with permitting of air pollutant sources. The aforementioned regulations would help to minimize air pollutant emissions, as well as any associated odors related to operation of construction equipment. Considering the short-term nature of construction activities, as well as the regulated and intermittent nature of the operation of construction equipment, the proposed project would not be expected to create objectionable odors affecting a substantial number of people.

The NSAQMD regulates objectionable odors through Rule 205 (Nuisance), which prohibits any person or source from emitting air contaminants or other material that result in any of the following: cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; endanger the comfort, repose, health, or safety of any such persons or the public; or have a natural tendency to cause injury or damage to business or property. Rule 205 is enforced based on complaints. If complaints are received, the NSAQMD is required to investigate the complaint, as well as determine and ensure a solution for the source of the complaint, which could include operational modifications. Thus, although not anticipated, if odor complaints are made during construction or operation of the project, the NSAQMD would ensure that such odors are addressed and any potential odor effects eliminated.

As noted previously, the proposed project would be required to comply with all applicable NSAQMD rules and regulations, including those related to dust. Furthermore, implementation of a Dust Control Plan pursuant to Rule 906 would be sufficient to reduce potential emissions of dust.

Therefore, construction and operation of the proposed project would not result in emissions (such as those leading to odors) adversely affecting a substantial number of people, and a ***less-than-significant*** impact would result.

IV. BIOLOGICAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	✖	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	✖	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	✖	☐
d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	✖	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	✖	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	✖

Discussion

a. The following discussion is based primarily on a Biological Summary prepared for the proposed project by Kelly Biological Consulting (see Appendix B).[4] Kelly Biological Consulting also conducted a Special-Status Plant Survey for the project site (see Appendix B).[5] While the overall site is 9.34 acre and includes the previous approval with Phase I of the Frishman Hollow development, the specific 7.1 acre site proposed for development primarily consists of native trees and grasses. The proposed buildings would be developed on portions of the site that primarily consist of trees and ruderal vegetation.

Special-status species include those plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal and State Endangered Species Acts. Both acts afford protection to listed and proposed species. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue are considered special-status species. Although CDFW Species of Special Concern and Fully Protected Species generally do not have special legal status, they are given special consideration under CEQA. In addition to regulations for special-status species, most birds in the U.S., including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) of 1918. Under the MBTA, destroying active nests, eggs, and young is illegal. In addition, plant species on California

4 Kelly Biological Consulting, Inc. *Biological Summary, Frishman Hollow Phase 2, Truckee, CA.* June, 2019.
5 Kelly Biological Consulting, Inc. *Special Status Plant Survey, Frishman Hollow Phase 2, Truckee, CA*. September 2019.

Native Plant Society (CNPS) Lists 1 and 2 are considered special-status plant species and are protected under CEQA.

Kelly Biological Consulting based much of their analysis on previous literature and the results of previous field surveys of the site, including the evaluation conducted for the Phase I project. In addition, the Biological Summary included a search of the California Natural Diversity Database (CNDDB) in May 2019 for the project site quadrangle. The intent of the database review was to identify documented occurrences of special-status species in the vicinity of the project area, to determine their locations relative to the project site, and to evaluate whether the site meets the habitat requirements of such species. Based on the results of the CNDDB search, a total of 27 special-status plant species and 26 special-status wildlife species are known to occur within the project region.

The potential for special-status species to occur on the project site is discussed in further detail below.

Special-Status Plants

Special-status plants generally occur in relatively undisturbed areas within vegetation communities such as vernal pools, marshes and swamps, chenopod scrub, seasonal wetlands, riparian scrub, chaparral, alkali playa, dunes, and areas with unusual soil characteristics.

According to the Biological Summary, of the 27 special-status plant species known to occur in the area, many are not likely to occur or have a low to moderate potential to occur within the project site. Previous surveys to assess potentially suitable habitat for special-status plants were undertaken by Kelly Biological Consulting in 2006 and 2019. The site was systematically searched. Based on the previous survey results, seven of the 27 species have the potential to occur within the off-site drainage area; however, the drainage would be avoided and not be subject to development as part of the proposed project. The species include the Plumas Ivesia, Donner Pass buckwheat, and Oregon fireweed. The 2019 special-status plant survey concluded that special status plants do not currently exist within the project site. Thus, construction activities associated with the proposed project would not result in substantial adverse effects to special-status plant species.

Special-Status Wildlife

Many of the 26 special-status wildlife species identified as a result of the CNDDB search have habitat requirements that are not present on the project site (i.e., cliffs, caves, meadows, etc.). Although the project site does not contain suitable habitat for a majority of special-status wildlife species, several species have a low to moderate potential to occur on the project site. Of the 26 special-status species, the species that have been determined to have moderate potential to occur on the project site include Cooper's hawk and white-headed woodpecker. In addition, due to the existing on-site trees, other avian species protected by the MBTA could use the project site as potential foraging and/or nesting habitat.

Cooper's Hawk

Cooper's hawk typically nests in woodlands and forest and are known to occur in most habitats during the migration season and winter. According to the Biological Summary, Cooper's hawk may use the project area for foraging and nesting habitat. Should construction activities begin during the nesting season, the proposed project could result in a substantial adverse effect to Cooper's hawk.

White-Headed Woodpecker

White-headed woodpecker is strongly associated with pine forests of the Transition and low Canadian life zones. The species is known to occur in elevations ranging from 4,000 to 7,500 feet. The project site elevation is 5,900 feet above sea level. Because pine trees are located on and adjacent to the project site, removal of trees could result in a substantial adverse effect to white-headed woodpecker.

Nesting Raptors and Migratory Birds

The project site contains existing trees that could be used by raptors and migratory birds protected by the MBTA. Tree removal during construction activities could adversely affect the nesting success of raptors and migratory birds (i.e., lead to the abandonment of active nests) or result in mortality of individual birds, which would constitute a violation of State and federal laws. Thus, in the event that such species occur on the project site during the breeding season, project construction activities could result in a substantial adverse effect to species protected under the MBTA.

Conclusion

Based on the above, the proposed project could have an adverse effect, either directly or through habitat modifications, on species identified as special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS, and a ***potentially significant*** impact could result.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

Cooper's Hawk, White-Headed Woodpecker, Nesting Raptors and Other Migratory Birds

IV-1. *A preconstruction nesting bird survey for Cooper's hawk, white-headed woodpecker, raptors and other migratory bird species shall be conducted by a qualified biologist within 14 days prior to the beginning of any construction or grading activity if construction commences within the avian nesting season (March 15th through August 31st). The results of the preconstruction nesting bird survey shall be submitted to the Town of Truckee for review. If nests are not found during the survey, further measures are not required. However, if an active nest is found during the survey, or at any time during project construction, construction activities shall not occur within 500 feet of the nest until the young have fledged from the nest and the nest is determined by a qualified biologist to be inactive. Trees containing nests or burrows that must be removed as a result of project implementation shall be removed during the non-breeding season (late September to March).*

b,c. According to the Biological Summary, the only potential wetlands or Waters of the U.S. in the vicinity of the project site is the unnamed drainage and wet meadow along the western border of the site. Such areas are within the 100-year floodplain identified in Figure 3. According to Section 18.38.040, River and Stream Development Standards, of the Town's

Development Code, structures and grading are prohibited within 50-feet of a 100-year floodplain. As shown in the figure, a 50-foot buffer or greater would be provided between the 100-year floodplain and any proposed development. Therefore, the proposed project would not have a substantial adverse effect on any riparian habitat, sensitive natural community, or protected wetlands, and a ***less-than-significant*** impact would occur.

d. Wildlife movement corridors are routes that animals regularly use and follow during seasonal migration, dispersal from native ranges, daily travel within home ranges, and inter-population movements. Movement corridors in California are typically associated with valleys, ridgelines, and rivers and creeks supporting riparian vegetation. The proposed project is located near other existing development, including the Frishman Hollow Phase I development on-site. Although an existing drainage channel is located along the western border of the site, as discussed above, setbacks from the drainage channel would be provided as part of the proposed project. Thus, the proposed project would not involve any work within the drainage area. Additionally, while portions of the site consist of tree-covered areas, existing development surrounding the site decreases the likelihood of wildlife using the site as a wildlife movement corridor. Furthermore, similar habitat to that found within the project site is found throughout the Sierra Nevada mountain range. Given the abundance of other suitable habitat for wildlife movement within the project region, wildlife would not be likely to prefer use of the site as a movement corridor.

As such, the project would not interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites, and a ***less-than-significant*** impact would occur.

e. The project site contains pine, fir, and other native trees, some of which would require removal as part of the proposed project. Specifically, 700 trees currently exist on the project site and approximately 359 would be removed. The Town's General Plan and Development Code encourage future development to consider retention of trees to the maximum extent feasible due to their ecological importance. As discussed above, approval of a Timber Harvest Plan by CAL FIRE is anticipated to be required to allow removal of approximately 359 on-site trees. According to Section 18.30.155(D)(1) of the Town Development Code, removal of trees greater than 24 inches diameter at breast height is reviewed as part of the land use approval. If approved, the project would be required to comply with the replacement standards identified in Section 18.30.155(F) of the Town Development Code, which requires one or more of the following:

- Replanting on-site – either a minimum one- and one-half inch caliper healthy and well-branched deciduous tree or a five to six-foot-tall evergreen tree for each tree removed.
- Replanting off-site – If there is insufficient available space on the property, the required replanting shall occur on other property owned or controlled by the same owner within the town, in an open space area that is part of the same subdivision, or in a publicly-owned or dedicated open space or park. Such mitigation planting is subject to property owner approval. If planting on publicly-owned or dedicated property, the public owner may specify the species and size of the tree(s).
- Unpermitted removal of trees – Any trees determined to have been accidently or purposely removed shall be required to be replaced at a 2:1 ratio (two new 15-gallon trees for each tree removed), or at an equivalent ratio to be approved by the Community Development Director.

In addition, the proposed project would be required to comply with the tree preservation requirements set forth in Section 18.30.155(G) of the Town Development Code, as well as Section 18.30.155(H) related to tree protection procedures for those trees that are not proposed for removal, including the placement of fencing at the dripline of the trees.

Because the proposed project would require removal of existing native trees, the project would be required to comply with the applicable standards set forth in Section 18.30.155, Tree Preservation, of the Town's Development Code. Given required compliance with the Town's standards related to tree protection, preservation, and removal, a ***less-than-significant*** impact would occur related to conflicting with local policies or ordinances protecting biological resources.

f. The project site is not located within an area that is subject to an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the proposed project would have ***no impact*** related to a conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan.

V. CULTURAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	✖	☐	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	☐	✖	☐	☐
c. Disturb any human remains, including those interred outside of dedicated cemeteries.	☐	✖	☐	☐

Discussion

The following is based primarily on a Cultural Resources Study prepared for the proposed project by Far Western.[6]

a-c. As part of the Cultural Resources Study prepared for the proposed project, Far Western conducted a records search update and literature review. The records search results identified three previous cultural studies that overlap with the current project area. The studies indicate that one archaeological site (CA-NEV-883/H) covers most of the proposed project area, and another site (CA-NEV-21) is located adjacent to the project site. However, the Cultural Resources Study did not indicate the presence of any historical resources, and structures are not located on the project site.

As further discussed in Section XVII, Tribal Cultural Resources, of this IS/MND, the Town of Truckee received responses from the UAIC and Washoe Tribe regarding the proposed project. The consultation with the tribes indicated the presence of two archaeological sites.

According to the Cultural Resources Study, CA-NEV-21 extends along an intermittent stream at the eastern toe of Alder Hill; the southern end of CA-NEV-21 (Loci 1 and 2) is located adjacent to the project site. Locus 2 and the area of Locus 1 south of Alder Drive were excavated in 2003 for the nearby Alder Creek Middle School project and were determined not to qualify for listing on the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP), as the resources had limited research potential. The results were forwarded to the Washoe Tribe, who concurred with the findings. The locations of the CA-NEV-21 Locus 2 and part of Locus 1 are covered by the school and paved parking areas and driveways. In addition, construction of the nearby existing Assumption Catholic Church disturbed or destroyed most of the remainder of Locus 1. As such, according to the Cultural Resources Study, the proposed project would not result in any additional impacts to site CA-NEV-21.

Site CA-NEV-883/H is a multi-component site that was recorded during the inventory phase of the Alder Creek Middle School project. The site consists of a flaked-stone scatter with three loci (areas of concentration) and five loci of early to mid-twentieth century refuse. According to the Cultural Resources Study, the site has not been subject to previous archaeological excavations, and the depth and full extent of the archaeological materials have not been determined. Because a formal evaluation addressing eligibility for the CRHR or NRHP has not been conducted, a significant impact to the site could occur as a result of construction of the proposed project.

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6 Far Western. *RE: Cultural Resources Study and AB 52 Native American Consultation for the Frishman Hollow Project.* January 9, 2020.

Additionally, unknown archaeological resources, including human remains, have the potential to be uncovered during ground-disturbing construction and excavation activities at the proposed project site. Therefore, if previously unknown resources are encountered during construction activities, the proposed project could cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines Section 15064.5 and/or disturb human remains, including those interred outside of dedicated cemeteries, during construction. Therefore, impacts are considered ***potentially significant***.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a *less-than-significant* level.

Known Resources

V-1. *Prior to any ground-disturbing activities, the project applicant shall retain an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology, as appropriate, to evaluate the eligibility of CA-NEV-883/H for listing on the California Register of Historical Resources, in consultation with the Washoe Tribe of Nevada and California and the United Auburn Indian Community. The formal evaluation shall include, at a minimum, additional exposure of the feature(s), photo-documentation and recordation, and analysis of the artifact assemblage(s). If the formal evaluation determines that the site is not eligible for the California Register, and the Washoe Tribe or United Auburn Indian Community does not consider the resource to be an important tribal resource, additional cultural work shall not be required for CA-NEV-883/H.*

If CA-NEV-883/H is found eligible for listing on the California Register of Historical Resources and/or is an important tribal cultural resource, further mitigation would be necessary, which might include avoidance of further disturbance to the resource through project redesign. If avoidance is determined to be infeasible, additional data recovery excavations shall be conducted for the resource, to collect enough information to exhaust the data potential of the resource. Pursuant to CEQA Guidelines Section 15126.4(b)(3)(C), a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the resource, shall be prepared and reviewed by involved parties prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Data recovery efforts can range from rapid photographic documentation to extensive excavation depending upon the physical nature of the resource. The degree of effort shall be determined at the discretion of a qualified archaeologist and should be sufficient to recover data considered important to the area's history and/or prehistory.

The language of this mitigation measure shall be included on any future grading plans, utility plans, and subdivision improvement drawings approved by the Town for the development of the project site.

Inadvertent Discovery of Unknown Resources

V-2. *Prior to grading permit issuance, the developer shall submit plans to the Town of Truckee for review and approval which indicate (via notation on the improvement plans) that if unknown historic and/or cultural resources are encountered during site grading or other site work, all such work shall be halted immediately within 200 feet and the developer shall immediately notify the Town of Truckee of the discovery. In such case, the developer shall be required, at their own expense, to retain the services of a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology for the purpose of recording, protecting, or curating the discovery as appropriate. The archaeologist shall be required to submit to the Town of Truckee, the Washoe Tribe of Nevada and California, and the United Auburn Indian Community, for review and approval, a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding work has occurred.*

V-3. *The project applicant shall file a grading plan with the Town prior to any soil disturbance for the project, and submit a copy to the Washoe and UAIC. The grading plan shall set forth the plan and methodology for grading and other excavation activities, including a timeline, grading locations, and other pertinent details including but not limited to, the depth of excavation, types of equipment to be used, etc. The grading plan shall stipulate the following two conditions: 1) an archaeological monitor and/or tribal monitor shall be present during all grading activities and shall have the authority to stop and redirect grading activities within 200 feet of the location of any potentially important discovery; and 2) the qualified archaeological monitor shall be required to consult with any on-site tribal monitor regarding any potentially important discovery. Significance determinations shall be measured in terms of criteria for inclusion on the California Register of Historical Resources (Title 14 CCR, §4852[a]), and the definition of tribal cultural resources set forth in Public Resources Code Section 21074. At least 10 business days prior to project grading, the Project Applicant shall contact the Washoe Tribe of Nevada and California and United Auburn Indian Community to notify the Tribes of grading and to coordinate with the Tribes on the monitoring program/schedule. The monitoring program/schedule shall be adhered to by both the qualified archeologist retained by the applicant, and any tribal monitor should they request to be on-site.*

V-4. *If human remains, or remains that are potentially human, are found during construction, a professional archeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance. The archaeologist shall notify the Nevada County Coroner (per §7050.5 of the State Health and Safety Code). The provisions of §7050.5 of the California Health and Safety Code, §5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, then the Coroner will notify the Native American Heritage Commission (NAHC), which then will designate a Native American Most*

Likely Descendant (MLD) for the project (§5097.98 of the Public Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the applicant does not agree with the recommendations of the MLD, the NAHC can mediate (§5097.94 of the Public Resources Code). If an agreement is not reached, the qualified archaeologist or MLD must rebury the remains where they will not be further disturbed (§5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center, using an open space or conservation zoning designation or easement, or recording a reinternment document with the county in which the property is located (AB 2641). Work cannot resume within the no-work radius until the lead agency, through consultation as appropriate, determines that the treatment measures have been completed to their satisfaction.

VI. ENERGY. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	✖	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	✖	☐

Discussion

a,b. The main forms of available energy supply are electricity, natural gas, and oil. As noted above, while the proposed project may be subject to the updated 2019 CBSC, which includes more stringent standards for energy efficiency than the 2016 CBSC, the project applicant has indicated that the potential exists for the State to accept compliance with the 2016 CBSC for the proposed project due to the timing of the submission of plans to the State. In order to provide a worst-case scenario, the project analysis assumes compliance with the 2016 CBSC, rather than the 2019 CBSC.

The purpose of the CBSC, which includes the California Green Building Standards Code and the Building Energy Efficiency Standards, is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. Furthermore, the CBSC regulates the method of use, properties, performance, types of materials used in construction, alteration repair, improvement and rehabilitation of a structure or improvement to property.

A description of the California Green Building Standards Code and the Building Energy Efficiency Standards, as well as discussions regarding the proposed project's potential effects related to energy demand during construction and operations, is provided below.

California Green Building Standards Code

The 2016 California Green Building Standards Code, otherwise known as the CALGreen Code (CCR Title 24, Part 11), is a portion of the CBSC, which became effective with the rest of the CBSC on January 1, 2017. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California. Requirements of the CALGreen Code include, but are not limited to, the following measures:

- Compliance with relevant regulations related to future installation of Electric Vehicle charging infrastructure in residential and non-residential structures;
- Indoor water use consumption is reduced through the establishment of maximum fixture water use rates;
- Outdoor landscaping must comply with the California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), or a local ordinance, whichever is more stringent, to reduce outdoor water use;
- Diversion of 65 percent of construction and demolition waste from landfills;
- Mandatory periodic inspections of energy systems (i.e., heat furnace, air conditioner, mechanical equipment) for nonresidential buildings over 10,000 sf to ensure that all are working at their maximum capacity according to their design efficiencies; and

- Mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board.

Building Energy Efficiency Standards

The 2016 Building Energy Efficiency Standards is a portion of the CBSC, which expands upon energy efficiency measures from the 2013 Building Energy Efficiency Standards resulting in a 28 percent reduction in energy consumption from the 2013 standards for residential structures. Energy reductions relative to previous Building Energy Efficiency Standards would be achieved through various regulations, including requirements for the use of high efficacy lighting, improved water heating system efficiency, and high-performance attics and walls.

Construction Energy Use

Construction of the proposed project would involve increased energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary lighting, welding, and for supplying energy to areas of the site where energy supply cannot be met via a hookup to the existing electricity grid.

Even during the most intense period of construction, due to the different types of construction activities (e.g., site preparation, grading, building construction), only portions of the project site would be disturbed at a time, with operation of construction equipment occurring at different locations on the project site, rather than a single location. In addition, all construction equipment and operation thereof would be regulated per the CARB In-Use Off-Road Diesel Vehicle Regulation, which is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing limits on idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. The In-Use Off-Road Diesel Vehicle Regulation would subsequently help to improve fuel efficiency and reduce GHG emissions. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to reduce demand on oil and emissions associated with construction.

The CARB has prepared the *2017 Climate Change Scoping Plan Update* (2017 Scoping Plan),[7] which builds upon previous efforts to reduce GHG emissions and is designed to continue to shift the California economy away from dependence on fossil fuels. Appendix B of the 2017 Scoping Plan includes examples of local actions (municipal code changes, zoning changes, policy directions, and mitigation measures) that would support the State's climate goals. The examples provided include, but are not limited to, enforcing idling time restrictions for construction vehicles, utilizing existing grid power for electric energy rather than operating temporary gasoline/diesel-powered generators, and increasing use of electric and renewable fuel-powered construction equipment. The In-Use Off-Road Diesel Vehicle Regulation described above, with which the proposed project must comply, would be consistent with the intention of the 2017 Scoping Plan and the recommended actions included in Appendix B of the 2017 Scoping Plan.

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7 California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* November 2017.

Based on the above, the temporary increase in energy use occurring during construction of the proposed project would not result in a significant increase in peak or base demands or require additional capacity from local or regional energy supplies. In addition, the proposed project would be required to comply with all applicable regulations related to energy conservation and fuel efficiency, which would help to reduce the temporary increase in demand.

Operational Energy Use

Following implementation of the proposed project, Truckee Donner Public Utilities District would provide electricity and natural gas to the project site. Energy use associated with operation of the proposed project would be typical of residential uses, requiring electricity and natural gas for interior and exterior building lighting, heating, ventilation, and air conditioning (HVAC), electronic equipment, machinery, refrigeration, appliances, security systems, and more. Maintenance activities during operations, such as landscape maintenance, would involve the use of electric or gas-powered equipment. In addition to on-site energy use, the proposed project would result in transportation energy use associated with vehicle trips generated by the proposed residential development.

The proposed project would be subject to all relevant provisions of the CBSC, including the Building Energy Efficiency Standards and CALGreen Code. Adherence to the CALGreen Code and the Building Energy Efficiency Standards would ensure that the proposed structures would consume energy efficiently. Required compliance with the CBSC would ensure that the building energy use associated with the proposed project would not be wasteful, inefficient, or unnecessary.

With regard to transportation energy use, the proposed project would comply with all applicable regulations associated with vehicle efficiency and fuel economy, such as the Corporate Average Fuel Economy (CAFE) Standards and Pavley. In addition, as discussed in Section XVII, Transportation, of this IS/MND, the project site is located in an area with access to several public transit lines. Transit would provide access to several grocery stores, restaurants, banks, and schools within close proximity to the project site. The site's access to public transit and proximity to such uses would reduce VMT and, consequently, fuel consumption associated with the proposed affordable housing development, thereby providing for increased pedestrian connectivity with the surrounding area and resulting in reduced vehicle use.

Conclusion

Based on the above, construction and operation of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Thus, a ***less-than-significant*** impact would occur.

VII. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	✖	☐
ii. Strong seismic ground shaking?	☐	☐	✖	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	✖	☐
iv. Landslides?	☐	☐	✖	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	✖	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	✖	☐
d. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	✖	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	✖
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	✖	☐	☐

Discussion

ai-ii. According to the Town's General Plan EIR, faults located near Truckee include the Mohawk Valley Fault, the Dog Valley Fault, and the Tahoe-Incline Village Fault. The Mohawk Valley Fault is located approximately 20 miles northwest of Truckee, while the northern portion of the Dog Valley Fault is located southwest of Truckee near Donner Lake. The Tahoe Incline-Village Fault is located approximately 12 miles southeast of the project site. Although California is known for seismic activity, the town of Truckee has a relatively low risk of seismic hazard. In addition, the project site is not located within a State-designated Alquist-Priolo Fault Zone. Thus, the potential for fault rupture risk at the project site is relatively low.

An earthquake of moderate to high magnitude generated by the above faults could cause considerable ground shaking at the project site. However, the proposed buildings would be properly engineered in accordance with the CBSC, which includes engineering standards appropriate for the seismic area in which the project site is located. Projects designed in accordance with the CBSC should be able to: 1) resist minor earthquakes without damage, 2) resist moderate earthquakes without structural damage but with some nonstructural damage, and 3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Conformance with the design standards is verified by the Town prior to the issuance of building permits. Proper engineering of the proposed buildings would ensure that the project would not be subject to substantial risks related to seismic ground shaking.

Based on the above, a ***less-than-significant*** impact would occur related to seismic surface rupture and strong seismic ground shaking.

aiii,aiv,
c. The proposed project's potential effects related to liquefaction, landslides, lateral spreading, and subsidence/settlement are discussed in detail below.

Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as that which is imposed by earthquake ground shaking. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, and fine-grained sediment. According to the Initial Study prepared for the Phase I area, soils on the project site are generally well graded and considered to be dense soils with interbedded cobbles and boulders. Additionally, as discussed below under question 'd', the soils are not considered to be expansive.

The Department of Conservation has not mapped the Town of Truckee to identify potential liquefaction zones. However, as noted in the Town of Truckee General Plan EIR, the area most susceptible to liquefaction includes areas along the Truckee River. Given that the project site is located 0.85-mile from the Truckee River, the likelihood of liquefaction at the site is relatively low. As such, development of the site would not expose persons to substantial adverse effects from ground failure, including liquefaction.

Landslides

Seismically-induced landslides are triggered by earthquake ground shaking. The risk of landslide hazard is greatest in areas with steep, unstable slopes. The project site contains slopes greater than 30 percent in some areas. As part of the proposed project, approval of a Use Permit would be required in order for development to occur within slopes of over 20 percent. Much of the development that would occur within areas of steep slopes would contain parking or landscape features, rather than residential buildings. Furthermore, rockery landscape retaining walls would be constructed in the southwestern portion of the site, north from Building A2 on the western side of the proposed parking areas along the western Rue Ivy loop. The retaining walls would provide slope stability and prevent risks associated with landslides. Sufficiency of retaining wall design to ensure slope stability would be verified by the Town of Truckee during review of project improvement plans and the design-level geotechnical report that will be required by the Town. Thus, landslides are not likely to occur on- or off-site as a result of the proposed project.

Lateral Spreading

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically, lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. The project site does not contain any open faces that would be considered susceptible to lateral spreading. In addition, as noted above, the site is not anticipated to be subject to substantial liquefaction hazards. Therefore, the potential for lateral spreading to pose a risk to the proposed development is relatively low.

Subsidence/Settlement

Subsidence is the settlement of soils of very low density generally from either oxidation of organic material, or desiccation and shrinkage, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. As discussed above, on-site soils are generally considered to be dense, non-expansive, and not subject to substantial liquefaction risks. Because the site presents low potential for liquefaction, the potential for seismically induced settlement to occur at the project site is also considered to be low.

Conclusion

Based on the above, construction of the proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction, subsidence, or settlement, and would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site subsidence, liquefaction, or collapse. Thus, a ***less-than-significant*** impact would occur.

b. Issues related to erosion and degradation of water quality during construction are discussed in Section X, Hydrology and Water Quality, of this IS/MND, under question ‘a’. As noted therein, the proposed project would not result in substantial soil erosion or the loss of topsoil. Thus, a ***less-than-significant*** impact would occur.

d. According to the Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), soils with a linear extensibility rating of between three and six percent and a clay content of 25 to 35 percent are characterized by a moderate shrink-swell class (i.e., moderate expansive potential). Soils with a linear extensibility rating of between six and nine percent with a clay content of 35 to 45 percent are characterized by a high shrink-swell class.

Based on the USDA NRCS Web Soil Survey program,[8] mapped soils within the project site consist of Euer-martis Variant Complex and Martis-Euer Varainat Complex. Table 6 below provides a summary of the extensibility and clay content of the on-site soils, along with the corresponding shrink-swell class. As shown in the table, based on the NRCS calculated coefficients of linear extensibility, the project site contains soils that are not considered to be highly expansive.

Table 6
Soil Properties

Soil Type	Percent of Project Site	Linear Extensibility Rating	Percent Clay Content	Shrink-Swell Class
Euer-martis Variant Complex	11.6	1.5	15.6	**Low**
Martis-Euer Variant Complex	88.4	1.5	18.3	**Low**

Source: Natural Resources Conservation Service, Web Soil Survey, 2019.

Based on the above, the proposed project would not create substantial direct or indirect risks to life or property related to being located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property. Thus, a ***less-than-significant*** impact would occur.

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8 Natural Resources Conservation Service. *Web Soil Survey.* Available at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed November 2019.

e. The proposed project would include connection to the existing Town sewer infrastructure. As such, the construction or operation of septic tanks or other alternative wastewater disposal systems is not included as part of the project. Therefore, ***no impact*** regarding the capability of soil to adequately support the use of septic tanks or alternative wastewater disposal systems would occur.

f. The Town's General Plan EIR indicates that known paleontological resources exist approximately four miles southwest of Downtown Truckee and approximately five miles northeast of Truckee, near the Boca Reservoir. The two resources located near the Boca Reservoir were from the Quaternary period and the Pleistocene epoch, whereas the resource southwest of Downtown Truckee is from the Quaternary period and the Holocene epoch. The Town's General Plan EIR concluded that with implementation of the policies under Goal CC-19, which is intended to identify and protect paleontological resources from Truckee's early history, impacts related to disturbance of paleontological resources would be less than significant. Furthermore, the Town's General Plan does not note the existence of any unique geologic features within the Town. Consequently, implementation of the proposed project would not be anticipated to have the potential to result in direct or indirect destruction of unique geologic features.

Although the proposed project would not have the potential to result in the destruction of unique geologic features, previously unknown paleontological resources could exist within the project site. Thus, ground-disturbing activity, such as grading, trenching, or excavating associated with implementation of the proposed project, could have the potential to disturb or destroy unknown resources. Therefore, the proposed project could result in the direct or indirect destruction of a unique paleontological resource, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

VII-2. Prior to grading permit issuance, the project applicant shall submit plans to the Town of Truckee for review and approval, which indicate (via notation on the improvement plans) that if construction or grading activities result in the discovery of unique paleontological resources, all work within 200 feet of the discovery shall cease. The Town of Truckee Planning Division shall be notified, and the resources shall be examined by a qualified archaeologist, paleontologist, or historian, at the developer's expense, for the purpose of recording, protecting, or curating the discovery as appropriate. The archaeologist, paleontologist, or historian shall submit to the Community Development Department for review and approval a report of the findings and method of curation or protection of the resources. Work may only resume in the area of discovery when the preceding work has occurred.

VIII. GREENHOUSE GAS EMISSIONS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	✖	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	☐	☐	✖	☐

a,b. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

Implementation of the proposed project would cumulatively contribute to increases of GHG emissions. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO_2) and, to a lesser extent, other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O) associated with area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste. The primary source of GHG emissions for the project would be mobile source emissions. The common unit of measurement for GHG is expressed in terms of annual metric tons of CO_2 equivalents ($MTCO_2e$/yr).

The proposed project is located within the jurisdictional boundaries of NSAQMD, which does not currently have any established thresholds for GHG emissions. However, NSAQMD prefers that GHG emissions are quantified for decision-makers and the public to consider. Because NSAQMD does not have GHG emission thresholds, the nearby air pollution control districts of PCAPCD and SMAQMD thresholds of significance have been used for this analysis. The thresholds of significance for operational and construction GHG emissions for PCAPCD and SMAQMD are presented in Table 7 below.

Table 7
GHG Thresholds of Significance ($MTCO_2e$/yr)

Air District	Construction Threshold	Operational Threshold
PCAPCD	10,000	1,100
SMAQMD	1,100	1,100

Sources: PCAPCD. CEQA Handbook Thresholds of Significance Justification Report. October 2016. SMAQMD. CEQA Guide, SMAQMD Thresholds of Significance Table. May 2015.

GHG emissions resulting from construction and operations of the proposed project were modeled using the CalEEMod emissions model under the same assumptions as discussed in Section III, Air Quality, of this IS/MND. Each phase of the proposed project and the associated GHG emissions is discussed below, and all modeling outputs are included in the appendix to this IS/MND. In addition, because the proposed project would include the removal of 359 trees, the unmitigated emissions have been increased to account for the loss of carbon sequestration.

Construction

Construction of the proposed project would occur over the course of approximately nine months. It should be noted that construction GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change. As discussed above, neither NSAQMD nor the Town of Truckee has adopted thresholds of significance for construction-related GHG emissions. Therefore, the total emissions have been compared to the thresholds of significance used by the nearby air districts, PCAPCD and SMAQMD. Total unmitigated GHG emissions from construction of the proposed project are presented in Table 8 below.

Table 8
Unmitigated Construction GHG Emissions

Construction Emissions	Annual GHG Emissions ($MTCO_2e$ / yr)
Total Emissions	285.07
PCAPCD Threshold	10,000.00
SMAQMD Threshold	1,100.00
Exceeds Thresholds?	**NO**
Source: CalEEMod, January 2020 (see Appendix).	

As shown above, construction of the proposed project would result in total GHG emissions of 336.50 $MTCO_2e$/yr. As such, construction emissions fall far below both applicable thresholds of significance.

Operations

The estimated unmitigated operational GHG emissions at full buildout of the proposed project in the year 2022 are presented in Table 9 below, including net increases in emissions resulting from removal of on-site trees that currently provide for carbon sequestration. As previously mentioned, because the proposed project would include the removal of 359 trees, the unmitigated emissions have been increased to account for the loss of carbon sequestration. According to CalEEMod User's Guide, Appendix A, Douglas fir trees typically accumulate 0.0447 $MTCO_2e$/yr, pine trees accumulate approximately 0.0319 $MTCO_2e$/yr, and the miscellaneous accumulation rate is 0.0354 $MTCO_2e$/yr.[9] Because the site includes 15 fir trees, 326 pine trees, and 18 additional unknown tree species, the proposed project would result in an additional increase in GHG emissions of approximately 11.71 $MTCO_2e$/yr [(15 x 0.0447) + (326 x 0.0319) + (18 x 0.0354)= 11.71] due to the loss of carbon sequestration currently provided by the existing on-site trees to be removed. Because NSAQMD has not adopted operational GHG thresholds, the total emissions were compared to both PCAPCSD and SMAQMD operational GHG thresholds of significance.

9 CalEEMod User's Guide. *Appendix A: Calculation Details for CalEEMod.* October 2017.

Table 9
Unmitigated Operational GHG Emissions

Operational Emissions	Annual GHG Emissions ($MTCO_2e$ / yr)
Emissions	969.06
PCAPCD Threshold	1,100.00
SMAQMD Threshold	1,100.00
Exceeds Thresholds?	**NO**

Source: CalEEMod, January 2020 (see Appendix).

As shown in the table above, the proposed project's maximum unmitigated operational GHG emissions fall below both PCAPCD's and SMAQMD's 1,100 $MTCO_2e$/yr threshold.

Conclusion

Construction and operational GHG emissions have been estimated for this analysis. Based on the above, both sources of emissions would fall under the applicable thresholds of significance. Therefore, the proposed project would not be considered to generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and a ***less-than-significant*** impact would occur.

IX. HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	✖	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	✖	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	✖	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	✖
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	✖	☐
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	✖	☐
g. Expose people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires?	☐	☐	✖	☐

Discussion

a. Residential developments are not typically associated with the routine transport, use, disposal, or generation of substantial amounts of hazardous materials. On-site maintenance may involve the use of common household cleaning products, fertilizers, and herbicides, any of which could contain potentially hazardous chemicals; however, such products would be expected to be used in accordance with label instructions. Due to the regulations governing use of such products and the amount anticipated to be used on the site, routine use of such products would not represent a substantial risk to public health or the environment. Therefore, the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and a ***less-than-significant*** impact would occur.

b. As noted previously, the central portion of the project site is developed with Phase I of the Frishman Hollow development. The other areas of the site proposed for development consist of forest trees and ruderal vegetation. According to the California Department of Toxic Substances Control Envirostor Database, hazardous material sites do not exist at the project site or in the project vicinity.

Construction activities associated with the proposed project would involve the use of heavy equipment, which would contain fuels and oils, and various other products such as concrete, paints, and adhesives. Small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used at the project site and transported to and from the site during construction. However, the project contractor would be required to comply with all California Health and

Safety Codes and local Town ordinances regulating the handling, storage, and transportation of hazardous and toxic materials. Thus, construction of the proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.

During project operation, hazardous materials use would be limited to landscaping products such as fertilizer and pesticides/herbicides. Such chemicals would be utilized in limited quantities according to label instructions. Furthermore, the proposed project would likely result in similar impacts as the Phase I development, as it relates to hazards.

Because the proposed project would involve limited use of hazardous materials, primarily limited to the construction phase of the project, during which the contractor would be required to adhere to all relevant guidelines and ordinances regulating the handling, storage, and transportation of hazardous materials, the project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment, and a ***less-than-significant*** impact would occur.

c. The nearest school is Alder Creek Middle School, located approximately 0.13-mile west of site. Although the project site is located within one-quarter mile of an existing school, residential development does not result in a substantial amount of hazardous emissions or the handling of hazardous materials. Therefore, the proposed project would result in a ***less-than-significant*** impact related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. According to the Department of Toxic Substances Control, the project site is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.[10] Thus, the proposed project would not create a significant hazard to the public or the environment, and ***no impact*** would occur.

e. The nearest public airport to the site is the Truckee Tahoe Airport, located approximately 1.5 miles to the southeast. According to the Truckee Tahoe Airport Land Use Compatibility Plan, the project site is located in a zone designated “Primary Traffic Pattern Zone”, which is identified for moderate noise impacts and low safety risks.[11] With regard to the moderate noise impact, the Land Use Compatibility Plan states that high-density residential is allowed. Therefore, a ***less-than-significant*** impact would occur related to a safety hazard or excessive noise for people residing or working in the project area associated with the project being located within an airport land use plan or within two miles of a public airport or public use airport.

f. The proposed project would not alter the existing circulation system in the surrounding area. During operation, the proposed project would provide adequate access for emergency vehicles and would not interfere with potential evacuation or response routes used by emergency response teams. During construction of the proposed project, all construction equipment would be staged on-site so as to prevent obstruction of local and

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10 Department of Toxic Substances Control. *Hazardous Waste and Substances Site List (Cortese).* Available at: https://www.envirostor.dtsc.ca.gov/public/. Accessed November 19, 2019.

11 Truckee Tahoe Airport Land Use Commission. *Truckee Tahoe Airport Land Use Compatibility Plan* [page 2-47]. October 27, 2016.

regional travel routes in the Town that could be used as evacuation routes during emergency events. As a result, the project would have a ***less-than-significant*** impact with respect to impairing the implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan.

g. Issues related to wildfire hazards are further discussed in Section XX, Wildfire, of this IS/MND. As noted therein, the project site is located within a VHFHSZ. The project site contains existing residential uses and is located in a sparsely developed area of the Town. Although the project site is located within a VHFHSZ, the area across SR 89 to the east is not considered a VHFHSZ and the area to the west of the site is developed with a school and residences. Additionally, the proposed project would be required to comply with all applicable requirements of the California Fire Code through the installation of fire sprinkler systems, fire hydrants, and other applicable requirements. The proposed project would also be situated near existing roads, water lines, and other utilities, which would reduce risks related to wildfire. Thus, the potential for wildland fires to reach the project site would be limited. Based on the above, the proposed project would not expose people or structures to the risk of loss, injury or death involving wildland fires, and a ***less-than-significant*** impact would occur.

X. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	✖	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	✖	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site;	☐	✖	☐	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	✖	☐	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	✖	☐	☐
iv. Impede or redirect flood flows?	☐	☐	✖	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	✖	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	✖	☐

Discussion

a. During the early stages of construction activities, topsoil would be exposed due to grading and excavation of the site. After grading and prior to overlaying the ground surface with impervious surfaces and structures, the potential exists for wind and water erosion to discharge sediment and/or urban pollutants into stormwater runoff, which could adversely affect water quality.

The State Water Resources Control Board (SWRCB) regulates stormwater discharges associated with construction activities where clearing, grading, or excavation results in a land disturbance of one or more acres. Given that the proposed project would disturb more than one acre of land, the proposed construction activities would be subject to applicable SWRCB regulations. The Town's Development Code, Section 18.30.050, Drainage and Storm Water Runoff, requires drainage and erosion control plans be submitted to the Town for review. Section 18.30.05 requires a Storm Water Pollution Prevention Plan (SWPPP) to be prepared for the proposed project. A SWPPP describes BMPs to control or minimize pollutants from entering stormwater and must address both grading/erosion impacts and non-point source pollution impacts of the development project, including post-construction impacts. The Town of Truckee requires all development projects to use BMPs to treat runoff. This would include implementation of BMPs (e.g., silt fence) along the western boundary of the construction area, to ensure that the water quality of the adjacent drainage is not adversely impacted.

Following completion of project buildout, the site would be largely covered with impervious surfaces and topsoil would no longer be exposed. As such, the potential for impacts to water quality would be reduced. As discussed under question 'ci' through 'cii', storm drainage from impervious areas would be collected and routed through water quality treatment facilities for removal of pollutants. The project would include multiple BMPs to treat and then discharge flow to existing drainage facilities. For example, vegetative swales and rock-lined swales would provide pre-treatment by collecting and slowly conveying runoff to downstream treatment facilities. The facilities are designed to treat runoff through filtering and trapping sediment and other pollutants with angular rock lining or vegetation in the channel, filtering through a subsoil matrix. Detention basins would also be included in the project design, which would allow settling of suspended solids and additional filtration through vegetation.

Based on the above, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Thus, a ***less-than-significant*** impact would occur.

b,e. Water supplies for the project site would be provided by the Truckee Donner Public Utility District. Per the District's 2015 Urban Water Management Plan (UWMP), all of the District's water supply is obtained through the pumping of groundwater from the Martis Valley Groundwater Basin (MVGB). According to the UWMP, the anticipated maximum demand at buildout is approximately 4,217 million gallons per year (mgy).[12] With a total water supply of at least 7,820 mgy, adequate water supply exists to meet the projected buildout. For the purposes of the UWMP analysis, buildout of the Truckee Donner Public Utility District service area is assumed to include continued operations of all existing land uses, as well as development of all currently vacant parcels. Consequently, development of the project site was generally included in the UWMP analysis.

The UWMP states that because of the large amount of water in storage in relation to the projected buildout demand, the District would have adequate supply to meet normal year, single dry year, and multiple dry years demand. Considering that the UWMP anticipated buildout of all currently undeveloped parcels within the Town, and that the available water supply far exceeds anticipated demand, despite the increased density resulting from the project's qualification for State density bonus law, adequate water supply exists to serve the project without resulting in a significant decrease in the available water supplies such that the project may interfere with management of the MVGB.

Stormwater falling on undeveloped portions of the project site currently sheet flows overland to existing drainage features or percolates into on-site soils. The proposed project would include development of impervious surfaces, which would result in decreased percolation of stormwater within developed areas of the site. Stormwater runoff from the proposed impervious surfaces would be directed to existing detention ponds, some of which would be regraded to accommodate increased flows, as well as one proposed detention pond. The detention ponds would allow for continued percolation of runoff into soils, which could contribute to groundwater recharge. Consequently, the proposed project would not result in substantial interference with groundwater recharge in the area.

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[12] Truckee Donner Public Utilities District. *Truckee Water System 2015 Urban Water Management Plan* [page 6-7]. June 2016.

Based on the above, the project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Therefore, the proposed project would result in a ***less-than-significant*** impact with respect to substantially decreasing groundwater supplies or interfering substantially with groundwater recharge such that the project would impede sustainable groundwater management of the basin.

ci-iii. According to the Preliminary Drainage Report prepared for the project site by SCO Planning & Engineering, Inc. (see Appendix C),[13] implementation of the proposed project would result in approximately 75,533 sf of impervious surface area and 50,133 sf of landscaping area.

Per the California Regional Water Quality Control Board (RWQCB) – Lahontan Regional – General Permit R6T – 2003-004, Attachment G, under Truckee River Hydrologic Area and Little Truckee Hydrologic Unit: Runoff from impervious surfaces shall be treated and contained on-site. Under the RWQCB requirement for the Truckee River Hydrologic Area and Little Truckee Hydrologic Unit, the volume of water to be contained or treated is the 20-year, one-hour storm, which is equal to 0.7 inches. The Town of Truckee Post-Construction Storm Water Quality Plan (SWQP) indicates that the volume of water to be contained is equal to 1.1 inches of rain, giving 0.9 x 1.1 inches = 1.0 inches. Because the Town's SWQP value is greater than the RWQCB value, the SWQP method is used for the determination of runoff volume for the proposed project.

As noted above, the proposed on-site vegetated swales and rock lined swales would provide pre-treatment by slowly collecting and conveying runoff to downstream treatment facilities, located north and south of the site. The proposed project would also include subsurface infiltration facilities to provide treatment by filtering pollutants through underlying soils from retained runoff. Once the infiltration volume is saturated, the excess runoff would have reduced particulates. Additionally, detention basins provide the final stage of water quality measure by allowing settling of suspended solids and additional filtration through vegetation. The detention basins allow for infiltration and detain runoff to reduce peak flows. The project site would include 11 Drainage Management Areas (DMAs). The DMAs would direct stormwater to one of the following treatment facilities: a bioswale (4), a trench (3), a pond (3), or an infiltration shoulder (1). According to the Preliminary Drainage Report, peak flows were determined for 10-year and 100-year storm events, and detention basins were sized for no net increase in peak flow runoff.

According to the Preliminary Drainage Report, all culverts, storm drain systems, and ditches would be designed to accommodate 10-year and 100-year storm event runoff flows. Such systems would include new 15 to 18-inch storm drain systems within the project site to accommodate project related stormwater flows. Continued operations of the existing storm drain system, as well as operation of the proposed 15 to 18-inch storm drains, would be sufficient to accommodate stormwater runoff from the site. As demonstrated in Attachment H of the Preliminary Drainage Report, the proposed project would result in a decrease in both the 10-year and 100-year peak runoff flows in comparison to the existing conditions. Therefore, the post-runoff flows would not exceed pre-runoff flows.

[13] SCO Planning & Engineering, Inc. *Town of Truckee Frishman Hollow Phase II*. January 2020.

In addition, the proposed project would include temporary and permanent Best Management Practices (BMPs) that have been designed to meet all applicable criteria and would promote water quality, mitigate peak flow increase, and ensure safety of structures. Temporary construction phase BMPs would include silt fences, gravel check dams, tree protection fencing, and inlet protection. It should be noted that BMPs would ensure that water quality is not degraded during the construction of the proposed project.

The Preliminary Drainage Report for the proposed project demonstrates that the proposed project would adequately manage the stormwater runoff from the project site. All on-site treatment areas would be adequately sized and comply with the Town of Truckee Post-Construction SWQP. However, without preparation of a final drainage report to verify the adequacy of the final drainage system design, the proposed project could result in a ***potentially significant*** impact with respect to substantially altering the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion, siltation, or flooding on- or off-site, creating or contributing runoff water which would exceed the capacity of existing or planned stormwater drainage systems, or providing substantial additional sources of polluted runoff.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

X-1. *In conjunction with the submittal of project improvement plans, the developer shall submit a Final Drainage report that includes pre- and post-development hydrology calculations, as well as calculations for the required treatment areas to ensure that the on-site drainage system complies with the Town of Truckee Post-Construction Storm Water Quality Plan/State Municipal Phase 2 Stormwater General Permit. The drainage report shall be submitted to the Town of Truckee for review and approval.*

civ. As shown in Figure 3, a 100-year floodplain is located along the western border of the project site. According to Section 18.38.040, River and Stream Development Standards, a minimum setback of 50-feet is required for structures and ground disturbing activities located near a 100-year floodplain of intermittent drainage. The proposed project would comply with the Town's Development Code by providing a 50-foot or greater setback from the floodplain. Ground-disturbing activities would not occur within 50-feet of the floodplain. Therefore, development of the proposed project would not impede or redirect flood flows, and a ***less-than-significant*** impact would result.

d. As discussed under question 'civ' above, development of the project would not impede or redirect flood flows. Tsunamis are defined as sea waves created by undersea fault movement, whereas a seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir. The project site is not located in proximity to a coastline and would not be potentially affected by flooding risks associated with tsunamis. The project site is located approximately 3.5 miles from Donner Lake which could be prone to seiches due to seismic activity. Given the distance from Donner Lake, the project site is not anticipated to be exposed to the impacts of seiches. Based on the above, the proposed project would not pose a risk related to the release of pollutants due to project inundation due to flooding, tsunami, or seiche, and a ***less-than-significant*** impact would occur.

XI. LAND USE AND PLANNING. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	✖	☐
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	✖	☐

Discussion

a. A project risks dividing an established community if the project would introduce infrastructure or alter land use so as to change the land use conditions in the surrounding community, or isolate an existing land use. Existing land uses in the project vicinity include the Frishman Hollow Phase I development, Alder Creek Middle School to the west, and additional single-family residential development to the southwest. Given that the proposed project would represent a continuation of the existing on-site Phase I development, the proposed project would not physically divide an established community and a ***less-than-significant*** impact would occur.

b. The project site is currently designated Residential High Density per the Town's General Plan and is zoned RM-10. Land designated RH is often located near existing development and provides infill development with access to community services and existing infrastructure. The proposed project would consist of four individual residential buildings consisting of 68 units. As discussed previously, the proposed project is consistent with the current RM-10 zoning given its qualification for State mandated density bonus. While not required to achieve the project density, a rezone to RM-18 and associated GPA to High Density Residential, 16-18 du/acre would ensure the Town maintains consistency with its certified Housing Element in terms of the amount and type of residentially-zoned land available within the Town.

In addition, as discussed in detail throughout this IS/MND, the proposed project would not conflict with Town policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect, including, but not limited to, the Town's noise standards and applicable SWRCB regulations related to stormwater. In addition, as discussed throughout this IS/MND, the proposed project would not result in any significant environmental effects that could not be mitigated to a less-than-significant level by the mitigation measures provided herein.

Therefore, the proposed project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and a ***less-than-significant*** impact would occur.

XII. MINERAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	✖	☐
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	✖	☐

Discussion

a,b. Per the Town's General Plan EIR, mineral resources with the Town of Truckee primarily include alluvial deposits along the Truckee River Valley, while some resources are associated with volcanic features.[14] Aggregate mining operations in the Town of Truckee are currently limited to the aggregate mining area in the far southeast portion of Truckee. According to the General Plan EIR, important mineral resources are known to be found within the developed portion of Truckee near downtown. Given that the project site is located north of the downtown area and that the central portion of the site is developed with the Frishman Hollow Phase I development, mineral resources are not likely to occur at the project site. Therefore, the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and residents of the State or result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. Thus, a ***less-than-significant*** impact to mineral resources would occur.

[14] Town of Truckee. *Town of Truckee 2025 General Plan EIR* [4.5-9]. April 2014.

XIII. NOISE. *Would the project result in:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	✖	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	✖	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	✖	☐

Discussion

The following discussion is based primarily on an Environmental Noise Assessment prepared for the proposed project by j.c. brennan & associates, Inc. (see Appendix D).[15]

a. The following sections present information regarding sensitive noise receptors in proximity to the project site, the existing noise environment, and the potential for the proposed project to result in impacts during project construction and operation. The following terms are referenced in the sections below:

- Decibel (dB): A unit of sound energy intensity. An A-weighted decibel (dBA) is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels. All references to decibels (dB) in this section will be A-weighted unless noted otherwise.
- Day-Night Average Level (L_{dn}): The average sound level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 PM to 7:00 AM) hours.
- Equivalent Sound Level (L_{eq}): The average sound level over a given time-period.
- Maximum Sound Level (L_{max}): The maximum sound level over a given time-period.
- Median Sound Level (L_{50}): The sound level exceeded 50 percent of the time over a given time-period.

Sensitive Noise Receptors

Some land uses are considered more sensitive to noise than others, and, thus, are referred to as sensitive noise receptors. Land uses often associated with sensitive noise receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise. Generally, the nearest sensitive uses include the existing Frishman Hollow Phase I development, located approximately 50 feet from the proposed Phase II development area. The nearest off-site sensitive receptors are the existing residences along Wolverine Circle, approximately 385 feet southwest of the project site.

[15] j.c. brennan & associates, Inc. *Frishman Hollow Phase II, Environmental Noise Assessment, Town of Truckee, California.* December 23, 2019.

Existing Noise Environment

The ambient noise environment in the project vicinity is primarily defined by vehicle traffic on the local roadways within the vicinity of the project site, including SR 89. To quantify the ambient noise environment at the project site, j.c. brennan & associates, Inc. conducted one continuous (24-hour) noise measurement and one short-term (30-minute) noise level measurement on the project site (see Figure 6 for noise measurement locations). The long-term (24-hour) noise measurement site was selected based upon the proximity to the primary noise generating source, the primary noise source being SR 89. Noise measurements were conducted on November 25-26, 2019. Table 10 below provides a summary of the noise measurement results.

Table 10
Existing Ambient Noise Monitoring Results

Site	Location	L_{dn}	Average Measured Hourly Noise Levels (dB)					
			Daytime (7 AM to 10 PM)			Nighttime (10 PM to 7 AM)		
			L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
Continuous 24-Hour Noise Measurement Results								
A	South side of the project site	62.4	61.3	59.0	75.1	53.8	46.9	69.9
Short-term Noise Measurement Results								
B	North side of the project site	N/A	62.0	59.1	74.3	N/A	N/A	N/A

Source: j.c. brennan & associates, Inc., 2019.

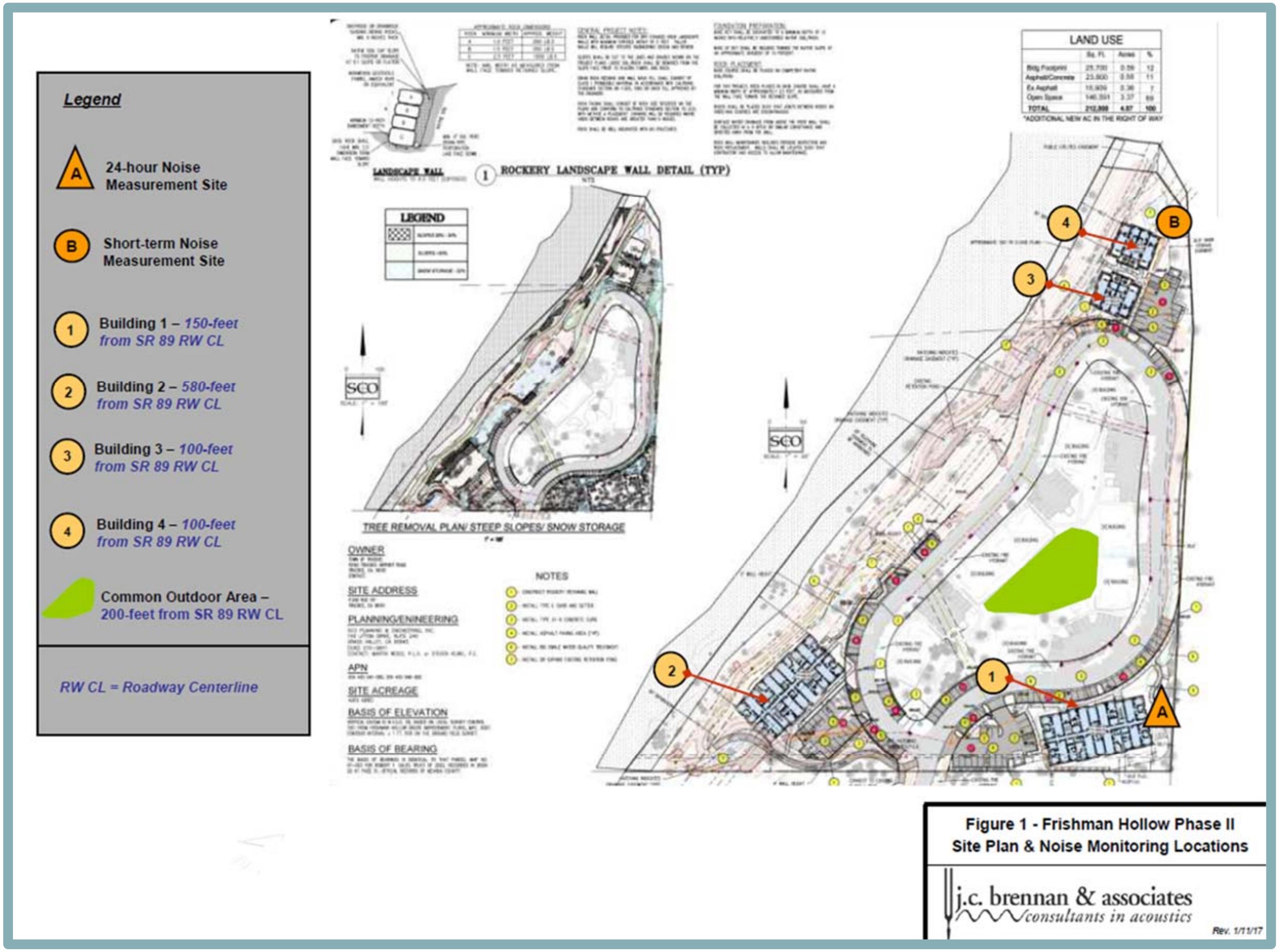
Standards of Significance

The Town's General Plan exterior standards for residential uses range between 60 dB and 65 dB L_{dn}/CNEL. The lower standard of 60 dB L_{dn}/CNEL is considered the "Normally Acceptable" standard and the 65 dB L_{dn}/CNEL is the "Conditionally Acceptable" standard. Noise Element Policy 1.3 states that the Town shall enforce the California Noise Insulation Standards for interior noise levels attributable to exterior sources for all proposed new single- and multi-family residences (45 dB L_{dn}/CNEL).

In addition to the noise standards in the General Plan, the Town's Development Code includes noise level performance criteria applicable to non-transportation noise sources. Specifically, Table 3-8 of the Town's Development Code, provides the noise level performance criteria for sensitive land uses, such as residential and hospital uses. It should be noted that according to Section 18.44.070 of the Town's Development Code, such criteria do not apply to noise sources associated with non-single-family residential construction (such as the existing multi-family residential uses included in the on-site Phase I development), provided that the activities do not take place before 7:00 AM or after 9:00 PM on any day, except Sunday, or before 9:00 AM or after 6:00 PM.

In practice, a noise impact may be considered significant if the project would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance.

Figure 6
Noise Measurement Locations



Research into the human perception of changes in sound level indicates the following: a 3 dB change is barely perceptible; a 5 dB change is clearly perceptible; and a 10 dB change is perceived as being twice or half as loud.[16] For the purpose of this analysis, a 5 dB increase in overall noise levels is considered to be significant.

Impact Analysis

The following sections provide an analysis of potential noise impacts associated with construction and operation of the proposed project.

Construction Noise

During construction of the proposed project, heavy-duty equipment would be used for demolition, grading, excavation, paving, and building construction, which would result in temporary noise level increases. Project haul truck traffic on local roadways would also result in a temporary noise level increase during construction activities. Noise levels would vary depending on the type of equipment used, how the equipment is operated, and how well the equipment is maintained. In addition, noise exposure at any single point outside the project site would vary depending on the proximity of construction activities to that point. Standard construction equipment, such as graders, backhoes, loaders, and haul trucks would be used on-site. Construction activities would be temporary in nature and are anticipated to occur during normal daytime work hours.

Table 11 shows maximum noise levels associated with typical construction equipment. Based on the table, activities involved in typical construction would generate maximum noise levels up to 90 dB at a distance of 50 feet.

Table 11
Construction Equipment Noise

Type of Equipment	Maximum Level, dB at 50 feet
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: Federal Highway Administration, Roadway Construction Noise Model User's Guide, January 2006.

Construction of the proposed project would be required to comply with limited construction hours set forth within Section 18.44.070 of the Town's Development Code. The project would also comply with General Plan Policy 3.13, which includes standard construction noise control measures to be included as requirements at construction sites in order to minimize construction noise impacts. For example, construction noise control measures set forth in Policy 3.13 include, but are not be limited to, locating stationary noise generating equipment as far as possible from sensitive receptors in the project vicinity and

16 j.c. brennan & associates, Inc. *Frishman Hollow Phase II, Environmental Noise Assessment, Town of Truckee, California.* December 23, 2019.

adding mufflers to noise generating equipment to reduce noise levels. Therefore, construction noise associated with the proposed project would be less-than-significant.

Project Operational Noise

Operations associated with the proposed project would generate noise primarily associated with vehicle traffic on local roadways.

To predict increase in traffic noise levels associated with the proposed project, the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise emission factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. Traffic volumes were obtained from the Traffic Study prepared for the proposed project by LSC Transportation Consultants, Inc.

Table 12 summarizes traffic noise levels along each study roadway segment in the project vicinity for the Existing and Existing Plus Project conditions. Future (no project) and Future Plus Project conditions are summarized in Table 13. Traffic noise levels are presented in terms of L_{dn}. As shown in the two tables, the proposed project would result in traffic noise level increases of 1 dB L_{dn} or less along the area roadways, with the exception of Rue Ivy which would have a 5 db L_{dn} increase. However, the increase in traffic noise occurs at the Phase I portion of the project site, and because the proposed project is a phased project, the increase in traffic noise levels is not considered to be significant.

Table 12
Existing Traffic Noise with Project Conditions

Roadway	Segment	Predicted L_{dn}/CNEL at 75 feet from the Roadway Centerlines (dB)			
		Existing	Existing + Project	Change	Criteria
Truckee Way	South of Rue Ivy	61	61	0	>+5
Truckee Way	West of Roundabout	60	61	+1	>+5
SR 267	South of Roundabout	61	62	+1	>+5
SR 89	North of Roundabout	64	64	0	>+5
Henness Road	East of Roundabout	49	50	+1	>+5
Rue Ivy	Project Site	42	47	+5	>+5
SR 89	At Building A1 – Frishman Hollow Phase II	59	60	+1	60-65 dB
SR 89	At Building A2 – Frishman Hollow Phase II	50	51	+1	60-65 dB
SR 89	At Building B1 – Frishman Hollow Phase II	62	62	0	60-65 dB
SR 89	At Building B2 – Frishman Hollow Phase II	62	62	0	60-65 dB
SR 89	Common Outdoor Area	57	58	+1	60-65 dB
Source: j.c. brennan & associates, Inc. 2019.					

Table 13
Future Traffic Noise with Project Conditions

Roadway	Segment	Predicted L_{dn} / CNEL at 75 feet from the Roadway Centerlines (dB)			
		Future	Future + Project	Change	Criteria
Truckee Way	South of Rue Ivy	63	63	0	>+5
Truckee Way	West of Roundabout	63	63	0	>+5
SR 267	South of Roundabout	64	64	0	>+5
SR 89	North of Roundabout	65	65	0	>+5
Henness Road	East of Roundabout	57	57	0	>+5
Rue Ivy	Project Site	42	47	+5	>+5
SR 89	At Building A1 – Frishman Hollow Phase II	60	60	0	60-65 dB
SR 89	At Building A2 – Frishman Hollow Phase II	51	51	0	60-65 dB
SR 89	At Building B1 – Frishman Hollow Phase II	63	63	0	60-65 dB
SR 89	At Building B2 – Frishman Hollow Phase II	63	63	0	60-65 dB
SR 89	Common Outdoor Area	58	58	0	60-65 dB
Source: j.c. brennan & associates, Inc. 2019.					

It should also be noted that the project noise levels along Rue Ivy would be less than 50 dB L_{dn}, and would be considerably less than the predicted overall traffic noise levels at the project site. Thus, impacts related to project traffic noise would be less than significant.

Exterior and Interior Traffic Noise Levels at the Project Site

As mentioned above, the existing common outdoor area in the center of the Phase I area would be available to future residents of the proposed project. As shown in Table 13, noise levels at the common outdoor area would not exceed the 60 dB L_{dn} exterior noise level standard.

Although CEQA does not consider a projects effects on itself to result in a significant environmental impact, in order to take a conservative approach, noise estimates and an analysis have been provided. Standard construction practices would provide an exterior to interior noise level reduction of 25 dB with windows and doors in the closed position, provided that the units include mechanical ventilation or air conditioning to allow residents to close windows and doors. An exterior to interior noise level reduction of 15 dB can be expected with windows in the partially open position. Buildings A1 and A2 would be exposed to future traffic noise levels of 60 dB L_{dn} or less, which would result in an interior noise level of less than the 45 dB L_{dn} standard, with standard construction practices. Buildings B1 and B2 would be exposed to future traffic noise levels of approximately 63 dB, as shown in Table 13, which exceeds 60 dB L_{dn}, but is less than the Conditionally Acceptable exterior noise level standard of 65 dB L_{dn}. With standard construction practices, associated interior noise levels at Buildings B1 and B2 would be reduced by 25 dB with windows closed, which would not exceed the 45 dB L_{dn} interior noise level standard. Thus, a less-than-significant impact would occur related to exterior and interior traffic noise levels.

Conclusion

As described above, the proposed project would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local General Plan, the Town's noise ordinance, or applicable standards of other agencies. Therefore, the proposed project would result in a ***less-than-significant*** impact.

b. Similar to noise, vibration involves a source, a transmission path, and a receiver. However, noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration depends on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration is measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of peak particle velocities (PPV) in inches per second (in/sec). Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of PPV. Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 14, which was developed by the California Department of Transportation (Caltrans), shows that the vibration levels that would normally be required to result in damage to structures range from 0.2 to 0.6 in/sec PPV. The general threshold at which human annoyance could occur is 0.10 in/sec PPV.

Table 14
Effects of Vibration on People and Buildings

PPV		Human Reaction	Effect on Buildings
mm/sec	in/sec		
0.15 to 0.30	0.006 to 0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10 to 15	0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

***Source:** Caltrans. Transportation Related Earthborne Vibrations. TAV-02-01-R9601. February 20, 2002.*

Table 15
Vibration Levels for Various Construction Equipment

Type of Equipment	PPV at 25 feet (in/sec)	PPV at 50 feet (in/sec)	PPV at 100 feet (in/sec)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006.

The primary vibration-generating activities associated with the proposed project would occur during grading, placement of underground utilities, and construction of foundations. Table 15 shows the typical vibration levels produced by construction equipment at various distances. The most substantial source of groundborne vibrations associated with project construction would be the use of vibratory compactors. Use of vibratory compactors/rollers could be required during construction of the proposed on-site drive aisles and parking areas.

The proposed project would only cause elevated vibration levels during construction, as the proposed project would not involve any uses or operations that would generate substantial groundborne vibration. Although noise and vibration associated with the construction phases of the project would add to the noise and vibration environment in the immediate project vicinity, construction activities would be temporary in nature and would occur during normal daytime working hours. In addition, the proposed construction activities would occur at distances nearly equal to or greater than 50 feet from the nearest existing buildings. Therefore, per the vibration levels shown in Table 15, groundborne vibration levels at the nearest buildings would be less than the 0.20 in/sec PPV threshold established by Caltrans for architectural damage to buildings.

Based on the above, the proposed project would not expose people to or generate excessive groundborne vibration or groundborne noise levels, and a ***less-than-significant*** impact would occur.

c. The nearest public airport to the site is the Truckee Tahoe Airport, located approximately 1.5 miles to the southeast. According to the Truckee Tahoe Airport Land Use Compatibility Plan, the project site is located in a zone designated “Primary Traffic Pattern Zone,”[17] which is identified for moderate noise impacts. The Truckee Tahoe Airport Land Use Compatibility Plan indicates that noise is more of a concern with respect to individual loud events rather than with cumulative noise contours and, that during portions of the peak season, the average day noise level contour of 55 CNEL extends into the “Primary Traffic Zone Pattern” area, which is within the range of existing ambient noise levels in the project area.

Furthermore, the Land Use Compatibility Plan states that residential density criteria for the “Primary Traffic Zone Pattern” area provide two options on the basis that noise concerns

[17] Truckee Tahoe Airport Land Use Commission. *Truckee Tahoe Airport Land Use Compatibility Plan* [page 2-47]. October 27, 2016.

can be minimized either by limiting the number of dwelling units in affected areas or by allowing high-density development, which tends to have comparatively high ambient noise levels. Given that the proposed project would include high-density residential development, the project would meet the density criteria for the “Primary Traffic Zone Pattern” area. Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels associated with airports, and a ***less-than-significant*** impact would occur.

XIV. POPULATION AND HOUSING. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	☐	☐	✖	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	✖	☐

Discussion

a. The overall project site is primarily developed with the Frishman Hollow Phase I development. The proposed project would include the construction of four separate residential buildings, consisting of 68 affordable housing units. Two of the proposed buildings would be constructed directly north of the development, while the other two buildings would be located directly south of the development. According to the Town of Truckee's Population and Housing Estimates, as of 2016 the average household size was estimated at 2.61 persons per household.[18] Using this average household size, the proposed project would result in a population of 178 residents. According to the Town of Truckee, the entire town has an estimated total population of 15,370. The estimated 178 residents would equate to just one percent of the entire town's population.

Given that the proposed project would be the second phase of a planned affordable housing development, the proposed project would not result in unplanned population growth. The proposed development of affordable housing units would add to the housing stock in the Town of Truckee. Furthermore, as discussed in Section XVIII, Utilities and Services Systems, of this IS, adequate utility infrastructure and services exist to meet the additional demand that would be created by the project. Similarly, as discussed in Section XIV, Public Services, public service providers, such as local police and fire departments, would be capable of accommodating the demands of the proposed project. Therefore, the proposed project would not induce substantial unplanned population growth either directly or indirectly, and a ***less-than-significant*** impact would occur.

b. The proposed project would not require the demolition of any existing residences or any other structures within the project site. Furthermore, the proposed project would develop 68 affordable housing units, adding to the housing stock and available housing options within the Town of Truckee. As such, the proposed project would not displace a substantial number of existing housing or people and would not necessitate the construction of replacement housing elsewhere. Therefore, a ***less-than-significant*** impact would occur.

[18] Town of Truckee. *Truckee Population and Housing Estimates.* Available at: https://www.townoftruckee.com/government/community-development/planning-division/growth-and-development/truckee-population-and-housing-estimates. Accessed November 19, 2019.

XV. PUBLIC SERVICES.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	✖	☐
b. Police protection?	☐	☐	✖	☐
c. Schools?	☐	☐	✖	☐
d. Parks?	☐	☐	✖	☐
e. Other Public Facilities?	☐	☐	✖	☐

Discussion

a-e. Fire protection services are currently provided to the site by the Truckee Fire Protection District (TFPD). The TFPD is comprised of 40 full-time and 10 part-time firefighters and paramedics. TFPD Station 92 is the nearest station to the project site and is located approximately 1.2 miles to the south at 10049 Donner Pass Road. Additionally, the Truckee Police Department provides law enforcement services to the project area. The Truckee Police Department is located at Town Hall at 10183 Truckee Airport Road, approximately 2.3 miles southeast of the site. The Town of Truckee 2025 General Plan EIR determined that buildout of the General Plan would increase the overall demand on fire and law enforcement services. The project site has been previously anticipated for residential development. While some increase in demand for fire and law enforcement services could occur as a result of the increase in population associated with development of the proposed project, due to the relatively low number of units, the increase would not be considered substantial and could be met by current service providers, without the need for expanding existing facilities or constructing new facilities, the construction of which could cause significant environmental effects.

Public school services for the proposed project would be provided by the Tahoe-Truckee Unified School District (TTUSD). The current residential developer fee rate for TTUSD for residential uses is $3.69 per sf of living area. Given that the project would result in approximately 58,928 sf of living area, the applicant would be required to pay approximately $217,444.32 in developer fees, based on an estimate provided by the TTUSD. The developer fees would be used by the TTUSD to address the current facility needs. According to SB 50, payment of the necessary school impact fees for the project would be considered full and satisfactory CEQA mitigation. Proposition 1A/SB 50 prohibits local agencies from using the inadequacy of school facilities as a basis for denying or conditioning approvals of any "[…] legislative or adjudicative act […] involving […] the planning, use, or development of real property" (Government Code 65996(b)). As such, payment of developer fees would be considered sufficient to reduce any potential impacts related to the provision of school services.

Section 18.58.180, Multi-Family Residential Projects, of the Development Code requires that any residential development over 10 units provide common open space areas and common recreational amenities to serve the residents and guests of the development. The project site would include various common areas and be located near the Alder Creek Middle School, whose recreational facilities and equipment would be available. While the proposed project would not consist of any designated parkland, the proposed project would include designated picnic areas for residents of the community to enjoy. In addition, the proposed project would include construction of a realigned trail along the southwestern portion of the project site, south of Building A1. As stated in the Town's General Plan, the Town strives to maintain at least five acres of parkland for every 1,000 residents. The proposed project is anticipated to generate approximately 178 new residents, which would require at least 0.89 acres of parkland in order to satisfy the parkland requirement. In order to meet the requirement, the project applicant would pay the appropriate park and recreational fee. The Town of Truckee would ensure that the proposed project supplies adequate open space and common recreational amenities, as well as submits the development impact fee payment.

Based on the above, the proposed project would have a ***less-than-significant*** impact related to the need for new or physically altered fire protection, law enforcement, schools, parks, or other public facilities, the construction of which could cause significant environmental impacts.

XVI. RECREATION. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	✖	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	✖	☐

Discussion

a,b. As discussed in Section XIV, Population and Housing, the proposed project would include the development of four residential buildings consisting of approximately 68 units, which would result in approximately 178 new residents. As discussed above, the proposed project would be required to comply with Section 18.58.180 of the Town's Development Code which requires new residential developments over 10 units provide common open space areas and common recreational amenities. While the proposed project would not include the dedication of parkland, the project would include various amenities that would provide residents with outdoor recreational activities. For example, the proposed project would include a community garden northeast of Building A2. Picnic areas would also be available for residents to use in various locations throughout the project site. In addition, the proposed project would include construction of a realigned trail along the southwestern portion of the project site, south of Building A1. Furthermore, the project applicant would be required to pay a development fee to the Truckee Donner Recreation and Parks District.

Currently, the Town of Truckee includes an ample amount of community and recreation facilities. For example, the proposed project would be located near the Truckee Donner Recreation and Park District, Truckee Community Recreation Center, as well as the Truckee River Regional Park. Both the Truckee Donner Recreation and Park District and the Truckee Community Recreation Center are located approximately 0.25-mile south of the site, while the Truckee River Regional Park is located approximately 1.11-miles south of the site. Additional community and recreation facilities in the Town of Truckee include the Donner Memorial State Park, Meadow Park, Riverview Sports Park, Truckee Community Pool, and Truckee Bike Park. Due to the ample amount of existing recreational facilities in the Town of Truckee, the proposed project would not substantially increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Based on the above, the proposed project would not result in population growth that could result in increased use of existing recreational facilities, nor would the proposed project include or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Thus, a ***less-than-significant*** impact would occur.

XVII. TRANSPORTATION. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	✖	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	✖	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	✖		☐
d. Result in inadequate emergency access?	☐	✖		☐

Discussion

a. The following is based primarily on a limited Traffic Study prepared for the proposed project by LSC Transportation Consultants, Inc. (see Appendix E).[19]

Study Intersections

Based on the project trip generation and expected distribution patterns, the following study intersections were identified for analysis in the Traffic Study:

1. Truckee Way/Rue Ivy; and
2. Truckee Way/ SR 89 North.

Conditions at each intersection were analyzed under the following scenarios:

- ***Existing Conditions*** – Existing (2019) conditions based on recent traffic counts;
- ***Existing Plus Project Conditions*** – Existing (2019) conditions with project-related traffic;
- ***Future Cumulative Conditions***– Future cumulative traffic conditions based on full buildout of the Town's adopted 2025 General Plan; and
- ***Future Cumulative Plus Project Conditions*** – Future 2025 cumulative conditions with project-related traffic.

Thresholds of Significance

Operations at each of the study intersections were evaluated based on Level of Service (LOS), a quantitative measure of the average delay experienced by a driver at an intersection. The LOS metric ranges from LOS A, with little delay and a lack of congestion, to LOS F, with excessive congestion and delay. As stated in the Truckee 2025 General Plan, the Town's LOS standards are as follows:

> *Policy P2.1 – Establish and maintain a Level of Service D or better on road segments and for total intersection movements in portions of the Town outside of the Downtown Study Area. Establish and maintain a Level of Service E or better on arterial and collector road segments and for total intersection movements within the Downtown Specific Plan Area. Throughout the Town, individual turning movements at unsignalized intersections shall not be allowed to reach LOS F and*

19 LSC Transportation Consultants, Inc. *RE: Frishman Hollow Phase II – Traffic Study.* January 3, 2020.

to exceed a cumulative vehicle delay of four vehicle hours. Both of these conditions shall be met for traffic operations to be considered unacceptable.

Based on the above, LOS D is considered acceptable for total intersection movements at the study intersections in the project vicinity, provided that individual turning movements at do not reach LOS F *and* do not exceed a cumulative vehicle delay of four vehicle hours.

Trip Generation and Distribution

According to the Traffic Study, local trip generation rates for multi-family affordable housing have been recently studied in the Tahoe Trip Generation Rate Analysis Memo. Specifically, traffic counts were conducted in the summer of 2019 at the Phase I Frishman Hollow residences and the nearby Henness Flats development to calculate trip generation rates. LSC Transportation Consultants, Inc. relied on such trip counts to calculate the estimated vehicle trip generation rate for the proposed project. As shown in Table 15, the resulting trip generation associated with the proposed project is estimated to be 630 average daily vehicle trips, including 71 PM peak hour trips (42 inbound and 29 outbound).

Table 16
Vehicle Trip Generation Summary (PM Peak-Hour)

Description	Units	Trip Rates Per Unit				Project Generated Vehicle Trips			
		Daily	PM Peak Hour			Daily	PM Peak Hour		
			In	Out	Total		In	Out	Total
Multi-Family Dwelling Units	68	9.27	0.62	0.43	1.05	630	42	29	71
Source: LSC Transportation Consultants, Inc., 2020.									

The distribution of trips arriving and leaving the project site is identified based upon residential and commercial center trips in the surrounding area and existing travel patterns. It should be noted that the Raley's grocery store currently under construction is assumed to be completed, which would shift trip distribution to a degree. The estimated PM peak hour distribution pattern for project-generated trips is shown below:

- 60 percent South on Truckee Way towards Downtown;
- 35 percent South on SR 267;
- 3 percent North on SR 89 North; and
- 2 percent East on Henness Road.

The trips generated by the proposed project were distributed and assigned to the study intersections in the project vicinity.

As discussed previously, the proposed project would require approval of a Snow Management Plan in order to comply with Section 18.30.130 of the Town Development Code. While the Snow Management Plan would include the transportation of snow by trucks to various locations on the site, snow storage and removal is currently conducted at the project site. Other than the location of the snow storage areas, the proposed project would not substantially alter snow plow traffic at the project site from what currently occurs. Thus, implementation of the Snow Management Plan as part of the proposed project would not affect the overall vehicle trip generation associated with the project.

Existing Conditions Plus Project

Project trips were added to the existing traffic conditions to obtain Existing Conditions Plus Project conditions. The results of the intersection LOS analysis under Existing and Existing Plus Project Conditions are summarized in Table 17 below.

Table 17
Study Intersection LOS: Existing Conditions Plus Project

Intersection	Control	LOS Standard	Existing		Existing Plus Project	
			Delay	LOS	Delay	LOS
Total Intersection						
1. Truckee Way/Rue Ivy	Stop	D	0.2	A	0.8	A
2. Truckee Way/SR 89 North	Roundabout	D	6.0	A	6.1	A
Worst Movement						
1. Truckee Way/Rue Ivy	Stop	F + 4 hour Delay	24.2	C	28.5	D
2. Truckee Way/SR 89 North	Roundabout	F + 4 hour Delay	6.5	A	6.6	A

Source: LSC Transportation Consultants, Inc., 2020.

As shown in the table, all study intersections would continue to operate at acceptable levels under Existing Plus Project conditions. While the proposed project would degrade the LOS at the intersection of Truckee Way and Rue Ivy during the worst movement, the LOS would still be within the acceptable LOS D standard set forth in Policy P2.1. As such, a less-than-significant impact would occur under Existing Plus Project Conditions.

Future Cumulative Conditions Plus Project

The LOS under Future Cumulative Plus Project conditions is shown in Table 18. As shown in the table, all study intersections would operate at acceptable levels under Future Cumulative Plus Project conditions with and without the proposed project. While the worst-case movement at the intersection of Truckee Way and Rue Ivy would operate at LOS F during the worst movement with and without the addition of project traffic, the total delay in vehicles per hour would be 1.0 under Future Cumulative Plus Project conditions, which is below the Town's four-hour standard. Thus, the project would not trigger a significant impact under Future Cumulative Plus Project conditions.

Pedestrian, Bicycle, and Transit Facilities

The proposed project's potential impacts related to pedestrian, bicycle, and transit facilities are discussed below.

Pedestrian Facilities

Roadways in the project area that have been developed to their ultimate width generally provide sidewalks on both sides of the street, with the exception of SR 89. Crosswalks are provided across the SR 89 roundabout. Thus, pedestrian facilities would be available to future residents of the proposed project.

Table 18
Study Intersection LOS: Future Cumulative Plus Project Conditions

Intersection	Control	LOS Standard	Future Cumulative			Future Cumulative Plus Project		
			Delay	Total Delay	LOS	Delay	Total Delay	LOS
Total Intersection								
1. Truckee Way/Rue Ivy	Stop	D	0.4	--	A	2.0	--	A
2. Truckee Way/SR 89 North	Roundabout	D	21.7	--	C	22.5	--	C
Worst Movement								
1. Truckee Way/Rue Ivy	Stop	F + 4 hour Delay	108.6	0.2	F	190.8	1.0	F
2. Truckee Way/SR 89 North	Roundabout	F + 4 hour Delay	644.2	--	E	46.8	--	E
Source: LSC Transportation Consultants, Inc., 2020.								

The proposed project would also provide a new connection to an existing pedestrian trail that runs along the west side of the project site. Given that the proposed project would provide adequate access for pedestrians, the proposed project would not conflict with a program, plan, or ordinance addressing pedestrian facilities.

Bicycle Facilities

Currently, the Town of Truckee includes 18 miles of Class I paved trails, 38 miles of Class II bike lanes, and 32 miles of Class III bike routes. The Town also includes 13 miles of dirt trails, resulting in a total of 101 miles.[20] The Truckee Trails and Bikeway Master Plan would increase the network of bike lanes and bike routes by connecting to existing paved and dirt trails. Ultimately, the Truckee Trails and Bikeway Master Plan would result in the development of 67 miles of additional dirt trails, paved trails, bike lanes, and bike routes. The proposed project includes the realignment of the existing trail which extends through the site along the western boundary. Realignment of the trail would allow residents of the proposed project and the area to use the bicycle facilities. Furthermore, the proposed project would not alter the existing circulation system in a way that would conflict with any existing or proposed bicycle facilities within the Town. Given that the proposed project would not conflict with a program, plan or ordinance addressing bicycle facilities, including the Truckee Trails and Bikeway Master Plan, the proposed project would result in a less-than-significant impact.

Transit Facilities

Tahoe Area Regional Transit (TART) provides transit service between Truckee and Tahoe City along the SR 89 corridor. TART is operated by the Placer County Department of Public Works, seven days a week, between the hours of 8:30 AM and 5:30 PM. Two TART bus stops are located in the vicinity of the project site; one stop is located at the corner of Rue Ivy and Truckee Way; and the second stop is located at the intersection of Henness Road and Edwin Road.

[20] Town of Truckee. *Truckee Trails and Bikeway Master Plan* [Appendix A]. September 2015.

Truckee Dial-A-Ride also operates within the Town of Truckee as a curb-to-curb demand response service to persons with disabilities with ADA certification and the general public. Service is provided between 7:00 AM and 7:00 PM Monday through Friday, and 9:00 AM to 5:00 PM on Saturdays. In addition, the Truckee Trolley operates within the Town of Truckee. During the winter months, three separate routes are provided, operating from 7:00 AM to 6:00 PM, seven days a week. During the non-winter months, one trolley is operated Monday through Saturday between the Truckee Train Depot and the end of Donner Lake between the hours of 9:00 AM and 5:00 PM. Service is not offered between the hours of noon and 1:00 PM during the non-winter months. Based on the above, adequate transit facilities would be available to serve the future residents of the proposed project. Additionally, the proposed project would not conflict with existing or planned transit facilities.

Conclusion

Based on the above, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, and a ***less-than-significant*** impact could occur.

b. Section 15064.3 of the CEQA Guidelines provides specific considerations for evaluating a project's transportation impacts. Per Section 15064.3, analysis of vehicle miles traveled (VMT) attributable to a project is the most appropriate measure of transportation impacts. While a qualitative discussion of VMT has been provided below, the provisions of Section 15064.3 apply only prospectively; determination of impacts based on VMT is not required Statewide until July 1, 2020.

Per Section 15064.3(3), a lead agency may analyze a project's VMT qualitatively based on the availability of transit, proximity to destinations, etc. While changes to driving conditions that increase intersection delay are an important consideration for traffic operations and management, the method of analysis does not fully describe environmental effects associated with fuel consumption, emissions, and public health. Section 15064.3(3) changes the focus of transportation impact analysis in CEQA from measuring impact to drivers to measuring the impact of driving. As noted in question 'a' above, residents of the proposed project would have access to existing public transit, bicycle, and pedestrian facilities in the project vicinity. In addition, the proposed project would include construction of a realigned trail along the southwestern portion of the project site for pedestrian use. The availability of transit service and bicycle and pedestrian infrastructure would encourage the use of alternative means of transportation to and from the project site.

Per the Traffic Study, the proposed project would result in an average daily VMT of 1,764, with 199 VMT during the PM peak hour. Currently, the Town of Truckee is in the process of developing VMT standards; however, the Town has not adopted finalized standards. Therefore, the resulting VMT of the proposed project cannot be compared to any established standards at this time. Nonetheless, according to the Traffic Study, the per capita VMT for the proposed project would be lower than the Truckee-wide average due to the site being located close to trip destinations, the TART transit route, and the availability of adjacent bike paths.

Based on the above, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and a ***less-than-significant*** impact would occur.

c,d. Access to the proposed buildings would be provided by the existing Rue Ivy roadway within the project site; construction of new roadways would not be required. Three parking areas would be constructed along Rue Ivy as part of the proposed project to provide for the additional project residents. One parking area would be constructed directly west of Building A1 and another parking area would be constructed directly east Building A2. The third parking area would be developed directly east of Buildings B1 and B2. The new parking areas would provide 136 additional parking spaces, resulting in a total of 201 parking spaces for the entire site.

The proposed parking improvements would not result in any traffic safety hazards. Additionally, the proposed drive aisles within the parking areas would be sufficiently sized to accommodate emergency vehicle access throughout the site.

Construction traffic associated with the proposed project would include heavy-duty vehicles associated with transport of construction material, as well as daily construction employee trips to and from the site that would share the area roadways with normal vehicle traffic, creating potential conflicts with other roadway users. Although construction traffic could affect traffic flows, Mitigation Measure III-1 requires traffic control measures be implemented during construction activities to control traffic flows in the project area. Implementation of Mitigation Measure III-1 would ensure that construction traffic does not conflict with other roadway users.

Nonetheless, a traffic control plan has not been submitted and approved by the Town of Truckee. Therefore, the proposed project could substantially increase hazards due to a design feature or incompatible uses or result in temporary inadequate emergency access, and a ***potentially significant*** impact would occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

XVII. Implement Mitigation Measure III-1.

XVIII. TRIBAL CULTURAL RESOURCES. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).	☐	✖	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	✖	☐	☐

Discussion

a,b. As discussed in Section V, Cultural Resources, of this IS/MND the Cultural Resources Study prepared for the proposed project included a records search update and literature review. In addition, in accordance with AB 52 requirements, the Town of Truckee sent a consultation letter to the UAIC. In addition, letters were sent to the Washoe Tribe of Nevada and California and the T'si Akim Maidu as a courtesy, due to their prevalence in the area. The UAIC responded initially requesting a visit to the project area and copies of archaeological reports and records search results for the proposed project. In a follow up correspondence, UAIC indicated that a site visit would be difficult due to the pending winter storms. Rather than a site visit at this time, UAIC indicated that they would like the opportunity to conduct a post-ground disturbance visit, at which ground visibility would be better. The Washoe Tribe responded on January 8, 2020 indicating their knowledge of a potential archaeological site in the project vicinity and also requesting the opportunity to review any cultural studies prepared for the project. The Cultural Resources Study prepared for the proposed project by Far Western was provided to the Washoe Tribe, who requested additional information referenced in the project-specific study. The additional information requested has been provided. The Washoe Tribe is currently reviewing the additional material and may provide further input.

According to the Cultural Resources Study, one archaeological site (CA-NEV-883/H) covers most of the proposed project area, and another site (CA-NEV-21) is located adjacent to the project site. CA-NEV-21 extends along an intermittent stream at the eastern toe of Alder Hill; the southern end of CA-NEV-21 (Loci 1 and 2) is located adjacent to the project site. Locus 2 and the area of Locus 1 south of Alder Drive were excavated in 2003 for the nearby Alder Creek Middle School project and were determined not to qualify for listing on the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP), as the resources had limited research potential. The results were forwarded to the Washoe Tribe, who concurred with the findings. The locations of the CA-NEV-21 Locus 2 and part of Locus 1 are covered by the school and paved parking areas and driveways. In addition, construction of the nearby existing Assumption Catholic Church disturbed or destroyed most of the remainder of Locus 1. As such, according to the Cultural Resources Study, the proposed project would not result in any additional impacts to site CA-NEV-21.

Site CA-NEV-883/H is a multi-component site that was recorded during the inventory phase of the Alder Creek Middle School project. The site consists of a flaked-stone scatter with three loci (areas of concentration) and five loci of early to mid-twentieth century refuse. According to the Cultural Resources Study, the site has not been subject to previous archaeological excavations, and the depth and full extent of the archaeological materials have not been determined. Because a formal evaluation addressing eligibility for the CRHR or NRHP has not been conducted, a significant impact to the site could occur as a result of construction of the proposed project.

Additionally, unknown tribal cultural resources, including human remains, have the potential to be uncovered during ground-disturbing construction and excavation activities at the proposed project site. Therefore, the proposed project could result in a substantial adverse change in the significance of a tribal cultural resource. Thus, impacts could be considered ***potentially significant***.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

XVIII-1. *Implement Mitigation Measures V-1 through V-4.*

XIX. UTILITIES AND SERVICE SYSTEMS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	✖	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	✖	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	✖	☐
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	✖	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	✖	☐

Discussion

a-c. Electricity, natural gas, telecommunications, water, and sanitary sewer services would be provided by way of new connections to existing infrastructure in the immediate project area. Electricity and water services for the proposed project would be provided by the TDPUD. Brief discussions of the water, sewer service, stormwater drainage, electrical, natural gas, and telecommunications facilities that would serve the proposed project are included below.

Water

As previously mentioned under Section X, Hydrology and Water Quality, water supplies for the project site are supplied by the TDPUD. Per the District's 2015 UWMP, the anticipated maximum demand at buildout of the service area is approximately 4,217 mgy.[21] With a total water supply of at least 7,820 mgy, water supply greatly exceeds the anticipated demand at buildout of the TDPUD service area. The water demand projections presented in the 2015 UWMP are based on continued operation of all existing developments as well as buildout of all vacant parcels. Considering that the UWMP anticipated buildout of all currently undeveloped parcels within the City, and that the available water supply far exceeds anticipated demand, despite the increased density resulting from the project's qualification for State density bonus law, adequate water supply exists to serve the project without resulting in a significant decrease in the available water supplies such that the project may interfere with management of the MVGB. Although water demand from the proposed project may exceed the demand anticipated by TDPUD, the increase in demand would be small relative to the overall demand within

21 Truckee Donner Public Utilities District. *Truckee Water System 2015 Urban Water Management Plan* [page 6-7]. June 2016.

the TDPUD service area, and ample excess water supply exists to accommodate the slight increase in water demand resulting from the project.

Given that the groundwater basin has adequate capacity,[22] the proposed project would not significantly impact the District's water supply. As such, the District would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. Furthermore, all infrastructure required to provide water supply to the project would be developed by connections to Phase I infrastructure within the overall project site, and the proposed project would not require major relocation or expansion of any water supply infrastructure.

Sewer Service

Sewer services would be provided to the site by the Truckee Sanitary District (TSD). TSD services an area of approximately 38-square miles through the operation and maintenance of a wastewater collection system that includes over 300 miles of sewer pipelines. Collected sewage is conveyed to the Tahoe Truckee Sanitation Agency (TTSA) Water Reclamation Plant, located adjacent to the Truckee River and Tahoe Truckee Airport. The TTSA previously upgraded and expanded wastewater facilities to increase handling capacity and meet the projected demands up to the year 2025 from buildout of the Town's General Plan. Despite the increased density resulting from the project's qualification for State density bonus law, the overall increase in wastewater generation would be limited in comparison to what was planned for in the Town's General Plan. In addition, all infrastructure required to provide sewer service to the project would be developed by connections to Phase I infrastructure within the overall project site, and the proposed project would not require major relocation or expansion of any sewer service infrastructure. Consequently, adequate sewer service capacity exists to serve the project.

Stormwater Systems

The proposed project would include continued use of existing stormwater infrastructure as well as provision of new on-site stormwater infrastructure to accommodate runoff from the proposed project. The physical effects of the proposed expansion to the on-site stormwater system have been discussed throughout this IS/MND. Based on the conclusions of the Preliminary Drainage Report, with the proposed expansion to the on-site stormwater system, all infrastructure would be properly sized to handle stormwater, and off-site expansion or relocation would not be required. In addition, Mitigation Measure X-1 requires the project applicant to submit a Final Drainage Report to ensure that on-site drainage systems comply with the Town of Truckee Post-Construction Storm Water Quality Plan.

Other Utilities

Natural gas and telecommunications utilities would be provided by way of connections to existing infrastructure located within the immediate project vicinity. The proposed project would not require major upgrades to, or extension of, existing infrastructure. Thus, impacts to electricity, natural gas, and telecommunications infrastructure would be less than significant.

[22] Truckee Donner Public Utilities District. *Truckee Water System 2015 Urban Water Management Plan*. June 2016.

Conclusion

Given that the utility infrastructure within the project vicinity has been designed with adequate capacity to accommodate demand from the proposed project, the increase in residents would not be substantial enough to require the construction of new utility infrastructure. Therefore, the project would result in a ***less-than-significant*** impact related to the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

d,e. Solid waste, recyclable materials, and compostable material collection within the project area is operated by the Tahoe Truckee Sierra Disposal. All solid waste is disposed and/or processed at the waste facility at the Eastern Regional Landfill Material Recovery Facility. The Eastern Regional Landfill Material Recovery Facility covers seven acres of land and currently handles 445 tons of waste per day, although the permit for the site allows up to 600 tons of waste per day to be managed at the facility. Pursuant to the CALGreen Code, at least 65 percent diversion of construction waste is required for projects permitted after January 1, 2017. Because the landfill is not operating at maximum capacity and the project would only create a temporary increase in the amount of waste during construction activities, the proposed project would not result in a significant impact related to solid waste generation.

With respect to operational solid waste generation, the nature of the proposed project would not be expected to generate substantial amounts of solid waste due to the relatively small scale of the project. In addition, the proposed project would be required to comply with all applicable provisions of Section 18.30.150, Solid Waste/Recyclable Materials Storage, of the Town's Development Code.

Therefore, the proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals and would comply with federal, State, and local management and reduction statutes and regulations related to solid waste. Therefore, a ***less-than-significant*** impact would occur.

XX. WILDFIRE. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	✖	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	✖	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	✖	☐
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	✖	☐

Discussion

a-d. According to the CAL FIRE Fire and Resource Assessment Program, the project site is located within a local responsibility area (LRA) with lands classified as a Very High Fire Hazard Severity Zone (VHFHSZ).[23] However, the proposed project would not involve any operations that would exacerbate fire risk.

As discussed in Section IX, Hazards and Hazardous Materials, of this IS/MND the project would not impair any emergency response plan or evacuation plan.

Although slopes are located along the western portion of the project site, the existing drainage and maintained landscape would act as a buffer. Furthermore, in accordance with State standards, the proposed project would be required to maintain defensible space to provide a fire break that would prevent the spread of ground fires and protect on-site structures.

In addition, implementation of the proposed project would include site clearing activities, which would remove much of the on-site vegetation within the area and would further create a buffer between the open space areas to the south of the site and the proposed residential development. Development of the site for residential uses would help to reduce the risk of wildland fire in the area due to site improvements, such as roadways, driveways, and irrigated landscaping, which would reduce readily combustible vegetation. Furthermore, development of the proposed project would include the installation of fire suppression systems (e.g., fire hydrants, fire sprinklers, smoke detectors) and would be designed in accordance with the latest requirements of the California Fire Code. The proposed project would also be subject to fire safety requirements of the Truckee Fire Protection District, which would review all plans as part of the Town's review process. Fire sprinklers, vegetative buffer zones, and other fire-safe measures may be required as part of their review. Compliance with such would ensure that the potential hazards associated with wildland fires to the proposed buildings and structures would be reduced.

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23 California Department of Forestry and Fire Protection. *Truckee, Very High Fire Hazard Severity Zones in LRA*. November 24, 2008.

As discussed in Section X, Hydrology and Water Quality, of this IS/MND, the proposed project would not alter the site's drainage pattern in a manner that would result in flooding. Additionally, the proposed project would include rock retaining wall to ensure slope stability at the project site.

Based on the above, impacts related to wildfires would be considered ***less than significant***.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially 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 history or prehistory?	☐	☐	✖	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	✖	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	✖	☐

Discussion

a. As discussed in Section IV, Biological Resources, of this IS/MND, while a limited potential exists for nesting raptors and migratory birds protected by the MBTA to occur on-site, Mitigation Measures IV-1 and IV-2 would ensure that any impacts related to special-status species would be reduced to a less-than-significant level. The project site is known to contain a previous archaeological site; however, the site has not been formally evaluated. Thus, without a formal evaluation of the archaeological site, a significant impact could occur. As such, Mitigation Measures V-1 through V-4 would require a formal evaluation be conducted and ensure that in the event that prehistoric resources are discovered within the project site, such resources would be protected in compliance with the requirements of CEQA and other State standards.

Considering the above, the proposed project would not degrade the quality of the environment, substantially reduce or impact the habitat of fish or wildlife species, cause fish or wildlife populations 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 history or prehistory. Therefore, a ***less-than-significant*** impact would occur.

b. The proposed project, in conjunction with other development within the Town of Truckee, could incrementally contribute to cumulative impacts in the area. However, as demonstrated in this IS/MND, all potential environmental impacts that could occur as a result of project implementation would be reduced to a less-than-significant level through compliance with the mitigation measures included in this IS/MND, as well as applicable General Plan policies, Development Code standards, and other applicable local and State regulations.

Therefore, when viewed in conjunction with other closely related past, present, or reasonably foreseeable future projects, development of the proposed project would not result in a cumulatively considerable contribution to cumulative impacts in the Town of

Truckee, and the project's incremental contribution to cumulative impacts would be ***less than significant****.*

c. As described in this IS/MND, the proposed project would comply with all applicable General Plan policies, Development Code standards, other applicable local and State regulations, in addition to the mitigation measures included herein. Additionally, as discussed in Section III, Air Quality, Section IX, Hazards and Hazardous Materials, and Section XIII, Noise, of this IS/MND, the proposed project would not cause substantial effects to human beings, including effects related to exposure to air pollutants, and hazardous materials. Therefore, the proposed project would result in a ***less-than-significant*** impact.

APPENDIX A

AIR QUALITY AND GHG MODELING RESULTS

Frishman Hollow

Northern Sierra AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	136.00	Space	0.40	54,400.00	0
Apartments Low Rise	8.00	Dwelling Unit	0.50	9,584.00	23
Apartments Mid Rise	60.00	Dwelling Unit	1.58	64,290.00	172

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	72
Climate Zone	14			**Operational Year**	2022
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	374.95	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - User Defined Utility Company is: Truckee-Donner Public Utilities District (PUD).
CO2, CH4, and N2O Intensity Factors were adjusted to more accurately reflect the Truckee-Donner PUD.
Reference: Sierra Business Council. High Altitude Fitness Air Quality and Greenhouse Gas Emissions Assessments. March 2018.

Land Use - Lot acreages/square footages were updated per information provided by the project applicant and on the site plans.

Construction Phase - Construction start date and total days required for each construction phase were updated based on information provided by the project applicant.

Grading - Total acres graded updated based on information provided by the project applicant.
Material export was calcutated based on the number of trees that would be removed from the site. Average diameter of trees to be removed = 12.4.
0.33 CY soil is removed per diameter of tree. 0.33 X 12.4 X 359 trees = 1,520 CY soil export from tree removal + 50 CY for construction = 1,570 CY total.

Vehicle Trips - Vehicle trips updated based on the Traffic Impact Report prepared for the proposed project.

Mobile Land Use Mitigation - Project applicant indicated plans to implement a pedestrian network connecting the project site and off-site.

Area Mitigation - Project applicant indicated that no hearths/fireplaces would be included in the proposed residences.

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	176.00
tblConstructionPhase	NumDays	220.00	176.00
tblConstructionPhase	NumDays	6.00	15.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	3.00	5.00
tblConstructionPhase	PhaseEndDate	4/14/2021	2/19/2021
tblConstructionPhase	PhaseEndDate	3/17/2021	2/5/2021
tblConstructionPhase	PhaseEndDate	5/13/2020	5/28/2020
tblConstructionPhase	PhaseEndDate	3/31/2021	6/4/2020
tblConstructionPhase	PhaseEndDate	5/5/2020	5/7/2020
tblConstructionPhase	PhaseStartDate	4/1/2021	6/19/2020
tblConstructionPhase	PhaseStartDate	5/14/2020	6/5/2020
tblConstructionPhase	PhaseStartDate	5/6/2020	5/8/2020
tblConstructionPhase	PhaseStartDate	3/18/2021	5/29/2020

tblGrading	AcresOfGrading	7.50	4.00
tblGrading	AcresOfGrading	7.50	0.00
tblGrading	MaterialExported	0.00	1,570.00
tblLandUse	LandUseSquareFeet	8,000.00	9,584.00
tblLandUse	LandUseSquareFeet	60,000.00	64,290.00
tblLandUse	LotAcreage	1.22	0.40
tblProjectCharacteristics	CH4IntensityFactor	0	0.033
tblProjectCharacteristics	CO2IntensityFactor	0	374.95
tblProjectCharacteristics	N2OIntensityFactor	0	0.004
tblVehicleTrips	ST_TR	7.16	9.27
tblVehicleTrips	ST_TR	6.39	9.27
tblVehicleTrips	SU_TR	6.07	9.27
tblVehicleTrips	SU_TR	5.86	9.27
tblVehicleTrips	WD_TR	6.59	9.27
tblVehicleTrips	WD_TR	6.65	9.27

2.0 Emissions Summary

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					
2020	1.1889	1.8742	1.7065	3.2900e-003	0.1081	0.0912	0.1993	0.0414	0.0873	0.1287	0.0000	283.9434	283.9434	0.0449	0.0000	285.0658
2021	0.2780	0.2648	0.2748	5.3000e-004	0.0107	0.0125	0.0232	2.8800e-003	0.0120	0.0149	0.0000	45.5596	45.5596	6.3200e-003	0.0000	45.7176
Maximum	**1.1889**	**1.8742**	**1.7065**	**3.2900e-003**	**0.1081**	**0.0912**	**0.1993**	**0.0414**	**0.0873**	**0.1287**	**0.0000**	**283.9434**	**283.9434**	**0.0449**	**0.0000**	**285.0658**

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					
2020	1.1889	1.8742	1.7065	3.2900e-003	0.1081	0.0912	0.1993	0.0414	0.0873	0.1287	0.0000	283.9431	283.9431	0.0449	0.0000	285.0656
2021	0.2780	0.2648	0.2748	5.3000e-004	0.0107	0.0125	0.0232	2.8800e-003	0.0120	0.0149	0.0000	45.5596	45.5596	6.3200e-003	0.0000	45.7176
Maximum	**1.1889**	**1.8742**	**1.7065**	**3.2900e-003**	**0.1081**	**0.0912**	**0.1993**	**0.0414**	**0.0873**	**0.1287**	**0.0000**	**283.9431**	**283.9431**	**0.0449**	**0.0000**	**285.0656**

	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**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	5-1-2020	7-31-2020	0.9851	0.9851
2	8-1-2020	10-31-2020	1.2473	1.2473
3	11-1-2020	1-31-2021	1.2278	1.2278
4	2-1-2021	4-30-2021	0.1405	0.1405
		Highest	1.2473	1.2473

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	4.6916	0.0892	5.7735	9.5700e-003		0.7413	0.7413		0.7413	0.7413	70.2411	30.2853	100.5264	0.0656	5.5200e-003	103.8134
Energy	1.7200e-003	0.0147	6.2700e-003	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	73.9834	73.9834	5.3400e-003	9.2000e-004	74.3910
Mobile	0.3027	1.7970	3.4765	9.4600e-003	0.6578	0.0100	0.6678	0.1767	9.4100e-003	0.1861	0.0000	868.7947	868.7947	0.0479	0.0000	869.9922
Waste						0.0000	0.0000		0.0000	0.0000	6.3496	0.0000	6.3496	0.3753	0.0000	15.7308
Water						0.0000	0.0000		0.0000	0.0000	1.4056	5.7399	7.1455	0.1449	3.4700e-003	11.8014
Total	**4.9960**	**1.9009**	**9.2563**	**0.0191**	**0.6578**	**0.7525**	**1.4102**	**0.1767**	**0.7519**	**0.9285**	**77.9963**	**978.8033**	**1,056.7996**	**0.6390**	**9.9100e-003**	**1,075.7288**

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	0.4249	5.8400e-003	0.5067	3.0000e-005		2.8000e-003	2.8000e-003		2.8000e-003	2.8000e-003	0.0000	0.8272	0.8272	8.0000e-004	0.0000	0.8472
Energy	1.7200e-003	0.0147	6.2700e-003	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	73.9834	73.9834	5.3400e-003	9.2000e-004	74.3910
Mobile	0.3004	1.7768	3.4265	9.2900e-003	0.6446	9.8200e-003	0.6544	0.1731	9.2400e-003	0.1824	0.0000	853.3915	853.3915	0.0474	0.0000	854.5754
Waste						0.0000	0.0000		0.0000	0.0000	6.3496	0.0000	6.3496	0.3753	0.0000	15.7308
Water						0.0000	0.0000		0.0000	0.0000	1.4056	5.7399	7.1455	0.1449	3.4700e-003	11.8014
Total	**0.7270**	**1.7973**	**3.9395**	**9.4100e-003**	**0.6446**	**0.0138**	**0.6584**	**0.1731**	**0.0132**	**0.1864**	**7.7551**	**933.9420**	**941.6971**	**0.5736**	**4.3900e-003**	**957.3457**

	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	N20	CO2e
Percent Reduction	**85.45**	**5.45**	**57.44**	**50.78**	**2.00**	**98.16**	**53.31**	**2.00**	**98.24**	**79.93**	**90.06**	**4.58**	**10.89**	**10.23**	**55.70**	**11.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2020	5/7/2020	5	5	
2	Grading	Grading	5/8/2020	5/28/2020	5	15	
3	Paving	Paving	5/29/2020	6/4/2020	5	5	
4	Building Construction	Building Construction	6/5/2020	2/5/2021	5	176	
5	Architectural Coating	Architectural Coating	6/19/2020	2/19/2021	5	176	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.4

Residential Indoor: 149,595; Residential Outdoor: 49,865; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,264 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Site Preparation	Scrapers	1	8.00	367	0.48
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

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
Site Preparation	3	8.00	0.00	196.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	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
Building Construction	8	72.00	16.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

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					9.0000e-005	0.0000	9.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1300e-003	0.0498	0.0282	6.0000e-005		1.9400e-003	1.9400e-003		1.7900e-003	1.7900e-003	0.0000	5.3817	5.3817	1.7400e-003	0.0000	5.4252
Total	**4.1300e-003**	**0.0498**	**0.0282**	**6.0000e-005**	**9.0000e-005**	**1.9400e-003**	**2.0300e-003**	**1.0000e-005**	**1.7900e-003**	**1.8000e-003**	**0.0000**	**5.3817**	**5.3817**	**1.7400e-003**	**0.0000**	**5.4252**

3.2 Site Preparation - 2020

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	7.9000e-004	0.0283	4.4900e-003	8.0000e-005	1.6500e-003	1.0000e-004	1.7500e-003	4.5000e-004	1.0000e-004	5.5000e-004	0.0000	7.5693	7.5693	3.0000e-004	0.0000	7.5768
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	1.2000e-004	1.0000e-004	8.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1441	0.1441	1.0000e-005	0.0000	0.1443
Total	**9.1000e-004**	**0.0284**	**5.3600e-003**	**8.0000e-005**	**1.8100e-003**	**1.0000e-004**	**1.9100e-003**	**4.9000e-004**	**1.0000e-004**	**5.9000e-004**	**0.0000**	**7.7134**	**7.7134**	**3.1000e-004**	**0.0000**	**7.7210**

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					9.0000e-005	0.0000	9.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1300e-003	0.0498	0.0282	6.0000e-005		1.9400e-003	1.9400e-003		1.7900e-003	1.7900e-003	0.0000	5.3817	5.3817	1.7400e-003	0.0000	5.4252
Total	**4.1300e-003**	**0.0498**	**0.0282**	**6.0000e-005**	**9.0000e-005**	**1.9400e-003**	**2.0300e-003**	**1.0000e-005**	**1.7900e-003**	**1.8000e-003**	**0.0000**	**5.3817**	**5.3817**	**1.7400e-003**	**0.0000**	**5.4252**

3.2 Site Preparation - 2020

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	7.9000e-004	0.0283	4.4900e-003	8.0000e-005	1.6500e-003	1.0000e-004	1.7500e-003	4.5000e-004	1.0000e-004	5.5000e-004	0.0000	7.5693	7.5693	3.0000e-004	0.0000	7.5768
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	1.2000e-004	1.0000e-004	8.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1441	0.1441	1.0000e-005	0.0000	0.1443
Total	**9.1000e-004**	**0.0284**	**5.3600e-003**	**8.0000e-005**	**1.8100e-003**	**1.0000e-004**	**1.9100e-003**	**4.9000e-004**	**1.0000e-004**	**5.9000e-004**	**0.0000**	**7.7134**	**7.7134**	**3.1000e-004**	**0.0000**	**7.7210**

3.3 Grading - 2020

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					0.0473	0.0000	0.0473	0.0251	0.0000	0.0251	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0144	0.1601	0.0745	1.5000e-004		7.4300e-003	7.4300e-003		6.8300e-003	6.8300e-003	0.0000	13.5833	13.5833	4.3900e-003	0.0000	13.6932
Total	**0.0144**	**0.1601**	**0.0745**	**1.5000e-004**	**0.0473**	**7.4300e-003**	**0.0547**	**0.0251**	**6.8300e-003**	**0.0319**	**0.0000**	**13.5833**	**13.5833**	**4.3900e-003**	**0.0000**	**13.6932**

3.3 Grading - 2020

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	4.3000e-004	3.6000e-004	3.2700e-003	1.0000e-005	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5404	0.5404	3.0000e-005	0.0000	0.5410
Total	**4.3000e-004**	**3.6000e-004**	**3.2700e-003**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**5.9000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5404**	**0.5404**	**3.0000e-005**	**0.0000**	**0.5410**

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					0.0473	0.0000	0.0473	0.0251	0.0000	0.0251	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0144	0.1601	0.0745	1.5000e-004		7.4300e-003	7.4300e-003		6.8300e-003	6.8300e-003	0.0000	13.5833	13.5833	4.3900e-003	0.0000	13.6931
Total	**0.0144**	**0.1601**	**0.0745**	**1.5000e-004**	**0.0473**	**7.4300e-003**	**0.0547**	**0.0251**	**6.8300e-003**	**0.0319**	**0.0000**	**13.5833**	**13.5833**	**4.3900e-003**	**0.0000**	**13.6931**

3.3 Grading - 2020

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	4.3000e-004	3.6000e-004	3.2700e-003	1.0000e-005	5.9000e-004	0.0000	5.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5404	0.5404	3.0000e-005	0.0000	0.5410
Total	**4.3000e-004**	**3.6000e-004**	**3.2700e-003**	**1.0000e-005**	**5.9000e-004**	**0.0000**	**5.9000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5404**	**0.5404**	**3.0000e-005**	**0.0000**	**0.5410**

3.4 Paving - 2020

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	2.8900e-003	0.0290	0.0295	4.0000e-005		1.6400e-003	1.6400e-003		1.5100e-003	1.5100e-003	0.0000	3.8764	3.8764	1.2300e-003	0.0000	3.9072
Paving	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4100e-003**	**0.0290**	**0.0295**	**4.0000e-005**		**1.6400e-003**	**1.6400e-003**		**1.5100e-003**	**1.5100e-003**	**0.0000**	**3.8764**	**3.8764**	**1.2300e-003**	**0.0000**	**3.9072**

3.4 Paving - 2020

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	2.2000e-004	1.8000e-004	1.6300e-003	0.0000	2.9000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2702	0.2702	1.0000e-005	0.0000	0.2705
Total	**2.2000e-004**	**1.8000e-004**	**1.6300e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2702**	**0.2702**	**1.0000e-005**	**0.0000**	**0.2705**

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	2.8900e-003	0.0290	0.0295	4.0000e-005		1.6400e-003	1.6400e-003		1.5100e-003	1.5100e-003	0.0000	3.8764	3.8764	1.2300e-003	0.0000	3.9072
Paving	5.2000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4100e-003**	**0.0290**	**0.0295**	**4.0000e-005**		**1.6400e-003**	**1.6400e-003**		**1.5100e-003**	**1.5100e-003**	**0.0000**	**3.8764**	**3.8764**	**1.2300e-003**	**0.0000**	**3.9072**

3.4 Paving - 2020

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	2.2000e-004	1.8000e-004	1.6300e-003	0.0000	2.9000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2702	0.2702	1.0000e-005	0.0000	0.2705
Total	**2.2000e-004**	**1.8000e-004**	**1.6300e-003**	**0.0000**	**2.9000e-004**	**0.0000**	**3.0000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2702**	**0.2702**	**1.0000e-005**	**0.0000**	**0.2705**

3.5 Building Construction - 2020

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	0.1716	1.3075	1.1173	1.8800e-003		0.0711	0.0711		0.0682	0.0682	0.0000	155.7333	155.7333	0.0316	0.0000	156.5235
Total	**0.1716**	**1.3075**	**1.1173**	**1.8800e-003**		**0.0711**	**0.0711**		**0.0682**	**0.0682**	**0.0000**	**155.7333**	**155.7333**	**0.0316**	**0.0000**	**156.5235**

3.5 Building Construction - 2020

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	5.7800e-003	0.1506	0.0407	3.5000e-004	7.8400e-003	7.9000e-004	8.6300e-003	2.2700e-003	7.6000e-004	3.0200e-003	0.0000	33.0056	33.0056	1.9100e-003	0.0000	33.0533
Worker	0.0311	0.0258	0.2352	4.3000e-004	0.0425	3.6000e-004	0.0428	0.0113	3.3000e-004	0.0116	0.0000	38.9056	38.9056	1.9400e-003	0.0000	38.9541
Total	**0.0369**	**0.1763**	**0.2759**	**7.8000e-004**	**0.0503**	**1.1500e-003**	**0.0515**	**0.0136**	**1.0900e-003**	**0.0147**	**0.0000**	**71.9113**	**71.9113**	**3.8500e-003**	**0.0000**	**72.0074**

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	0.1716	1.3075	1.1173	1.8800e-003		0.0711	0.0711		0.0682	0.0682	0.0000	155.7331	155.7331	0.0316	0.0000	156.5233
Total	**0.1716**	**1.3075**	**1.1173**	**1.8800e-003**		**0.0711**	**0.0711**		**0.0682**	**0.0682**	**0.0000**	**155.7331**	**155.7331**	**0.0316**	**0.0000**	**156.5233**

3.5 Building Construction - 2020

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	5.7800e-003	0.1506	0.0407	3.5000e-004	7.8400e-003	7.9000e-004	8.6300e-003	2.2700e-003	7.6000e-004	3.0200e-003	0.0000	33.0056	33.0056	1.9100e-003	0.0000	33.0533
Worker	0.0311	0.0258	0.2352	4.3000e-004	0.0425	3.6000e-004	0.0428	0.0113	3.3000e-004	0.0116	0.0000	38.9056	38.9056	1.9400e-003	0.0000	38.9541
Total	**0.0369**	**0.1763**	**0.2759**	**7.8000e-004**	**0.0503**	**1.1500e-003**	**0.0515**	**0.0136**	**1.0900e-003**	**0.0147**	**0.0000**	**71.9113**	**71.9113**	**3.8500e-003**	**0.0000**	**72.0074**

3.5 Building Construction - 2021

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	0.0266	0.2084	0.1893	3.3000e-004		0.0106	0.0106		0.0102	0.0102	0.0000	26.9943	26.9943	5.3100e-003	0.0000	27.1271
Total	**0.0266**	**0.2084**	**0.1893**	**3.3000e-004**		**0.0106**	**0.0106**		**0.0102**	**0.0102**	**0.0000**	**26.9943**	**26.9943**	**5.3100e-003**	**0.0000**	**27.1271**

3.5 Building Construction - 2021

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	8.4000e-004	0.0239	6.2000e-003	6.0000e-005	1.3600e-003	7.0000e-005	1.4300e-003	3.9000e-004	6.0000e-005	4.6000e-004	0.0000	5.6807	5.6807	3.2000e-004	0.0000	5.6886
Worker	5.0400e-003	4.0000e-003	0.0367	7.0000e-005	7.3600e-003	6.0000e-005	7.4200e-003	1.9600e-003	5.0000e-005	2.0100e-003	0.0000	6.5305	6.5305	3.0000e-004	0.0000	6.5379
Total	**5.8800e-003**	**0.0279**	**0.0429**	**1.3000e-004**	**8.7200e-003**	**1.3000e-004**	**8.8500e-003**	**2.3500e-003**	**1.1000e-004**	**2.4700e-003**	**0.0000**	**12.2112**	**12.2112**	**6.2000e-004**	**0.0000**	**12.2266**

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	0.0266	0.2084	0.1893	3.3000e-004		0.0106	0.0106		0.0102	0.0102	0.0000	26.9943	26.9943	5.3100e-003	0.0000	27.1271
Total	**0.0266**	**0.2084**	**0.1893**	**3.3000e-004**		**0.0106**	**0.0106**		**0.0102**	**0.0102**	**0.0000**	**26.9943**	**26.9943**	**5.3100e-003**	**0.0000**	**27.1271**

3.5 Building Construction - 2021

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	8.4000e-004	0.0239	6.2000e-003	6.0000e-005	1.3600e-003	7.0000e-005	1.4300e-003	3.9000e-004	6.0000e-005	4.6000e-004	0.0000	5.6807	5.6807	3.2000e-004	0.0000	5.6886
Worker	5.0400e-003	4.0000e-003	0.0367	7.0000e-005	7.3600e-003	6.0000e-005	7.4200e-003	1.9600e-003	5.0000e-005	2.0100e-003	0.0000	6.5305	6.5305	3.0000e-004	0.0000	6.5379
Total	**5.8800e-003**	**0.0279**	**0.0429**	**1.3000e-004**	**8.7200e-003**	**1.3000e-004**	**8.8500e-003**	**2.3500e-003**	**1.1000e-004**	**2.4700e-003**	**0.0000**	**12.2112**	**12.2112**	**6.2000e-004**	**0.0000**	**12.2266**

3.6 Architectural Coating - 2020

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	0.9343					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1179	0.1282	2.1000e-004		7.7700e-003	7.7700e-003		7.7700e-003	7.7700e-003	0.0000	17.8728	17.8728	1.3800e-003	0.0000	17.9074
Total	**0.9512**	**0.1179**	**0.1282**	**2.1000e-004**		**7.7700e-003**	**7.7700e-003**		**7.7700e-003**	**7.7700e-003**	**0.0000**	**17.8728**	**17.8728**	**1.3800e-003**	**0.0000**	**17.9074**

3.6 Architectural Coating - 2020

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	5.6400e-003	4.6700e-003	0.0427	8.0000e-005	7.7100e-003	7.0000e-005	7.7700e-003	2.0500e-003	6.0000e-005	2.1100e-003	0.0000	7.0607	7.0607	3.5000e-004	0.0000	7.0695
Total	**5.6400e-003**	**4.6700e-003**	**0.0427**	**8.0000e-005**	**7.7100e-003**	**7.0000e-005**	**7.7700e-003**	**2.0500e-003**	**6.0000e-005**	**2.1100e-003**	**0.0000**	**7.0607**	**7.0607**	**3.5000e-004**	**0.0000**	**7.0695**

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	0.9343					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0170	0.1179	0.1282	2.1000e-004		7.7700e-003	7.7700e-003		7.7700e-003	7.7700e-003	0.0000	17.8728	17.8728	1.3800e-003	0.0000	17.9074
Total	**0.9512**	**0.1179**	**0.1282**	**2.1000e-004**		**7.7700e-003**	**7.7700e-003**		**7.7700e-003**	**7.7700e-003**	**0.0000**	**17.8728**	**17.8728**	**1.3800e-003**	**0.0000**	**17.9074**

3.6 Architectural Coating - 2020

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	5.6400e-003	4.6700e-003	0.0427	8.0000e-005	7.7100e-003	7.0000e-005	7.7700e-003	2.0500e-003	6.0000e-005	2.1100e-003	0.0000	7.0607	7.0607	3.5000e-004	0.0000	7.0695
Total	**5.6400e-003**	**4.6700e-003**	**0.0427**	**8.0000e-005**	**7.7100e-003**	**7.0000e-005**	**7.7700e-003**	**2.0500e-003**	**6.0000e-005**	**2.1100e-003**	**0.0000**	**7.0607**	**7.0607**	**3.5000e-004**	**0.0000**	**7.0695**

3.6 Architectural Coating - 2021

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	0.2403					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9400e-003	0.0275	0.0327	5.0000e-005		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	4.5959	4.5959	3.2000e-004	0.0000	4.6037
Total	**0.2442**	**0.0275**	**0.0327**	**5.0000e-005**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**4.5959**	**4.5959**	**3.2000e-004**	**0.0000**	**4.6037**

3.6 Architectural Coating - 2021

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	1.3600e-003	1.0800e-003	9.8700e-003	2.0000e-005	1.9800e-003	2.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.7582	1.7582	8.0000e-005	0.0000	1.7602
Total	**1.3600e-003**	**1.0800e-003**	**9.8700e-003**	**2.0000e-005**	**1.9800e-003**	**2.0000e-005**	**2.0000e-003**	**5.3000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.7582**	**1.7582**	**8.0000e-005**	**0.0000**	**1.7602**

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	0.2403					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9400e-003	0.0275	0.0327	5.0000e-005		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	4.5959	4.5959	3.2000e-004	0.0000	4.6037
Total	**0.2442**	**0.0275**	**0.0327**	**5.0000e-005**		**1.6900e-003**	**1.6900e-003**		**1.6900e-003**	**1.6900e-003**	**0.0000**	**4.5959**	**4.5959**	**3.2000e-004**	**0.0000**	**4.6037**

3.6 Architectural Coating - 2021

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	1.3600e-003	1.0800e-003	9.8700e-003	2.0000e-005	1.9800e-003	2.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.7582	1.7582	8.0000e-005	0.0000	1.7602
Total	**1.3600e-003**	**1.0800e-003**	**9.8700e-003**	**2.0000e-005**	**1.9800e-003**	**2.0000e-005**	**2.0000e-003**	**5.3000e-004**	**1.0000e-005**	**5.4000e-004**	**0.0000**	**1.7582**	**1.7582**	**8.0000e-005**	**0.0000**	**1.7602**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	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	0.3004	1.7768	3.4265	9.2900e-003	0.6446	9.8200e-003	0.6544	0.1731	9.2400e-003	0.1824	0.0000	853.3915	853.3915	0.0474	0.0000	854.5754
Unmitigated	0.3027	1.7970	3.4765	9.4600e-003	0.6578	0.0100	0.6678	0.1767	9.4100e-003	0.1861	0.0000	868.7947	868.7947	0.0479	0.0000	869.9922

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Apartments Low Rise	74.16	74.16	74.16	208,259	204,094
Apartments Mid Rise	556.20	556.20	556.20	1,561,940	1,530,701
Total	630.36	630.36	630.36	1,770,199	1,734,795

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Apartments Low Rise	10.80	7.30	7.50	37.30	20.70	42.00	86	11	3
Apartments Mid Rise	10.80	7.30	7.50	37.30	20.70	42.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.450218	0.041480	0.238529	0.144444	0.036492	0.006519	0.014682	0.056829	0.001848	0.001006	0.005817	0.000606	0.001528
Apartments Low Rise	0.450218	0.041480	0.238529	0.144444	0.036492	0.006519	0.014682	0.056829	0.001848	0.001006	0.005817	0.000606	0.001528
Apartments Mid Rise	0.450218	0.041480	0.238529	0.144444	0.036492	0.006519	0.014682	0.056829	0.001848	0.001006	0.005817	0.000606	0.001528

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	56.9210	56.9210	5.0100e-003	6.1000e-004	57.2272
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	56.9210	56.9210	5.0100e-003	6.1000e-004	57.2272
NaturalGas Mitigated	1.7200e-003	0.0147	6.2700e-003	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	17.0625	17.0625	3.3000e-004	3.1000e-004	17.1639
NaturalGas Unmitigated	1.7200e-003	0.0147	6.2700e-003	9.0000e-005		1.1900e-003	1.1900e-003		1.1900e-003	1.1900e-003	0.0000	17.0625	17.0625	3.3000e-004	3.1000e-004	17.1639

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	86396.6	4.7000e-004	3.9800e-003	1.6900e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.6105	4.6105	9.0000e-005	8.0000e-005	4.6379
Apartments Mid Rise	233342	1.2600e-003	0.0108	4.5800e-003	7.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	12.4520	12.4520	2.4000e-004	2.3000e-004	12.5260
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		**1.7300e-003**	**0.0147**	**6.2700e-003**	**1.0000e-004**		**1.1900e-003**	**1.1900e-003**		**1.1900e-003**	**1.1900e-003**	**0.0000**	**17.0625**	**17.0625**	**3.3000e-004**	**3.1000e-004**	**17.1639**

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	86396.6	4.7000e-004	3.9800e-003	1.6900e-003	3.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.6105	4.6105	9.0000e-005	8.0000e-005	4.6379
Apartments Mid Rise	233342	1.2600e-003	0.0108	4.5800e-003	7.0000e-005		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	12.4520	12.4520	2.4000e-004	2.3000e-004	12.5260
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		**1.7300e-003**	**0.0147**	**6.2700e-003**	**1.0000e-004**		**1.1900e-003**	**1.1900e-003**		**1.1900e-003**	**1.1900e-003**	**0.0000**	**17.0625**	**17.0625**	**3.3000e-004**	**3.1000e-004**	**17.1639**

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	6.4751	5.7000e-004	7.0000e-005	6.5100
Apartments Mid Rise	277570	47.2076	4.1500e-003	5.0000e-004	47.4616
Parking Lot	19040	3.2382	2.9000e-004	3.0000e-005	3.2556
Total		**56.9210**	**5.0100e-003**	**6.0000e-004**	**57.2272**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	38072.4	6.4751	5.7000e-004	7.0000e-005	6.5100
Apartments Mid Rise	277570	47.2076	4.1500e-003	5.0000e-004	47.4616
Parking Lot	19040	3.2382	2.9000e-004	3.0000e-005	3.2556
Total		**56.9210**	**5.0100e-003**	**6.0000e-004**	**57.2272**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	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	0.4249	5.8400e-003	0.5067	3.0000e-005		2.8000e-003	2.8000e-003		2.8000e-003	2.8000e-003	0.0000	0.8272	0.8272	8.0000e-004	0.0000	0.8472
Unmitigated	4.6916	0.0892	5.7735	9.5700e-003		0.7413	0.7413		0.7413	0.7413	70.2411	30.2853	100.5264	0.0656	5.5200e-003	103.8134

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	0.1175					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2920					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	4.2667	0.0833	5.2668	9.5400e-003		0.7385	0.7385		0.7385	0.7385	70.2411	29.4581	99.6992	0.0648	5.5200e-003	102.9662
Landscaping	0.0154	5.8400e-003	0.5067	3.0000e-005		2.8000e-003	2.8000e-003		2.8000e-003	2.8000e-003	0.0000	0.8272	0.8272	8.0000e-004	0.0000	0.8472
Total	**4.6916**	**0.0892**	**5.7735**	**9.5700e-003**		**0.7413**	**0.7413**		**0.7413**	**0.7413**	**70.2411**	**30.2853**	**100.5264**	**0.0656**	**5.5200e-003**	**103.8134**

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	0.1175					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2920					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	0.0154	5.8400e-003	0.5067	3.0000e-005		2.8000e-003	2.8000e-003		2.8000e-003	2.8000e-003	0.0000	0.8272	0.8272	8.0000e-004	0.0000	0.8472
Total	**0.4249**	**5.8400e-003**	**0.5067**	**3.0000e-005**		**2.8000e-003**	**2.8000e-003**		**2.8000e-003**	**2.8000e-003**	**0.0000**	**0.8272**	**0.8272**	**8.0000e-004**	**0.0000**	**0.8472**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.1455	0.1449	3.4700e-003	11.8014
Unmitigated	7.1455	0.1449	3.4700e-003	11.8014

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	0.8406	0.0170	4.1000e-004	1.3884
Apartments Mid Rise	3.90924 / 2.46452	6.3048	0.1278	3.0600e-003	10.4130
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**7.1455**	**0.1449**	**3.4700e-003**	**11.8013**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	0.521232 / 0.328603	0.8406	0.0170	4.1000e-004	1.3884
Apartments Mid Rise	3.90924 / 2.46452	6.3048	0.1278	3.0600e-003	10.4130
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**7.1455**	**0.1449**	**3.4700e-003**	**11.8013**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.3496	0.3753	0.0000	15.7308
Unmitigated	6.3496	0.3753	0.0000	15.7308

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	27.6	5.6026	0.3311	0.0000	13.8801
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**6.3496**	**0.3753**	**0.0000**	**15.7308**

8.2 Waste by Land Use

Mitigated

	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	27.6	5.6026	0.3311	0.0000	13.8801
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**6.3496**	**0.3753**	**0.0000**	**15.7308**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Frishman Hollow

Northern Sierra AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	136.00	Space	0.40	54,400.00	0
Apartments Low Rise	8.00	Dwelling Unit	0.50	9,584.00	23
Apartments Mid Rise	60.00	Dwelling Unit	1.58	64,290.00	172

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	72
Climate Zone	14			**Operational Year**	2022
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	374.95	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - User Defined Utility Company is: Truckee-Donner Public Utilities District (PUD).
CO2, CH4, and N2O Intensity Factors were adjusted to more accurately reflect the Truckee-Donner PUD.
Reference: Sierra Business Council. High Altitude Fitness Air Quality and Greenhouse Gas Emissions Assessments. March 2018.

Land Use - Lot acreages/square footages were updated per information provided by the project applicant and on the site plans.

Construction Phase - Construction start date and total days required for each construction phase were updated based on information provided by the project applicant.

Grading - Total acres graded updated based on information provided by the project applicant.
Material export was calcutated based on the number of trees that would be removed from the site. Average diameter of trees to be removed = 12.4.
0.33 CY soil is removed per diameter of tree. 0.33 X 12.4 X 359 trees = 1,520 CY soil export from tree removal + 50 CY for construction = 1,570 CY total.

Vehicle Trips - Vehicle trips updated based on the Traffic Impact Report prepared for the proposed project.

Mobile Land Use Mitigation - Project applicant indicated plans to implement a pedestrian network connecting the project site and off-site.

Area Mitigation - Project applicant indicated that no hearths/fireplaces would be included in the proposed residences.

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	176.00
tblConstructionPhase	NumDays	220.00	176.00
tblConstructionPhase	NumDays	6.00	15.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	3.00	5.00
tblConstructionPhase	PhaseEndDate	4/14/2021	2/19/2021
tblConstructionPhase	PhaseEndDate	3/17/2021	2/5/2021
tblConstructionPhase	PhaseEndDate	5/13/2020	5/28/2020
tblConstructionPhase	PhaseEndDate	3/31/2021	6/4/2020
tblConstructionPhase	PhaseEndDate	5/5/2020	5/7/2020
tblConstructionPhase	PhaseStartDate	4/1/2021	6/19/2020
tblConstructionPhase	PhaseStartDate	5/14/2020	6/5/2020
tblConstructionPhase	PhaseStartDate	5/6/2020	5/8/2020
tblConstructionPhase	PhaseStartDate	3/18/2021	5/29/2020

tblGrading	AcresOfGrading	7.50	4.00
tblGrading	AcresOfGrading	7.50	0.00
tblGrading	MaterialExported	0.00	1,570.00
tblLandUse	LandUseSquareFeet	8,000.00	9,584.00
tblLandUse	LandUseSquareFeet	60,000.00	64,290.00
tblLandUse	LotAcreage	1.22	0.40
tblProjectCharacteristics	CH4IntensityFactor	0	0.033
tblProjectCharacteristics	CO2IntensityFactor	0	374.95
tblProjectCharacteristics	N2OIntensityFactor	0	0.004
tblVehicleTrips	ST_TR	7.16	9.27
tblVehicleTrips	ST_TR	6.39	9.27
tblVehicleTrips	SU_TR	6.07	9.27
tblVehicleTrips	SU_TR	5.86	9.27
tblVehicleTrips	WD_TR	6.59	9.27
tblVehicleTrips	WD_TR	6.65	9.27

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2020	16.4731	31.0219	21.0166	0.0572	6.3870	1.0753	7.3779	3.3626	1.0351	4.2741	0.0000	5,810.2900	5,810.2900	0.8953	0.0000	5,832.6721
2021	16.1607	19.6690	20.2403	0.0398	0.8148	0.9219	1.7367	0.2186	0.8871	1.1056	0.0000	3,765.6183	3,765.6183	0.5263	0.0000	3,778.7749
Maximum	**16.4731**	**31.0219**	**21.0166**	**0.0572**	**6.3870**	**1.0753**	**7.3779**	**3.3626**	**1.0351**	**4.2741**	**0.0000**	**5,810.2900**	**5,810.2900**	**0.8953**	**0.0000**	**5,832.6721**

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	lb/day										lb/day					
2020	16.4731	31.0219	21.0166	0.0572	6.3870	1.0753	7.3779	3.3626	1.0351	4.2741	0.0000	5,810.2900	5,810.2900	0.8953	0.0000	5,832.6721
2021	16.1607	19.6690	20.2403	0.0398	0.8148	0.9219	1.7367	0.2186	0.8871	1.1056	0.0000	3,765.6183	3,765.6183	0.5263	0.0000	3,778.7749
Maximum	**16.4731**	**31.0219**	**21.0166**	**0.0572**	**6.3870**	**1.0753**	**7.3779**	**3.3626**	**1.0351**	**4.2741**	**0.0000**	**5,810.2900**	**5,810.2900**	**0.8953**	**0.0000**	**5,832.6721**

	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**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	106.4815	2.0972	134.0893	0.2330		18.0423	18.0423		18.0423	18.0423	1,888.4777	802.1313	2,690.6090	1.7526	0.1485	2,778.6892
Energy	9.4500e-003	0.0807	0.0344	5.2000e-004		6.5300e-003	6.5300e-003		6.5300e-003	6.5300e-003		103.0583	103.0583	1.9800e-003	1.8900e-003	103.6707
Mobile	1.8961	9.4146	18.8402	0.0545	3.7727	0.0547	3.8273	1.0096	0.0514	1.0610		5,515.8491	5,515.8491	0.2870		5,523.0239
Total	**108.3870**	**11.5925**	**152.9638**	**0.2880**	**3.7727**	**18.1035**	**21.8762**	**1.0096**	**18.1003**	**19.1098**	**1,888.4777**	**6,421.0387**	**8,309.5164**	**2.0416**	**0.1504**	**8,405.3839**

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	lb/day										lb/day					
Area	2.4147	0.0649	5.6300	3.0000e-004		0.0311	0.0311		0.0311	0.0311	0.0000	10.1313	10.1313	9.8200e-003	0.0000	10.3769
Energy	9.4500e-003	0.0807	0.0344	5.2000e-004		6.5300e-003	6.5300e-003		6.5300e-003	6.5300e-003		103.0583	103.0583	1.9800e-003	1.8900e-003	103.6707
Mobile	1.8831	9.3128	18.5404	0.0535	3.6972	0.0537	3.7509	0.9894	0.0505	1.0399		5,418.0857	5,418.0857	0.2835		5,425.1732
Total	**4.3072**	**9.4584**	**24.2047**	**0.0543**	**3.6972**	**0.0913**	**3.7885**	**0.9894**	**0.0881**	**1.0775**	**0.0000**	**5,531.2754**	**5,531.2754**	**0.2953**	**1.8900e-003**	**5,539.2209**

	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	N20	CO2e
Percent Reduction	96.03	18.41	84.18	81.13	2.00	99.50	82.68	2.00	99.51	94.36	100.00	13.86	33.43	85.54	98.74	34.10

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2020	5/7/2020	5	5	
2	Grading	Grading	5/8/2020	5/28/2020	5	15	
3	Paving	Paving	5/29/2020	6/4/2020	5	5	
4	Building Construction	Building Construction	6/5/2020	2/5/2021	5	176	
5	Architectural Coating	Architectural Coating	6/19/2020	2/19/2021	5	176	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.4

Residential Indoor: 149,595; Residential Outdoor: 49,865; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,264 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Site Preparation	Scrapers	1	8.00	367	0.48
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

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
Site Preparation	3	8.00	0.00	196.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	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
Building Construction	8	72.00	16.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

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	lb/day										lb/day					
Fugitive Dust					0.0355	0.0000	0.0355	5.3800e-003	0.0000	5.3800e-003			0.0000			0.0000
Off-Road	1.6521	19.9196	11.2678	0.0245		0.7771	0.7771		0.7149	0.7149		2,372.9062	2,372.9062	0.7675		2,392.0924
Total	**1.6521**	**19.9196**	**11.2678**	**0.0245**	**0.0355**	**0.7771**	**0.8126**	**5.3800e-003**	**0.7149**	**0.7203**		**2,372.9062**	**2,372.9062**	**0.7675**		**2,392.0924**

3.2 Site Preparation - 2020

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	lb/day										lb/day					
Hauling	0.3117	11.0706	1.6841	0.0321	0.6850	0.0407	0.7257	0.1877	0.0389	0.2267		3,369.487 8	3,369.487 8	0.1246		3,372.601 5
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
Worker	0.0485	0.0316	0.3538	6.8000e-004	0.0657	5.3000e-004	0.0663	0.0174	4.9000e-004	0.0179		67.8961	67.8961	3.2800e-003		67.9782
Total	**0.3602**	**11.1022**	**2.0379**	**0.0327**	**0.7507**	**0.0412**	**0.7920**	**0.2051**	**0.0394**	**0.2446**		**3,437.383 8**	**3,437.383 8**	**0.1278**		**3,440.579 7**

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	lb/day										lb/day					
Fugitive Dust					0.0355	0.0000	0.0355	5.3800e-003	0.0000	5.3800e-003			0.0000			0.0000
Off-Road	1.6521	19.9196	11.2678	0.0245		0.7771	0.7771		0.7149	0.7149	0.0000	2,372.906 2	2,372.906 2	0.7675		2,392.092 4
Total	**1.6521**	**19.9196**	**11.2678**	**0.0245**	**0.0355**	**0.7771**	**0.8126**	**5.3800e-003**	**0.7149**	**0.7203**	**0.0000**	**2,372.906 2**	**2,372.906 2**	**0.7675**		**2,392.092 4**

3.2 Site Preparation - 2020

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	lb/day										lb/day					
Hauling	0.3117	11.0706	1.6841	0.0321	0.6850	0.0407	0.7257	0.1877	0.0389	0.2267		3,369.4878	3,369.4878	0.1246		3,372.6015
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
Worker	0.0485	0.0316	0.3538	6.8000e-004	0.0657	5.3000e-004	0.0663	0.0174	4.9000e-004	0.0179		67.8961	67.8961	3.2800e-003		67.9782
Total	**0.3602**	**11.1022**	**2.0379**	**0.0327**	**0.7507**	**0.0412**	**0.7920**	**0.2051**	**0.0394**	**0.2446**		**3,437.3838**	**3,437.3838**	**0.1278**		**3,440.5797**

3.3 Grading - 2020

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	lb/day										lb/day					
Fugitive Dust					6.3049	0.0000	6.3049	3.3408	0.0000	3.3408			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110		1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.3049**	**0.9902**	**7.2951**	**3.3408**	**0.9110**	**4.2517**		**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

3.3 Grading - 2020

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	lb/day										lb/day					
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
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
Worker	0.0606	0.0395	0.4423	8.5000e-004	0.0822	6.6000e-004	0.0828	0.0218	6.1000e-004	0.0224		84.8701	84.8701	4.1100e-003		84.9727
Total	**0.0606**	**0.0395**	**0.4423**	**8.5000e-004**	**0.0822**	**6.6000e-004**	**0.0828**	**0.0218**	**6.1000e-004**	**0.0224**		**84.8701**	**84.8701**	**4.1100e-003**		**84.9727**

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	lb/day										lb/day					
Fugitive Dust					6.3049	0.0000	6.3049	3.3408	0.0000	3.3408			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110	0.0000	1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.3049**	**0.9902**	**7.2951**	**3.3408**	**0.9110**	**4.2517**	**0.0000**	**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

3.3 Grading - 2020

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	lb/day										lb/day					
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
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
Worker	0.0606	0.0395	0.4423	8.5000e-004	0.0822	6.6000e-004	0.0828	0.0218	6.1000e-004	0.0224		84.8701	84.8701	4.1100e-003		84.9727
Total	**0.0606**	**0.0395**	**0.4423**	**8.5000e-004**	**0.0822**	**6.6000e-004**	**0.0828**	**0.0218**	**6.1000e-004**	**0.0224**		**84.8701**	**84.8701**	**4.1100e-003**		**84.9727**

3.4 Paving - 2020

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	lb/day										lb/day					
Off-Road	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051		1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.2096					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3643**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**		**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.4 Paving - 2020

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	lb/day										lb/day					
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
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
Worker	0.0909	0.0593	0.6634	1.2800e-003	0.1232	1.0000e-003	0.1242	0.0327	9.2000e-004	0.0336		127.3051	127.3051	6.1600e-003		127.4591
Total	**0.0909**	**0.0593**	**0.6634**	**1.2800e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.2000e-004**	**0.0336**		**127.3051**	**127.3051**	**6.1600e-003**		**127.4591**

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	lb/day										lb/day					
Off-Road	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051	0.0000	1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.2096					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3643**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**	**0.0000**	**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.4 Paving - 2020

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	lb/day										lb/day					
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
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
Worker	0.0909	0.0593	0.6634	1.2800e-003	0.1232	1.0000e-003	0.1242	0.0327	9.2000e-004	0.0336		127.3051	127.3051	6.1600e-003		127.4591
Total	**0.0909**	**0.0593**	**0.6634**	**1.2800e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.2000e-004**	**0.0336**		**127.3051**	**127.3051**	**6.1600e-003**		**127.4591**

3.5 Building Construction - 2020

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	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089		2,288.887 7	2,288.887 7	0.4646		2,300.501 4
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**		**2,288.887 7**	**2,288.887 7**	**0.4646**		**2,300.501 4**

3.5 Building Construction - 2020

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	lb/day										lb/day					
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
Vendor	0.0748	1.9749	0.4843	4.7000e-003	0.1083	0.0104	0.1187	0.0312	9.9700e-003	0.0412		491.7924	491.7924	0.0264		492.4519
Worker	0.4365	0.2846	3.1845	6.1500e-003	0.5915	4.7800e-003	0.5962	0.1569	4.4100e-003	0.1613		611.0646	611.0646	0.0296		611.8036
Total	**0.5113**	**2.2594**	**3.6688**	**0.0109**	**0.6998**	**0.0152**	**0.7150**	**0.1881**	**0.0144**	**0.2024**		**1,102.8570**	**1,102.8570**	**0.0559**		**1,104.2555**

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	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089	0.0000	2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**	**0.0000**	**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	lb/day										lb/day					
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
Vendor	0.0748	1.9749	0.4843	4.7000e-003	0.1083	0.0104	0.1187	0.0312	9.9700e-003	0.0412		491.7924	491.7924	0.0264		492.4519
Worker	0.4365	0.2846	3.1845	6.1500e-003	0.5915	4.7800e-003	0.5962	0.1569	4.4100e-003	0.1613		611.0646	611.0646	0.0296		611.8036
Total	**0.5113**	**2.2594**	**3.6688**	**0.0109**	**0.6998**	**0.0152**	**0.7150**	**0.1881**	**0.0144**	**0.2024**		**1,102.857 0**	**1,102.857 0**	**0.0559**		**1,104.255 5**

3.5 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	2.0451	16.0275	14.5629	0.0250		0.8173	0.8173		0.7831	0.7831		2,288.935 5	2,288.935 5	0.4503		2,300.193 5
Total	**2.0451**	**16.0275**	**14.5629**	**0.0250**		**0.8173**	**0.8173**		**0.7831**	**0.7831**		**2,288.935 5**	**2,288.935 5**	**0.4503**		**2,300.193 5**

3.5 Building Construction - 2021

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	lb/day										lb/day					
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
Vendor	0.0623	1.8103	0.4244	4.6600e-003	0.1083	5.0800e-003	0.1134	0.0312	4.8600e-003	0.0360		488.3901	488.3901	0.0253		489.0218
Worker	0.4081	0.2548	2.8762	5.9500e-003	0.5915	4.5600e-003	0.5960	0.1569	4.2000e-003	0.1611		591.7769	591.7769	0.0263		592.4334
Total	**0.4704**	**2.0651**	**3.3006**	**0.0106**	**0.6998**	**9.6400e-003**	**0.7094**	**0.1881**	**9.0600e-003**	**0.1971**		**1,080.1670**	**1,080.1670**	**0.0515**		**1,081.4551**

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	lb/day										lb/day					
Off-Road	2.0451	16.0275	14.5629	0.0250		0.8173	0.8173		0.7831	0.7831	0.0000	2,288.9355	2,288.9355	0.4503		2,300.1935
Total	**2.0451**	**16.0275**	**14.5629**	**0.0250**		**0.8173**	**0.8173**		**0.7831**	**0.7831**	**0.0000**	**2,288.9355**	**2,288.9355**	**0.4503**		**2,300.1935**

3.5 Building Construction - 2021

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	lb/day										lb/day					
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
Vendor	0.0623	1.8103	0.4244	4.6600e-003	0.1083	5.0800e-003	0.1134	0.0312	4.8600e-003	0.0360		488.3901	488.3901	0.0253		489.0218
Worker	0.4081	0.2548	2.8762	5.9500e-003	0.5915	4.5600e-003	0.5960	0.1569	4.2000e-003	0.1611		591.7769	591.7769	0.0263		592.4334
Total	**0.4704**	**2.0651**	**3.3006**	**0.0106**	**0.6998**	**9.6400e-003**	**0.7094**	**0.1881**	**9.0600e-003**	**0.1971**		**1,080.1670**	**1,080.1670**	**0.0515**		**1,081.4551**

3.6 Architectural Coating - 2020

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	lb/day										lb/day					
Archit. Coating	13.3470					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**13.5891**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	lb/day										lb/day					
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
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
Worker	0.0849	0.0553	0.6192	1.2000e-003	0.1150	9.3000e-004	0.1159	0.0305	8.6000e-004	0.0314		118.8181	118.8181	5.7500e-003		118.9618
Total	**0.0849**	**0.0553**	**0.6192**	**1.2000e-003**	**0.1150**	**9.3000e-004**	**0.1159**	**0.0305**	**8.6000e-004**	**0.0314**		**118.8181**	**118.8181**	**5.7500e-003**		**118.9618**

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	lb/day										lb/day					
Archit. Coating	13.3470					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**13.5891**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	lb/day										lb/day					
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
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
Worker	0.0849	0.0553	0.6192	1.2000e-003	0.1150	9.3000e-004	0.1159	0.0305	8.6000e-004	0.0314		118.8181	118.8181	5.7500e-003		118.9618
Total	**0.0849**	**0.0553**	**0.6192**	**1.2000e-003**	**0.1150**	**9.3000e-004**	**0.1159**	**0.0305**	**8.6000e-004**	**0.0314**		**118.8181**	**118.8181**	**5.7500e-003**		**118.9618**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	13.3470					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**13.5659**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
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
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
Worker	0.0794	0.0496	0.5593	1.1600e-003	0.1150	8.9000e-004	0.1159	0.0305	8.2000e-004	0.0313		115.0677	115.0677	5.1100e-003		115.1954
Total	**0.0794**	**0.0496**	**0.5593**	**1.1600e-003**	**0.1150**	**8.9000e-004**	**0.1159**	**0.0305**	**8.2000e-004**	**0.0313**		**115.0677**	**115.0677**	**5.1100e-003**		**115.1954**

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	lb/day										lb/day					
Archit. Coating	13.3470					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**13.5659**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
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
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
Worker	0.0794	0.0496	0.5593	1.1600e-003	0.1150	8.9000e-004	0.1159	0.0305	8.2000e-004	0.0313		115.0677	115.0677	5.1100e-003		115.1954
Total	**0.0794**	**0.0496**	**0.5593**	**1.1600e-003**	**0.1150**	**8.9000e-004**	**0.1159**	**0.0305**	**8.2000e-004**	**0.0313**		**115.0677**	**115.0677**	**5.1100e-003**		**115.1954**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	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	lb/day										lb/day					
Mitigated	1.8831	9.3128	18.5404	0.0535	3.6972	0.0537	3.7509	0.9894	0.0505	1.0399		5,418.0857	5,418.0857	0.2835		5,425.1732
Unmitigated	1.8961	9.4146	18.8402	0.0545	3.7727	0.0547	3.8273	1.0096	0.0514	1.0610		5,515.8491	5,515.8491	0.2870		5,523.0239

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Apartments Low Rise	74.16	74.16	74.16	208,259	204,094
Apartments Mid Rise	556.20	556.20	556.20	1,561,940	1,530,701
Total	630.36	630.36	630.36	1,770,199	1,734,795

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Apartments Low Rise	10.80	7.30	7.50	37.30	20.70	42.00	86	11	3
Apartments Mid Rise	10.80	7.30	7.50	37.30	20.70	42.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.450218	0.041480	0.238529	0.144444	0.036492	0.006519	0.014682	0.056829	0.001848	0.001006	0.005817	0.000606	0.001528
Apartments Low Rise	0.450218	0.041480	0.238529	0.144444	0.036492	0.006519	0.014682	0.056829	0.001848	0.001006	0.005817	0.000606	0.001528
Apartments Mid Rise	0.450218	0.041480	0.238529	0.144444	0.036492	0.006519	0.014682	0.056829	0.001848	0.001006	0.005817	0.000606	0.001528

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	lb/day										lb/day					
NaturalGas Mitigated	9.4500e-003	0.0807	0.0344	5.2000e-004		6.5300e-003	6.5300e-003		6.5300e-003	6.5300e-003		103.0583	103.0583	1.9800e-003	1.8900e-003	103.6707
NaturalGas Unmitigated	9.4500e-003	0.0807	0.0344	5.2000e-004		6.5300e-003	6.5300e-003		6.5300e-003	6.5300e-003		103.0583	103.0583	1.9800e-003	1.8900e-003	103.6707

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	lb/day										lb/day					
Apartments Low Rise	236.703	2.5500e-003	0.0218	9.2800e-003	1.4000e-004		1.7600e-003	1.7600e-003		1.7600e-003	1.7600e-003		27.8474	27.8474	5.3000e-004	5.1000e-004	28.0129
Apartments Mid Rise	639.293	6.8900e-003	0.0589	0.0251	3.8000e-004		4.7600e-003	4.7600e-003		4.7600e-003	4.7600e-003		75.2109	75.2109	1.4400e-003	1.3800e-003	75.6578
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
Total		**9.4400e-003**	**0.0807**	**0.0344**	**5.2000e-004**		**6.5200e-003**	**6.5200e-003**		**6.5200e-003**	**6.5200e-003**		**103.0583**	**103.0583**	**1.9700e-003**	**1.8900e-003**	**103.6708**

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	lb/day										lb/day					
Apartments Low Rise	0.236703	2.5500e-003	0.0218	9.2800e-003	1.4000e-004		1.7600e-003	1.7600e-003		1.7600e-003	1.7600e-003		27.8474	27.8474	5.3000e-004	5.1000e-004	28.0129
Apartments Mid Rise	0.639293	6.8900e-003	0.0589	0.0251	3.8000e-004		4.7600e-003	4.7600e-003		4.7600e-003	4.7600e-003		75.2109	75.2109	1.4400e-003	1.3800e-003	75.6578
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
Total		**9.4400e-003**	**0.0807**	**0.0344**	**5.2000e-004**		**6.5200e-003**	**6.5200e-003**		**6.5200e-003**	**6.5200e-003**		**103.0583**	**103.0583**	**1.9700e-003**	**1.8900e-003**	**103.6708**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	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	lb/day										lb/day					
Mitigated	2.4147	0.0649	5.6300	3.0000e-004		0.0311	0.0311		0.0311	0.0311	0.0000	10.1313	10.1313	9.8200e-003	0.0000	10.3769
Unmitigated	106.4815	2.0972	134.0893	0.2330		18.0423	18.0423		18.0423	18.0423	1,888.4777	802.1313	2,690.6090	1.7526	0.1485	2,778.6892

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	lb/day										lb/day					
Architectural Coating	0.6436					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6002					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	104.0669	2.0323	128.4592	0.2327		18.0112	18.0112		18.0112	18.0112	1,888.4777	792.0000	2,680.4777	1.7428	0.1485	2,768.3123
Landscaping	0.1709	0.0649	5.6300	3.0000e-004		0.0311	0.0311		0.0311	0.0311		10.1313	10.1313	9.8200e-003		10.3769
Total	**106.4815**	**2.0972**	**134.0893**	**0.2330**		**18.0423**	**18.0423**		**18.0423**	**18.0423**	**1,888.4777**	**802.1313**	**2,690.6090**	**1.7526**	**0.1485**	**2,778.6892**

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	lb/day										lb/day					
Architectural Coating	0.6436					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6002					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	0.1709	0.0649	5.6300	3.0000e-004		0.0311	0.0311		0.0311	0.0311		10.1313	10.1313	9.8200e-003		10.3769
Total	**2.4147**	**0.0649**	**5.6300**	**3.0000e-004**		**0.0311**	**0.0311**		**0.0311**	**0.0311**	**0.0000**	**10.1313**	**10.1313**	**9.8200e-003**	**0.0000**	**10.3769**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Frishman Hollow

Northern Sierra AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	136.00	Space	0.40	54,400.00	0
Apartments Low Rise	8.00	Dwelling Unit	0.50	9,584.00	23
Apartments Mid Rise	60.00	Dwelling Unit	1.58	64,290.00	172

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	72
Climate Zone	14			**Operational Year**	2022
Utility Company	User Defined				
CO2 Intensity (lb/MWhr)	374.95	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - User Defined Utility Company is: Truckee-Donner Public Utilities District (PUD).
CO2, CH4, and N2O Intensity Factors were adjusted to more accurately reflect the Truckee-Donner PUD.
Reference: Sierra Business Council. High Altitude Fitness Air Quality and Greenhouse Gas Emissions Assessments. March 2018.

Land Use - Lot acreages/square footages were updated per information provided by the project applicant and on the site plans.

Construction Phase - Construction start date and total days required for each construction phase were updated based on information provided by the project applicant.

Grading - Total acres graded updated based on information provided by the project applicant.
Material export was calcutated based on the number of trees that would be removed from the site. Average diameter of trees to be removed = 12.4.
0.33 CY soil is removed per diameter of tree. 0.33 X 12.4 X 359 trees = 1,520 CY soil export from tree removal + 50 CY for construction = 1,570 CY total.

Vehicle Trips - Vehicle trips updated based on the Traffic Impact Report prepared for the proposed project.

Mobile Land Use Mitigation - Project applicant indicated plans to implement a pedestrian network connecting the project site and off-site.

Area Mitigation - Project applicant indicated that no hearths/fireplaces would be included in the proposed residences.

Energy Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	176.00
tblConstructionPhase	NumDays	220.00	176.00
tblConstructionPhase	NumDays	6.00	15.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	3.00	5.00
tblConstructionPhase	PhaseEndDate	4/14/2021	2/19/2021
tblConstructionPhase	PhaseEndDate	3/17/2021	2/5/2021
tblConstructionPhase	PhaseEndDate	5/13/2020	5/28/2020
tblConstructionPhase	PhaseEndDate	3/31/2021	6/4/2020
tblConstructionPhase	PhaseEndDate	5/5/2020	5/7/2020
tblConstructionPhase	PhaseStartDate	4/1/2021	6/19/2020
tblConstructionPhase	PhaseStartDate	5/14/2020	6/5/2020
tblConstructionPhase	PhaseStartDate	5/6/2020	5/8/2020
tblConstructionPhase	PhaseStartDate	3/18/2021	5/29/2020

tblGrading	AcresOfGrading	7.50	4.00
tblGrading	AcresOfGrading	7.50	0.00
tblGrading	MaterialExported	0.00	1,570.00
tblLandUse	LandUseSquareFeet	8,000.00	9,584.00
tblLandUse	LandUseSquareFeet	60,000.00	64,290.00
tblLandUse	LotAcreage	1.22	0.40
tblProjectCharacteristics	CH4IntensityFactor	0	0.033
tblProjectCharacteristics	CO2IntensityFactor	0	374.95
tblProjectCharacteristics	N2OIntensityFactor	0	0.004
tblVehicleTrips	ST_TR	7.16	9.27
tblVehicleTrips	ST_TR	6.39	9.27
tblVehicleTrips	SU_TR	6.07	9.27
tblVehicleTrips	SU_TR	5.86	9.27
tblVehicleTrips	WD_TR	6.59	9.27
tblVehicleTrips	WD_TR	6.65	9.27

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

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	lb/day										lb/day					
2020	16.5048	31.2822	21.2169	0.0565	6.3870	1.0755	7.3779	3.3626	1.0353	4.2741	0.0000	5,728.7972	5,728.7972	0.9109	0.0000	5,751.5697
2021	16.1903	19.7861	20.3997	0.0391	0.8148	0.9221	1.7369	0.2186	0.8873	1.1058	0.0000	3,694.4102	3,694.4102	0.5287	0.0000	3,707.6269
Maximum	**16.5048**	**31.2822**	**21.2169**	**0.0565**	**6.3870**	**1.0755**	**7.3779**	**3.3626**	**1.0353**	**4.2741**	**0.0000**	**5,728.7972**	**5,728.7972**	**0.9109**	**0.0000**	**5,751.5697**

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	lb/day										lb/day					
2020	16.5048	31.2822	21.2169	0.0565	6.3870	1.0755	7.3779	3.3626	1.0353	4.2741	0.0000	5,728.7972	5,728.7972	0.9109	0.0000	5,751.5697
2021	16.1903	19.7861	20.3997	0.0391	0.8148	0.9221	1.7369	0.2186	0.8873	1.1058	0.0000	3,694.4102	3,694.4102	0.5287	0.0000	3,707.6269
Maximum	**16.5048**	**31.2822**	**21.2169**	**0.0565**	**6.3870**	**1.0755**	**7.3779**	**3.3626**	**1.0353**	**4.2741**	**0.0000**	**5,728.7972**	**5,728.7972**	**0.9109**	**0.0000**	**5,751.5697**

	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**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
Area	106.4815	2.0972	134.0893	0.2330		18.0423	18.0423		18.0423	18.0423	1,888.4777	802.1313	2,690.6090	1.7526	0.1485	2,778.6892
Energy	9.4500e-003	0.0807	0.0344	5.2000e-004		6.5300e-003	6.5300e-003		6.5300e-003	6.5300e-003		103.0583	103.0583	1.9800e-003	1.8900e-003	103.6707
Mobile	1.6564	10.0497	20.0637	0.0512	3.7727	0.0555	3.8282	1.0096	0.0522	1.0618		5,180.2553	5,180.2553	0.3003		5,187.7639
Total	**108.1473**	**12.2276**	**154.1874**	**0.2847**	**3.7727**	**18.1043**	**21.8770**	**1.0096**	**18.1010**	**19.1106**	**1,888.4777**	**6,085.4449**	**7,973.9226**	**2.0549**	**0.1504**	**8,070.1238**

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	lb/day										lb/day					
Area	2.4147	0.0649	5.6300	3.0000e-004		0.0311	0.0311		0.0311	0.0311	0.0000	10.1313	10.1313	9.8200e-003	0.0000	10.3769
Energy	9.4500e-003	0.0807	0.0344	5.2000e-004		6.5300e-003	6.5300e-003		6.5300e-003	6.5300e-003		103.0583	103.0583	1.9800e-003	1.8900e-003	103.6707
Mobile	1.6436	9.9343	19.7887	0.0503	3.6972	0.0545	3.7517	0.9894	0.0513	1.0407		5,087.7952	5,087.7952	0.2971		5,095.2220
Total	**4.0677**	**10.0799**	**25.4531**	**0.0511**	**3.6972**	**0.0921**	**3.7893**	**0.9894**	**0.0889**	**1.0783**	**0.0000**	**5,200.9849**	**5,200.9849**	**0.3089**	**1.8900e-003**	**5,209.2696**

	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	N20	CO2e
Percent Reduction	96.24	17.56	83.49	82.06	2.00	99.49	82.68	2.00	99.51	94.36	100.00	14.53	34.78	84.97	98.74	35.45

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	5/1/2020	5/7/2020	5	5	
2	Grading	Grading	5/8/2020	5/28/2020	5	15	
3	Paving	Paving	5/29/2020	6/4/2020	5	5	
4	Building Construction	Building Construction	6/5/2020	2/5/2021	5	176	
5	Architectural Coating	Architectural Coating	6/19/2020	2/19/2021	5	176	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0.4

Residential Indoor: 149,595; Residential Outdoor: 49,865; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 3,264 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Site Preparation	Scrapers	1	8.00	367	0.48
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

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
Site Preparation	3	8.00	0.00	196.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	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
Building Construction	8	72.00	16.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2020

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	lb/day										lb/day					
Fugitive Dust					0.0355	0.0000	0.0355	5.3800e-003	0.0000	5.3800e-003			0.0000			0.0000
Off-Road	1.6521	19.9196	11.2678	0.0245		0.7771	0.7771		0.7149	0.7149		2,372.906 2	2,372.906 2	0.7675		2,392.092 4
Total	**1.6521**	**19.9196**	**11.2678**	**0.0245**	**0.0355**	**0.7771**	**0.8126**	**5.3800e-003**	**0.7149**	**0.7203**		**2,372.906 2**	**2,372.906 2**	**0.7675**		**2,392.092 4**

3.2 Site Preparation - 2020

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	lb/day										lb/day					
Hauling	0.3243	11.3207	1.9294	0.0313	0.6850	0.0417	0.7267	0.1877	0.0399	0.2276		3,293.298 4	3,293.298 4	0.1403		3,296.804 7
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
Worker	0.0509	0.0419	0.3622	6.3000e-004	0.0657	5.3000e-004	0.0663	0.0174	4.9000e-004	0.0179		62.5925	62.5925	3.2000e-003		62.6726
Total	**0.3752**	**11.3626**	**2.2916**	**0.0320**	**0.7507**	**0.0423**	**0.7930**	**0.2051**	**0.0404**	**0.2455**		**3,355.890 9**	**3,355.890 9**	**0.1435**		**3,359.477 3**

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	lb/day										lb/day					
Fugitive Dust					0.0355	0.0000	0.0355	5.3800e-003	0.0000	5.3800e-003			0.0000			0.0000
Off-Road	1.6521	19.9196	11.2678	0.0245		0.7771	0.7771		0.7149	0.7149	0.0000	2,372.906 2	2,372.906 2	0.7675		2,392.092 4
Total	**1.6521**	**19.9196**	**11.2678**	**0.0245**	**0.0355**	**0.7771**	**0.8126**	**5.3800e-003**	**0.7149**	**0.7203**	**0.0000**	**2,372.906 2**	**2,372.906 2**	**0.7675**		**2,392.092 4**

3.2 Site Preparation - 2020

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	lb/day										lb/day					
Hauling	0.3243	11.3207	1.9294	0.0313	0.6850	0.0417	0.7267	0.1877	0.0399	0.2276		3,293.298 4	3,293.298 4	0.1403		3,296.804 7
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
Worker	0.0509	0.0419	0.3622	6.3000e-004	0.0657	5.3000e-004	0.0663	0.0174	4.9000e-004	0.0179		62.5925	62.5925	3.2000e-003		62.6726
Total	**0.3752**	**11.3626**	**2.2916**	**0.0320**	**0.7507**	**0.0423**	**0.7930**	**0.2051**	**0.0404**	**0.2455**		**3,355.890 9**	**3,355.890 9**	**0.1435**		**3,359.477 3**

3.3 Grading - 2020

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	lb/day										lb/day					
Fugitive Dust					6.3049	0.0000	6.3049	3.3408	0.0000	3.3408			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110		1,996.406 1	1,996.406 1	0.6457		2,012.548 0
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.3049**	**0.9902**	**7.2951**	**3.3408**	**0.9110**	**4.2517**		**1,996.406 1**	**1,996.406 1**	**0.6457**		**2,012.548 0**

3.3 Grading - 2020

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	lb/day										lb/day					
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
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
Worker	0.0637	0.0524	0.4527	7.9000e-004	0.0822	6.6000e-004	0.0828	0.0218	6.1000e-004	0.0224		78.2407	78.2407	4.0000e-003		78.3407
Total	**0.0637**	**0.0524**	**0.4527**	**7.9000e-004**	**0.0822**	**6.6000e-004**	**0.0828**	**0.0218**	**6.1000e-004**	**0.0224**		**78.2407**	**78.2407**	**4.0000e-003**		**78.3407**

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	lb/day										lb/day					
Fugitive Dust					6.3049	0.0000	6.3049	3.3408	0.0000	3.3408			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110	0.0000	1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.3049**	**0.9902**	**7.2951**	**3.3408**	**0.9110**	**4.2517**	**0.0000**	**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

3.3 Grading - 2020

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	lb/day										lb/day					
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
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
Worker	0.0637	0.0524	0.4527	7.9000e-004	0.0822	6.6000e-004	0.0828	0.0218	6.1000e-004	0.0224		78.2407	78.2407	4.0000e-003		78.3407
Total	**0.0637**	**0.0524**	**0.4527**	**7.9000e-004**	**0.0822**	**6.6000e-004**	**0.0828**	**0.0218**	**6.1000e-004**	**0.0224**		**78.2407**	**78.2407**	**4.0000e-003**		**78.3407**

3.4 Paving - 2020

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	lb/day										lb/day					
Off-Road	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051		1,709.218 0	1,709.218 0	0.5417		1,722.760 5
Paving	0.2096					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3643**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**		**1,709.218 0**	**1,709.218 0**	**0.5417**		**1,722.760 5**

3.4 Paving - 2020

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	lb/day										lb/day					
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
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
Worker	0.0955	0.0786	0.6791	1.1800e-003	0.1232	1.0000e-003	0.1242	0.0327	9.2000e-004	0.0336		117.3610	117.3610	6.0000e-003		117.5111
Total	**0.0955**	**0.0786**	**0.6791**	**1.1800e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.2000e-004**	**0.0336**		**117.3610**	**117.3610**	**6.0000e-003**		**117.5111**

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	lb/day										lb/day					
Off-Road	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051	0.0000	1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.2096					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3643**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**	**0.0000**	**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.4 Paving - 2020

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	lb/day										lb/day					
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
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
Worker	0.0955	0.0786	0.6791	1.1800e-003	0.1232	1.0000e-003	0.1242	0.0327	9.2000e-004	0.0336		117.3610	117.3610	6.0000e-003		117.5111
Total	**0.0955**	**0.0786**	**0.6791**	**1.1800e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.2000e-004**	**0.0336**		**117.3610**	**117.3610**	**6.0000e-003**		**117.5111**

3.5 Building Construction - 2020

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	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089		2,288.887 7	2,288.887 7	0.4646		2,300.501 4
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**		**2,288.887 7**	**2,288.887 7**	**0.4646**		**2,300.501 4**

3.5 Building Construction - 2020

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	lb/day										lb/day					
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
Vendor	0.0803	2.0004	0.5949	4.5500e-003	0.1083	0.0107	0.1190	0.0312	0.0102	0.0414		475.8640	475.8640	0.0299		476.6107
Worker	0.4584	0.3774	3.2596	5.6800e-003	0.5915	4.7800e-003	0.5962	0.1569	4.4100e-003	0.1613		563.3328	563.3328	0.0288		564.0532
Total	**0.5386**	**2.3778**	**3.8545**	**0.0102**	**0.6998**	**0.0155**	**0.7152**	**0.1881**	**0.0146**	**0.2027**		**1,039.1968**	**1,039.1968**	**0.0587**		**1,040.6639**

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	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089	0.0000	2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**	**0.0000**	**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

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	lb/day										lb/day					
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
Vendor	0.0803	2.0004	0.5949	4.5500e-003	0.1083	0.0107	0.1190	0.0312	0.0102	0.0414		475.8640	475.8640	0.0299		476.6107
Worker	0.4584	0.3774	3.2596	5.6800e-003	0.5915	4.7800e-003	0.5962	0.1569	4.4100e-003	0.1613		563.3328	563.3328	0.0288		564.0532
Total	**0.5386**	**2.3778**	**3.8545**	**0.0102**	**0.6998**	**0.0155**	**0.7152**	**0.1881**	**0.0146**	**0.2027**		**1,039.1968**	**1,039.1968**	**0.0587**		**1,040.6639**

3.5 Building Construction - 2021

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	lb/day										lb/day					
Off-Road	2.0451	16.0275	14.5629	0.0250		0.8173	0.8173		0.7831	0.7831		2,288.9355	2,288.9355	0.4503		2,300.1935
Total	**2.0451**	**16.0275**	**14.5629**	**0.0250**		**0.8173**	**0.8173**		**0.7831**	**0.7831**		**2,288.9355**	**2,288.9355**	**0.4503**		**2,300.1935**

3.5 Building Construction - 2021

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	lb/day										lb/day					
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
Vendor	0.0673	1.8284	0.5240	4.5100e-003	0.1083	5.2900e-003	0.1136	0.0312	5.0600e-003	0.0362		472.4355	472.4355	0.0286		473.1513
Worker	0.4287	0.3377	2.9262	5.4900e-003	0.5915	4.5600e-003	0.5960	0.1569	4.2000e-003	0.1611		545.5182	545.5182	0.0255		546.1545
Total	**0.4960**	**2.1661**	**3.4502**	**0.0100**	**0.6998**	**9.8500e-003**	**0.7096**	**0.1881**	**9.2600e-003**	**0.1973**		**1,017.9537**	**1,017.9537**	**0.0541**		**1,019.3057**

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	lb/day										lb/day					
Off-Road	2.0451	16.0275	14.5629	0.0250		0.8173	0.8173		0.7831	0.7831	0.0000	2,288.9355	2,288.9355	0.4503		2,300.1935
Total	**2.0451**	**16.0275**	**14.5629**	**0.0250**		**0.8173**	**0.8173**		**0.7831**	**0.7831**	**0.0000**	**2,288.9355**	**2,288.9355**	**0.4503**		**2,300.1935**

3.5 Building Construction - 2021

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	lb/day										lb/day					
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
Vendor	0.0673	1.8284	0.5240	4.5100e-003	0.1083	5.2900e-003	0.1136	0.0312	5.0600e-003	0.0362		472.4355	472.4355	0.0286		473.1513
Worker	0.4287	0.3377	2.9262	5.4900e-003	0.5915	4.5600e-003	0.5960	0.1569	4.2000e-003	0.1611		545.5182	545.5182	0.0255		546.1545
Total	**0.4960**	**2.1661**	**3.4502**	**0.0100**	**0.6998**	**9.8500e-003**	**0.7096**	**0.1881**	**9.2600e-003**	**0.1973**		**1,017.9537**	**1,017.9537**	**0.0541**		**1,019.3057**

3.6 Architectural Coating - 2020

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	lb/day										lb/day					
Archit. Coating	13.3470					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**13.5891**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	lb/day										lb/day					
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
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
Worker	0.0891	0.0734	0.6338	1.1000e-003	0.1150	9.3000e-004	0.1159	0.0305	8.6000e-004	0.0314		109.5369	109.5369	5.6000e-003		109.6770
Total	**0.0891**	**0.0734**	**0.6338**	**1.1000e-003**	**0.1150**	**9.3000e-004**	**0.1159**	**0.0305**	**8.6000e-004**	**0.0314**		**109.5369**	**109.5369**	**5.6000e-003**		**109.6770**

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	lb/day										lb/day					
Archit. Coating	13.3470					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**13.5891**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.6 Architectural Coating - 2020

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	lb/day										lb/day					
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
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
Worker	0.0891	0.0734	0.6338	1.1000e-003	0.1150	9.3000e-004	0.1159	0.0305	8.6000e-004	0.0314		109.5369	109.5369	5.6000e-003		109.6770
Total	**0.0891**	**0.0734**	**0.6338**	**1.1000e-003**	**0.1150**	**9.3000e-004**	**0.1159**	**0.0305**	**8.6000e-004**	**0.0314**		**109.5369**	**109.5369**	**5.6000e-003**		**109.6770**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
Archit. Coating	13.3470					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**13.5659**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
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
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
Worker	0.0834	0.0657	0.5690	1.0700e-003	0.1150	8.9000e-004	0.1159	0.0305	8.2000e-004	0.0313		106.0730	106.0730	4.9500e-003		106.1967
Total	**0.0834**	**0.0657**	**0.5690**	**1.0700e-003**	**0.1150**	**8.9000e-004**	**0.1159**	**0.0305**	**8.2000e-004**	**0.0313**		**106.0730**	**106.0730**	**4.9500e-003**		**106.1967**

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	lb/day										lb/day					
Archit. Coating	13.3470					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**13.5659**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.6 Architectural Coating - 2021

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	lb/day										lb/day					
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
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
Worker	0.0834	0.0657	0.5690	1.0700e-003	0.1150	8.9000e-004	0.1159	0.0305	8.2000e-004	0.0313		106.0730	106.0730	4.9500e-003		106.1967
Total	**0.0834**	**0.0657**	**0.5690**	**1.0700e-003**	**0.1150**	**8.9000e-004**	**0.1159**	**0.0305**	**8.2000e-004**	**0.0313**		**106.0730**	**106.0730**	**4.9500e-003**		**106.1967**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	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	lb/day										lb/day					
Mitigated	1.6436	9.9343	19.7887	0.0503	3.6972	0.0545	3.7517	0.9894	0.0513	1.0407		5,087.795 2	5,087.795 2	0.2971		5,095.222 0
Unmitigated	1.6564	10.0497	20.0637	0.0512	3.7727	0.0555	3.8282	1.0096	0.0522	1.0618		5,180.255 3	5,180.255 3	0.3003		5,187.763 9

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Apartments Low Rise	74.16	74.16	74.16	208,259	204,094
Apartments Mid Rise	556.20	556.20	556.20	1,561,940	1,530,701
Total	630.36	630.36	630.36	1,770,199	1,734,795

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Apartments Low Rise	10.80	7.30	7.50	37.30	20.70	42.00	86	11	3
Apartments Mid Rise	10.80	7.30	7.50	37.30	20.70	42.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.450218	0.041480	0.238529	0.144444	0.036492	0.006519	0.014682	0.056829	0.001848	0.001006	0.005817	0.000606	0.001528
Apartments Low Rise	0.450218	0.041480	0.238529	0.144444	0.036492	0.006519	0.014682	0.056829	0.001848	0.001006	0.005817	0.000606	0.001528
Apartments Mid Rise	0.450218	0.041480	0.238529	0.144444	0.036492	0.006519	0.014682	0.056829	0.001848	0.001006	0.005817	0.000606	0.001528

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	lb/day										lb/day					
NaturalGas Mitigated	9.4500e-003	0.0807	0.0344	5.2000e-004		6.5300e-003	6.5300e-003		6.5300e-003	6.5300e-003		103.0583	103.0583	1.9800e-003	1.8900e-003	103.6707
NaturalGas Unmitigated	9.4500e-003	0.0807	0.0344	5.2000e-004		6.5300e-003	6.5300e-003		6.5300e-003	6.5300e-003		103.0583	103.0583	1.9800e-003	1.8900e-003	103.6707

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	lb/day										lb/day					
Apartments Low Rise	236.703	2.5500e-003	0.0218	9.2800e-003	1.4000e-004		1.7600e-003	1.7600e-003		1.7600e-003	1.7600e-003		27.8474	27.8474	5.3000e-004	5.1000e-004	28.0129
Apartments Mid Rise	639.293	6.8900e-003	0.0589	0.0251	3.8000e-004		4.7600e-003	4.7600e-003		4.7600e-003	4.7600e-003		75.2109	75.2109	1.4400e-003	1.3800e-003	75.6578
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
Total		**9.4400e-003**	**0.0807**	**0.0344**	**5.2000e-004**		**6.5200e-003**	**6.5200e-003**		**6.5200e-003**	**6.5200e-003**		**103.0583**	**103.0583**	**1.9700e-003**	**1.8900e-003**	**103.6708**

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	lb/day										lb/day					
Apartments Low Rise	0.236703	2.5500e-003	0.0218	9.2800e-003	1.4000e-004		1.7600e-003	1.7600e-003		1.7600e-003	1.7600e-003		27.8474	27.8474	5.3000e-004	5.1000e-004	28.0129
Apartments Mid Rise	0.639293	6.8900e-003	0.0589	0.0251	3.8000e-004		4.7600e-003	4.7600e-003		4.7600e-003	4.7600e-003		75.2109	75.2109	1.4400e-003	1.3800e-003	75.6578
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
Total		**9.4400e-003**	**0.0807**	**0.0344**	**5.2000e-004**		**6.5200e-003**	**6.5200e-003**		**6.5200e-003**	**6.5200e-003**		**103.0583**	**103.0583**	**1.9700e-003**	**1.8900e-003**	**103.6708**

6.0 Area Detail

6.1 Mitigation Measures Area

No Hearths Installed

	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	lb/day										lb/day					
Mitigated	2.4147	0.0649	5.6300	3.0000e-004		0.0311	0.0311		0.0311	0.0311	0.0000	10.1313	10.1313	9.8200e-003	0.0000	10.3769
Unmitigated	106.4815	2.0972	134.0893	0.2330		18.0423	18.0423		18.0423	18.0423	1,888.4777	802.1313	2,690.6090	1.7526	0.1485	2,778.6892

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	lb/day										lb/day					
Architectural Coating	0.6436					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6002					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	104.0669	2.0323	128.4592	0.2327		18.0112	18.0112		18.0112	18.0112	1,888.477 7	792.0000	2,680.477 7	1.7428	0.1485	2,768.312 3
Landscaping	0.1709	0.0649	5.6300	3.0000e-004		0.0311	0.0311		0.0311	0.0311		10.1313	10.1313	9.8200e-003		10.3769
Total	**106.4815**	**2.0972**	**134.0893**	**0.2330**		**18.0423**	**18.0423**		**18.0423**	**18.0423**	**1,888.477 7**	**802.1313**	**2,690.609 0**	**1.7526**	**0.1485**	**2,778.689 2**

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	lb/day										lb/day					
Architectural Coating	0.6436					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6002					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	0.1709	0.0649	5.6300	3.0000e-004		0.0311	0.0311		0.0311	0.0311		10.1313	10.1313	9.8200e-003		10.3769
Total	**2.4147**	**0.0649**	**5.6300**	**3.0000e-004**		**0.0311**	**0.0311**		**0.0311**	**0.0311**	**0.0000**	**10.1313**	**10.1313**	**9.8200e-003**	**0.0000**	**10.3769**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Frishman Hollow

Northern Sierra AQMD Air District, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Cement and Mortar Mixers	Diesel	No Change	0	1	No Change	0.00
Forklifts	Diesel	No Change	0	2	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Graders	Diesel	No Change	0	2	No Change	0.00
Pavers	Diesel	No Change	0	1	No Change	0.00
Paving Equipment	Diesel	No Change	0	1	No Change	0.00
Rollers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	1	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	5	No Change	0.00
Welders	Diesel	No Change	0	3	No Change	0.00
Scrapers	Diesel	No Change	0	1	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	2.08900E-002	1.45350E-001	1.60920E-001	2.60000E-004	9.46000E-003	9.46000E-003	0.00000E+000	2.24686E+001	2.24686E+001	1.70000E-003	0.00000E+000	2.25111E+001
Cement and Mortar Mixers	1.50000E-004	9.20000E-004	7.70000E-004	0.00000E+000	4.00000E-005	4.00000E-005	0.00000E+000	1.14570E-001	1.14570E-001	1.00000E-005	0.00000E+000	1.14870E-001
Cranes	3.93700E-002	4.67410E-001	1.84430E-001	5.10000E-004	1.92300E-002	1.76900E-002	0.00000E+000	4.46088E+001	4.46088E+001	1.44300E-002	0.00000E+000	4.49695E+001
Forklifts	2.18400E-002	1.97120E-001	1.81480E-001	2.40000E-004	1.45900E-002	1.34200E-002	0.00000E+000	2.06809E+001	2.06809E+001	6.69000E-003	0.00000E+000	2.08481E+001
Generator Sets	3.45800E-002	3.02060E-001	3.25820E-001	5.80000E-004	1.69000E-002	1.69000E-002	0.00000E+000	4.97383E+001	4.97383E+001	2.76000E-003	0.00000E+000	4.98073E+001
Graders	4.76000E-003	6.32600E-002	1.81400E-002	7.00000E-005	2.02000E-003	1.86000E-003	0.00000E+000	5.83065E+000	5.83065E+000	1.89000E-003	0.00000E+000	5.87779E+000
Pavers	6.60000E-004	7.03000E-003	7.25000E-003	1.00000E-005	3.40000E-004	3.10000E-004	0.00000E+000	1.03254E+000	1.03254E+000	3.30000E-004	0.00000E+000	1.04089E+000
Paving Equipment	5.20000E-004	5.35000E-003	6.34000E-003	1.00000E-005	2.70000E-004	2.50000E-004	0.00000E+000	8.94770E-001	8.94770E-001	2.90000E-004	0.00000E+000	9.02010E-001
Rollers	1.04000E-003	1.04100E-002	9.47000E-003	1.00000E-005	6.60000E-004	6.10000E-004	0.00000E+000	1.15243E+000	1.15243E+000	3.70000E-004	0.00000E+000	1.16174E+000
Rubber Tired Dozers	8.10000E-003	8.49900E-002	3.09900E-002	6.00000E-005	4.16000E-003	3.83000E-003	0.00000E+000	5.62914E+000	5.62914E+000	1.82000E-003	0.00000E+000	5.67466E+000
Scrapers	2.48000E-003	2.93800E-002	1.86500E-002	4.00000E-005	1.15000E-003	1.05000E-003	0.00000E+000	3.32713E+000	3.32713E+000	1.08000E-003	0.00000E+000	3.35404E+000
Tractors/Loaders/ Backhoes	1.73400E-002	1.74400E-001	1.90880E-001	2.60000E-004	1.09500E-002	1.00700E-002	0.00000E+000	2.28696E+001	2.28696E+001	7.40000E-003	0.00000E+000	2.30545E+001
Welders	8.87700E-002	4.12400E-001	4.64610E-001	6.70000E-004	2.24400E-002	2.24400E-002	0.00000E+000	4.96903E+001	4.96903E+001	7.22000E-003	0.00000E+000	4.98706E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	2.08900E-002	1.45350E-001	1.60920E-001	2.60000E-004	9.46000E-003	9.46000E-003	0.00000E+000	2.24686E+001	2.24686E+001	1.70000E-003	0.00000E+000	2.25111E+001
Cement and Mortar Mixers	1.50000E-004	9.20000E-004	7.70000E-004	0.00000E+000	4.00000E-005	4.00000E-005	0.00000E+000	1.14570E-001	1.14570E-001	1.00000E-005	0.00000E+000	1.14870E-001
Cranes	3.93700E-002	4.67410E-001	1.84430E-001	5.10000E-004	1.92300E-002	1.76900E-002	0.00000E+000	4.46088E+001	4.46088E+001	1.44300E-002	0.00000E+000	4.49695E+001
Forklifts	2.18400E-002	1.97120E-001	1.81480E-001	2.40000E-004	1.45900E-002	1.34200E-002	0.00000E+000	2.06808E+001	2.06808E+001	6.69000E-003	0.00000E+000	2.08481E+001
Generator Sets	3.45800E-002	3.02060E-001	3.25820E-001	5.80000E-004	1.69000E-002	1.69000E-002	0.00000E+000	4.97382E+001	4.97382E+001	2.76000E-003	0.00000E+000	4.98072E+001
Graders	4.76000E-003	6.32600E-002	1.81400E-002	7.00000E-005	2.02000E-003	1.86000E-003	0.00000E+000	5.83064E+000	5.83064E+000	1.89000E-003	0.00000E+000	5.87778E+000
Pavers	6.60000E-004	7.03000E-003	7.25000E-003	1.00000E-005	3.40000E-004	3.10000E-004	0.00000E+000	1.03254E+000	1.03254E+000	3.30000E-004	0.00000E+000	1.04089E+000
Paving Equipment	5.20000E-004	5.35000E-003	6.34000E-003	1.00000E-005	2.70000E-004	2.50000E-004	0.00000E+000	8.94770E-001	8.94770E-001	2.90000E-004	0.00000E+000	9.02010E-001
Rollers	1.04000E-003	1.04100E-002	9.47000E-003	1.00000E-005	6.60000E-004	6.10000E-004	0.00000E+000	1.15242E+000	1.15242E+000	3.70000E-004	0.00000E+000	1.16174E+000
Rubber Tired Dozers	8.10000E-003	8.49900E-002	3.09900E-002	6.00000E-005	4.16000E-003	3.83000E-003	0.00000E+000	5.62914E+000	5.62914E+000	1.82000E-003	0.00000E+000	5.67465E+000
Scrapers	2.48000E-003	2.93800E-002	1.86500E-002	4.00000E-005	1.15000E-003	1.05000E-003	0.00000E+000	3.32713E+000	3.32713E+000	1.08000E-003	0.00000E+000	3.35403E+000
Tractors/Loaders/Backhoes	1.73400E-002	1.74400E-001	1.90880E-001	2.60000E-004	1.09500E-002	1.00700E-002	0.00000E+000	2.28696E+001	2.28696E+001	7.40000E-003	0.00000E+000	2.30545E+001
Welders	8.87700E-002	4.12400E-001	4.64610E-001	6.70000E-004	2.24400E-002	2.24400E-002	0.00000E+000	4.96902E+001	4.96902E+001	7.22000E-003	0.00000E+000	4.98706E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	8.90130E-007	8.90130E-007	0.00000E+000	0.00000E+000	8.88450E-007
Cement and Mortar Mixers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Cranes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.34502E-006	1.34502E-006	0.00000E+000	0.00000E+000	1.11186E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	9.67078E-007	9.67078E-007	0.00000E+000	0.00000E+000	1.43898E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20631E-006	1.20631E-006	0.00000E+000	0.00000E+000	1.20464E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.71507E-006	1.71507E-006	0.00000E+000	0.00000E+000	1.70132E-006
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	8.67732E-006	8.67732E-006	0.00000E+000	0.00000E+000	0.00000E+000
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.76222E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.98148E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	8.74523E-007	8.74523E-007	0.00000E+000	0.00000E+000	8.67508E-007
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20748E-006	1.20748E-006	0.00000E+000	0.00000E+000	1.20311E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	

No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)	0.00		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.01	0.00	0.01	0.00	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.06	0.02	0.06	0.02	0.00	0.00
Grading	Fugitive Dust	0.05	0.03	0.05	0.03	0.00	0.00
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.77	1.12	1.44	1.80	1.80	1.81	0.00	1.77	1.77	1.13	0.00	1.77
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00	0.00	0.00	
No	Land Use	Increase Diversity	0.09	0.31		
No	Land Use	Improve Walkability Design	0.00	0.00		
No	Land Use	Improve Destination Accessibility	0.00	0.00		
No	Land Use	Increase Transit Accessibility	0.25	0.00		
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00		
	Land Use	Land Use SubTotal	0.00			

Yes	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site		
No	Neighborhood Enhancements	Provide Traffic Calming Measures	0.00			
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.02			
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00	0.00		
No	Transit Improvements	Expand Transit Network	0.00	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		0.00	
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.02			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
No	Commute	Workplace Parking Charge		0.00		
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program	5.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.02			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
Yes	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	250.00
No	Use Low VOC Paint (Residential Exterior)	250.00
No	Use Low VOC Paint (Non-residential Interior)	250.00
No	Use Low VOC Paint (Non-residential Exterior)	250.00
No	Use Low VOC Paint (Parking)	250.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24		
No	Install High Efficiency Lighting		
No	On-site Renewable		

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value

Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

APPENDIX B

BIOLOGICAL SUMMARY AND SPECIAL STATUS PLANT SURVEY

Biological Summary
Frishman Hollow Phase 2

Truckee, CA

Prepared for:

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June 2019

1.0 Introduction

Frishman Hollow is a 9.5 acre site located at the southwest corner of Highway 89 North and Alder Drive, in the Town of Truckee (Town) at 5,900 feet above sea level. In 2006, Kelly Biological Consulting conducted an evaluation to determine the potential for special status species identified in the Initial Study/Mitigated Neg Dec (IS/MND) and/or Army Corps of Engineers (ACOE) jurisdictional Waters of the U.S. including wetlands to occur in the project site. Since then, Phase 1 of the project has been built. The Pacific Company is proposing to construct Phase 2. This report summarizes previous work and evaluates the Phase 2 portion of the site (Figure 1). Figure 2 provides an aerial image of the site.

2.0 Summary of Initial Study/Mitigated Negative Declaration Mitigation Measures and 2006-7 Survey Results

The Town of Truckee identified potential impacts to biological resources including wildlife movement; wildlife habitat; riparian habitat, wetlands, other sensitive natural communities, and special status species in the project's IS/MND. In 2006, Micki Kelly, PWS, plant ecologist conducted a focused special status plant survey and a wetland reconnaissance and a wildlife biologist conducted surveys in accordance with the mitigation measures identified in the CEQA document. The measures and results were as follows:

Mitigation Measure MM02 in the IS/MND. Plants. Prior to issuance of a grading permit on the Alder Drive site, a focused plant survey for Plumas ivesia, Donner Pass buckwheat, and Oregon fireweed shall be required to determine the presence or absence of these species on the project site. The survey area shall include all areas proposed for grading or disturbance including areas that may be graded or disturbed in the future. The survey shall be completed by a qualified botanist during the blooming season for each species.

2006-7 Survey Results. No sensitive plants were observed during surveys conducted May 30, 2006, July 21, 2006, and April 13, 2007 (additional information can be found in Kelly Biological Consulting's letters to the Town dated August 8, 2006 and April 13, 2007.)

Mitigation Measure MM03 in the IS/MND. Bats. Prior to grading or construction activity and on an annual basis on the Alder Drive site, a focused survey shall be conducted by a qualified biologist to determine the presence or absence of roosts of special status bat species on the project site. The initial survey shall be conducted within 30 days prior to the commencement of any grading and/or construction on the site and survey the entire project site except areas designated for open space. Re-surveys shall be conducted each spring within 30 days prior to the commencement of any grading and/or construction proposed for the following year. These re-surveys need only to survey those areas of the project site that will be impacted by grading and/or construction activity in the following year.

2006-7 Survey Results. On June 9, 2006 and March 30, 2007, a wildlife biologist traversed the Study Area on foot to assess the availability of potential bat roost habitat. Tree-roosting bats typically use large-diameter dead or live snags with hollows or exfoliating bark. The trees in the Study Area are relatively young in age, and do not exhibit roost habitat characteristics. Dead trees observed in the Study Area were small in diameter and had no apparent bat roost habitat. The absence of typical bat roost habitat suggests that special status bats and common bat species are not occupying the Study Area.

Mitigation Measure MM04 in the IS/MND. Snowshoe Hare*:* Prior to grading or construction activity and on an annual basis on the Alder Drive site, a focused survey for Sierra Nevada snowshoe hare shall be conducted to determine if this species is breeding onsite. A qualified biologist shall conduct the survey during the breeding season at the time of day that this species is most active. Technical assistance from the United States Fish and Wildlife Service and/or California Department of Fish and Game shall be requested to determine appropriate survey techniques. If no evidence of this species is found during the field survey, then no further measures are required. However, if active Sierra Nevada snowshoe hare nests are determined to occur on the site, technical assistance shall be requested from the appropriate regulatory agency to determine further action. At a minimum, construction activities shall not occur with 500 feet of an active nest.

2006-7 Survey Results. During the June 9, 2006 assessment, an evaluation of snowshoe hare habitat within and adjacent to the Study Area was conducted. This species is typically found in dense cover, either in understory thickets of montane riparian habitats, or in shrubby understories of young conifer habitats. It is rarely found in open spaces (Zeiner et al. 1990). The Study Area does not contain the dense vegetation preferred by this species; therefore, the snowshoe hare is not likely to occur in the Study Area.

Mitigation Measure MM05 in the IS/MND. Breeding Birds*:* A focused annual survey for raptors and special-status bird species shall be conducted within 30 days prior to the beginning of any construction or grading activity by a qualified biologist in order to identify active nests onsite. If no nests are found during the survey, no further measures are required. However, if an active nest is found during the survey, or at any time during project construction, no construction activities shall occur within 500 feet of the nest until the young have fledged from the nest and the nest is determined by a qualified biologist to be inactive. Trees containing nests or burrows that must be removed as a result of project implementation shall be removed during the non-breeding season (late September to March).

2006-7 Survey Results. On June 9 and 10, 2006, the Study Area was traversed and monitoring points were established to determine if raptors and other birds were nesting on and adjacent to the Study Area. No evidence of nesting raptors was observed in the

Study Area. No evidence of other breeding special status birds was observed. Three common species observed nesting in pines along the drainage, western wood-pewee (*Contopus sordidulus*), mountain chickadee (*Poecile gambeli*), and Brewer's blackbird (*Euphagus cyanocephalus*). Another species, the pygmy nuthatch (*Sitta pygmaea*), appeared to be nesting in the pines in the south-central portion of the site.

On March 30, 2007, the Study Area was traversed and monitoring points were established to determine if raptors and other birds were nesting on and adjacent to the Study Area. No evidence of nesting raptors or other breeding special status and/or common birds was observed in the Study Area. No migrant birds were detected, suggesting that the breeding season at this altitude had not yet begun.

3.0 Methods

For the purpose of this report, the Study Area is defined as the Phase 2 impact area and adjacent areas within the site. The site is bounded by Donner Pass Road on the southeast, Alder Drive on the north, a drainage swale on the northwest, and Highway 89 on the east.

In addition to the species identified in the IS/MND, a special status species list was compiled based on the results of a May 2019 search of the California Department of Fish and Wildlife Natural Diversity Database (CNDDB). The table in Appendix A lists selected special status species and the probability of occurrence as determined by the biologists' professional assessment of habitats found in the area. Potential for special status species to occur in the Study Area was evaluated according to the following criteria:

(1) Not Present. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (based on foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, or disturbance regime).

(2) Low Potential. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

(3) Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

(4) High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

(5) Present. Species has been observed on the site or recorded (i.e. CNDDB, other reports) on the site recently.

The potential occurrence of ACOE jurisdictional Waters of the U.S. was determined by reviewing the National Wetland Inventory map (Google Earth with NWI overlay) and examining the Study Area in the field.

3.0 Results and Analysis

3.1 Plant Communities

The communities found within the Study Area include Jeffery Pine Forest and Montane Meadow habitat (Sawyer, et.al. 2009). The plant species observed during surveys are listed in Appendix B.

Jeffery Pine Forest

The plant community found in the forested part of the Study Area is Jeffery Pine Forest (*Pinus jeffreyi* Forest Alliance). Trees that occur on site within in this community are a mix of ponderosa and Jeffrey pines (*Pinus ponderosa* and *Pinus jeffreyi*) with an open canopy. The understory consists of bitterbrush (P*urshia tridentata*), mountain sagebrush (A*rtemisia tridentata* ssp. *vaseyana*), native grasses [for example bluegrass (*Poa secunda* ssp. s*ecunda*)], non-native grasses [cheatgrass (*Bromus tectorum*)], and forbs such as groundsel (*Senecio aronicoides*) and small flowered blue-eyed Mary (*Collinsia parviflora*). Within this plant community, there are patches of open areas that are predominately sagebrush and bitterbrush with no overstory.

Montane Meadow

An unnamed drainage flows from southwest to northeast along the northwest boundary of the Study Area supporting Montane Meadow. Its receiving waters are Prosser Creek and eventually the Truckee River. The drainage appears to be intermittent, though it is marked as a perennial blue line on the USGS topo. On the site, the drainage is at the base of a moderately steep slope. That slope provides a distinct boundary between the Jeffery Pine Forest and Montane Meadow communities. Within the drainage are areas of open water mixed with large areas of herbaceous wetland vegetation. The emergent vegetation includes sedges (*Carex spp.*), linear-leaved montia (*Montia linearis*), and toad lily (*Montia chamissoi*). Small stands of willows (*Salix* sp.) occur along the drainage in a few areas.

3.2 Special Status Species

No special status species were observed during the 2006-7 site visits. Tables 1 and 2 in Appendix A, identify selected special status species that are known to occur in the region according to the CNDDB. Most of the special status species shown in the tables are not present or have a low potential to occur in the Study Area. A few wildlife species have a moderate potential to occur because possible nesting habitat present within the Study Area. Several special status plant species have the low-moderate potential to occur on the site in the wetlands or mesic areas, which will be avoided. An additional plant survey will be conducted in July/August 2019.

Take or needless destruction of bird nests or eggs may result in a violation of CFGC §3503. To protect active nests, eggs, and/or young of nesting birds from project-related construction activities, such as earthwork or vegetation trimming, the following will be implemented. If ground-disturbing activities and/or removal of vegetation occurs during the non-nesting season (defined as September 1 through March 14), no nesting bird surveys are needed. If any ground-disturbing activities or vegetation removal occurs during the avian breeding season (March 15 through August 31), breeding bird surveys will be conducted by a qualified biologist within 14 days of ground disturbance or vegetation removal. If active nests are found, an exclusion buffer will be established. The size of the buffer will be determined by the qualified biologist. The buffer will be maintained until the qualified biologist has determined that all young have fledged.

3.3 Waters of the U.S. Including Wetlands

The U.S. Army Corps of Engineers (Corps) regulates “Waters of the United States” pursuant to Section 404 of the Clean Water Act (CWA). “Waters of the US” are defined broadly as waters potentially used in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas are determined by the three criteria stated in the *Corps of Engineers Wetlands Delineation Manual* (1987) and the *Western Mountains, Valleys, and Coast Regional Supplement* (2010). Those criteria are hydrophytic vegetation, hydric soils, and wetland hydrology. Areas that are inundated for sufficient duration and depth to exclude growth of upland and hydrophytic vegetation are subject to Section 404 of the CWA jurisdiction as “other waters” and are often characterized by an ordinary high water line. “Other waters” generally include lakes, rivers, streams, and their tributaries. The placement of fill material into Waters of the US (including wetlands) generally requires authorization from the Corps pursuant to Section 404. In the case of "other waters" the Corps requires that such features be delineated by the ordinary high water mark, normally discernable by a "bed and bank" for the watercourse.

The only wetland/"other waters" feature observed within or adjacent to the Study Area was the unnamed drainage on the western portion of the site. Portions of the drainage are shown on the National Wetland Inventory map as palustrine, emergent, seasonally flooded (PEMC). However, the entire drainage within the Study Area is a mosaic of wetland and open water ("other waters") areas.

In 2006, the three parameters observed in the wetland and upland areas were as follows. The soils observed in the drainage were typically 10YR 2/2 sandy loam with a few dark redoximorphic features. Depending on the location within the drainage, the hydrology on May 30, 2006 varied from saturated soil to flowing water, 1-12 inches deep. There was a predominance of hydrophytic vegetation (sedges, rushes, montias, etc.) with wetland status ranging from FAC to OBL. Due to the site topography, there is a distinct wetland/upland boundary. The soils observed in the adjacent uplands were 10YR 2/2 sandy loam with no redoximorphic features. There was a predominance of upland vegetation (sagebrush, bitterbrush, etc.) that does not have a wetland status. The upland soils were dry on May 30, 2006 and likely dry quickly after seasonal snowmelt has passed.

4.0 Conclusion and Recommendations

Based on review of available literature and photographs, and the results of previous field surveys, no special status wildlife species are expected to occur in the Study Area. Mitigation Measure MM05 (Breeding Birds) should be repeated within 14- 30 days prior to the beginning of any construction or grading activity to determine the pre-construction status of nesting special status birds in the Study Area. No special status plant species were observed during the May 2006 survey. An additional special status plant survey will be conducted in July/August.

The only potential Waters of the US (including wetlands) was an unnamed drainage and wet meadow on the west part of the Study Area. It should be noted, that only the US Army Corps of Engineers has the authority to determine which areas fall within their jurisdiction. In general, the wetlands and "other waters" are within the 100-year floodplain shown on the project maps. The Waters of the US (including wetlands) will be avoided.

An updated list of the plant species observed during previous surveys is in Appendix B of this report. Where possible, the project should consider using species native to the area for landscaping and erosion control. Invasive species should be avoided. Determining which species would be appropriate is beyond the scope of this letter report.

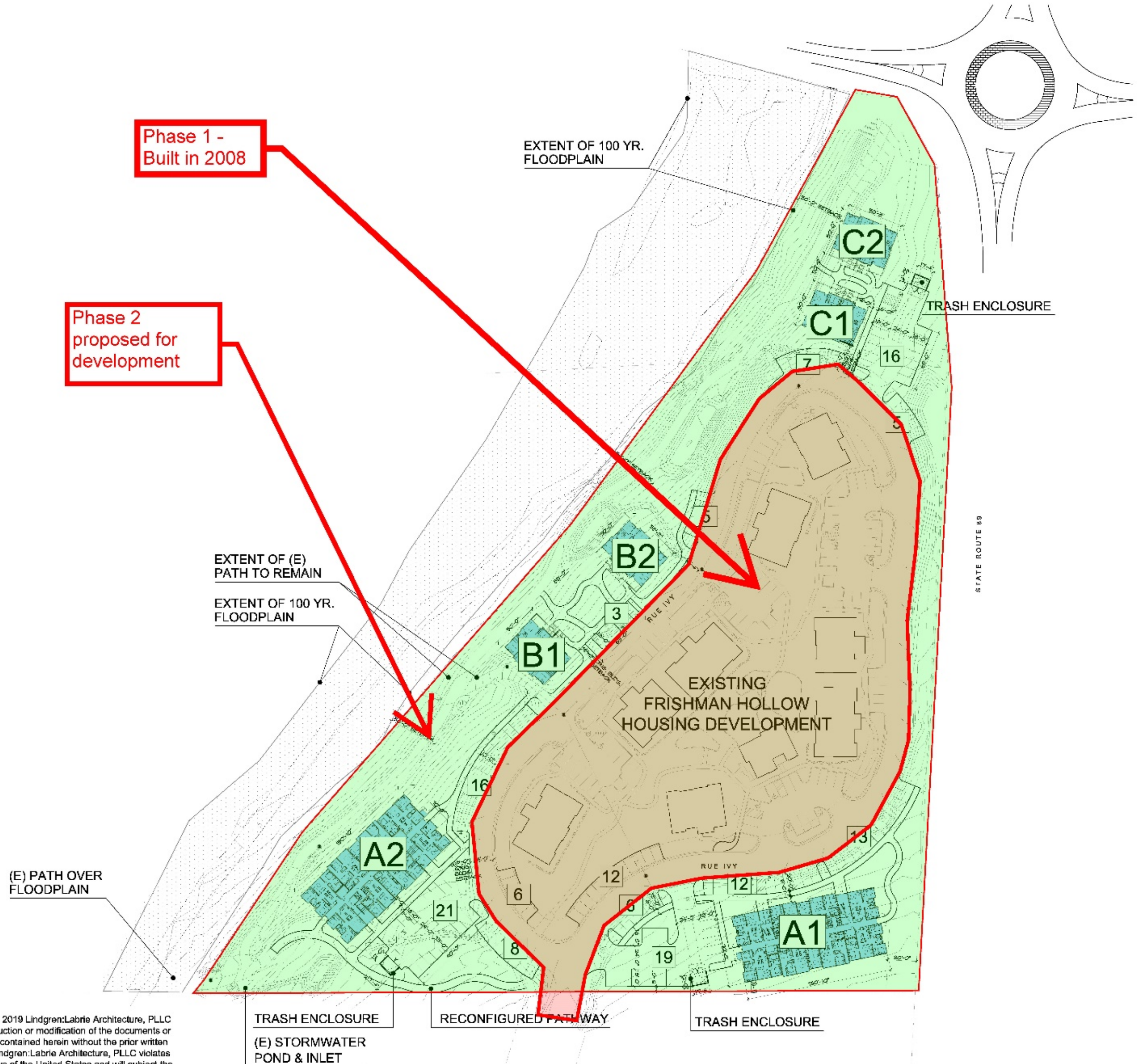

Figure 1. Site Map (Green Area is Phase 2)

A Development Permit Application Submittal for

FRISHMAN HOLLOW
PHASE II

Rue Ivy - Truckee, California

08 May 2019

OVERALL SITE PLAN - 80 Units

0 50 100

Bldg. A1 - 3 FLOORS

Unit Type	# / Bldg.	# Parking Stalls	Stalls / Unit
3 BR / 2 BA	6	12	2.0
2 BR / 1 BA	12	24	2.0
1 BR / 1 BA	6	9	1.5
STUDIO	6	9	1.5
	30	54 (incl. 2 Accessible)	
		54 (incl. 2 Accessible)	PROPOSED

Bldg. A2 - 3 FLOORS

Unit Type	# / Bldg.	# Parking Stalls	Stalls / Unit
3 BR / 2 BA	6	12	2.0
2 BR / 1 BA	12	24	2.0
1 BR / 1 BA	6	9	1.5
STUDIO	6	9	1.5
	30	54 (incl. 2 Accessible)	
		54 (incl. 2 Accessible)	PROPOSED

Bldg. B1 - 3 FLOORS

Unit Type	# / Bldg.	# Parking Stalls	Stalls / Unit
3 BR / 2 BA	6	12 (incl. 1 Accessible)	2.0
		7 (incl. 1 Accessible)	PROPOSED

Bldg. B2 - 3 FLOORS

Unit Type	# / Bldg.	# Parking Stalls	Stalls / Unit
3 BR / 2 BA	6	12 (incl. 1 Accessible)	2.0
		6 (incl. 1 Accessible)	PROPOSED

Bldg. C1 - 2 FLOORS

Unit Type	# / Bldg.	# Parking Stalls	Stalls / Unit
3 BR / 2 BA	4	8 (incl. 1 Accessible)	2.0
		14 (incl. 1 Accessible)	PROPOSED

Bldg. C2 - 2 FLOORS

Unit Type	# / Bldg.	# Parking Stalls	Stalls / Unit
3 BR / 2 BA	4	8 (incl. 1 Accessible)	2.0
		14 (incl. 1 Accessible)	PROPOSED

OVERALL PARKING

Phase	# Stalls Provided	# Stalls Required	% of Reqd. Parking
(E) Phase I	65	80*	81%
Phase II	149	185*	81%
Overall	214	265*	81%

*Includes 25% Guest Parking Requirement

DEVELOPMENT TEAM:

THE PACIFIC COMPANIES

DESIGN CONSULTANT:

LINDGREN:LABRIE ARCHITECTURE

Figure 2. Google Earth July 2018 Image of the Site and Adjacent Areas.
(Note This was taken after Phase 1 was built.)

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Appendix A. Potential Occurrence of Selected Special Status Species in the Fishman Hollow Phase 2 Study Area

Table 1. Special Status Wildlife Species Potentially Occurring in or Near the Study Area

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE
Mammals			
Corynorhinus townsendii pallescens Townsend's big-eared bat	SC, SSC, WBWG	Lives in a wide variety of habitats but most common in mesic sites. Needs appropriate roosting, maternity, and hibernacula sites free from human disturbance.	**Low potential.** Typical cavern-like roosting habitat not present within Study Area. May occasionally forage in the Study Area.
Euderma maculatum spotted bat	SSC, WBWG	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests. Feeds over water and along washes. Needs rock crevices in cliffs or caves for roosting.	**Low potential.** Typical roosting habitat not present within Study Area. May occasionally forage in the Study Area.
Gulo gulo California wolverine	FPT,ST	Uses caves, logs, and burrows for den sites. Requires water source. Hunts in areas that are more open. Disperses long distances.	**Not present.** Development in vicinity of Study Area precludes presence.
Lasiurus blossevillii western red bat	SSC, WBWG	Locally common in California from Shasta County to Mexican border. Roosts in forests and woodlands at many elevations and feed over grasslands, shrublands, open woodlands, and forests.	**Low potential.** Typical roosting habitat not present within Study Area. Adjacent forests may provide roost habitat.
Lepus americanus tahoensis Sierra Nevada snowshoe hare	SSC	Occurs in boreal zones of riparian communities. They typically occupy altitudes between 5000 and 8000 feet.	**Low potential.** Typical riparian habitat is not present.
Peckania pennanti Pacific fisher	FC, SC SSC	Primarily inhabits mixed conifer forests composed of Douglas fir and associated conifers. They prefer heavy stands of mixed species of mature timber.	**Low potential.** Pacific fisher are likely absent from the central part of their historic range. Development in vicinity of Study Area likely precludes presence. Typical forest habitat not present.
Myotis evotis long-eared myotis	WBWG	Primarily a forest associated species. Day roosts in hollow trees, under exfoliating bark, rock outcrop crevices, and buildings. Other roosts include caves, mines and under bridges.	**Low potential.** Although present in the surrounding forests, typical roosting habitat not present within Study Area. Small dead trees on the site do not appear to provide suitable roosts.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE
Myotis thysanodes fringed myotis	WBWG	Associated with a wide variety of habitats including mixed coniferous-deciduous forest and redwood/sequoia groves. Buildings, mines, and large snags are important day and night roosts.	**Low potential.** Although present in the surrounding forests, typical roosting habitat not present within Study Area. Small dead trees on the site do not appear to provide suitable roosts.
Myotis yumanensis Yuma myotis	WBWG	Known for its ability to survive in urbanized environments. Also found in heavily forested settings. Day roosts in buildings, trees, mines, caves, bridges and rock crevices. Night roosts associated with man-made structures.	**Low potential.** Although present in the surrounding forests, typical roosting habitat not present within Study Area. Small dead trees on the site do not appear to provide suitable roosts.
Myotis ciliolabrum small-footed myotis	WBWG	Commonly found in arid uplands of California above 6000-foot elevation. Feeds on a variety of small flying insects. Seeks cover in caves, buildings, mines, crevices, and occasionally under bridges.	**Low potential.** Study Area is near the lower elevation range of the species. Typical roosting habitat not present within Study Area.
Taxidea taxus American badger	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils & open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Low potential.** Adjacent development probably precludes presence.
Vulves vulpes necator Sierra Nevada red fox	ST	Dense vegetation and rocky areas are used for cover and den sites. Prefers forests interspersed with meadows or alpine fields.	**Low potential.** Development in vicinity of Study Area likely precludes presence.
Birds			
Accipter gentilis northern goshawk	SSC	Prefers dense, mature conifer and deciduous forest usually near open space. Usually nests on north facing slopes near water.	**Low potential.** Adjacent development probably precludes nesting attempts; individuals may rarely use the Study Area for foraging.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE
Accipiter cooperi Cooper’s hawk	WL	Typically nests in woodlands and forests. May occur in most habitats in migration and winter.	**Moderate potential.** Individuals may use the Study Area for foraging; the more dense stands in the Study Area appear to provide suitable nesting habitat. If construction begins during nesting season, this species will be included in the preconstruction nesting bird survey. If nest are found they will be avoided as discussed above
Aquila chrysaetos golden eagle	CFP, BCC	Nests in isolated large trees and cliffs. Forages in more open country on small to medium-sized mammals.	**Not Present.** The Study Area does not likely support prey animals, and breeding habitat is not present.
Asio otus Long-eared owl	SSC	Found in woodlands and forests.	**Low potential**. Individuals may use the Study Area for foraging; human disturbance likely precludes nesting.
Cypseloides niger black swift	SSC, BCC	Requires steep cliffs or ocean bluffs with ledges, cavities, or cracks for nest sites. Nests are usually behind waterfalls.	**Not Present.** May rarely forage in Study Area; however, no suitable nesting habitat is present.
Dendroica petechia Yellow warbler	SSC, BCC	Associated with riparian habitat, particularly willow and alder thickets in montane areas, and willow-cottonwood riparian at lower elevations.	**Low Potential**. Suitable willow thicket habitat is not present.
Empidonax traillii willow flycatcher	SE, BCC	Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2000-8000 elev. Requires dense willow thickets for nesting/roosting. Low, exposed branches are used for singing posts/hunting perches	**Not Present.** Suitable willow thicket habitat is not present.
Falco peregrinus anatum American peregrine falcon	CFP, BCC	Winters throughout Central Valley. Requires protected cliffs and ledges for cover. Feeds on a variety of birds, and some mammals, insects, and fish.	**Not Present.** No cliffs in the Study Area, however, this species may rarely forage near the site.
Haliaeetus leucocephalus bald eagle	SE, CFP, BCC	Requires large bodies of water, or free-flowing rivers with abundant fish adjacent snags or other perches. Nests in large, old-growth, or dominant live tree with open branches.	**Not present.** Study Area does not provide suitable habitat.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL FOR OCCURRENCE
Picoides albolarvatus white-headed woodpecker	BCC	Strongly associated with pine forests of the Transition and lower Canadian life zones. Breed primarily between 4000 to 7500 feet in elevation.	**Moderate potential.** Pines on and adjacent to the Study Area may be occasionally used by this species. If construction begins during nesting season, this species will be included in the preconstruction nesting bird survey. If nest are found they will be avoided as discussed above.
Selasphorus rufus rufous hummingbird	BCC	Found in a wide variety of habitats that provide nectar-producing flowers. A common migrant and uncommon summer resident of California.	**Low potential.** Migrating individuals may forage in the Study Area.
Strix nebulosa great gray owl	SE	Largest owl in North America. Extremely rare, prefers dense mature forest at edges of meadows. Known from Plumas County south to Yosemite Park.	**Not Present.** Typical forest habitat not present.
Strix occidentalis occidentalis California spotted owl	SSC, BCC	Mixed conifer forest, often with an understory of black oaks & other deciduous hardwoods. Canopy closure >40%. Most often found in deep-shaded canyons, on north-facing slopes, and within 300 meters of water.	**Not Present.** Typical forest habitat not present.
Reptiles and Amphibians			
Rana muscosa mountain yellow-legged frog	FE, ST	Found in sunny riverbanks, meadow streams, and isolated ponds of the High Sierra usually higher than 4500 feet in elevation. Always encountered within a few feet of water. Tadpoles may require up to two years to completely development.	**Not Present.** Typical aquatic habitat not present in the Study Area. Drainage along west boundary likely dries in most years.

*** Key to status codes:**
FE Federal Endangered
FT Federal Threatened
FC Federal Candidate
FPD Federal Proposed Delisted
BCC U.S. Fish and Wildlife Service Birds of Conservation Concern
SE State Endangered
ST State Threatened
CFP CDFW Fully Protected Animal
CSC CDFW Species of Special Concern
WL CDFW Watch List
BLM Bureau of Land Management Sensitive Species
FS Sensitive US Forest Service sensitive species

Table 2. Special Status Plant Species Potentially Occurring in or Near the Study Area

Species	Federal Status*	State Status*	CNPS Status*	Habitat Associations and Taxa Ecology	Potential Occurrence in Study Area
Boechera rigidissima (Arabis r. var. *demota)* (Galena Creek rockcress)	FSS	-	1B.2	Brassicaceae. Perennial herb. Broadleafed upland forest, upper montane coniferous forest; rocky. 2255 - 2560m. Flowers August.	**Not Present.** No suitable habitat.
Artemisia tripartita ssp. *tripartita* (threetip sagebrush)	-	-	2B.3	Asteraceae. Perennial shrub. Upper montane coniferous forest; rocky, volcanic. 2200 – 2600m. Flowers August.	**Low Potential.** Limited habitat present. Not observed during surveys.
Astragalus austiniae (Austin's astragalus)	-	-	1B.3	Fabaceae. Perennial herb. Alpine boulder and rock field, subalpine coniferous forest; rocky. 2440 – 2965m. Flowers July -September.	**Not Present.** No suitable habitat.
Botrychium crenulatum (scalloped moonwort)	FSS	-	2.B2	Ophioglossaceae. Perennial herb, rhizomatous. Lower and upper montane coniferous forest, marshes and swamps; mesic areas. Elevation range 1265-3280 m. Best identified June-September.	**Low Potential.** Limited habitat present. May occur in wet meadows and wetlands. No work is expected in the wetlands.
Botrychium lunaria (common moonwort)	FSS	-	2B.3	Ophioglossaceae. Perennial herb, rhizomatous. Subalpine and upper montane coniferous forest, meadows and seeps; mesic areas. Elevation range 2280-3400 m. Best identified August.	**Low Potential.** Limited habitat present. May occur in wet meadows and wetlands. No work is expected in the wetlands.
Botrychium minganense (Mingan moonwort)	FSS	-	2B.2	Ophioglossaceae. Perennial herb, rhizomatous. Bogs and fens, lower montane coniferous forest, edges of meadows and seeps; mesic areas. Elevation range 1455-2180m. Best identified July-Sept.	**Low Potential.** Limited habitat present. May occur in wet meadows and wetlands. No work is expected in the wetlands.
Carex davyi (C. constanceana) (Davy's sedge)	-	-	1B.3	Cyperaceae. Subalpine coniferous forest, upper montane coniferous forest. Known from fewer than 20 extant occurrences. Similar to *C. petasata*. Elevation 1500-3200m. May to August.	**Low-Moderate Potential.** Limited habitat present. May occur in slightly mesic. No work in the wetland is expected.

Species	Federal Status*	State Status*	CNPS Status*	Habitat Associations and Taxa Ecology	Potential Occurrence in Study Area
Carex limosa (mud sedge)	-	-	2B.2	Cyperaceae. Perennial rhizomatous herb. Bogs and fens, lower and upper montane coniferous forest, soggy meadows and seeps, marshes and swamps, edges of lakes. 1200-2700m. Jun-Aug.	**Low Potential.** No bogs or fens present, limited habitat in the portions of wetlands with a long hydroperiod. No work in wetlands expected.
Claytonia megarhiza (fell fields claytonia)	-	-	2B.3	Portulacaceae. Perennial herb. Alpine boulder and rock field, subalpine, lower, and upper montane coniferous forest; talus crevices, rocky or gravelly sites. Elevation range 2600-3300m. Flowers July-August.	**Not Present.** No suitable habitat.
Drosera anglica (English sundew)	-	-	2B.3	Droseraceae. Perennial herb. Bogs and fens, meadows and seeps, mesic sites. Elevation range 1300-2000m. Flowers June-August.	**Not Present.** No suitable habitat.
Erigeron eatonii var. *nevadincola* (Nevada daisy)	-	-	2B.3	Asteraceae. Perennial herb. Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland; rocky substrates. 1400-2900m. Flowers May-July.	**Not Present.** No suitable habitat.
Erigeron miser (starved daisy)	FSS	-	1B.3	Asteraceae. Perennial herb. Upper montane coniferous forest; rocky substrates. Occurs along Hole in the Ground and Warren Lake trails to the west. Elevation range 1840-2620m. Flowers July-August..	**Not Present.** No suitable habitat.
Eriogonum umbellatum var. *torreyanum* (Donner Pass buckwheat)	FSS	-	1B.2	Polygonaceae. Perennial herb. Upper montane coniferous forest, meadows and seep volcanic rocky substrates, usually in bare or sparse areas. Known from fewer than 10 occurrences. Many populations to the west. Also observed on east slope of Red Mountain above Crabtree Canyon. Elevation range 1855-2620m. Flowers July-September.	**Not Present.** No suitable habitat.

Species	Federal Status*	State Status*	CNPS Status*	Habitat Associations and Taxa Ecology	Potential Occurrence in Study Area
Glyceria grandis (American manna grass)	-	-	2B.3	Poaceae. Perennial rhizomatous grass. Bogs and fens, meadows and seeps, marshes and swamps; streambank and lake margins. Elevation range 15-1980m. Flowers June-August.	**Low-Moderate Potential.** Limited habitat present. May occur in the wetlands (wetter wet meadows & edge of open water). Closest occurrence on the Truckee River, near Squaw, approx. 13 miles away. No work expected in wetlands.
Ivesia sericoleuca (Plumas ivesia)	FSS	-	1B.2	Rosaceae. Perennial herb. Great Basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools, vernally mesic. Elevation range 1400-2200m. Flowers May-September.	**Low-Moderate Potential**. Typically found in flat slightly mesic areas on volcanics. Occurs nearby, to the east of Hwy 89. The flat areas on the site are dry. The mesic areas are down by the creek and outside of the Phase 2 work.
Juncus luciensis (Santa Lucia dwarf rush)	FSS	-	1B.2	Juncaceae. Annual herb. Chaparral. Great Basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools. Elevation range 300 - 2040m. Flowers Apr-Jul.	**Low-Moderate Potential.** Limited habitat in the wetland areas. Not observed during surveys. No work is expected in the wetlands.
Lewisia longipetala (long-petaled lewisia)	FSS	-	1B.3	Montiaceae. Perennial herb. Known from fewer than twenty occurrences. Alpine boulder and rock fields, subalpine coniferous forest, mesic, rocky, and granitic. Elevation range 2500-2925m. Flowers July-August.	**Not Present.** No suitable habitat.
Meesia uliginosa (broad-nerved hump moss)	FSS	-	2B.2	Meesiaceae. Moss. Bogs and fens, meadows and seeps, subalpine coniferous forest, upper montane coniferous forest, damp soil. Multiple occurrences several miles to the north. 1210- 2805m.	**Low to Moderate Potential.** Limited habitat present. May occur in openings in the wet meadows. No work expected in the wetlands.

Species	Federal Status*	State Status*	CNPS Status*	Habitat Associations and Taxa Ecology	Potential Occurrence in Study Area
Mertensia oblongifolia var. oblongifolia (sagebrush bluebells)	-	-	2B.2	Boraginaceae. Perennial herb. Great basin scrub, lower montane coniferous forest, meadows and seeps, subalpine coniferous forest. 1000-3000m. Flowers April – July.	**Low Potential.** Limited habitat present. No work expected in the wetlands.
Phacelia stebbinsii (Stebbins' phacelia)	FSS	-	1B.2	Boraginaceae. Annual herb. Cismontane woodland, lower montane coniferous forest, meadows, and seeps. Elevation range 610-2010m. Flowers June-July.	**Low-Medium Potential.** Limited habitat present. No work expected in the wetlands.
Potamogeton epihydrus (Nuttall's ribbon-leaved pondweed)	-	-	2B.2	Potamogetonaceae. Perennial rhizomatous herb aquatic. Marshes and swamps (shallow water, ponds, lakes, irrigation districts). Last observed near Tahoe Tavern in 1932. 370 - 217m. Flowers July-August.	**Not Present.** No suitable habitat.
Potamogeton praelongus (white stemmed pondweed)	-	-	2B.2	Potamogetonaceae. Perennial rhizomatous herb aquatic. Marshes and swamps (deep water, lakes). Last observed near the Webber Peak Quad in 1894. 1800 - 3000m. Flowers July-August.	**Not Present.** No suitable habitat.
Potamogeton robbinsii (Robbins' pondweed)	-	-	2B.3	Potamogetonaceae. Perennial rhizomatous herb aquatic. Marshes and swamps; deep water, lakes. Occurs in shallow water in Donner Lake. Elevation range 1585-3300m. Flowers July-August.	**Low Potential.** Limited habitat present. No work expected in the wetlands.
Rhamnus alnifolia (alder buckthorn)	-	-	2B.2	Rhamnaceae. Perennial deciduous shrub. Lower and upper montane coniferous forest, meadows and seeps, riparian scrub. 1370-2130m. Flowers May-Jul.	**Low Potential.** Habitat present, though this woody species was not observed during surveys.
Rorippa subumbellata (Tahoe yellow cress)	FC/FSS	CE	1B.1	Brassicaceae. Perennial herb. Known in CA only from Lake Tahoe. Lower montane coniferous forest, meadows, and seeps; decomposed granitic beaches. Elevation range 1895-1900m. Flowers May-September.	**Not Present.** Occurs in the vicinity of Lake Tahoe on decomposed granite.

Species	Federal Status*	State Status*	CNPS Status*	Habitat Associations and Taxa Ecology	Potential Occurrence in Study Area
Scutellaria galericulata (marsh skullcap)	-	-	2B.2	Lamiaceae. Perennial rhizomatous herb. Lower montane coniferous forest, meadows and seeps, marshes and swamps. Elevation range 0-2100m. Flowers June-September.	**Low-Medium Potential.** Limited habitat present. May occur in wetter wet meadows. No work in wetlands is expected.
Sphaeralcea munroana (Munroe's desert mallow)	-	-	2B.2	Malvaceae. Perennial herb. Great Basin scrub. Known in CA only from Squaw Creek in 1922. Elevation range 2000m. Flowers May-June.	**Not Present.** No Great Basin scrub present.

*** Key to status codes:**

FE Federal Endangered
FT Federal Threatened
FC Federal Candidate
FSS US Forest Service Sensitive
CE State Endangered
CT State Threatened
SCE State Candidate Endangered
SSC CDFW Species of Special Concern

California Native Plant Society ("CNPS") List

1B.1 Rare, threatened or endangered in California and elsewhere. Fairly endangered in California.
1B.2 Rare, threatened or endangered in California and elsewhere. Moderately threatened in California.
1B.3 Rare, threatened, or endangered in California and elsewhere. Not very endangered in California.
2.1 Rare, threatened or endangered in California, but more common elsewhere. Fairly endangered in California.
2.2 Rare, threatened or endangered in California, but more common elsewhere. Moderately threatened in California.
2.3 Rare, threatened, or endangered in California, but more common elsewhere. Not very endangered in California.

Appendix B. Plant Species Observed on the Fishman Hollow Site During the Fieldwork Various Years

Family	Scientific Name	Common Name
Other		
Pinaceae	*Abies concolor*	white fir
Pinaceae	*Pinus contorta* var. *murrayana*	lodgepole pine
Pinaceae	*Pinus jeffreyi*	Jeffrey pine
Pinaceae	*Pinus ponderosa*	Ponderosa pine
Eudicots		
Asteraceae	*Artemisia douglasiana*	mugwort
Asteraceae	*Artemisia tridentata* ssp. *vaseyana*	mountain sagebrush
Asteraceae	*Chrysothamnus viscidiflorus*	yellow rabbitbrush
Asteraceae	*Ericameria nauseosus*	rubber rabbitbrush
Asteraceae	*Eriophyllum lanatum (cf)*	wholly sunflower
Asteraceae	*Gnaphalium palustre*	
Asteraceae	*Lactuca serriola*	prickly lettuce
Asteraceae	*Madia glomerata*	tarweed
Asteraceae	*Senecio aronicoides*	rayless ragwort
Asteraceae	*Symphyotrichum spathulatum* var. *spathulatum*	aster
Boraginaceae	*Horkelia fusca* var. *parviflora*	dusky horkelia
Boraginaceae	*Hydrophyllum capitatum* var. *alpinum*	woolen breeches
Boraginaceae	*Nemophila parviflora*	baby blue-eyes
Boraginaceae	*Phacelia hastata* var. *hastata*	silver-leaf phacelia
Boraginaceae	*Plagiobothrys* sp.	popcorn flower
Brassicaceae	*Boechera pinetorum*	woodland rockcress
Brassicaceae	*Descurainia* sp.	tansy mustard
Caryophyllaceae	*Cerastium fontanum* ssp. *vulgare*	common mouse ear chickweed
Ericaceae	*Arctostaphylos patula*	manzanita
Ericaceae	*Pyrola picta*	white-veined wintergreen
Fabaceae	*Acmispon americanus* var. *americanus* (was *Lotus purshianus* var. *purshianus)*	Spanish-clover
Fabaceae	*Astragalus purshii*	Pursh's milkvetch
Fabaceae	*Lupinus argenteus* var. *meionanthus*	lupine

Family	Scientific Name	Common Name
Fabaceae	*Trifolium cyathiferum*	bowl clover
Fabaceae	*Trifolium longipes*	long stalked clover
Fabaceae	*Trifolium repens*	white clover
Grossulariaceae	*Ribes cereum* var. *cereum*	wax current
Lamiaceae	*Monardella odoratissima* ssp. *pallida*	coyote mint
Malvaceae	*Sidalcea oregana spicata*	Oregon checkerbloom
Montiaceae	*Lewisia nevadensis*	Nevada lewisii
Montiaceae	*Calyptridium umbellatum*	pussy paws
Montiaceae	*Claytonia parviflora*	miners lettuce
Montiaceae	*Claytonia parviflora* var. *parviflora*	claytonia
Montiaceae	*Montia chamissoi*	Chamisso's montia
Montiaceae	*Montia fontana*	water chickweed
Onagraceae	*Chamerion angustifolium* ssp. *circumvagum (was Epilobium)*	fireweed
Onagraceae	*Epilobium brachycarpum*	willow-herb
Onagraceae	*Epilobium glaberrimum*	glabrous willow-herb
Onagraceae	*Epilobium torreyi*	willow-herb
Onagraceae	*Gayophytum diffusum* var. *parviflorum*	Gayophytum
Orchidaceae	*Corallorhiza maculata*	spotted coral root
Orobanchaceae	*Castilleja tenuis*	slender paintbrush (owl's clover)
Paeoniaceae	*Paeonia brownii*	peony
Plantaginaceae	*Collinsia parviflora*	blue-eyed Mary
Plantaginaceae	*Penstemon gracilentus*	slender beardtongue
Plantaginaceae	*Penstemon rydbergii* var. *oreocharis*	Rydberg's beardtongue
Polemoniaceae	*Collomia grandiflora*	large flowered collomia
Polemoniaceae	*Collomia linearis*	narrow leaf collomia
Polemoniaceae	*Microsteris gracilis*	microsteris
Polemoniaceae	*Navarretia breweri*	Brewer's navarretia
Polemoniaceae	*Navarretia intertexta*	needle navarretia
Polygonaceae	*Polygonum aviculare*	common knotweed
Polygonaceae	*Polygonum douglasii*	Douglas' knotweed
Ranunculaceae	*Aconitum columbianum ssp. columbianum*	Columbian monkshood
Ranunculaceae	*Delphinium nuttallianum*	Nuttall's larkspur

Family	Scientific Name	Common Name
Ranunculaceae	*Ranunculus alismifolius*	buttercup
Ranunculaceae	*Ranunculus occidentalis*	western buttercup
Rosaceae	*Potentilla gracilis* var. *fastigiata*	cinquefoil
Roseaceae	*Poteridium annuum*	western burnet
Roseaceae	*Purshia tridentata*	bitterbrush
Rubiaceae	*Kelloggia galioides*	kelloggia
Salicaceae	*Salix lasiolepis*	arroyo willow
Solanaceae	*Chamaesaracha nana*	Chamaesaracha
Violaceae	*Viola purpurea* ssp. *integrifolia*	mountain violet
Monocots		
Agavaceae	*Camassia quamash*	camas lily
Cyperaceae	*Carex athrostachya*	slender beaked sedge
Cyperaceae	*Carex subfusca*	pale broom sedge
Cyperaceae	*Carex utriculata*	southern beaked sedge
Cyperaceae	*Eleocharis macrostachya*	spikerush
Juncaceae	*Juncus balticus*	Baltic rush
Juncaceae	*Juncus nevadensis*	Sierran rush
Liliaceae	*Fritillaria autropupurea*	fritillaria
Poaceae	*Bromus tectorum*	cheatgrass
Poaceae	*Deschampsia danthonioides*	annual hairgrass
Poaceae	*Elymus elymoides*	squirreltail
Poaceae	*Hordeum brachyantherum*	meadow barley
Poaceae	*Hordeum* sp.	barley
Poaceae	*Poa bulbosa*	bulbous bluegrass
Poaceae	*Poa pratensis*	Kentucky bluegrass
Poaceae	*Poa secunda* var. *secunda*	bluegrass
Poaceae	*Stipa comata* var. *comata*	needlegrass
Themidaceae	*Tritelia hyacinthina*	hyacinth brodiaea

Special Status Plant Survey
Frishman Hollow Phase 2

Truckee, CA

Prepared for:

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September 2019

1.0 Introduction

Frishman Hollow is located at the southwest corner of Highway 89 North and Alder Drive, in the Town of Truckee (Town) at 5,900 feet above sea level. In 2006, Kelly Biological Consulting conducted an evaluation to determine the potential for special status species identified in the Initial Study/Mitigated Neg Dec (IS/MND) and/or Army Corps of Engineers (ACOE) jurisdictional Waters of the U.S. including wetlands to occur in the project site. Since then, Phase 1 of the project has been built. The Pacific Company is proposing to construct Phase 2. This report summarizes previous work and discusses the special status plant survey for the Phase 2 portion of the site (Figure 1). Figure 2 provides an aerial image of the site.

2.0 Summary of Initial Study/Mitigated Negative Declaration Mitigation Measure and 2006-7 Survey Results

The Town of Truckee identified potential impacts to biological resources including wildlife movement; wildlife habitat; riparian habitat, wetlands, other sensitive natural communities, and special status species in the project's IS/MND. In 2006, Micki Kelly, PWS, plant ecologist conducted a focused special status plant survey and a wetland reconnaissance and a wildlife biologist conducted surveys in accordance with the mitigation measures identified in the CEQA document. The plant specific measure and 2006-7 results were as follows:

Mitigation Measure MM02 in the IS/MND. Plants. Prior to issuance of a grading permit on the Alder Drive site, a focused plant survey for Plumas ivesia, Donner Pass buckwheat, and Oregon fireweed shall be required to determine the presence or absence of these species on the project site. The survey area shall include all areas proposed for grading or disturbance including areas that may be graded or disturbed in the future. The survey shall be completed by a qualified botanist during the blooming season for each species.

2006-7 Survey Results. No sensitive plants were observed during surveys conducted May 30, 2006, July 21, 2006, and April 13, 2007 (additional information can be found in Kelly Biological Consulting's letters to the Town dated August 8, 2006 and April 13, 2007.)

3.0 Methods

For the purpose of this report, the Study Area is defined as the Phase 2 impact area and adjacent areas within the site. The site is bounded by Donner Pass Road on the southeast, Alder Drive on the north, a drainage swale on the west/northwest, and Highway 89 on the east.

On July 25, 2019, Ms. Kelly PWS, plant ecologist conducted a sensitive plant survey of the Phase 2 impact area and adjacent areas. She conducted meander transects traversing the site on foot. All plants observed were keyed to the taxonomic level necessary to determine their level of rarity. The plant species observed during the various surveys are listed in Table 2.

In addition to the species identified in the IS/MND, a special status species list was compiled based on the results of a May 2019 search of the California Department of Fish and Wildlife Natural Diversity Database (CNDDB). The Table 1 provides a list of selected special status plant species and the probability of occurrence as determined by the biologists' professional assessment of habitats found in the area. Potential for special status species to occur in the Study Area was evaluated according to the following criteria:

(1) Not Present. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (based on substrate, elevation, hydrology, plant community, site history, or disturbance regime).

(2) Low Potential. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

(3) Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

(4) High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

(5) Present. Species has been observed on the site or recorded (i.e. CNDDB, other reports) on the site recently.

3.0 Results and Analysis

3.1 Plant Communities

The communities found within and adjacent to the Study Area include Jeffery Pine Forest and Montane Meadow Wetland/Intermittent Drainage habitat along the northwest boundary.

Jeffery Pine Forest

The plant community found in the forested part of the Study Area is Jeffery Pine Forest (*Pinus jeffreyi* Forest Alliance) (Sawyer, et.al. 2009). Trees that occur on site are a mix of ponderosa and Jeffrey pines (*Pinus ponderosa* and *Pinus jeffreyi*) with an open canopy. The understory consists of bitterbrush (P*urshia tridentata*), mountain sagebrush (A*rtemisia tridentata* ssp. *vaseyana*), native grasses [for example bluegrass (*Poa secunda* ssp. s*ecunda*)], non-native grasses [cheatgrass (*Bromus tectorum*)], and forbs such as groundsel (*Senecio aronicoides*) and small flowered blue-eyed Mary (*Collinsia parviflora*). Within this plant community, there are patches of open areas that are predominately sagebrush and bitterbrush with no overstory, as well as disturbed areas.

Montane Meadow Wetland/Intermittent Drainage

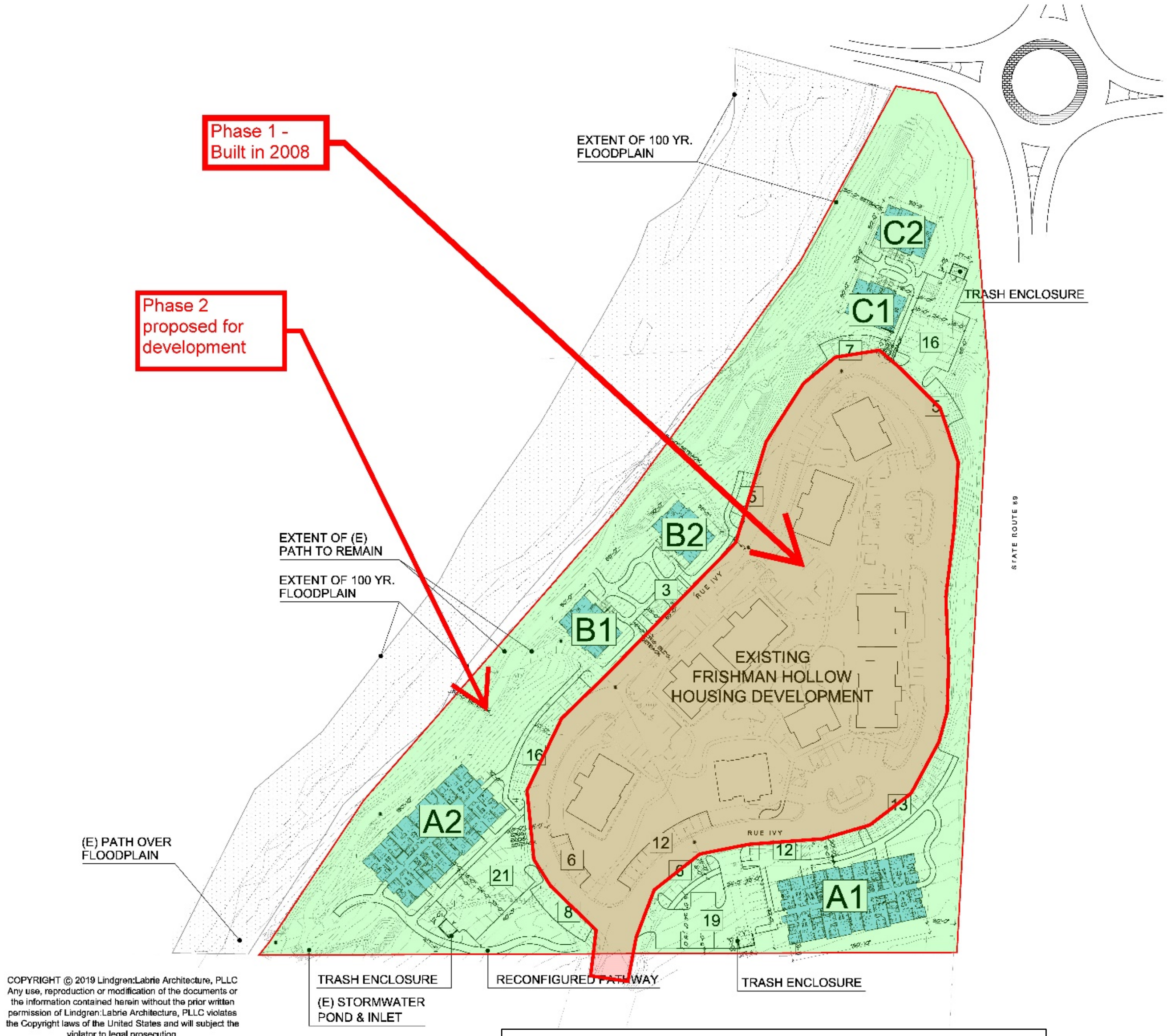
An unnamed drainage flows from southwest to northeast along the northwest boundary of the Study Area supporting Montane Meadow Wetland habitat. Its receiving waters are Prosser Creek and eventually the Truckee River. The drainage appears to be intermittent, though it is marked as a perennial blue line on the USGS topo. On the site, the drainage is at the base of a moderately steep slope. That slope provides a distinct boundary between the Jeffery Pine Forest and Montane Meadow communities. Within the drainage are areas of open water mixed with large areas of herbaceous wetland vegetation. The emergent vegetation includes sedges (*Carex spp.*), linear-leaved montia (*Montia linearis*), and toad lily (*Montia chamissoi*).

3.2 Special Status Plant Species

No special status plant species were observed during the 2006-7 or the 2019 site visits. Table 1 identifies selected special status plant species that are known to occur in the region according to the CNDDB. Most of the special status plant species shown in the table are not present or have a low potential to occur in the Study Area. Several special status plant species have the low-moderate potential to occur on the site in the wetlands or mesic areas, which will be avoided.

4.0 Conclusion and Recommendations

No special status plant species were observed during the 2019 survey. Table 1 identifies selected special status plant species that are known to occur in the region. Table 2 provides an updated list of the plant species observed. Where possible, the project should consider using species native to the area for landscaping and erosion control. Invasive species and noxious weeds should be avoided. Determining which species would be appropriate is beyond the scope of this letter report.



A Development Permit Application Submittal for

FRISHMAN HOLLOW

PHASE II

Rue Ivy - Truckee, California

08 May 2019

OVERALL SITE PLAN - 80 Units

0 50 100

Bldg. A1 - 3 FLOORS

Unit Type	# / Bldg.	# Parking Stalls	Stalls / Unit
3 BR / 2 BA	6	12	2.0
2 BR / 1 BA	12	24	2.0
1 BR / 1 BA	6	9	1.5
STUDIO	6	9	1.5
	30	54 (incl. 2 Accessible)	
		54 (incl. 2 Accessible)	PROPOSED

Bldg. A2 - 3 FLOORS

Unit Type	# / Bldg.	# Parking Stalls	Stalls / Unit
3 BR / 2 BA	6	12	2.0
2 BR / 1 BA	12	24	2.0
1 BR / 1 BA	6	9	1.5
STUDIO	6	9	1.5
	30	54 (incl. 2 Accessible)	
		54 (incl. 2 Accessible)	PROPOSED

Bldg. B1 - 3 FLOORS

Unit Type	# / Bldg.	# Parking Stalls	Stalls / Unit
3 BR / 2 BA	6	12 (incl. 1 Accessible)	2.0
		7 (incl. 1 Accessible)	PROPOSED

Bldg. B2 - 3 FLOORS

Unit Type	# / Bldg.	# Parking Stalls	Stalls / Unit
3 BR / 2 BA	6	12 (incl. 1 Accessible)	2.0
		6 (incl. 1 Accessible)	PROPOSED

Bldg. C1 - 2 FLOORS

Unit Type	# / Bldg.	# Parking Stalls	Stalls / Unit
3 BR / 2 BA	4	8 (incl. 1 Accessible)	2.0
		14 (incl. 1 Accessible)	PROPOSED

Bldg. C2 - 2 FLOORS

Unit Type	# / Bldg.	# Parking Stalls	Stalls / Unit
3 BR / 2 BA	4	8 (incl. 1 Accessible)	2.0
		14 (incl. 1 Accessible)	PROPOSED

OVERALL PARKING

Phase	# Stalls Provided	# Stalls Required	% of Reqd. Parking
(E) Phase I	65	80*	81%
Phase II	149	185*	81%
Overall	214	265*	81%

*Includes 25% Guest Parking Requirement

DEVELOPMENT TEAM:

THE PACIFIC COMPANIES

DESIGN CONSULTANT:

LINDGREN:LABRIE ARCHITECTURE

Figure 1. Site Map (Green Area is Phase 2)

Figure 2. Google Earth July 2018 Image of the Site and Adjacent Areas.
(Note This was taken after Phase 1 was built.)

Representative Photos

Jeffery Pine Forest. Taken from the bike path near the bridge by the southwest part of the site (July 25, 2019).

Montane Meadow Wetland/Intermittent Drainage. Facing northeast, taken from the drainage corridor northwest of the proposed B building complex (July 25, 2019).

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Table 1. Special Status Plant Species Potentially Occurring in or Near the Study Area

Species	Federal Status*	State Status*	CNPS Status*	Habitat Associations and Taxa Ecology	Potential Occurrence in Study Area
Boechera rigidissima (Arabis r. var. *demota)* (Galena Creek rockcress)	FSS	-	1B.2	Brassicaceae. Perennial herb. Broadleafed upland forest, upper montane coniferous forest, rocky. 2255 - 2560m. Flowers August.	**Not Present.** No suitable habitat.
Artemisia tripartita ssp. *tripartita* (threetip sagebrush)	-	-	2B.3	Asteraceae. Perennial shrub. Upper montane coniferous forest; rocky, volcanic. 2200 – 2600m. Flowers August.	**Low Potential.** Limited habitat present. Not observed during surveys.
Astragalus austiniae (Austin's astragalus)	-	-	1B.3	Fabaceae. Perennial herb. Alpine boulder and rock field, subalpine coniferous forest; rocky. 2440 – 2965m. Flowers July -September.	**Not Present.** No suitable habitat.
Botrychium crenulatum (scalloped moonwort)	FSS	-	2.B2	Ophioglossaceae. Perennial herb, rhizomatous. Lower and upper montane coniferous forest, marshes and swamps; mesic areas. Elevation range 1265-3280 m. Best identified June-September.	**Low Potential.** Limited habitat present. May occur in wet meadows and wetlands. No work is expected in the wetlands. Not observed during surveys.
Botrychium lunaria (common moonwort)	FSS	-	2B.3	Ophioglossaceae. Perennial herb, rhizomatous. Subalpine and upper montane coniferous forest, meadows and seeps; mesic areas. Elevation range 2280-3400 m. Best identified August.	**Low Potential.** Limited habitat present. May occur in wet meadows and wetlands. No work is expected in the wetlands. Not observed during surveys.
Botrychium minganense (Mingan moonwort)	FSS	-	2B.2	Ophioglossaceae. Perennial herb, rhizomatous. Bogs and fens, lower montane coniferous forest, edges of meadows and seeps; mesic areas. Elevation range 1455-2180m. Best identified July-Sept.	**Low Potential.** Limited habitat present. May occur in wet meadows and wetlands. No work is expected in the wetlands. Not observed during surveys.

Species	Federal Status*	State Status*	CNPS Status*	Habitat Associations and Taxa Ecology	Potential Occurrence in Study Area
Carex davyi (C. constanceana) (Davy's sedge)	-	-	1B.3	Cyperaceae. Subalpine coniferous forest, upper montane coniferous forest. Known from fewer than 20 extant occurrences. Similar to *C. petasata*. Elevation 1500-3200m. May to August.	**Low-Moderate Potential.** Limited habitat present. May occur in slightly mesic. No work in the wetland is expected. Not observed during surveys.
Carex limosa (mud sedge)	-	-	2B.2	Cyperaceae. Perennial rhizomatous herb. Bogs and fens, lower and upper montane coniferous forest, soggy meadows and seeps, marshes and swamps, edges of lakes. 1200-2700m. Jun-Aug.	**Low Potential.** No bogs or fens present, limited habitat in the portions of wetlands with a long hydroperiod. No work in wetlands expected. Not observed during surveys.
Claytonia megarhiza (fell fields claytonia)	-	-	2B.3	Portulacaceae. Perennial herb. Alpine boulder and rock field, subalpine, lower, and upper montane coniferous forest; talus crevices, rocky or gravelly sites. Elevation range 2600-3300m. Flowers July-August.	**Not Present.** No suitable habitat.
Drosera anglica (English sundew)	-	-	2B.3	Droseraceae. Perennial herb. Bogs and fens, meadows and seeps, mesic sites. Elevation range 1300-2000m. Flowers June-August.	**Not Present.** No suitable habitat.
Erigeron eatonii var. *nevadincola* (Nevada daisy)	-	-	2B.3	Asteraceae. Perennial herb. Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland; rocky substrates. 1400-2900m. Flowers May-July.	**Not Present.** No suitable habitat.
Erigeron miser (starved daisy)	FSS	-	1B.3	Asteraceae. Perennial herb. Upper montane coniferous forest; rocky substrates. Occurs along Hole in the Ground and Warren Lake trails to the west. Elevation range 1840-2620m. Flowers July-August..	**Not Present.** No suitable habitat.

Species	Federal Status*	State Status*	CNPS Status*	Habitat Associations and Taxa Ecology	Potential Occurrence in Study Area
Eriogonum umbellatum var. *torreyanum* (Donner Pass buckwheat)	FSS	-	1B.2	Polygonaceae. Perennial herb. Upper montane coniferous forest, meadows and seep volcanic rocky substrates, usually in bare or sparse areas. Known from fewer than 10 occurrences. Many populations to the west. Also observed on east slope of Red Mountain above Crabtree Canyon. Elevation range 1855-2620m. Flowers July-September.	**Not Present.** No suitable habitat.
Glyceria grandis (American manna grass)	-	-	2B.3	Poaceae. Perennial rhizomatous grass. Bogs and fens, meadows and seeps, marshes and swamps; streambank and lake margins. Elevation range 15-1980m. Flowers June-August.	**Low-Moderate Potential.** Limited habitat present. May occur in the wetlands (wetter wet meadows & edge of open water). Closest occurrence on the Truckee River, near Squaw, approx. 13 miles away. No work expected in wetlands. Not observed during surveys.
Ivesia sericoleuca (Plumas ivesia)	FSS	-	1B.2	Rosaceae. Perennial herb. Great Basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools, vernally mesic. Elevation range 1400-2200m. Flowers May-September.	**Low-Moderate Potential**. Typically found in flat slightly mesic areas on volcanics. Occurs nearby, to the east of Hwy 89. The flat areas on the site are dry. The mesic areas are down by the creek and outside of the Phase 2 work. Not observed during surveys.
Juncus luciensis (Santa Lucia dwarf rush)	FSS	-	1B.2	Juncaceae. Annual herb. Chaparral. Great Basin scrub, lower montane coniferous forest, meadows and seeps, vernal pools. Elevation range 300 - 2040m. Flowers Apr-Jul.	**Low-Moderate Potential.** Limited habitat in the wetland areas. Not observed during surveys. No work is expected in the wetlands. Not observed during surveys.

Species	Federal Status*	State Status*	CNPS Status*	Habitat Associations and Taxa Ecology	Potential Occurrence in Study Area
Lewisia longipetala (long-petaled lewisia)	FSS	-	1B.3	Montiaceae. Perennial herb. Known from fewer than twenty occurrences. Alpine boulder and rock fields, subalpine coniferous forest, mesic, rocky, and granitic. Elevation range 2500-2925m. Flowers July-August.	**Not Present.** No suitable habitat.
Meesia uliginosa (broad-nerved hump moss)	FSS	-	2B.2	Meesiaceae. Moss. Bogs and fens, meadows and seeps, subalpine coniferous forest, upper montane coniferous forest, damp soil. Multiple occurrences several miles to the north. 1210- 2805m.	**Low to Moderate Potential.** Limited habitat present. May occur in openings in the wet meadows. No work expected in the wetlands. Not observed during surveys.
Mertensia oblongifolia var. oblongifolia (sagebrush bluebells)	-	-	2B.2	Boraginaceae. Perennial herb. Great basin scrub, lower montane coniferous forest, meadows and seeps, subalpine coniferous forest. 1000-3000m. Flowers April – July.	**Low Potential.** Limited habitat present. No work expected in the wetlands. Not observed during surveys.
Phacelia stebbinsii (Stebbins' phacelia)	FSS	-	1B.2	Boraginaceae. Annual herb. Cismontane woodland, lower montane coniferous forest, meadows and seeps, sometime rocky areas. Elevation range 610-2010m. Flowers June-July.	**Low-Medium Potential.** Limited habitat present. No work expected in the wetlands. Not observed during surveys.
Potamogeton epihydrus (Nuttall's ribbon-leaved pondweed)	-	-	2B.2	Potamogetonaceae. Perennial rhizomatous herb aquatic. Marshes and swamps (shallow water, ponds, lakes, irrigation districts). Last observed near Tahoe Tavern in 1932. 370 - 217m. Flowers July-August.	**Not Present.** No suitable habitat.
Potamogeton praelongus (white stemmed pondweed)	-	-	2B.2	Potamogetonaceae. Perennial rhizomatous herb aquatic. Marshes and swamps (deep water, lakes). Last observed near the Webber Peak Quad in 1894. 1800 - 3000m. Flowers July-August.	**Not Present.** No suitable habitat.

Species	Federal Status*	State Status*	CNPS Status*	Habitat Associations and Taxa Ecology	Potential Occurrence in Study Area
Potamogeton robbinsii (Robbins' pondweed)	-	-	2B.3	Potamogetonaceae. Perennial rhizomatous herb aquatic. Marshes and swamps; deep water, lakes. Occurs in shallow water in Donner Lake. Elevation range 1585-3300m. Flowers July-August.	**Low Potential.** Limited habitat present. No work expected in the wetlands. Not observed during surveys.
Rhamnus alnifolia (alder buckthorn)	-	-	2B.2	Rhamnaceae. Perennial deciduous shrub. Lower and upper montane coniferous forest, meadows and seeps, riparian scrub. 1370-2130m. Flowers May-Jul.	**Low Potential.** Habitat present, though this woody species was not observed during surveys. Not observed during survey.
Rorippa subumbellata (Tahoe yellow cress)	FC/FSS	CE	1B.1	Brassicaceae. Perennial herb. Known in CA only from Lake Tahoe. Lower montane coniferous forest, meadows, and seeps; decomposed granitic beaches. Elevation range 1895-1900m. Flowers May-September.	**Not Present.** Occurs in the vicinity of Lake Tahoe on decomposed granite.
Scutellaria galericulata (marsh skullcap)	-	-	2B.2	Lamiaceae. Perennial rhizomatous herb. Lower montane coniferous forest, meadows and seeps, marshes and swamps. Elevation range 0-2100m. Flowers June-September.	**Low-Medium Potential.** Limited habitat present. Occurs in wet meadow with a longer hydroperiod. No work in wetlands is expected. Not observed during survey.
Sphaeralcea munroana (Munroe's desert mallow)	-	-	2B.2	Malvaceae. Perennial herb. Great Basin scrub. Known in CA only from Squaw Creek in 1922. Elevation range 2000m. Flowers May-June.	**Not Present.** No Great Basin scrub present.

Species	Federal Status*	State Status*	CNPS Status*	Habitat Associations and Taxa Ecology	Potential Occurrence in Study Area

*** Key to status codes:**

FE Federal Endangered
FT Federal Threatened
FC Federal Candidate
FSS US Forest Service Sensitive
CE State Endangered
CT State Threatened
SCE State Candidate Endangered
SSC CDFW Species of Special Concern

California Native Plant Society ("CNPS") List

1B.1 Rare, threatened or endangered in California and elsewhere. Fairly endangered in California.
1B.2 Rare, threatened or endangered in California and elsewhere. Moderately threatened in California.
1B.3 Rare, threatened, or endangered in California and elsewhere. Not very endangered in California.
2.1 Rare, threatened or endangered in California, but more common elsewhere. Fairly endangered in California.
2.2 Rare, threatened or endangered in California, but more common elsewhere. Moderately threatened in California.
2.3 Rare, threatened, or endangered in California, but more common elsewhere. Not very endangered in California.

Table 2. Plant Species Observed on the Fishman Hollow Site During the Fieldwork Various Years

Family	Scientific Name	Common Name
Other		
Pinaceae	*Abies concolor*	white fir
Pinaceae	*Pinus contorta* var. *murrayana*	lodgepole pine
Pinaceae	*Pinus jeffreyi*	Jeffrey pine
Pinaceae	*Pinus ponderosa*	Ponderosa pine
Eudicots		
Apiaceae	*Perideridia* sp.	yampah
Asteraceae	*Achillea millefolium*	yarrow
Asteraceae	*Agoseris grandiflora*	agoseris
Asteraceae	*Artemisia douglasiana*	mugwort
Asteraceae	*Artemisia tridentata* ssp. *vaseyana*	mountain sagebrush
Asteraceae	*Cirsium vulgare*	bull thistle
Asteraceae	*Chrysothamnus viscidiflorus*	yellow rabbitbrush
Asteraceae	*Ericameria nauseosus*	rubber rabbitbrush
Asteraceae	*Eriophyllum lanatum (cf)*	wholly sunflower
Asteraceae	*Gnaphalium palustre*	gnaphalium
Asteraceae	*Lactuca serriola*	prickly lettuce
Asteraceae	*Madia glomerata*	tarweed
Asteraceae	*Senecio aronicoides*	rayless ragwort
Asteraceae	*Symphyotrichum spathulatum* var. *spathulatum*	aster
Asteraceae	*Tragopogon pratense*	salsify
Asteraceae	*Wyethia mollis*	mules ears
Boraginaceae	*Cryptantha (affinis?)*	cryptantha
Boraginaceae	*Horkelia fusca* var. *parviflora*	dusky horkelia
Boraginaceae	*Hydrophyllum capitatum* var. *alpinum*	woolen breeches
Boraginaceae	*Nemophila parviflora*	baby blue-eyes
Boraginaceae	*Phacelia hastata* var. *hastata*	silver-leaf phacelia
Boraginaceae	*Plagiobothrys* sp.	popcorn flower
Brassicaceae	*Boechera retrofracta*	reflexed rock-cress
Brassicaceae	*Descurainia* sp.	tansy mustard
Brassicaceae	*Lepidium campestre*	peppergrass
Brassicaceae	*Rorippa curvisiliqua*	curve pod yellowcress
Caryophyllaceae	*Cerastium fontanum* ssp. *vulgare*	common mouse ear chickweed
Convolvulaceae	*Cuscuta* sp.	dodder
Ericaceae	*Arctostaphylos patula*	manzanita
Ericaceae	*Pyrola picta*	white-veined wintergreen

Family	Scientific Name	Common Name
Fabaceae	*Acmispon americanus* var. *americanus* (was *Lotus purshianus* var. *purshianus)*	Spanish-clover
Fabaceae	*Astragalus purshii*	Pursh's milkvetch
Fabaceae	*Lupinus argenteus* var. *meionanthus*	lupine
Fabaceae	*Trifolium cyathiferum*	bowl clover
Fabaceae	*Trifolium longipes*	long stalked clover
Fabaceae	*Trifolium repens*	white clover
Grossulariaceae	*Ribes cereum* var. *cereum*	wax current
Lamiaceae	*Mentha canadensis*	mint
Lamiaceae	*Monardella odoratissima* ssp. *pallida*	coyote mint
Malvaceae	*Sidalcea oregana spicata*	Oregon checkerbloom
Montiaceae	*Lewisia nevadensis*	Nevada lewisii
Montiaceae	*Calyptridium umbellatum*	pussy paws
Montiaceae	*Claytonia parviflora*	miners lettuce
Montiaceae	*Claytonia parviflora* var. *parviflora*	claytonia
Montiaceae	*Montia chamissoi*	Chamisso's montia
Montiaceae	*Montia fontana*	water chickweed
Onagraceae	*Chamerion angustifolium* ssp. *circumvagum (was Epilobium)*	fireweed
Onagraceae	*Epilobium brachycarpum*	willow-herb
Onagraceae	*Epilobium glaberrimum*	glabrous willow-herb
Onagraceae	*Epilobium torreyi*	willow-herb
Onagraceae	*Gayophytum diffusum* var. *parviflorum*	spreading ground smoke
Orchidaceae	*Corallorhiza maculata*	spotted coral root
Orobanchaceae	*Castilleja tenuis*	slender paintbrush (owl's clover)
Paeoniaceae	*Paeonia brownii*	peony
Phrymaceae	*Erythranthe primuloides*	primrose monkeyflower
Plantaginaceae	*Collinsia parviflora*	blue-eyed Mary
Plantaginaceae	*Penstemon gracilentus*	slender beardtongue
Plantaginaceae	*Penstemon rydbergii* var. *oreocharis*	Rydberg's beardtongue
Plantaginaceae	*Penstemon speciosus*	royal beardtongue
Polemoniaceae	*Collomia grandiflora*	large flowered collomia
Polemoniaceae	*Collomia linearis*	narrow leaf collomia
Polemoniaceae	*Microsteris gracilis*	microsteris
Polemoniaceae	*Navarretia breweri*	Brewer's navarretia
Polemoniaceae	*Navarretia intertexta*	needle navarretia
Polemoniaceae	*Navarretia leptalea a*	gilia

Family	Scientific Name	Common Name
Polygonaceae	*Eriogonum umbellatum* var. *nevadensis*	Nevada sulfur flower
Polygonaceae	*Polygonum aviculare*	common knotweed
Polygonaceae	*Polygonum douglasii*	Douglas' knotweed
Ranunculaceae	*Aconitum columbianum ssp. columbianum*	Columbian monkshood
Ranunculaceae	*Delphinium nuttallianum*	Nuttall's larkspur
Ranunculaceae	*Ranunculus alismifolius*	buttercup
Ranunculaceae	*Ranunculus occidentalis*	western buttercup
Rosaceae	*Potentilla gracilis* var. *fastigiata*	cinquefoil
Roseaceae	*Poteridium annuum*	western burnet
Roseaceae	*Prunus emarginata*	bittercherry
Roseaceae	*Purshia tridentata*	bitterbrush
Rubiaceae	*Kelloggia galioides*	kelloggia
Salicaceae	*Salix exigua*	sandbar willow
Salicaceae	*Salix lasiandra*	Pacific willow
Solanaceae	*Chamaesaracha nana*	Chamaesaracha
Violaceae	*Viola purpurea* ssp. *integrifolia*	mountain violet
Monocots		
Agavaceae	*Camassia quamash*	camas lily
Cyperaceae	*Carex athrostachya*	slender beaked sedge
Cyperaceae	*Carex subfusca*	pale broom sedge
Cyperaceae	*Carex utriculata*	southern beaked sedge
Cyperaceae	*Eleocharis macrostachya*	spikerush
Juncaceae	*Juncus balticus*	Baltic rush
Juncaceae	*Juncus nevadensis*	Sierran rush
Liliaceae	*Fritillaria autropupurea*	fritillaria
Poaceae	*Bromus tectorum*	cheatgrass
Poaceae	*Deschampsia danthonioides*	annual hairgrass
Poaceae	*Elymus elymoides*	squirreltail
Poaceae	*Elymus trachycaulus*	beardless wildrye
Poaceae	*Hordeum brachyantherum*	meadow barley
Poaceae	*Hordeum* sp.	barley
Poaceae	*Poa bulbosa*	bulbous bluegrass
Poaceae	*Poa pratensis*	Kentucky bluegrass
Poaceae	*Poa secunda* var. *secunda*	bluegrass
Poaceae	*Stipa comata* var. *comata*	needlegrass
Themidaceae	*Tritelia hyacinthina*	hyacinth brodiaea

APPENDIX C

PRELIMINARY DRAINAGE REPORT

PRELIMINARY DRAINAGE REPORT

TOWN OF TRUCKEE
FRISHMAN HOLLOW PHASE II

Nevada County, CA

Prepared for the Owner/Developer:

Pacific West Communities, Inc.
Frishman Hollow II
430 E. State St., suite 100
Eagle, ID 83616
T (208) 461-0033

Prepared by:
SCO Planning & Engineering, Inc.
140 Litton Drive, Suite 240
Grass Valley, CA 95945-5079
T (530) 272-5841 / F (530) 272-5880

January 2020

TABLE OF CONTENTS

I. PURPOSE

The purpose of this report is:

- To satisfy the requirements of the Town of Truckee Improvement Standards necessary to support the proposed development.
- Provide the proposed areas of new or replaced impervious areas that Q10 and Q100 peak run-off calculations that will be used to design the storm drain and treatment system.
- To demonstrate that the project will result in no net increase of 10 or 100 year peak runoff to the receiving waterboady.

II. INTRODUCTION

Project Location/Description:

The site is irregular in shape and encompasses approximately 10 acres and is located at the southwest corner of Alder Drive and Highway 89 in Truckee, California. A school is located west of the site with vacant lots surrounding the remaining.

The site currently consists of nine residential dwellings with associated access road, parking areas, walkways and four detention basins. The existing dwellings and parking are located within the looped portion of Rue Ivy.

The proposed improvements include four additional residential dwellings parking and pedestrian path connecting to the existing trail to the north. The proposed improvements will be located on the perimeter of the loop road with approximately 18 parking spots on the interior. No other improvements are proposed within the interior of the loop road.

Project Site Topography/Soils:

The undeveloped portion of the site consists of sparse to moderate weed growth and surface soils having a loose consistency. The areas to the west and north is relatively space of trees, while the south is dense. The site generally slopes to the northwest towards Prosser Creek at 5 to 20% with 5 discharge locations via culverts under the existing trail. The site soil conditions are typical of the geological region and generally consist of 6 to 12 inches of very loose silty sand with some areas containing varying amounts of gravel. The soils are disturbed, have low strength and are highly compressible when saturated and groundwater was not encountered during subsurface investigations. Refer to the Geotechnical Engineering Investigation Proposed Frishman Hollow 2 by Krazan & Associates Inc., December 10, 2018 for additional soils information.

Project Drainage:

The project lies within the Prosser Creek Watershed. The existing drainage consists of overland sheet flow towards the northwest and collected by roadside gutter and routed through the site via a storm drainage system to 3 existing detention ponds north of the site and south of the existing trail. A fourth detention basin is located southeast of the site to attenuate runoff from the portion of Rue Ivy connecting to Donner Pass road that will remain unmodified.

The proposed drainage modifications will leave the existing drainage system largely unaffected due to only approximately 18 parking spots being proposed within the interior of Rue Ivy. Pond A is proposed to be regraded to provide a larger retention volume and peak flow attenuation along with biomedia for water quality treatment. Pond B is proposed to remain unmodified. Pond C is proposed to be modified slightly to accommodate the grading for the proposed water quality treatment preceding the pond. An additional stormwater discharge location is proposed downstream of the existing discharges along Prosser Creek which conveys flows from Pond 1, for a total of 6.

III. METHODOLOGY

Hydrology

Town of Truckee storm drain design criteria will used to calculate the 10-year and 100-year peak runoff utilizing the Rational Method:

Q = CIA, where:

Q = Flow Quantity in Cubic Feet per Second (CFS)
C = Runoff Coefficient Transpiration Losses
I = Intensity in In./Hr., Time of Travel = Time of Concentration (Tc)
for I: Tc = Ti (Travel Time, sheet flow) + Tt (Travel Time, channel flow)
A = Area in Acres

Refer to Appendix B for pre-development hydrology calculations and Appendix C for post-development hydrology calculations.

Peak flows were determined for 10- and 100-year storm events, and detention basins were sized for no net increase in peak flow runoff to comply with Caltrans requirements. Refer to Appendix C for volume retention requirements and calculations, and Appendix E for detention calculations.

The pre-development hydrology map is provided herein as Attachment B.
The post-development hydrology map is provided herein as Attachment C.

Hydraulics

Hydraulic evaluation and hydraulic design will be performed in accordance with the Town of Truckee Standards and storm drain design criteria. A comprehensive hydraulics analysis program, (Autodesk Storm and Sanitary Analysis, v.2020), will be used to size the storm drain system. This program uses Manning's Open Channel Flow and Bernoulli's Energy Equations.

All culverts, storm drain systems, and ditches will be designed to accommodate 10-year and 100-year storm event runoff flows. Drainage Inlet operational capacity allows for 50% blockage. Hydraulic Calculations are provided in Appendix G.

Water Quality Treatment Methods:

Storm drainage from impervious areas (roads, walks, roofs) is collected and routed through water quality treatment facilities for removal of potential pollutants. This consists of one or more of the following Best Management Practices (BMP's) in series prior to discharge of flow to existing drainage facilities.

Vegetated swales and rock-lined swales will provide pre-treatment by collecting and slowly conveying runoff to downstream treatment facilities. They are designed to treat runoff through filtering and trapping sediment and other pollutants with angular rock lining or vegetation in the channel, filtering through a subsoil matrix.

Subsurface infiltration facilities provide treatment by filtering pollutants though underlying soils from retained runoff. Excess runoff once the infiltration volume is saturated has reduced particulates.

Detention basins provide the final stage of water quality measure by allowing settling of suspended solids and additional filtration through vegetation. These facilities detain runoff allowing infiltration and detaining runoff to reduce peak flows.

During construction, additional BMP's including temporary erosion control facilities shall be implemented to control any pollutants that could potentially affect the quality of storm water discharges from the site. A Water Quality Control Plan has been prepared for this site.

IV. RESULTS AND CONCLUSIONS

Treatment facilities have been sited to meet water quality requirements and the final drainage report will provide sufficient volume to have post development discharge to Prosser Creek match pre-development. It is anticipated the proposed Pond 1 and the expansion of Pond C, if necessary, will provide attenuation for the site drainage.

V. REFERENCES

- *Autodesk AutoCAD Storm and Sanitary Analysis*
- *Hydraflow Express Extension by AutoCAD Civil 3D,* 2013
- *Town of Truckee improvement standards.*
- *California Stormwater BMP Handbook; New Development and Redevelopment,* dated January 2003
- *Frishman Hollow Phase II Improvement Plans,* prepared by SCO Planning and Engineering, Inc., December 2019

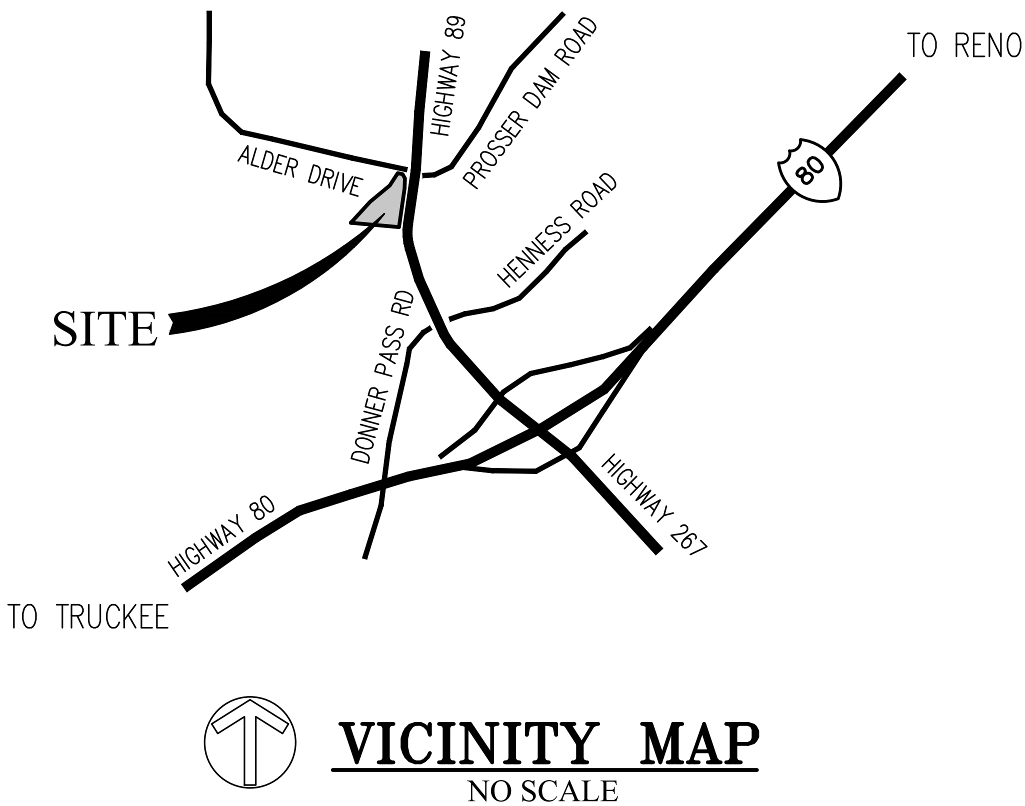
Please feel free to contact our office at (530) 272-5841 with any questions.

SCO PLANNING & ENGINEERING, INC.

Steven L Kline, P.E.
Senior Engineer

ATTACHMENT A

VICINITY MAP

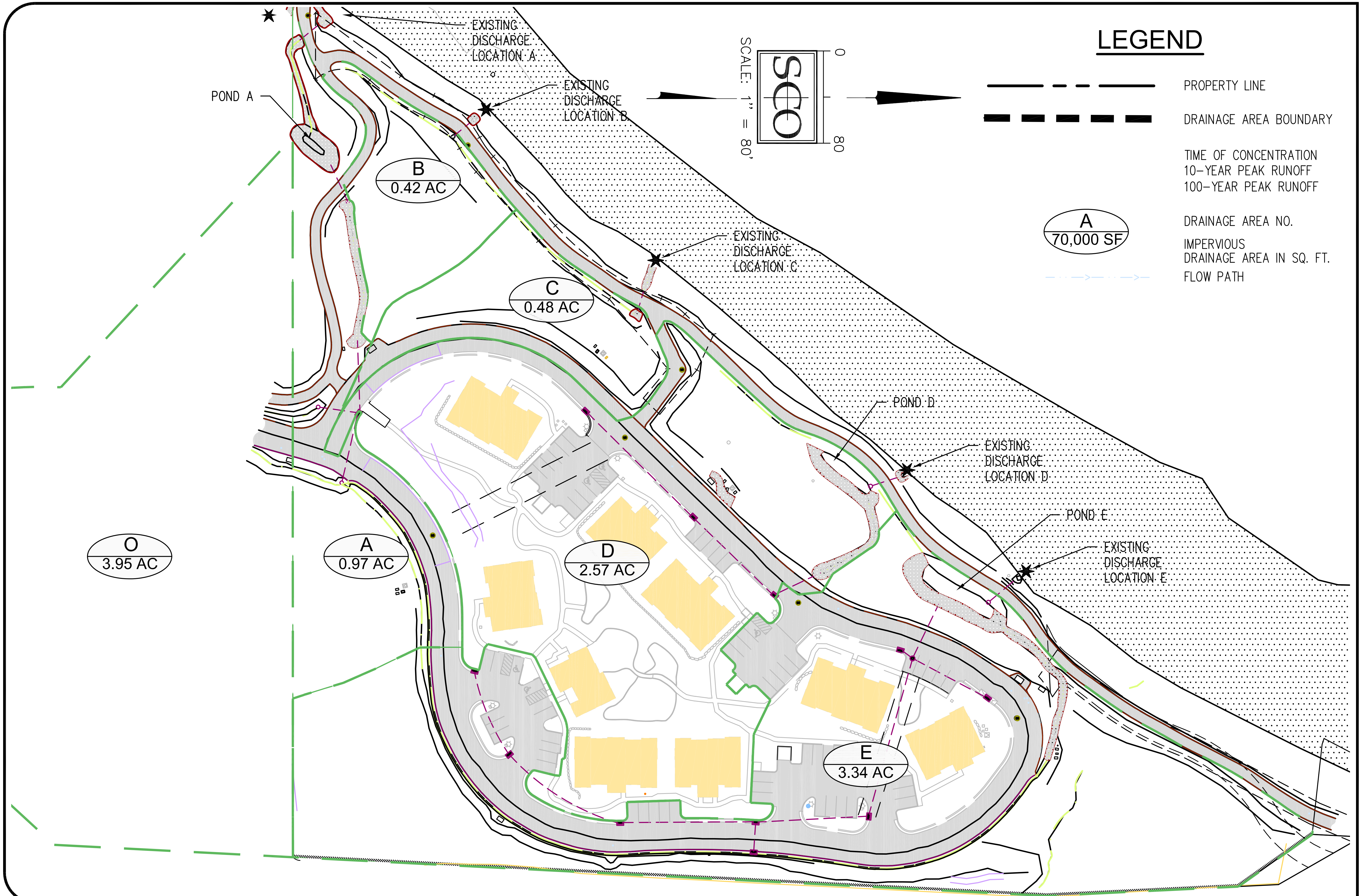


VICINITY MAP

NO SCALE

ATTACHMENT B

PRE-DEVELOPMENT HYDROLOGY MAP



DESIGNED: SLK
DRAWN: SLK
PROJ NO: 201811
DWG: SEE PLOT STAMP
DATE: JANUARY, 2020

NO. | REVISIONS | DATE

FRISHMAN HALLOW
DRAINAGE STUDY
PRE-DEVELOPMENT

TOWN OF TRUCKEE CALIFORNIA

SCO
PLANNING ENGINEERING & SURVEYING

GRASS VALLEY 530 272-5841
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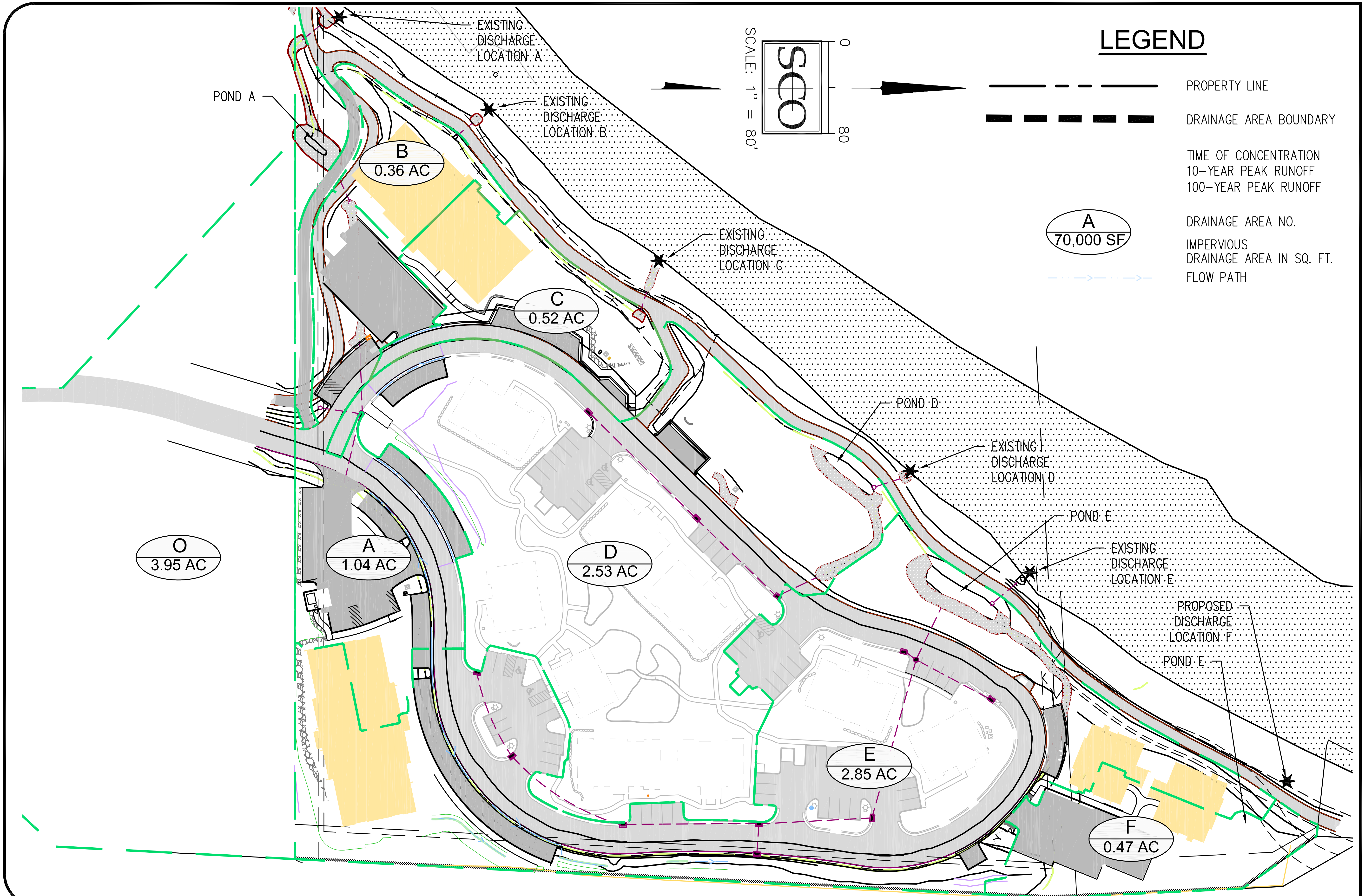
TRUCKEE 530 582-4043

ATTACHMENT C

POST-DEVELOPMENT HYDROLOGY MAP



FRISHMAN HALLOW
DRAINAGE STUDY
POST-DEVELOPMENT

TOWN OF TRUCKEE
CALIFORNIA

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NO.	REVISIONS	DATE

DESIGNED: SLK
DRAWN: SLK
PROJ NO: 201611
DWG: SEE PLOT STAMP
DATE: JANUARY, 2020

1 OF 1

ATTACHMENT D

PROPOSED STORMWATER ROUTING AND TREATMENT SUMMARY

PROPOSED STORMWATER ROUTING AND TREATMENT SUMMARY

Drainage Region	Total Area (s.f.)	Roof Area (s.f.)	Pavement/ concrete (s.f.)	Total impv. (s.f.)	Landscaping (s.f.)	Treatment	Swale/trench length (ft)	Swale/trench Width (ft)	Swale/trench/pond Depth (ft)	Pond Bottom area (s.f.)	Comments
DMA 1	10255	5285	211	5496	4759	Bio swale 1	90	3	1 (including freeboard)		
DMA 2	16593	5422	3327	8749	7844	Bio swale 2	100	1.5	1 (including freeboard)		
DMA 3	1440		803	803	637	Trench 1	20	4	2.5		
DMA 4	2040		884	884	1156	Trench 2	20	4	2.5		
DMA 5	33328	2631	24740	27371	5957	Pond A			2	713	Pond to be regraded bio media to be added
DMA 6	1128		1128	1128	0	Pond D					existing pond to remain
DMA 7	27941	7991	5584.00	13575	14366	Bio swale 3	181	1	1 (including freeboard)		
DMA 8	4277		2192	2192	2085	Trench 3	25.3	4.5	4		
DMA 9	16122	1777	7404	9181	6941	Pond 1			1 (water depth)	389	
DMA 10	8233	2346	648	2994	5239	Bio swale 4	113	1	1 (including freeboard)		
DMA 11	4309		3160	3160	1149	infiltration shoulder	316	2	1.25		
Total Impervious	125666	25452	50081	75533	50133						

ATTACHMENT E

PRE-DEVELOPMENT HYDROLOGY
CALCULATIONS

SCO PLANNING AND ENGINEERING, INC.
140 Litton Dr. Suite 240, Grass Valley, CA 95945

Janurary, 2020

FRISHMAN HOLLOW
PRE-DEVELOPMENT
HYDROLOGY INFORMATION

NATURAL GROUND C VALUE

	C VALUE USED			
	EXTREME	HIGH	MODERATE	LOW
SLOPE			0.22	
SURFACE PERMEABILITY			0.05	
VEGETATION		0.07		
SURFACE			0.1	
NATURAL C VALUE	0.44			

SNOW COVERED AREAS		
Elevation	Percent Covered	Percent Uncovered
4000-5000	30.00%	70.00%
5001-6000	60.00%	40.00%
6001-7000	85.00%	15.00%
7001 and above	100.00%	0.00%
	VALUES USED	
	60.00%	**40.00%**

SNOW COVERED AREAS ARE CONSIDERED TO BE FROZEN AND IMPERVIOUS AND ARE ASSIGNED AN INFILTRATION RATE OF ZERO
AND ROUGHNESS COEFFICIENT = 0.90.

PRE-DEVELOPMENT BASINS

	C Values		0.9		0.95		0.25		0.3		0.44			Snow Cover
BASIN	Total Areas		Asphalt/Concrete		Roof		Landscape		Gravel Area		Natural		Composite C	Adjusted C
	Sq. Ft.	Ac.	Sq. Ft.	Ac.	Sq. Ft.	Ac.	Sq. Ft.	Ac.	Sq. Ft.	Ac.	Sq. Ft.	Ac.		
A	42,387	0.97	6,593	0.15	0	0.00	0	0.00	0	0.00	35,794	0.82	0.51	0.74
O	172,120	3.95	8,920	0.20	0	0.00	0	0.00		0.00	163,200	3.75	0.46	0.73
A+O	214,507	4.92	15,513	0.36	0	0.00	0	0.00	0	0.00	198,994	4.57	0.47	0.73
B	18,309	0.42	0	0.00	0	0.00	0	0.00	0	0.00	18,309	0.42	0.44	0.72
C	20,892	0.48	3,314	0.08	0	0.00	0	0.00	0	0.00	17,578	0.40	0.51	0.75
D	112,050	2.57	20,926	0.48	18,637	0.43	50,215	1.15	0	0.00	22,272	0.51	0.53	0.75
E	145,292	3.34	45,127	1.04	5,546	0.13	14,569	0.33		0.00	80,050	1.84	0.58	0.77
Total	511,050													

SCO PLANNING AND ENGINEERING, INC.
140 Litton Dr. Suite 240, Grass Valley, CA 95945

Janurary, 2020

FRISHMAN HOLLOW
PRE-DEVELOPMENT
HYDROLOGY INFORMATION

PRE-DEVELOPMENT CALCULATIONS

A+O		Basin Area	Elevation	Return Period		Mean Precipitation				
		4.92	6160	10		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	1.44	0.73	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		5.17
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		5.53

10 Year

Time 1	Tc	Time 2
10.00	15.00	15.00

Intensity 1	Intensity	Intensity 2
1.73	1.44	1.44

A+O		Basin Area	Elevation	Return Period		Mean Precipitation				
		4.92	6160	100		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	2.05	0.73	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		7.36
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		7.72

100 Year

Time 1	Tc	Time 2
10.00	15.00	15.00

Intensity 1	Intensity	Intensity 2
2.46	2.05	2.05

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B		Basin Area	Elevation	Return Period		Mean Precipitation				
		0.42	**6160**	**10**		**34 in/yr**				
		Length (ft)	**Slope (ft/ft)**	**Manning's n**	**Contributing Area (Ac)**	**Side Slope Z**	**Response Time**	**Intensity In/hr**	**C**	
Sheet Flow			0.220	0.400			0.00	1.44	0.72	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		0.43
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		**0.46**

10 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**
Intensity 1	**Intensity**	Intensity 2
1.73	**1.44**	**1.44**

B		Basin Area	Elevation	Return Period		Mean Precipitation				
		0.42	**6160**	**100**		**34 in/yr**				
		Length (ft)	**Slope (ft/ft)**	**Manning's n**	**Contributing Area (Ac)**	**Side Slope Z**	**Response Time**	**Intensity In/hr**	**C**	
Sheet Flow			0.220	0.400			0.00	2.05	0.72	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		0.62
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		**0.65**

100 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**
Intensity 1	**Intensity**	Intensity 2
2.46	**2.05**	**2.05**

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C		Basin Area	Elevation	Return Period		Mean Precipitation				
		0.48	6160	10		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	1.44	0.75	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		0.51
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		**0.55**

10 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**

Intensity 1	**Intensity**	Intensity 2
1.73	**1.44**	**1.44**

C		Basin Area	Elevation	Return Period		Mean Precipitation				
		0.48	6160	100		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	2.05	0.75	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		0.73
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		**0.77**

100 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**

Intensity 1	**Intensity**	Intensity 2
2.46	**2.05**	**2.05**

FRISHMAN HOLLOW
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D		Basin Area	Elevation	Return Period		Mean Precipitation				
		2.57	6160	10		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	1.44	0.75	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		2.78
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		**2.97**

10 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**

Intensity 1	**Intensity**	Intensity 2
1.73	**1.44**	**1.44**

D		Basin Area	Elevation	Return Period		Mean Precipitation				
		2.57	6160	100		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	2.05	0.75	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		3.96
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		**4.15**

100 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**

Intensity 1	**Intensity**	Intensity 2
2.46	**2.05**	**2.05**

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E		Basin Area	Elevation	Return Period		Mean Precipitation				
		3.34	6160	10		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	1.44	0.77	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		3.71
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		3.97

10 Year

Time 1	Tc	Time 2
10.00	15.00	15.00
Intensity 1	**Intensity**	Intensity 2
1.73	1.44	1.44

E		Basin Area	Elevation	Return Period		Mean Precipitation				
		3.34	6160	100		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	2.05	0.77	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		5.29
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		5.55

100 Year

Time 1	Tc	Time 2
10.00	15.00	15.00
Intensity 1	**Intensity**	Intensity 2
2.46	2.05	2.05

ATTACHMENT F

POST-DEVELOPMENT HYDROLOGY
CALCULATIONS

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NATURAL GROUND C VALUE

	C VALUE USED			
	EXTREME	HIGH	MODERATE	LOW
SLOPE			0.22	
SURFACE PERMEABILITY			0.05	
VEGETATION		0.07		
SURFACE			0.1	
NATURAL C VALUE	0.44			

SNOW COVERED AREAS		
Elevation	Percent Covered	Percent Uncovered
4000-5000	30.00%	70.00%
5001-6000	60.00%	40.00%
6001-7000	85.00%	15.00%
7001 and above	100.00%	0.00%
	VALUES USED	
	60.00%	**40.00%**

SNOW COVERED AREAS ARE CONSIDERED TO BE FROZEN AND IMPERVIOUS AND ARE ASSIGNED AN INFILTRATION RATE OF ZERO AND ROUGHNESS COEFFICIENT = 0.90.

POST-DEVELOPMENT BASINS

	C Values		0.9		0.95		0.25		0.3		0.44		Composite	Snow Cover Adjusted
BASIN	Total Areas		Asphalt/Concrete		Roof		Landscape		Gravel Area		Natural		C	C
	Sq. Ft.	Ac.	Sq. Ft.	Ac.	Sq. Ft.	Ac.	Sq. Ft.	Ac.	Sq. Ft.	Ac.	Sq. Ft.	Ac.		
A	45,266	1.04	31,333	0.72	2,631	0.06	0	0.00	0	0.00	11,302	0.26	0.79	0.86
O	172,120	3.95	8,920	0.20	0	0.00	0	0.00	0	0.00	163,200	3.75	0.46	0.73
A+O	217,386	4.99	40,253	0.92	2,631	0.06	0	0.00	0	0.00	174,502	4.01	0.53	0.75
B	15,806	0.36	3,371	0.08	5,285	0.12	0	0.00	0	0.00	7,150	0.16	0.71	0.82
C	22,722	0.52	7,444	0.17	5,422	0.12	0	0.00	0	0.00	9,856	0.23	0.71	0.82
D	110,228	2.53	28,522	0.65	26,628	0.61	50,215	1.15	0	0.00	4,863	0.11	0.60	0.78
E	124,276	2.85	47,967	1.10	7,892	0.18	14,569	0.33		0.00	53,848	1.24	0.63	0.79
F	20,445	0.47	7,404	0.17	1,777	0.04		0.00		0.00	11,264	0.26	0.65	0.80
Total	510,863													

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A+O		Basin Area	Elevation	Return Period		Mean Precipitation				
		4.99	6160	10		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	1.44	0.75	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		5.41
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		5.78

10 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**
Intensity 1	**Intensity**	Intensity 2
1.73	**1.44**	**1.44**

A+O		Basin Area	Elevation	Return Period		Mean Precipitation				
		4.99	6160	100		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	2.05	0.75	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		7.70
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		8.07

100 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**
Intensity 1	**Intensity**	Intensity 2
2.46	**2.05**	**2.05**

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B		Basin Area	Elevation	Return Period		Mean Precipitation				
		0.36	6160	10		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	1.44	0.82	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		0.43
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		**0.46**

10 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**
Intensity 1	**Intensity**	Intensity 2
1.73	**1.44**	**1.44**

B		Basin Area	Elevation	Return Period		Mean Precipitation				
		0.36	6160	100		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	2.05	0.82	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		0.61
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		**0.64**

100 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**
Intensity 1	**Intensity**	Intensity 2
2.46	**2.05**	**2.05**

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C		Basin Area	Elevation	Return Period		Mean Precipitation				
		0.52	6160	10		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	1.44	0.82	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		0.62
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		**0.66**

10 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**
Intensity 1	**Intensity**	Intensity 2
1.73	**1.44**	**1.44**

C		Basin Area	Elevation	Return Period		Mean Precipitation				
		0.52	6160	100		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	2.05	0.82	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		0.88
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		**0.93**

100 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**
Intensity 1	**Intensity**	Intensity 2
2.46	**2.05**	**2.05**

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D		Basin Area	Elevation	Return Period		Mean Precipitation				
		2.53	6160	10		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	1.44	0.78	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		2.84
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		3.03

10 Year

Time 1	Tc	Time 2
10.00	15.00	15.00
Intensity 1	**Intensity**	Intensity 2
1.73	1.44	1.44

D		Basin Area	Elevation	Return Period		Mean Precipitation				
		2.53	6160	100		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	2.05	0.78	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		4.04
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		4.23

100 Year

Time 1	Tc	Time 2
10.00	15.00	15.00
Intensity 1	**Intensity**	Intensity 2
2.46	2.05	2.05

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E		Basin Area	Elevation	Return Period		Mean Precipitation				
		2.85	6160	10		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	1.44	0.79	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		3.25
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		3.48

10 Year

Time 1	Tc	Time 2
10.00	15.00	15.00
Intensity 1	**Intensity**	Intensity 2
1.73	1.44	1.44

E		Basin Area	Elevation	Return Period		Mean Precipitation				
		2.85	6160	100		34 in/yr				
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr	C	
Sheet Flow			0.220	0.400			0.00	2.05	0.79	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00			
Channel Flow 2										
Channel Flow 3										
Channel Flow 4										
Channel Flow 5										
	Total Response Time						0.00			
								Q=CIA		4.63
	Snowmelt Rate (in/hr)					0.10				
								Qadj=Q+Qsnowmelt		4.85

100 Year

Time 1	Tc	Time 2
10.00	15.00	15.00
Intensity 1	**Intensity**	Intensity 2
2.46	2.05	2.05

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F		Basin Area	Elevation	Return Period		Mean Precipitation					
		0.47	6160	10		34 in/yr					
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr		C	
Sheet Flow			0.220	0.400			0.00	1.44		0.80	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00				
Channel Flow 2											
Channel Flow 3											
Channel Flow 4											
Channel Flow 5											
	Total Response Time						0.00				
								Q=CIA			0.54
	Snowmelt Rate (in/hr)					0.10					
								Qadj=Q+Qsnowmelt			**0.58**

10 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**
Intensity 1	**Intensity**	Intensity 2
1.73	**1.44**	**1.44**

F		Basin Area	Elevation	Return Period		Mean Precipitation					
		0.47	6160	100		34 in/yr					
		Length (ft)	Slope (ft/ft)	Manning's n	Contributing Area (Ac)	Side Slope Z	Response Time	Intensity In/hr		C	
Sheet Flow			0.220	0.400			0.00	2.05		0.80	
Channel Flow 1			0.240	0.070	42.3	4.0	0.00				
Channel Flow 2											
Channel Flow 3											
Channel Flow 4											
Channel Flow 5											
	Total Response Time						0.00				
								Q=CIA			0.77
	Snowmelt Rate (in/hr)					0.10					
								Qadj=Q+Qsnowmelt			**0.81**

100 Year

Time 1	Tc	Time 2
10.00	**15.00**	**15.00**
Intensity 1	**Intensity**	Intensity 2
2.46	**2.05**	**2.05**

ATTACHMENT G

HYDRAULIC CALCULATIONS

(TO BE INCLUDED IN FINAL REPORT)

ATTACHMENT H

DETENTION CALCULATIONS

	Pre development Detention Discharge Flow Reduction					
	10 YR			100 YR		
	in	out	diff	in	out	diff
A+O	5.17	4.95	-0.22	7.36	7.13	-0.23
D	2.78	1.03	-1.75	3.95	2.43	-1.52
E	3.7	0	-3.7	5.27	1.75	-3.52

	PRE DEVELOPMENT			
	without detention		with detention	
	10 YR	100 YR	10 YR	100 YR
A+O	5.53	7.72	5.31	7.49
B	0.46	0.65	0.46	0.65
C	0.55	0.77	0.55	0.77
D	2.97	4.15	1.22	2.63
E	3.97	5.55	0.27	2.03
TOTAL			7.82	13.56

	Post Development Detention Discharge Flow Reduction					
	10 YR			100 YR		
	in	out	diff	in	out	diff
A+O	5.39	2.39	-3	7.67	5.38	-2.29
D	2.84	1.11	-1.73	4.05	2.54	-1.51
E	3.24	0	-3.24	4.62	0.97	-3.65
F	0.54	0	-0.54	0.77	0.33	-0.44

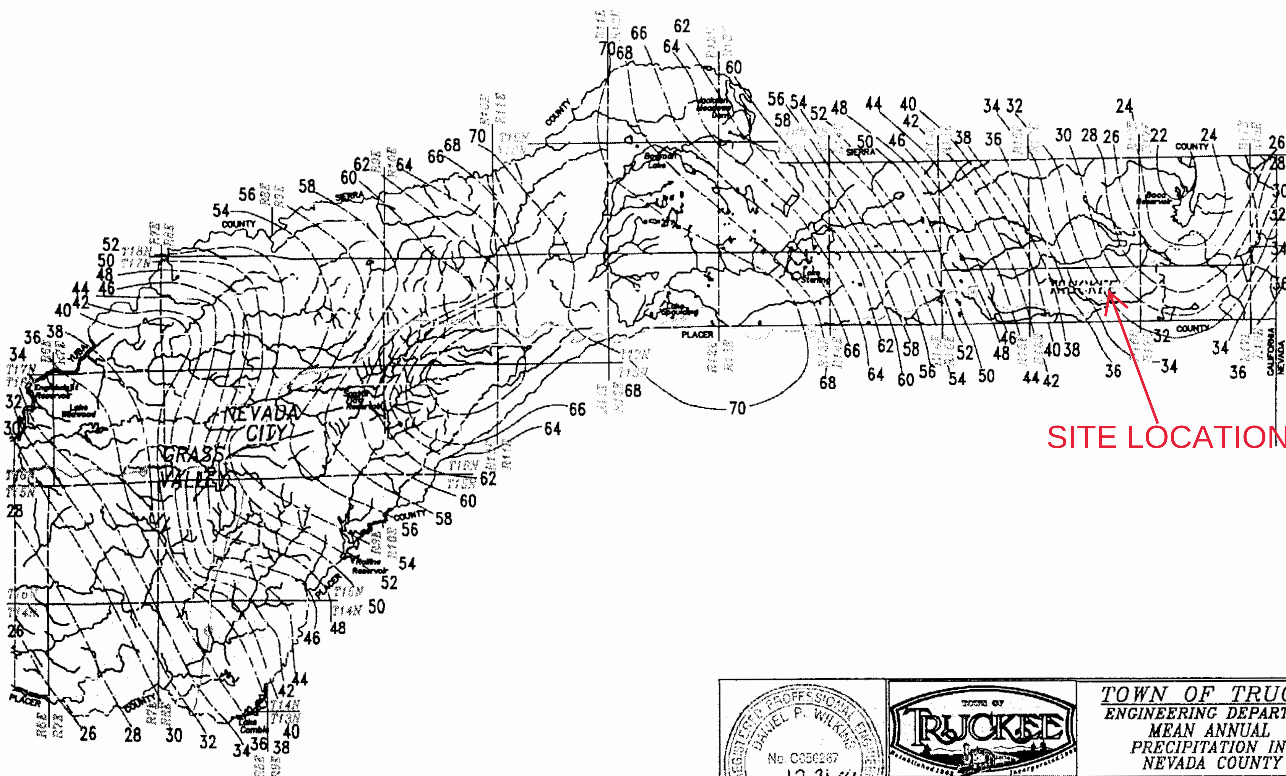
	POST DEVELOPMENT			
	without detention		with detention	
	10 YR	100 YR	10 YR	100 YR
A+O	5.78	8.07	2.78	5.78
B	0.46	0.64	0.46	0.64
C	0.66	0.93	0.66	0.93
D	3.03	4.23	1.30	2.72
E	3.48	4.85	0.24	1.20
F	0.58	0.81	0.04	0.37
Total			5.48	11.65
PRE DIF			-2.34	-1.92

	10 YR CFS FLOW			100 YR CFS FLOW		
	PRE	POST	DIFF	PRE	POST	DIFF
A+O	5.31	2.78	-2.53	7.49	5.78	-1.71
B	0.46	0.46	0.00	0.65	0.64	0.00
C	0.55	0.66	0.11	0.77	0.93	0.16
D	1.22	1.30	0.08	2.63	2.72	0.10
E	0.27	0.24	-0.04	2.03	1.20	-0.82
F		0.04	0.04		0.37	0.37
			-2.34			-1.92

ATTACHMENT F

TOWN OF TRUCKEE STANDARD DETAILS

NEVADA COUNTY



REGISTERED PROFESSIONAL ENGINEER
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CIVIL
STATE OF CALIFORNIA

TOWN OF TRUCKEE

TOWN OF TRUCKEE
ENGINEERING DEPARTMENT
MEAN ANNUAL PRECIPITATION IN NEVADA COUNTY

LOCAL ROAD SYSTEM STANDARDS

NOT TO SCALE	APPROVED BY:	STANDARD DRAWING
MAY, 2003	TOWN ENGINEER	SD#63

TABLE FOR ESTIMATING "C" IN RATIONAL FORMULA

UNIMPROVED AREAS

CONDITION	EXTREME	HIGH	MODERATE	LOW
Slope	.36 – .28 Above 30%	.28 – .15 30% – 10%	.15 – .10 10% – 5%	.10 – .05 5% – 0
Surface permeability	.20 – .15 Bare rock or very thin soil	.15 – .07 Impervious clays shallow soils	.07 – .04 Deep pervious loam, sandy loam	.03 Deep sand, volcanic ash
Vegetation	.20 – .15 None or very sparse	.15 – .07 Less than 20% covered with substantial growth	.07 – .04 About 50% covered with heavy growth	.03 90% covered with heavy growth, deep hummus layer
Surface	.20 – .15 Smooth soil, slick rock drainage flow continuos	.15 – .07 Roughened soil or rocks	.07 – .04 Drainage flow interrupted many ponds, lakes & marshes	.03 Drainage flow arrested many ponds, lakes & marshes

IMPROVED AREAS

Surface	C
Roof surfaces	.95
A.C. or P.C.C. pavement, patios, driveways, streets, sidewalks	.90
Landscaped areas	.25
Gravel walks, roadways	.30

EXAMPLE: Unimproved

20% slope	.22
Well drained soil	.05
Fair cover	.07
No ponds	.08
	C= .42

EXAMPLE: Improved

100 acre tract

15 ac.	@.95
50 ac. A.C.pave	@.90
35 ac. landscaped	@.25

$$C=\frac{(15 \times .95)+(50 \times .90)+(35 \times .25)}{100 \text{ acres}}= 0.68 \quad C= 0.68$$

REGISTERED PROFESSIONAL ENGINEER DANIEL P. WILKINS No. C050267 Exp. 12-31-04 CIVIL STATE OF CALIFORNIA

TOWN OF TRUCKEE

TOWN OF TRUCKEE
ENGINEERING DEPARTMENT
VALUES FOR ESTIMATING COEFFICIENT OF RUNOFF "C"

LOCAL ROAD SYSTEM STANDARDS

NOT TO SCALE	APPROVED BY:	STANDARD DRAWING
MAY, 2003	TOWN ENGINEER	SD#58

NEVADA COUNTY DESIGN STORM (INTENSITY)

100 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY

Mean Annual Precipitation Inches	5	10	15	30	60 1hr	120 2hr	180 3hr	360 6hr	720 12hr	1440 24hr
	Intensity in inches per hour									
20	2.22	1.63	1.36	.99	.73	.53	.44	.32	.24	.17
22	2.39	1.75	1.46	1.07	.78	.57	.48	.35	.25	.19
24	2.55	1.86	1.55	1.14	.83	.61	.51	.37	.27	.20
26	2.71	1.98	1.65	1.21	.89	.65	.54	.40	.29	.21
28	2.87	2.10	1.75	1.28	.94	.69	.57	.42	.31	.22
30	3.03	2.22	1.85	1.35	.99	.73	.60	.44	.32	.24
32	3.19	2.34	1.95	1.43	1.04	.76	.64	.47	.34	.25
34	3.36	2.46	2.05	1.50	1.10	.80	.67	.49	.36	.26
36	3.52	2.58	2.15	1.57	1.15	.84	.70	.51	.38	.28
38	3.68	2.69	2.24	1.64	1.20	.88	.73	.54	.39	.29
40	3.84	2.81	2.34	1.72	1.26	.92	.77	.56	.41	.30
42	4.00	2.93	2.44	1.79	1.31	.96	.80	.58	.43	.31
44	4.17	3.05	2.54	1.86	1.36	1.00	.83	.61	.45	.33
46	4.33	3.17	2.64	1.93	1.41	1.04	.86	.63	.46	.34
48	4.49	3.29	2.74	2.00	1.47	1.07	.89	.66	.48	.35
50	4.65	3.40	2.84	2.08	1.52	1.11	.93	.68	.50	.36
52	4.81	3.52	2.94	2.15	1.57	1.15	.96	.70	.51	.38
54	4.97	3.64	3.03	2.22	1.63	1.19	.99	.73	.53	.39
56	5.14	3.76	3.13	2.29	1.68	1.23	1.02	.75	.55	.40
58	5.30	3.88	3.23	2.37	1.73	1.27	1.06	.77	.57	.41
60	5.46	4.00	3.33	2.44	1.78	1.31	1.09	.80	.58	.43
62	5.62	4.12	3.43	2.51	1.84	1.35	1.12	.82	.60	.44
64	5.78	4.23	3.53	2.58	1.89	1.38	1.15	.84	.62	.45
66	5.94	4.35	3.63	2.65	1.94	1.42	1.19	.87	.64	.46
68	6.11	4.47	3.72	2.73	2.00	1.46	1.22	.89	.65	.48
70	6.27	4.59	3.82	2.80	2.05	1.50	1.25	.91	.67	.49
72	6.43	4.71	3.92	2.87	2.10	1.54	1.28	.94	.69	.50
74	6.59	4.83	4.02	2.94	2.15	1.58	1.31	.96	.70	.52
76	6.75	4.94	4.12	3.02	2.21	1.62	1.35	.99	.72	.53
78	6.92	5.06	4.22	3.09	2.26	1.65	1.38	1.01	.74	.54
80	7.08	5.18	4.32	3.16	2.31	1.69	1.41	1.03	.76	.55

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TOWN OF TRUCKEE

TOWN OF TRUCKEE
ENGINEERING DEPARTMENT
100 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY

LOCAL ROAD SYSTEM STANDARDS

NOT TO SCALE

MAY, 2003

APPROVED BY: Daniel P. Wilkins
TOWN ENGINEER

STANDARD DRAWING
SD#59

NEVADA COUNTY DESIGN STORM (INTENSITY)

10 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY

Mean Annual Precipitation Inches	5	10	15	30	60 1hr	120 2Hr	180 3Hr	360 6Hr	720 12Hr	1440 24Hr
	Intensity in inches per hour									
20	1.57	1.15	.96	.70	.51	.38	.31	.23	.17	.12
22	1.68	1.23	1.03	.75	.55	.40	.34	.25	.18	.13
24	1.80	1.31	1.10	.80	.59	.43	.36	.26	.19	.14
26	1.91	1.40	1.17	.85	.62	.46	.38	.28	.20	.15
28	2.02	1.48	1.23	.90	.66	.48	.40	.30	.22	.16
30	2.14	1.57	1.30	.95	.70	.51	.43	.31	.23	.17
32	2.25	1.65	1.37	1.01	.74	.54	.45	.33	.24	.18
34	2.37	1.73	1.44	1.06	.77	.57	.47	.35	.25	.19
36	2.48	1.82	1.51	1.11	.81	.59	.49	.36	.27	.19
38	2.59	1.90	1.58	1.16	.85	.62	.52	.38	.28	.20
40	2.71	1.98	1.65	1.21	.89	.65	.54	.40	.29	.21
42	2.82	2.07	1.72	1.26	.92	.68	.56	.41	.30	.22
44	2.94	2.15	1.79	1.31	.96	.70	.59	.43	.31	.23
46	3.05	2.23	1.86	1.36	1.00	.73	.61	.45	.33	.24
48	3.17	2.32	1.93	1.41	1.03	.76	.63	.46	.34	.25
50	3.28	2.40	2.00	1.46	1.07	.78	.65	.48	.35	.26
52	3.39	2.48	2.07	1.52	1.11	.81	.68	.50	.36	.27
54	3.51	2.57	2.14	1.57	1.15	.84	.70	.51	.37	.27
56	3.62	2.65	2.21	1.62	1.18	.87	.72	.53	.39	.28
58	3.74	2.73	2.28	1.67	1.22	.89	.74	.55	.40	.29
60	3.85	2.82	2.35	1.72	1.26	.92	.77	.56	.41	.30
62	3.96	2.90	2.42	1.77	1.30	.95	.79	.58	.42	.31
64	4.08	2.98	2.49	1.82	1.33	.98	.81	.60	.44	.32
66	4.19	3.07	2.56	1.87	1.37	1.00	.84	.61	.45	.33
68	4.31	3.15	2.63	1.92	1.41	1.03	.86	.63	.46	.34
70	4.42	3.24	2.70	1.97	1.44	1.06	.88	.65	.47	.35
72	4.53	3.32	2.77	2.02	1.48	1.08	.90	.66	.48	.35
74	4.65	3.40	2.84	2.08	1.52	1.11	.93	.68	.50	.36
76	4.76	3.49	2.90	2.13	1.56	1.14	.95	.70	.51	.37
78	4.88	3.57	2.97	2.18	1.59	1.17	.97	.71	.52	.38
80	4.99	3.65	3.04	2.23	1.63	1.19	.99	.73	.53	.39

TOWN OF TRUCKEE
ENGINEERING DEPARTMENT
10 YEAR STORM DURATION
IN MINUTES FOR NEVADA COUNTY

LOCAL ROAD SYSTEM STANDARDS

NOT TO SCALE
MAY, 2003

APPROVED BY:
TOWN ENGINEER

STANDARD DRAWING
SD#60

NEVADA COUNTY DESIGN STORM (DEPTH)

100 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY

Mean Annual Precipitation Inches	5	10	15	30	60 1hr	120 2hr	180 3hr	360 6hr	720 12hr	1440 24hr
	Design Storm depth in inches									
20	.19	.27	.34	.50	.73	1.06	1.33	1.95	2.85	4.17
22	.20	.29	.36	.53	.78	1.14	1.43	2.09	3.06	4.48
24	.21	.31	.39	.57	.83	1.22	1.52	2.23	3.27	4.78
26	.23	.33	.41	.60	.89	1.30	1.62	2.37	3.47	5.09
28	.24	.35	.44	.64	.94	1.37	1.72	2.51	3.68	5.39
30	.25	.37	.46	.68	.99	1.45	1.81	2.66	3.89	5.69
32	.27	.39	.49	.71	1.04	1.53	1.91	2.80	4.10	6.00
34	.28	.41	.51	.75	1.10	1.61	2.01	2.94	4.30	6.30
36	.29	.43	.54	.79	1.15	1.68	2.10	3.08	4.51	6.60
38	.31	.45	.56	.82	1.20	1.76	2.20	3.22	4.72	6.91
40	.32	.47	.59	.86	1.26	1.84	2.30	3.36	4.93	7.21
42	.33	.49	.61	.89	1.31	1.92	2.39	3.51	5.13	7.51
44	.35	.51	.64	.93	1.36	1.99	2.49	3.65	5.34	7.82
46	.36	.53	.66	.97	1.41	2.07	2.59	3.79	5.55	8.12
48	.37	.55	.68	1.00	1.47	2.15	2.68	3.93	5.76	8.43
50	.39	.57	.71	1.04	1.52	2.23	2.78	4.07	5.96	8.73
52	.40	.59	.73	1.07	1.57	2.30	2.88	4.21	6.17	9.03
54	.41	.61	.76	1.11	1.63	2.38	2.98	4.36	6.38	9.34
56	.43	.63	.78	1.15	1.68	2.46	3.07	4.50	6.58	9.64
58	.44	.65	.81	1.18	1.73	2.54	3.17	4.64	6.79	9.94
60	.45	.67	.83	1.22	1.78	2.61	3.27	4.78	7.00	10.25
62	.47	.69	.86	1.25	1.84	2.69	3.36	4.92	7.21	10.55
64	.48	.71	.88	1.29	1.89	2.77	3.46	5.06	7.41	10.86
66	.50	.73	.91	1.33	1.94	2.84	3.56	5.21	7.62	11.16
68	.51	.75	.93	1.36	2.00	2.92	3.65	5.35	7.83	11.46
70	.52	.76	.96	1.40	2.05	3.00	3.75	5.49	8.04	11.77
72	.54	.78	.98	1.44	2.10	3.08	3.85	5.63	8.24	12.07
74	.55	.80	1.01	1.47	2.15	3.15	3.94	5.77	8.45	12.37
76	.56	.82	1.03	1.51	2.21	3.23	4.04	5.91	8.66	12.68
78	.58	.84	1.05	1.54	2.26	3.31	4.14	6.06	8.87	12.98
80	.59	.86	1.08	1.58	2.31	3.39	4.23	6.20	9.07	13.28

REGISTERED PROFESSIONAL ENGINEER
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TOWN OF TRUCKEE
ENGINEERING DEPARTMENT
100 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY

LOCAL ROAD SYSTEM STANDARDS

NOT TO SCALE	APPROVED BY: Daniel P. Wilkins	STANDARD DRAWING
MAY, 2003	TOWN ENGINEER	SD#61

NEVADA COUNTY DESIGN STORM (DEPTH)

10 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY

Mean Annual Precipitation Inches	5	10	15	30	60 1hr	120 2Hr	180 3Hr	360 6Hr	720 12Hr	1440 24Hr
	Design Storm Depth in inches									
20	.13	.19	.24	.35	.51	.75	.94	1.37	2.01	2.94
22	.14	.21	.26	.38	.55	.81	1.01	1.47	2.16	3.16
24	.15	.22	.27	.40	.59	.86	1.07	1.57	2.30	3.37
26	.16	.23	.29	.43	.62	.91	1.14	1.67	2.45	3.59
28	.17	.25	.31	.45	.66	.97	1.21	1.77	2.60	3.80
30	.18	.26	.33	.48	.70	1.02	1.28	1.87	2.74	4.01
32	.19	.27	.34	.50	.74	1.08	1.35	1.97	2.89	4.23
34	.20	.29	.36	.53	.77	1.13	1.42	2.07	3.03	4.44
36	.21	.30	.38	.55	.81	1.19	1.48	2.17	3.18	4.66
38	.22	.32	.40	.58	.85	1.24	1.55	2.27	3.33	4.87
40	.23	.33	.41	.60	.89	1.30	1.62	2.37	3.47	5.08
42	.24	.34	.43	.63	.92	1.35	1.69	2.47	3.62	5.30
44	.24	.36	.45	.66	.96	1.41	1.76	2.57	3.77	5.51
46	.25	.37	.47	.68	1.00	1.46	1.82	2.67	3.91	5.73
48	.26	.39	.48	.71	1.03	1.51	1.89	2.77	4.06	5.94
50	.27	.40	.50	.73	1.07	1.57	1.96	2.87	4.20	6.16
52	.28	.41	.52	.76	1.11	1.62	2.03	2.97	4.35	6.37
54	.29	.43	.53	.78	1.15	1.68	2.10	3.07	4.50	6.58
56	.30	.44	.55	.81	1.18	1.73	2.17	3.17	4.64	6.80
58	.31	.46	.57	.83	1.22	1.79	2.23	3.27	4.79	7.01
60	.32	.47	.59	.86	1.26	1.84	2.30	3.37	4.94	7.23
62	.33	.48	.60	.88	1.30	1.90	2.37	3.47	5.08	7.44
64	.34	.50	.62	.91	1.33	1.95	2.44	3.57	5.23	7.65
66	.35	.51	.64	.94	1.37	2.01	2.51	3.67	5.37	7.87
68	.36	.53	.66	.96	1.41	2.06	2.58	3.77	5.52	8.08
70	.37	.54	.67	.99	1.44	2.12	2.64	3.87	5.67	8.30
72	.38	.55	.69	1.01	1.48	2.17	2.71	3.97	5.81	8.51
74	.39	.57	.71	1.04	1.52	2.22	2.78	4.07	5.96	8.72
76	.40	.58	.73	1.06	1.56	2.28	2.85	4.17	6.11	8.94
78	.41	.59	.74	1.09	1.59	2.33	2.92	4.27	6.25	9.15
80	.42	.61	.76	1.11	1.63	2.39	2.98	4.37	6.40	9.37

REGISTERED PROFESSIONAL ENGINEER
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TOWN OF TRUCKEE
ENGINEERING DEPARTMENT
10 YEAR STORM DURATION
IN MINUTES FOR NEVADA COUNTY

LOCAL ROAD SYSTEM STANDARDS

NOT TO SCALE	APPROVED BY:	STANDARD DRAWING
MAY, 2003	Daniel P. Wilkins TOWN ENGINEER	SD#62

APPENDIX D

ENVIRONMENTAL NOISE ASSESSMENT

Frishman Hollow Phase II
Environmental Noise Assessment

Town of Truckee, California

December 23, 2019

jcb Project # 2019-156

Prepared for:

RANEY
PLANNING & MANAGEMENT, INC.

TOWN OF TRUCKEE
Established 1863 Incorporated 1993

Attn:
Mr. Nick Pappani
1501 Sports Drive
Sacramento, CA 95834

Prepared by:

j.c. brennan & associates, Inc.

Jim Brennan, INCE
President
Member, Institute of Noise Control Engineering (INCE)

INTRODUCTION

This section discusses the existing noise environment in the project vicinity, and identifies potential noise impacts and mitigation measures related to development of the Frishman Hollow Phase II residential development. Specifically, this section analyzes potential noise impacts due to and upon development of the project relative to applicable noise criteria and to the existing ambient noise environment.

PROJECT DESCRIPTION

The Frishman Hollow Phase II project is located in the Prosser area at the southwest corner of the intersection of the State Highway 89 North and Alder Drive (APNs 19- 370-29 and 19-410-26). Phase I developed the site with 16 two-bedroom units and 16 three-bedroom units for a total of 32 units. The Phase II project is proposing to develop the site with 68 new units.

The project site plan is shown in Figure 1.

Acoustical Terminology[1]

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective. Often, someone’s music is described as noise by another.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels.

[1] For an explanation of these terms, see Appendix A: "Acoustical Terminology"

There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this section are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the

composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise. The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common noise sources. Appendix A provides a summary of acoustical terms used in this report.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.).

Table 1
Typical Maximum Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source:Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. September 2013.

Legend

24-hour Noise Measurement Site

Short-term Noise Measurement Site

Building 1 – ***150-feet from SR 89 RW CL***

Building 2 – ***580-feet from SR 89 RW CL***

Building 3 – ***100-feet from SR 89 RW CL***

Building 4 – ***100-feet from SR 89 RW CL***

Common Outdoor Area – **200-feet from SR 89 RW CL**

RW CL = Roadway Centerline

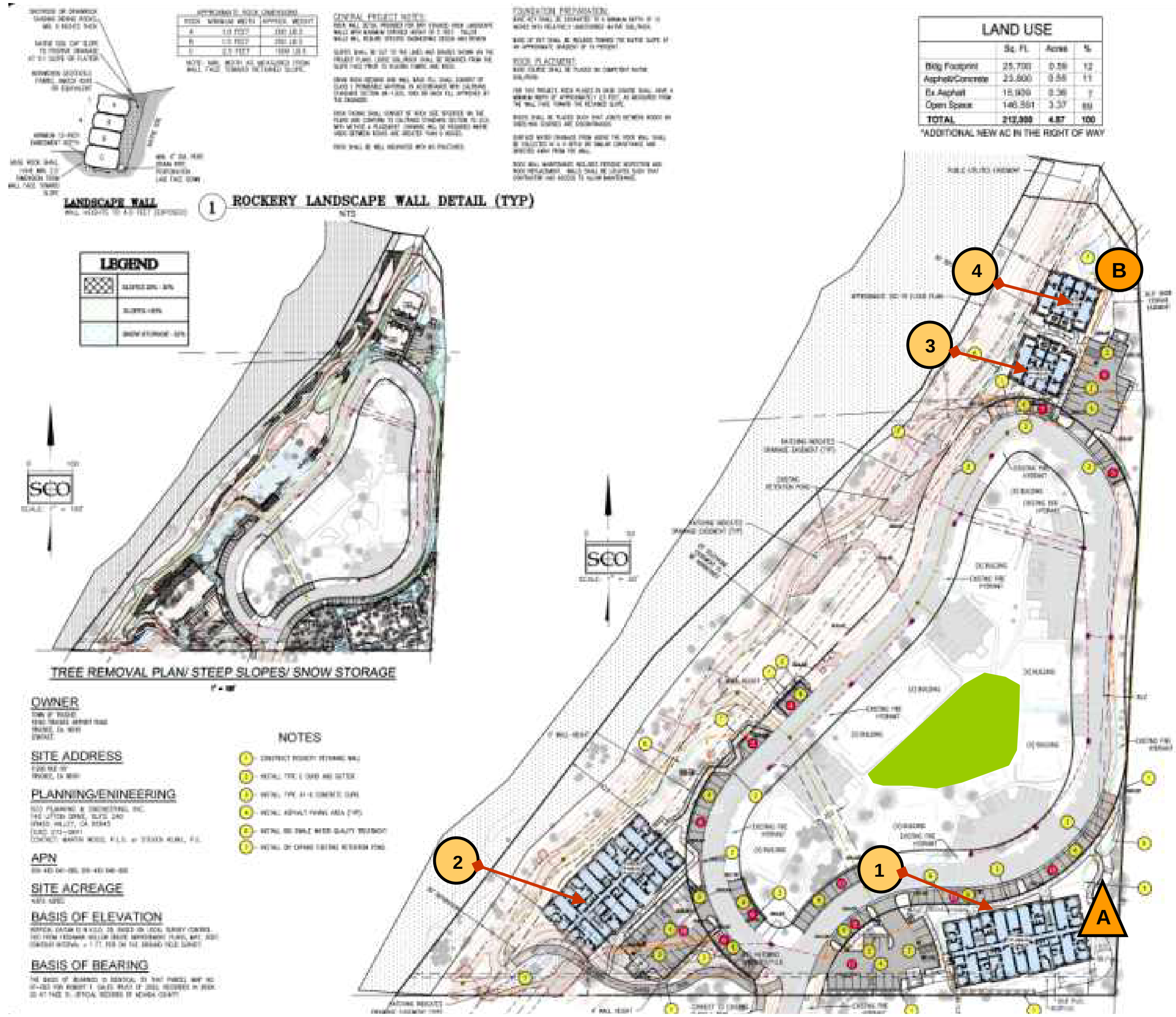

Figure 1 - Frishman Hollow Phase II
Site Plan & Noise Monitoring Locations

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Rev. 1/11/17

CRITERIA

Town of Truckee General Plan Noise Element Goals and Policies

The following Town of Truckee General Plan Noise Element goals and policies relative to this project.

> **Goal 1:**
> **Minimize community noise exposure to excessive noise by ensuring compatible land uses relative to noise sources.**
>
> **Policy 1.1:**
> Allow new development only if consistent with the ground transportation noise compatibility guidelines and policies of this Element. Noise measurements used in establishing compatibility shall be measured in dBA CNEL and based on worst case noise levels, either existing or future, with future noise levels to be predicted based on projected 2025 levels.
>
> **Policy 1.2:**
> Require new development to mitigate exterior noise to "normally acceptable" levels in outdoor areas where quiet is a benefit such as in the backyards of single-family homes.
>
> **Policy 1.3:**
> Enforce the California Noise Insulation Standards for interior noise levels attributable to exterior sources for all proposed new single- and multi-family residences. (*Note: This is an interior noise level of 45 dB Ldn/CNEL*)
>
> **Goal 2:**
> **Address noise issues through the planning and permitting process.**
>
> **Policy 2.1:**
> Require mitigation of all significant noise impacts as a condition of project approval.
>
> **Policy 2.2:**
> Require preparation of a noise analysis which is to include recommendations for mitigation for all proposed projects which may result in potentially significant noise impacts to nearby noise sensitive land uses.
>
> **Policy 2.3:**
> Require preparation of a noise analysis which is to include recommendations for mitigation for all proposed development within noise impacted areas that may be exposed to levels greater than "normally acceptable."

Policy 2.4:
Discourage the construction of sound walls and require development projects to evaluate site design techniques, building setbacks, earthen berms, alternative architectural layouts and other means to meet noise reduction requirements.

Goal 3:
Reduce noise levels from sources such as domestic uses, construction and car stereos, and from mobile sources, including motor vehicle traffic and aircraft operations.

Policy 3.13:
Require the following standard construction noise control measures to be included as requirements at construction sites in order to minimize construction noise impacts.

- Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area.
- Utilize “quiet” air compressors and other stationary noise-generating equipment where appropriate technology exists.
- The project sponsor shall designate a “disturbance coordinator” who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint and will require that reasonable measures warranted to correct the problem be implemented. The project sponsor shall also post telephone number for excessive noise complaints in conspicuous locations in the vicinity of the project site. Additionally, the project sponsor shall send a notice to neighbors in the project vicinity with the information on the construction schedule and the telephone number for noise complaints.

The Town of Truckee Noise Element guidelines are provided in Table 2.

Table 2
Noise Compatibility Guidelines

Land Use Category	Exterior Noise Exposure (CNEL, dB)* 50	55	60	65	70	75	80
Residential, Mobile Homes	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Normally Unacceptable	Unacceptable	Unacceptable
Residential in Mixed Use Development	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable	Unacceptable
Hospitals, Schools, Congregate Care	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable	Unacceptable
Office; Medical; Light Industrial	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable
Hotel; Commercial	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable
Neighborhood Parks; RV Parks	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Unacceptable	Unacceptable
Other Recreation; Community and Regional Parks	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Unacceptable

* Based on worst-case levels, both existing and 2025.

NORMALLY ACCEPTABLE
Specified land use is compatible, assuming standard construction practices are used.

NORMALLY UNACCEPTABLE
New land uses should be discouraged, but development may be allowed after a detailed noise analysis is performed, noise reduction and insulation features necessary to reduce exterior noise to "normally acceptable" levels and interior noise levels as appropriate are included in project design, and the land uses are shown to serve the greater public interests of the citizens of Truckee.

CONDITIONALLY ACCEPTABLE
New land uses may be allowed if a detailed noise analusis is performed and noise reduction and insulation features necessary to reduce exterior noise levels to "normally acceptable" levels and interior noise levels as appropriate are included in the project design.

UNACCEPTABLE
New construction or development of these land uses should generally not be permitted because mitigation is usually not feasible.

Note: The Truckee-Tahoe Airport has separate guidelines addressing airport noise.

Town of Truckee Development Code
The Town of Truckee Development Code essentially contains the Noise Ordinance referred to in the Town of Truckee Noise Element policies.

Section 18.44.020 of the development code states that noise complaints associated with the types of commercial uses (loading docks, stationary noise sources, etc.) would be directed to the Community Development Department.

Section 18.44.040 states that exterior noise levels, when measured at a noise-sensitive receiving land use, shall not exceed the noise level standards set forth in Table 3 (Table 3-8 in the Code). In the event that the ambient noise environment exceeds the Table 3 standards, the applicable standards shall be adjusted to equal the ambient noise level. In addition, the Table 3 standards shall be reduced by 5 dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

Table 3
Noise Standards by Receiving Land Use
Town of Truckee Development Code

Cumulative Duration of Intrusive Sound	Noise Metric	Daytime (7 am to 10 pm)	Nighttime (10 pm - 7 am)
Hospital, Library, Religious Institution, Residential or School Uses:			
Cumulative period of 30 minutes per hour	L_{50}	55	50
Cumulative period of 15 minutes per hour	L_{25}	60	55
Cumulative period of 5 minutes per hour	L_{08}	65	60
Cumulative period of 1 minute per hour	L_{02}	70	65
Level not to be exceeded for any time during hour	L_{max}	75	70
Commercial Uses:			
Cumulative period of 30 minutes per hour	L_{50}	65	60
Cumulative period of 15 minutes per hour	L_{25}	70	65
Cumulative period of 5 minutes per hour	L_{08}	75	70
Cumulative period of 1 minute per hour	L_{02}	80	75
Level not to be exceeded for any time during hour	L_{max}	85	80

Note: Each of the noise limits specified above shall be reduced by 5 dBA for impulsive or simple tone noises or for noises consisting of speech or music.
If the existing ambient noise levels exceed that permitted in the first four noise-limit categories, the allowable limit shall be increased to encompass the ambient.

Section 18.44.070 – Exceptions states that the provisions of the chapter do not apply to noise sources associated with non-single family residential construction provided that the activities do not take place before 7 a.m. or after 9 p.m. on any day except Sunday, or before 9 a.m. or after 6 p.m. on Sunday. The provisions of the chapter do not apply to noise sources associated with single family residential construction on a single family lot.

Vibration Standards

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

The Town of Truckee does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and project operations are addressed as potential noise impacts associated with project implementation.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Based upon Caltrans criteria, the threshold for damage to structures ranges from 0.2 to 0.6 peak particle velocity in inches per second (in/sec p.p.v). The general threshold at which human annoyance could occur is noted as 0.1 in/sec p.p.v.

Significant Increase In Noise Levels

Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to measurably severe noise levels. In practice, a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following[2]:

- A 3-dB change is barely perceptible,
- A 5-dB change is clearly perceptible, and
- A 10-dB change is perceived as being twice or half as loud.

For this project an increase in noise levels of 5 dB or greater due to the project is considered to be significant change.

[2] California Department of Transportation. *Technical Noise Supplement to the Traffic Analysis Protocol.* September 2013.

EXISTING NOISE ENVIRONMENT

Existing Background Noise Levels

The primary noise sources in the project vicinity is roadway traffic along State Route 89 (SR 89). j.c. brennan & associates, Inc. conducted continuous 24-hour noise level measurements and short-term noise level measurements on the project site. The long-term (24-hour) noise measurement site was selected to determine the existing background noise levels associated with SR 89, the temporal distribution of traffic over a 24-hour period, to assist in future traffic noise modeling, and for comparison to any project-related noise levels. Noise measurements were conducted on November 25-26, 2019. Sound level meters were programmed to collect hourly noise level data, including the hourly averages, hourly maximum levels and hourly statistical noise levels. Figure 1 shows the noise measurement locations. The results of the noise level measurements are shown in Table 4. Appendix B contains the results of the continuous 24-hour noise level measurements, and graphically shows the results of the 24-hour noise measurement survey.

Equipment used for all noise level measurements included Larson-Davis-Laboratories (LDL) Model 820 precision integrating sound level meters. The sound level meters were calibrated in the field using an LDL Model CAL200 acoustical calibrator to ensure accuracy.

Table 4
Existing Ambient Noise Monitoring Results
November 25-26, 2019

			Average Measured Hourly Noise Levels, (dBA)						
				Daytime (7:00 am - 10:00 pm)			Nighttime (10:00 pm - 7 am)		
Site	Location	Duration	24-hr Ldn/CNEL	Leq	L50	Lmax	Leq	L50	Lmax
Continuous 24-hour Noise Measurement Results									
A	South side of the project site (@100-feet from roadway C.L.	24-hours	62.4 dBA	61.3	59.0	75.1	53.8	46.9	69.9
Short-term Noise Measurement Results									
B	North side of the project site	30-minutes	NA	62.0	59.1	74.3	At 2:30 p.m. (11/25/2019)		
Source - j.c. brennan & associates, Inc. 2019									

IMPACT ASSESSMENT

Traffic Noise Impact Assessment

To predict noise levels due to traffic, the Federal Highway Administration Traffic Noise Prediction Model (FHWA RD-77-108) was used. The Model is used in conjunction with the Calveno reference noise emission curves, and accounts for vehicle volume and speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the project site. The FHWA Model was developed to predict hourly Leq values for free-flowing traffic conditions. To calculate Ldn/CNEL, average daily traffic (ADT) volume data is manipulated based on the assumed day/night distribution of traffic on the project roadways.

Traffic volumes for the local roadway system were obtained from the traffic consultant (LSC Transportation Consultants in the form of p.m. peak hour volumes. The volumes were adjusted to daily volumes based upon a typical peak hour ratio of 10%. Tables 5 and 6 show the results of the traffic noise calculations. Table 5 compares the existing and the existing plus project scenarios. Table 6 compares the future no project, and the future plus project scenarios. Appendix C contains the inputs and results of the FHWA traffic noise prediction model.

The calculated traffic noise levels are at a distance of 75-feet from the roadway centerlines, unless otherwise described in Tables 5 and 6.

Significant Increase in Traffic Noise Due to the Project

Based upon Tables 5 and 6, the only roadway where there will be a 5 dB or greater increase in traffic noise levels is along Rue Ivy Road. However, the increase in traffic noise occurs at the Phase I portion of the project site, and since this is a phased project, and the increase occurs at the project site, the increase in traffic noise levels is not considered to be significant. There will not be a significant increase in traffic noise levels due to the project. It is also worth noting that the project noise levels along Rue Ivy Road will be less than 50 dB Ldn / CNEL, and will be considerably less than the predicted overall traffic noise levels at the project site.

Implementation of the proposed project would have a **less than significant** impact.

Table 5

Predicted Traffic Noise Levels and Project-Related Traffic Noise Level Increases (Existing Scenarios)

Roadway	Segment / Location	Predicted Ldn/CNEL @ 75-feet from the Roadway Centerlines (dB)				
		Existing	Existing + Project	Change	Criteria	Significant?
Truckee Way	South of Rue Ivy	61	61	0	> +5	No
Truckee Way	West of Roundabout	60	61	+1	> +5	No
SR 267	South of Roundabout	61	62	+1	>+ 5	No
SR 89	North of Roundabout	64	64	0	> +5	No
Henness Road	East of Roundabout	49	50	+1	> +5	No
Rue Ivy	Project Site	42	47	+5	> +5	No
SR 89	At Building 1 - Frishman Hollow Phase II	59	60	+1	60 - 65 dB	No
SR 89	At Building 2 - Frishman Hollow Phase II	50	51	+1	60 - 65 dB	No
SR 89	At Building 3 - Frishman Hollow Phase II	62	62	0	60 - 65 dB	No
SR 89	At Building 4 - Frishman Hollow Phase II	62	62	0	60 - 65 dB	No
SR 89	Common Outdoor Area	57	58	+1	60 - 65 dB	No

Source: j.c. brennan & associates, Inc., Inc., FHWA RD-77-108 Traffic Noise Prediction Model, and LSC Traffic Consultants, 2019

Table 6

Predicted Traffic Noise Levels and Project-Related Traffic Noise Level Increases (Future Scenarios)

Roadway	Segment / Location	Predicted Ldn/CNEL @ 75-feet from the Roadway Centerlines (dB)				
		Future No Project	Future + Project	Change	Criteria	Significant?
Truckee Way	South of Rue Ivy	63	63	0	> +5	No
Truckee Way	West of Roundabout	63	63	0	> +5	No
SR 267	South of Roundabout	64	64	0	> +5	No
SR 89	North of Roundabout	65	65	0	> +5	No
Henness Road	East of Roundabout	57	57	0	> +5	No
Rue Ivy	Project Site	42	47	+5	> +5	No
SR 89	At Building 1 - Frishman Hollow Phase II	60	60	0	60 - 65 dB	No
SR 89	At Building 2 - Frishman Hollow Phase II	51	51	0	60 - 65 dB	No
SR 89	At Building 3 - Frishman Hollow Phase II	63	63	0	60 - 65 dB	No
SR 89	At Building 4 - Frishman Hollow Phase II	63	63	0	60 - 65 dB	No
SR 89	Common Outdoor Area	58	58	0	60 - 65 dB	No

Source: j.c. brennan & associates, Inc., Inc., FHWA RD-77-108 Traffic Noise Prediction Model, and LSC Traffic Consultants, 2019

Significant Traffic Noise Levels at the Project Site

There are two traffic noise level standards which apply at the project site. There are exterior noise level standards contained in the Noise Compatibility Guidelines which are shown in Table 2 of this report. The exterior standards range between 60 dB and 65 dB Ldn / CNEL. The lower standard of 60 dB Ldn / CNEL is the Normally Acceptable standard. The Town of Truckee allows up to 65 dB Ldn / CNEL which is the Conditionally Acceptable standard. However, the following conditions need to be met:

> *New land uses may be allowed if a detailed noise analysis is performed and noise reduction and insulation features necessary to reduce exterior noise levels to "normally acceptable" levels and interior noise levels as appropriate are included in the project design.*

It is noted that the exterior noise level standard is generally applied at outdoor activity areas, such as decks, rear yards, or a common outdoor activity area.

Policy 1.3 of the Truckee General Plan Noise Element provides guidance for interior noise levels. Policy 1.3 states the following:

> *Enforce the California Noise Insulation Standards for interior noise levels attributable to exterior sources for all proposed new single- and multi-family residences. (Note: this is an interior noise level of 45 dB Ldn/CNEL. In addition, the California Noise Insulation Standards assume the ability to close windows and doors for the appropriate acoustical isolation.)*

<u>Exterior Traffic Noise Levels</u>
Based upon Table 6, the Future No Project, and the Future Plus Project scenarios are expected to exceed the 60 dB Ldn/CNEL Normally Acceptable exterior noise level standard at Buildings 3 and 4, as shown on Figure 1. Buildings 3 and 4 will comply with the Conditionally Acceptable exterior noise level standard of 65 dB Ldn/CNEL. The project does include a common outdoor activity area in the center of Phase I, which is assumed to be available to the Phase II residents. This common outdoor area will not exceed the 60 dB Ldn/CNEL Normally Acceptable exterior noise level standard. Since the project does provide a common outdoor activity area for all units, it is expected that the exterior noise level standard applies at the common outdoor area, and will comply with the Town of Truckee exterior noise level standard of 60 dB Ldn/CNEL

<u>Interior Traffic Noise Levels</u>
Standard construction practices will provide an exterior to interior noise level reduction of 25 dB with windows and doors in the closed position, provided that the units include mechanical ventilation or air conditioning to allow residents to close windows and doors for the appropriate acoustical isolation. An exterior to interior noise level reduction of 15 dB can be expected with windows in the partially open position.

Buildings 1 and 2 shown on Figure 1 will be exposed to future traffic noise levels of 60 dB Ldn/CNEL or less. Therefore, no interior noise level mitigation is required to those units. Units 3 and 4 will be exposed to traffic noise levels in excess of 60 dB Ldn/CNEL. Therefore, fresh air exchange or air conditioning will be required for the units located within Buildings 3 and 4.

Implementation of the interior mitigation measures for Buildings 3 and 4 will result in a **less than significant** impact.

Construction Noise Impact Assessment

During the construction of the project, noise from construction activities would add to the noise environment in the project vicinity. Activities involved in construction would generate maximum noise levels, as indicated in Table 7, ranging from 76 to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A substantial project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from construction sites. This noise increase would be of short duration, and would likely occur primarily during daytime hours. Based upon the predicted noise levels shown in Table 7, the maximum noise levels would range between 78 dB and 90 dB at the nearest residences.

Policy 3.13 provides requirements for construction activities. These requirements will be followed to reduce construction noise level impacts.

Implementation of the proposed project would have a **less than significant** impact.

Table 7:
Construction Equipment Noise

Type of Equipment	Maximum Level, dB at 50 feet
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85
Source: *Roadway Construction Noise Model User's Guide*. Federal Highway Administration. FHWA-HEP-05-054. January 2006.	

Construction Vibration Impact Assessment

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading and utility placement occur.

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. Table 8 shows the typical vibration levels produced by construction equipment.

All buildings near the construction could be impacted by construction related vibrations, especially vibratory compactors/rollers. The nearest receptors are generally located a minimum of 50-feet from the construction sites. At these distances construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

**Table 8:
Construction Vibration**

Type of Equipment	Peak Particle Velocity @ 25 feet (inches/second)	Peak Particle Velocity @ 50 feet (inches/second)	Peak Particle Velocity @ 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210	0.074	0.026

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006

The Table 8 data indicate that construction vibration levels anticipated for the project are less than the 0.1 in/sec criteria at distances of 50-feet. Therefore, construction vibrations are not predicted to cause damage to existing buildings or cause annoyance to sensitive receptors. Implementation of the proposed project would have a **less than significant** impact.

Appendix A
Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
$L_{(n)}$	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L_{50} is the sound level exceeded 50% of the time during the one hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the AMaximum@ level, which is the highest RMS level.
RT_{60}	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is s rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy into a one-second event.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

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Appendix B
Frishman Hollow Phase II - 2019-156
24hr Continuous Noise Monitoring - Site A
November 25-26, 2019

Hour	Leq	Lmax	L50	L90
12:00	60.6	73.8	59.3	52.7
13:00	60.8	73.3	59.5	52.7
14:00	62.3	78.6	61.2	54.4
15:00	62.6	83.3	61.3	54.7
16:00	63.1	82.8	61.7	55.8
17:00	61.7	72.6	60.8	53.6
18:00	59.6	72.8	57.8	50.1
19:00	58.7	70.5	56.6	48.0
20:00	57.8	80.0	51.9	46.1
21:00	54.8	69.9	49.1	45.1
22:00	54.5	74.9	48.1	43.8
23:00	52.2	72.8	46.5	43.1
0:00	50.0	67.0	45.3	41.5
1:00	47.0	64.0	44.1	40.6
2:00	46.4	65.3	43.2	39.2
3:00	49.3	67.8	44.6	41.0
4:00	51.8	73.6	45.5	41.5
5:00	54.7	73.5	47.9	44.5
6:00	59.9	70.5	56.6	48.3
7:00	63.7	74.2	63.1	56.9
8:00	61.9	73.8	60.7	51.9
9:00	61.8	76.8	60.4	49.7
10:00	61.7	73.7	60.3	50.4
11:00	62.0	70.1	61.4	52.2

	Statistical Summary					
	Daytime (7 a.m. - 10 p.m.)			Nighttime (10 p.m. - 7 a.m.)		
	High	Low	Average	High	Low	Average
Leq (Average)	63.7	54.8	61.3	59.9	46.4	53.8
Lmax (Maximum)	83.3	69.9	75.1	74.9	64.0	69.9
L50 (Median)	63.1	49.1	59.0	56.6	43.2	46.9
L90 (Background)	56.9	45.1	51.6	48.3	39.2	42.6

Computed Ldn, dB	62.4
% Daytime Energy	90%
% Nighttime Energy	10%

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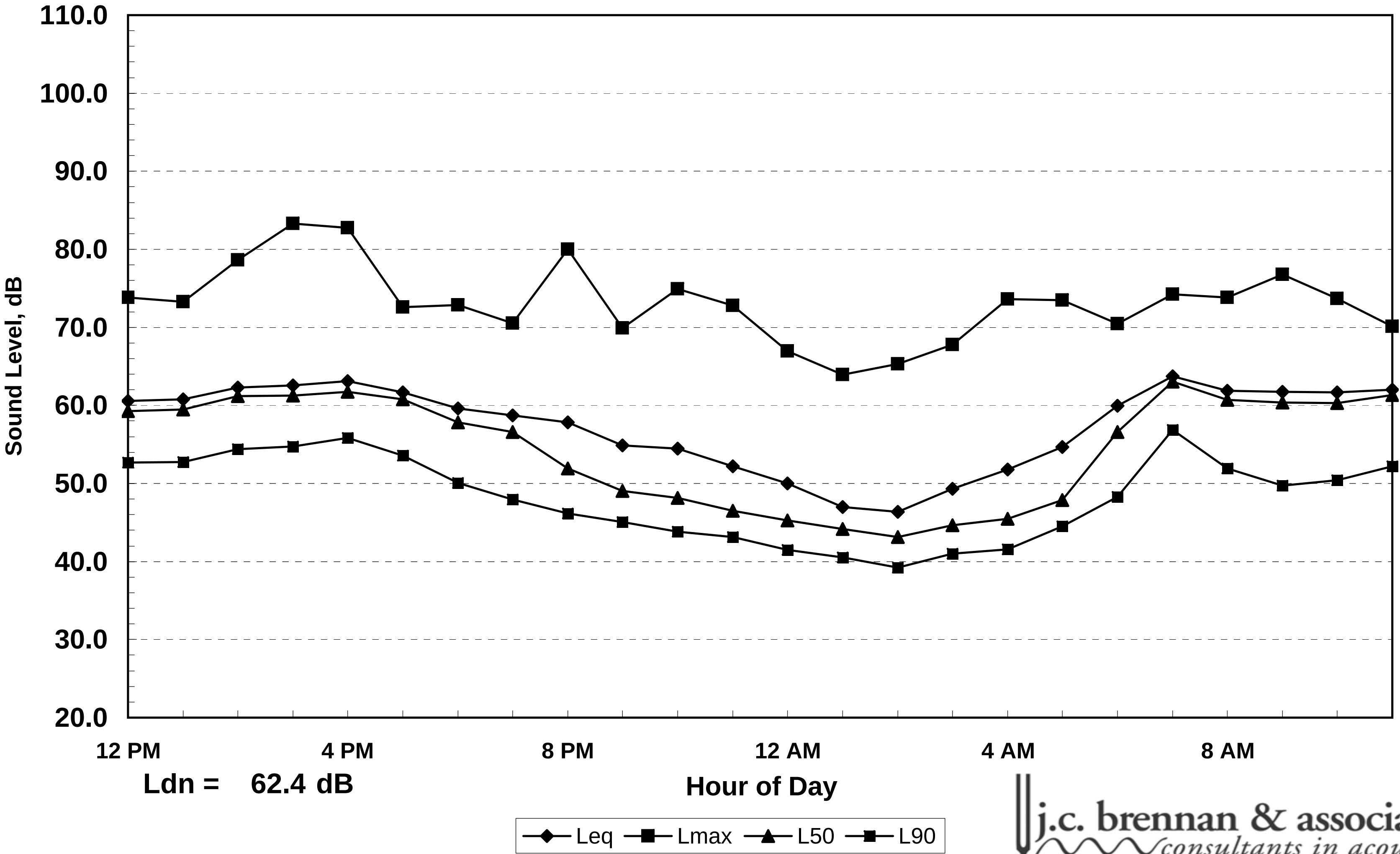
Appendix B
Frishman Hollow Phase II - 2019-156
24hr Continuous Noise Monitoring - Site A
November 25-26, 2019



Ldn = 62.4 dB

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-156
Description: Frishman Hollow Phase II - Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Location	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Truckee Way	South of Rue Ivy	11,230	90		10	2	1	30	75	
2	Truckee Way	West of Roundabout	11,130	90		10	2	1	30	75	
3	SR 267	South of Roundabout	11,000	90		10	2	1	35	75	
4	SR 89	North of Roundabout	9,650	90		10	2	1	45	75	
5	Henness Road	East of Roundabout	1,270	90		10	1	0.25	30	75	
6	Rue Ivy	Project Entrance	430	90		10	1	0.1	25	75	
7											
8	SR 89	Building 1	9,650	90		10	2	1	45	150	
9	SR 89	Building 2	9,650	90		10	2	1	45	580	
10	SR 89	Building 3	9,650	90		10	2	1	45	100	
11	SR 89	Building 4	9,650	90		10	2	1	45	100	
12	SR 89	Common Area	9,650	90		10	2	1	45	200	
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2019-156
Description: Frishman Hollow Phase II - Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Location	Autos	Medium Trucks	Heavy Trucks	Total
1	Truckee Way	South of Rue Ivy	57.9	51.6	55.7	61
2	Truckee Way	West of Roundabout	57.8	51.5	55.7	60
3	SR 267	South of Roundabout	59.7	52.5	54.7	61
4	SR 89	North of Roundabout	62.3	53.7	55.2	64
5	Henness Road	East of Roundabout	48.5	39.1	40.2	49
6	Rue Ivy	Project Entrance	41.5	33.2	30.8	42
8	SR 89	Building 1	57.8	49.2	50.6	59
9	SR 89	Building 2	49.0	40.3	41.8	50
10	SR 89	Building 3	60.4	51.8	53.3	62
11	SR 89	Building 4	60.4	51.8	53.3	62
12	SR 89	Common Area	55.9	47.3	48.8	57

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2019-156
Description: Frishman Hollow Phase II - Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Location	75	70	65	60	55
1	Truckee Way	South of Rue Ivy	8	17	38	81	175
2	Truckee Way	West of Roundabout	8	17	37	81	174
3	SR 267	South of Roundabout	9	20	44	94	203
4	SR 89	North of Roundabout	13	28	60	129	277
5	Henness Road	East of Roundabout	1	3	7	15	32
6	Rue Ivy	Project Entrance	1	1	2	5	11
8	SR 89	Building 1	13	28	60	129	277
9	SR 89	Building 2	13	28	60	129	277
10	SR 89	Building 3	13	28	60	129	277
11	SR 89	Building 4	13	28	60	129	277
12	SR 89	Common Area	13	28	60	129	277

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2019-156
Description: Frishman Hollow Phase II - Existing + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Location	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Truckee Way	South of Rue Ivy	11,820	90		10	2	1	30	75	
2	Truckee Way	West of Roundabout	11,420	90		10	2	1	30	75	
3	SR 267	South of Roundabout	11,270	90		10	2	1	35	75	
4	SR 89	North of Roundabout	11,360	90		10	2	1	45	75	
5	Henness Road	East of Roundabout	1,280	90		10	1	0.25	30	75	
6	Rue Ivy	Project Entrance	1,140	90		10	1	0.1	25	75	
7											
8	SR 89	Building 1	11,360	90		10	2	1	45	150	
9	SR 89	Building 2	11,360	90		10	2	1	45	580	
10	SR 89	Building 3	11,360	90		10	2	1	45	100	
11	SR 89	Building 4	11,360	90		10	2	1	45	100	
12	SR 89	Common Area	11,360	90		10	2	1	45	200	
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2019-156
Description: Frishman Hollow Phase II - Existing + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Location	Autos	Medium Trucks	Heavy Trucks	Total
1	Truckee Way	South of Rue Ivy	58.1	51.8	55.9	61
2	Truckee Way	West of Roundabout	57.9	51.7	55.8	61
3	SR 267	South of Roundabout	59.8	52.6	54.8	62
4	SR 89	North of Roundabout	63.0	54.4	55.9	64
5	Henness Road	East of Roundabout	48.5	39.1	40.2	50
6	Rue Ivy	Project Entrance	45.7	37.4	35.0	47
8	SR 89	Building 1	58.5	49.9	51.3	60
9	SR 89	Building 2	49.7	41.1	42.5	51
10	SR 89	Building 3	61.1	52.5	54.0	62
11	SR 89	Building 4	61.1	52.5	54.0	62
12	SR 89	Common Area	56.6	48.0	49.5	58

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2019-156
Description: Frishman Hollow Phase II - Existing + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Location	75	70	65	60	55
1	Truckee Way	South of Rue Ivy	8	18	39	84	181
2	Truckee Way	West of Roundabout	8	18	38	82	177
3	SR 267	South of Roundabout	10	21	44	96	206
4	SR 89	North of Roundabout	14	31	67	144	309
5	Henness Road	East of Roundabout	2	3	7	15	32
6	Rue Ivy	Project Entrance	1	2	4	10	21
8	SR 89	Building 1	14	31	67	144	309
9	SR 89	Building 2	14	31	67	144	309
10	SR 89	Building 3	14	31	67	144	309
11	SR 89	Building 4	14	31	67	144	309
12	SR 89	Common Area	14	31	67	144	309

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2019-156
Description: Frishman Hollow Phase II - Future + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Location	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Truckee Way	South of Rue Ivy	21,880	90		10	2	1	30	75	
2	Truckee Way	West of Roundabout	21,480	90		10	2	1	30	75	
3	SR 267	South of Roundabout	19,510	90		10	2	1	35	75	
4	SR 89	North of Roundabout	12,990	90		10	2	1	45	75	
5	Henness Road	East of Roundabout	7,690	90		10	1	0.25	30	75	
6	Rue Ivy	Project Entrance	1,140	90		10	1	0.1	25	75	
7											
8	SR 89	Building 1	12,990	90		10	2	1	45	150	
9	SR 89	Building 2	12,990	90		10	2	1	45	580	
10	SR 89	Building 3	12,990	90		10	2	1	45	100	
11	SR 89	Building 4	12,990	90		10	2	1	45	100	
12	SR 89	Common Area	12,990	90		10	2	1	45	200	
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2019-156
Description: Frishman Hollow Phase II - Future + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Location	Autos	Medium Trucks	Heavy Trucks	Total
1	Truckee Way	South of Rue Ivy	60.8	54.5	58.6	63
2	Truckee Way	West of Roundabout	60.7	54.4	58.5	63
3	SR 267	South of Roundabout	62.2	55.0	57.2	64
4	SR 89	North of Roundabout	63.6	55.0	56.4	65
5	Henness Road	East of Roundabout	56.3	46.9	48.0	57
6	Rue Ivy	Project Entrance	45.7	37.4	35.0	47
8	SR 89	Building 1	59.1	50.4	51.9	60
9	SR 89	Building 2	50.2	41.6	43.1	51
10	SR 89	Building 3	61.7	53.1	54.6	63
11	SR 89	Building 4	61.7	53.1	54.6	63
12	SR 89	Common Area	57.2	48.6	50.1	58

Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2019-156
Description: Frishman Hollow Phase II - Future + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Location	75	70	65	60	55
1	Truckee Way	South of Rue Ivy	13	27	59	127	273
2	Truckee Way	West of Roundabout	13	27	58	125	270
3	SR 267	South of Roundabout	14	30	64	138	298
4	SR 89	North of Roundabout	16	34	73	157	338
5	Henness Road	East of Roundabout	5	11	23	50	107
6	Rue Ivy	Project Entrance	1	2	4	10	21
8	SR 89	Building 1	16	34	73	157	338
9	SR 89	Building 2	16	34	73	157	338
10	SR 89	Building 3	16	34	73	157	338
11	SR 89	Building 4	16	34	73	157	338
12	SR 89	Common Area	16	34	73	157	338

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2019-156
Description: Frishman Hollow Phase II - Future + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Location	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	Truckee Way	South of Rue Ivy	21,880	90		10	2	1	30	75	
2	Truckee Way	West of Roundabout	21,480	90		10	2	1	30	75	
3	SR 267	South of Roundabout	19,510	90		10	2	1	35	75	
4	SR 89	North of Roundabout	12,990	90		10	2	1	45	75	
5	Henness Road	East of Roundabout	7,690	90		10	1	0.25	30	75	
6	Rue Ivy	Project Entrance	1,140	90		10	1	0.1	25	75	
7											
8	SR 89	Building 1	12,990	90		10	2	1	45	150	
9	SR 89	Building 2	12,990	90		10	2	1	45	580	
10	SR 89	Building 3	12,990	90		10	2	1	45	100	
11	SR 89	Building 4	12,990	90		10	2	1	45	100	
12	SR 89	Common Area	12,990	90		10	2	1	45	200	
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

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Appendix C

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2019-156
Description: Frishman Hollow Phase II - Future + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Location	Autos	Medium Trucks	Heavy Trucks	Total
1	Truckee Way	South of Rue Ivy	60.8	54.5	58.6	63
2	Truckee Way	West of Roundabout	60.7	54.4	58.5	63
3	SR 267	South of Roundabout	62.2	55.0	57.2	64
4	SR 89	North of Roundabout	63.6	55.0	56.4	65
5	Henness Road	East of Roundabout	56.3	46.9	48.0	57
6	Rue Ivy	Project Entrance	45.7	37.4	35.0	47
8	SR 89	Building 1	59.1	50.4	51.9	60
9	SR 89	Building 2	50.2	41.6	43.1	51
10	SR 89	Building 3	61.7	53.1	54.6	63
11	SR 89	Building 4	61.7	53.1	54.6	63
12	SR 89	Common Area	57.2	48.6	50.1	58

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2019-156
Description: Frishman Hollow Phase II - Future + Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Location	75	70	65	60	55
1	Truckee Way	South of Rue Ivy	13	27	59	127	273
2	Truckee Way	West of Roundabout	13	27	58	125	270
3	SR 267	South of Roundabout	14	30	64	138	298
4	SR 89	North of Roundabout	16	34	73	157	338
5	Henness Road	East of Roundabout	5	11	23	50	107
6	Rue Ivy	Project Entrance	1	2	4	10	21
8	SR 89	Building 1	16	34	73	157	338
9	SR 89	Building 2	16	34	73	157	338
10	SR 89	Building 3	16	34	73	157	338
11	SR 89	Building 4	16	34	73	157	338
12	SR 89	Common Area	16	34	73	157	338

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APPENDIX E

TRAFFIC STUDY

LSC TRANSPORTATION CONSULTANTS, INC.

2690 Lake Forest Road, Suite C
P. O. Box 5875
Tahoe City, CA 96145
(530) 583-4053
FAX (530) 583-5966
Email: lsc@lsctahoe.com
Website: www.lsctrans.com

January 3, 2020

Yumi Dahn, Associate Planner
Town of Truckee
10183 Truckee Airport Road
Truckee, CA 96161

RE: Frishman Hollow Phase II – Traffic Study

Dear Ms. Dahn:

Per your request, LSC Transportation Consultants, Inc. has prepared a limited traffic study for the proposed Phase II development of Frishman Hollow located on Rue Ivy in Truckee, California. The project proposes adding 68 multi-family dwelling units to the existing 32 units.

The trip generation of the proposed project is first calculated, and then the distribution and assignment of these trips is estimated through Truckee Way/Rue Ivy and Truckee Way/SR 89 North. Finally, traffic impacts are analyzed including Level Of Service (LOS) and Vehicle Miles Traveled (VMT) for existing and future conditions.

Trip Generation

Trip generation evaluates the number of vehicle trips that would be generated by the proposed land uses. Standard trip rates for multi-family dwelling units are provided in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 10th Edition* (ITE, 2017). However, the Manual states that if local rates are available they should be used. Local rates for multi-family affordable housing have been recently studied in the *Tahoe Trip Generation Rate Analysis Memo* (LSC, 10/10/2019). Traffic counts were conducted in the summer of 2019 at Frishman Hollow and Henness Flats and trip generation rates were then calculated. Daily and peak hour rates are shown in Table 1. Trip generation rates were calculated as follows:

- For the PM Peak hour rate, we calculated the average rate between both Frishman Hollow and Henness Flats. This resulted in a PM Peak hour rate of 1.05 trips per dwelling unit. Frishman Hollow has only 32 units and we believe the overall rate is improved by including data for Henness Flats' 92 units.

- As daily counts were only conducted at Frishman Hollow, we cannot calculate an average daily rate. The daily rate from Frishman Hollow was observed to be very high. This is likely because the units are relatively large, consisting only of 2 and 3 bedroom units.

The Frishman Hollow Phase II development has smaller units, on average 75% of the size of Phase I. Therefore we applied 75% of the observed daily rate which would be 9.27 trips per day. (Note that this is still conservatively high in comparison with the ITE weekday daily rate of 7.32 for multifamily low-rise residential units.)

- No additional reduction for non-auto trips has been taken, as the trip rates were based on observed vehicle trips (reflecting existing non-auto travel mode use). The Tahoe Trip Rate Memo has additional information on the non-auto trips which are above and beyond these vehicle trips.

The resulting trip generation is estimated to be 630 daily one-way vehicle-trips, including 71 PM peak hour trips (42 inbound and 29 outbound) as shown in Table 1.

Traffic Volumes

Existing traffic volumes at Truckee Way/SR 89 North were obtained from the design volumes in the *Town of Truckee 2018 Summer Count Program* memo (LSC, December 6, 2018). Volumes along Rue Ivy were counted as part of the Tahoe Trip Rate Memo and were used to estimate the intersection volumes at Truckee Way/Rue Ivy along with the estimated project distribution. The resulting existing traffic volumes are shown in Table 2.

Future volumes are based on the Truckee TransCAD model and were obtained from the *Coburn Crossing Traffic Impact Analysis* (LSC, September 16, 2016). They reflect buildout of the existing Truckee General Plan land uses. Volumes for Truckee Way/SR 89 North were taken directly from Coburn Crossing TIA and the volumes for Truckee Way/Rue Ivy were estimated based on the adjacent intersections and the existing traffic along Rue Ivy. The resulting future traffic volumes are shown in Table 2.

Trip Distribution and Assignment

The distribution of trips arriving and leaving the project site is identified based upon residential and commercial center in the surrounding area and existing travel patterns. Note the Raley's grocery store currently under construction is assumed to be completed, which will shift trip distribution to a degree. The estimated PM peak hour distribution pattern for project-generated trips is shown below.

- 60 % South on Truckee Way towards Downtown
- 35 % South on SR 267
- 3 % North on SR 89 North
- 2 % East on Henness Road

The trips generated by the project are then distributed and assigned through the study intersections. The resulting project generated intersection turning movement volumes are presented in Table 2. Adding the project generated volumes to the existing and future volumes produce the existing plus project and future plus project volumes as shown in the bottom portion of Table 2.

Level of Service

As stated in the *Truckee 2025 General Plan*, the Town's applicable Level of Service (LOS) standards are as follows:

> *"Policy P2.1- Establish and maintain a Level of Service D or better on road segments and for total intersection movements in portions of the Town outside of the Downtown Study Area…Throughout the Town, individual turning movements at unsignalized intersections shall not be allowed to reach LOS F and to exceed a cumulative vehicle delay of four vehicle hours. Both of these conditions shall be met for traffic operations to be considered unacceptable."*

Intersection LOS was evaluated using the methodologies documented in the *Highway Capacity Manual 6th Edition* (Transportation Research Board, 2016). Highway Capacity Software 7.8 (McTrans, 2019) and Synchro 10 (Trafficware, 2017) applications were utilized for the LOS calculations. The detailed LOS calculations for all intersections are attached. As shown in Table 3, the LOS for both intersections with and without the project under existing and future condition is within the LOS standard.

Vehicle Miles Traveled

Vehicle Miles Traveled (VMT) is the number of vehicle miles associated with all trips generated by a project. This is calculated by multiplying the number of trips generated by the average trip length. The average trip length was calculated using the Truckee TransCAD Model. The number of trips generated by TAZ 89 (in which Frishman Hollow is located) was multiplied by the trip length to each of the other TAZ's in the model and then divided by the number of trips to get the average trip length. Note that as the trip length used was the length within the Town of Truckee limits, the resulting VMT is for travel within the Town only. The resulting average trip length is 2.8 miles per trip. Multiplying this by the number of trips results in 1,764 daily VMT and 199 PM peak hour VMT.

Currently the Town of Truckee is in the process of developing VMT standards, therefore the resulting VMT of this project cannot be compared to standards at this time. Qualitatively, LSC can conclude that the VMT per capita of Frishman Hollow II will be lower than the Truckee-wide average due to (1) the site location being relatively close to trip destinations like schools, employment, shopping etc. (2) the project is located on the TART transit route and (3) availability of the adjacent bike paths.

Conclusion

The results of this analysis can be summarized as follows:

- The project will generate an estimated 630 daily one-way vehicle-trips, including 71 PM peak hour trips (42 inbound and 29 outbound).

- The LOS at Truckee Way/Rue Ivy and Truckee Way/SR 89 North is within the standard both with the project under existing and future conditions.

- The project is expected to generate 1,764 daily VMT and 199 PM peak hour VMT.

▲ ▲ ▲

Please contact our office with any comments or questions pertaining to this analysis.

Respectfully Submitted,

LSC TRANSPORTATION CONSULTANTS, INC.

By: Leslie Suen
Leslie Suen, PE, Engineer

Enclosed: Tables 1-3, LOS Calculations

Table 1: Frishman Hollow Phase II - Trip Generation

Description	Quantity	Unit	**Trip Rates per Unit[1]**				**Project Generated Vehicle Trips**			
				PM Peak-Hr				PM Peak-Hr		
			Daily	In	Out	Total	Daily	In	Out	Total
Multifamily Dwelling Units	68	Dwelling Units	9.27	0.62	0.43	1.05	630	42	29	71

Note 1: Trips rate developed from counts of Truckee affordable housing in the summer of 2019. See text.

Source: LSC Transportation Consultants, Inc.

Table 2: Frishman Hollow Phase II - Intersection Volumes

	Northbound			Southbound			Eastbound			Westbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Total
Existing													
Truckee Way/Rue Ivy	0	0	0	5	0	10	18	539	0	0	546	10	1128
Truckee Way/SR 89 North	253	309	27	1	169	269	213	36	308	25	34	4	1648
Project Generated													
Truckee Way/Rue Ivy	0	0	0	12	0	17	25	0	0	0	0	17	71
Truckee Way/SR 89 North	15	0	0	0	0	1	1	0	11	0	1	0	29
Existing Plus Project													
Truckee Way/Rue Ivy	0	0	0	17	0	27	43	539	0	0	546	27	1199
Truckee Way/SR 89 North	268	309	27	1	169	270	214	36	319	25	35	4	1677
Future													
Truckee Way/Rue Ivy	0	0	0	5	0	10	18	1202	0	0	889	10	2134
Truckee Way/SR 89 North	472	334	136	28	236	302	370	229	621	223	125	27	3103
Future Plus Project													
Truckee Way/Rue Ivy	0	0	0	17	0	27	43	1202	0	0	889	27	2205
Truckee Way/SR 89 North	487	334	136	28	236	303	371	229	632	223	126	27	3132

Table 3: Frishman Hollow Phase II - Level of Service

			Existing No Project		Existing Plus Project		Future No Project			Future Plus Project		
Intersection	Control Type	LOS Standard	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	Total Delay (Veh-Hrs)	LOS	Delay (sec/veh)	Total Delay (Veh-Hrs)
Total Intersection												
Truckee Way/Rue Ivy	Stop	D	A	0.2	A	0.8	A	0.4	-	A	2.0	-
Truckee Way/SR 89 North	Roundabout	D	A	6.0	A	6.1	C	21.7	-	C	22.5	-
Worst Movement												
Truckee Way/Rue Ivy	Stop	F + 4hr delay	C	24.2	D	28.5	F	108.6	0.2	F	190.8	1.0
Truckee Way/SR 89 North	Roundabout	F + 4hr delay	A	6.5	A	6.6	E	44.2	-	E	46.8	-

Source: LSC Transportation Consultants, Inc.

HCM 6th Roundabout
21: SR 89 N & Truckee Way/Henness Rd

11/04/2019

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	598	67	634	477
Demand Flow Rate, veh/h	611	69	647	487
Vehicles Circulating, veh/h	217	854	277	339
Vehicles Exiting, veh/h	609	70	551	584
Ped Vol Crossing Leg, #/h	1	1	2	0
Ped Cap Adj	0.999	1.000	0.998	1.000
Approach Delay, s/veh	5.7	6.5	6.3	5.9
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Left	Right	Left	Right
Designated Moves	LT	R	LTR	LT	TR	LT	TR
Assumed Moves	LT	R	LTR	LT	TR	LT	R
RT Channelized							
Lane Util	0.452	0.548	1.000	0.470	0.530	0.388	0.612
Follow-Up Headway, s	2.667	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	276	335	69	304	343	189	298
Cap Entry Lane, veh/h	1106	1181	687	1046	1122	988	1065
Entry HV Adj Factor	0.979	0.979	0.975	0.981	0.980	0.980	0.980
Flow Entry, veh/h	270	328	67	298	336	185	292
Cap Entry, veh/h	1081	1155	670	1024	1098	969	1043
V/C Ratio	0.250	0.284	0.100	0.291	0.306	0.191	0.280
Control Delay, s/veh	5.7	5.8	6.5	6.4	6.3	5.5	6.2
LOS	A	A	A	A	A	A	A
95th %tile Queue, veh	1	1	0	1	1	1	1

Intersection	
Intersection Delay, s/veh	6.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	610	68	650	478
Demand Flow Rate, veh/h	623	70	664	488
Vehicles Circulating, veh/h	217	872	278	357
Vehicles Exiting, veh/h	628	70	562	585
Ped Vol Crossing Leg, #/h	1	1	2	0
Ped Cap Adj	0.999	1.000	0.998	1.000
Approach Delay, s/veh	5.8	6.6	6.4	6.1
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Left	Right	Left	Right
Designated Moves	LT	R	LTR	LT	TR	LT	TR
Assumed Moves	LT	R	LTR	LT	TR	LT	R
RT Channelized							
Lane Util	0.445	0.555	1.000	0.470	0.530	0.387	0.613
Follow-Up Headway, s	2.667	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	277	346	70	312	352	189	299
Cap Entry Lane, veh/h	1106	1181	677	1045	1121	972	1048
Entry HV Adj Factor	0.979	0.980	0.975	0.980	0.979	0.980	0.980
Flow Entry, veh/h	271	339	68	306	345	185	293
Cap Entry, veh/h	1082	1156	660	1022	1096	953	1027
V/C Ratio	0.251	0.293	0.103	0.299	0.315	0.194	0.285
Control Delay, s/veh	5.7	5.9	6.6	6.5	6.4	5.7	6.3
LOS	A	A	A	A	A	A	A
95th %tile Queue, veh	1	1	0	1	1	1	1

Intersection	
Intersection Delay, s/veh	21.7
Intersection LOS	C

Approach	EB	WB	NB	SB
Entry Lanes	2	1	2	2
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	1308	399	1010	615
Demand Flow Rate, veh/h	1334	408	1030	628
Vehicles Circulating, veh/h	535	1293	691	890
Vehicles Exiting, veh/h	983	428	1178	811
Ped Vol Crossing Leg, #/h	1	1	2	0
Ped Cap Adj	0.999	1.000	0.999	1.000
Approach Delay, s/veh	21.3	44.2	18.2	13.9
Approach LOS	C	E	C	B

Lane	Left	Right	Left	Left	Right	Left	Right
Designated Moves	LT	R	LTR	LT	TR	LT	TR
Assumed Moves	LT	R	LTR	LT	TR	LT	R
RT Channelized							
Lane Util	0.495	0.505	1.000	0.470	0.530	0.467	0.533
Follow-Up Headway, s	2.667	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	660	674	408	484	546	293	335
Cap Entry Lane, veh/h	825	901	473	715	789	595	666
Entry HV Adj Factor	0.980	0.981	0.979	0.981	0.980	0.979	0.979
Flow Entry, veh/h	647	661	399	475	535	287	328
Cap Entry, veh/h	809	883	463	700	773	583	652
V/C Ratio	0.800	0.748	0.862	0.678	0.692	0.492	0.503
Control Delay, s/veh	23.7	18.9	44.2	18.6	17.9	14.5	13.5
LOS	C	C	E	C	C	B	B
95th %tile Queue, veh	8	7	9	5	6	3	3

Intersection	
Intersection Delay, s/veh	22.5
Intersection LOS	C

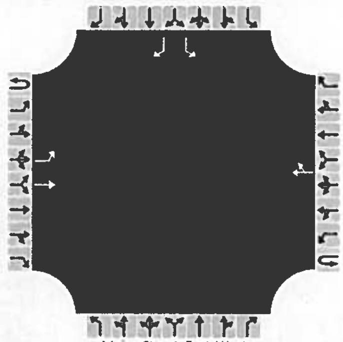
Approach	EB		WB		NB		SB	
Entry Lanes	2		1		2		2	
Conflicting Circle Lanes	2		2		2		2	
Adj Approach Flow, veh/h	1319		400		1026		616	
Demand Flow Rate, veh/h	1345		409		1046		629	
Vehicles Circulating, veh/h	535		1309		691		907	
Vehicles Exiting, veh/h	1001		428		1189		811	
Ped Vol Crossing Leg, #/h	1		1		2		0	
Ped Cap Adj	0.999		1.000		0.999		1.000	
Approach Delay, s/veh	21.6		46.8		19.2		14.3	
Approach LOS	C		E		C		B	

Lane	Left	Right	Left	Left	Right	Left	Right
Designated Moves	LT	R	LTR	LT	TR	LT	TR
Assumed Moves	LT	R	LTR	L	TR	LT	R
RT Channelized							
Lane Util	0.491	0.509	1.000	0.505	0.495	0.466	0.534
Follow-Up Headway, s	2.667	2.535	2.535	2.667	2.535	2.667	2.535
Critical Headway, s	4.645	4.328	4.328	4.645	4.328	4.645	4.328
Entry Flow, veh/h	660	685	409	528	518	293	336
Cap Entry Lane, veh/h	825	901	467	715	789	586	657
Entry HV Adj Factor	0.980	0.981	0.979	0.981	0.980	0.979	0.979
Flow Entry, veh/h	647	672	400	518	508	287	329
Cap Entry, veh/h	809	884	457	701	773	574	643
V/C Ratio	0.800	0.761	0.876	0.739	0.657	0.500	0.512
Control Delay, s/veh	23.7	19.6	46.8	21.9	16.4	14.9	13.9
LOS	C	C	E	C	C	B	B
95th %tile Queue, veh	8	7	9	7	5	3	3

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	LGS	Intersection	Truckee Way/Rue Ivy
Agency/Co.	LSC	Jurisdiction	
Date Performed	11/4/2019	East/West Street	Truckee Way
Analysis Year	2019	North/South Street	Rue Ivy
Time Analyzed	Existing No Project	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Frishman Hollow II		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		1	0	1
Configuration		L	T					TR						L		R
Volume (veh/h)		18	539				546	10						5		10
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

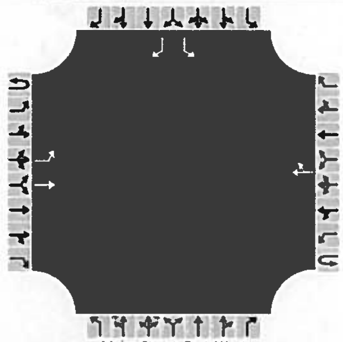
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		20												5		11
Capacity, c (veh/h)		969												193		500
v/c Ratio		0.02												0.03		0.02
95% Queue Length, Q_{95} (veh)		0.1												0.1		0.1
Control Delay (s/veh)		8.8												24.2		12.4
Level of Service (LOS)		A												C		B
Approach Delay (s/veh)	0.3												16.3			
Approach LOS													C			

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	LGS	Intersection	Truckee Way/Rue Ivy
Agency/Co.	LSC	Jurisdiction	
Date Performed	11/4/2019	East/West Street	Truckee Way
Analysis Year	2019	North/South Street	Rue Ivy
Time Analyzed	Existing Plus Project	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Frishman Hollow II		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		1	0	1
Configuration		L	T					TR						L		R
Volume (veh/h)		43	539				546	27						17		27
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

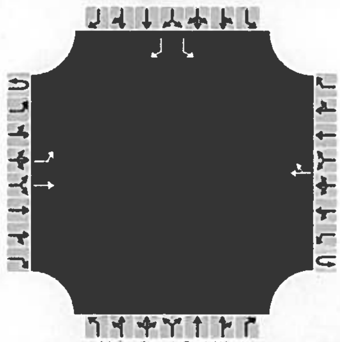
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		47												18		29
Capacity, c (veh/h)		953												171		494
v/c Ratio		0.05												0.11		0.06
95% Queue Length, Q_{95} (veh)		0.2												0.4		0.2
Control Delay (s/veh)		9.0												28.5		12.8
Level of Service (LOS)		A												D		B
Approach Delay (s/veh)	0.7												18.8			
Approach LOS													C			

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	LGS	Intersection	Truckee Way/Rue Ivy
Agency/Co.	LSC	Jurisdiction	
Date Performed	11/4/2019	East/West Street	Truckee Way
Analysis Year	2019	North/South Street	Rue Ivy
Time Analyzed	Future No Project	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Frishman Hollow II		

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		1	0	1
Configuration		L	T					TR						L		R
Volume (veh/h)		18	1202				889	10						5		10
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

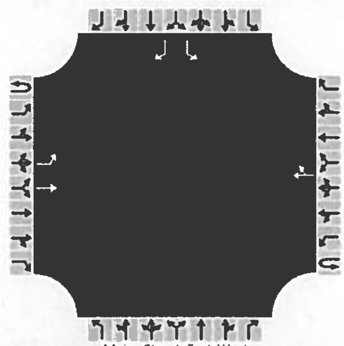
Delay, Queue Length, and Level of Service

	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Flow Rate, v (veh/h)		20												5		11
Capacity, c (veh/h)		702												40		305
v/c Ratio		0.03												0.14		0.04
95% Queue Length, Q_{95} (veh)		0.1												0.4		0.1
Control Delay (s/veh)		10.3												108.6		17.2
Level of Service (LOS)		B												F		C
Approach Delay (s/veh)	0.2												47.7			
Approach LOS													E			

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	LGS	Intersection	Truckee Way/Rue Ivy
Agency/Co.	LSC	Jurisdiction	
Date Performed	11/4/2019	East/West Street	Truckee Way
Analysis Year	2019	North/South Street	Rue Ivy
Time Analyzed	Future Plus Project	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Frishman Hollow II		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		1	0	1
Configuration		L	T					TR						L		R
Volume (veh/h)		43	1202				889	27						17		27
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

	EB U	EB L	EB T	EB R	WB U	WB L	WB T	WB R	NB U	NB L	NB T	NB R	SB U	SB L	SB T	SB R
Flow Rate, v (veh/h)		47												18		29
Capacity, c (veh/h)		691												35		301
v/c Ratio		0.07												0.53		0.10
95% Queue Length, Q_{95} (veh)		0.2												1.8		0.3
Control Delay (s/veh)		10.6												190.8		18.2
Level of Service (LOS)		B												F		C
Approach Delay (s/veh)	0.4												84.9			
Approach LOS													F			