BLACK OLIVE VILLAGE

DRAFT ENVIRONMENTAL IMPACT REPORT

State Clearinghouse No. 2017072065

Prepared for:

TOWN OF PARADISE
5555 SKYWAY
PARADISE, CA 95969

Prepared by:

Michael Baker
INTERNATIONAL

140 INDEPENDENCE CIRCLE, SUITE C
CHICO, CA 95973

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AB	Assembly Bill
ACM	asbestos-containing materials
amsl	above mean sea level
APCD	Air Pollution Control District
AQMD	Air Quality Management District
BCAG	Butte County Association of Governments
BCAQMD	Butte County Air Quality Management District
BMP	best management practice
BTU	British thermal unit
CAAQS	California ambient air quality standards
CalEEMod	California Emissions Estimator Model
Cal Fire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CH_4	methane
CNEL	Community Noise Level Equivalent
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CTCP	Construction Traffic Control Plan
dB	decibel
dBA	A-weighted decibel
EIR	environmental impact report
EPA	US Environmental Protection Agency
ESA	Environmental Site Assessment
FHWA	Federal Highway Administration
GHG	greenhouse gas
HARP	Hotspots Analysis and Reporting Program
HCM	Highway Capacity Manual
HRA	health risk assessment
HSIP	Highway Safety Improvement Program
HVAC	heating, ventilation, and air conditioning
Hz	hertz
IPCC	International Panel on Climate Change
ITE	Institute of Transportation Engineers
LBP	lead-based paint
L_{eq}	equivalent noise level

L_{max}	maximum A-weighted noise level
L_{min}	minimum A-weighted noise level
LOS	level of service
MMRP	mitigation monitoring and reporting program
mph	miles per hour
NAAQS	national ambient air quality standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOA	naturally occurring asbestos
NOC	Notice of Completion
NOP	Notice of Preparation
NO_2	nitrogen dioxide
NOx	nitrogen oxide
NSVAB	Northern Sacramento Valley Air Basin
NSVPA	North Sacramento Valley Planning Area
N_2O	nitrous oxide
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
O_3	ozone
PCAPCD	Placer County Air Pollution Control District
PG&E	Pacific Gas and Electric Company
PID	Paradise Irrigation District
PM	particulate matter
ppm	parts per million
PPV	peak particle velocity
RAST	Risk Assessment Standalone Tool
RMS	root mean square
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RTP/SCS	Regional Transportation Plan/Sustainable Community Strategy
SB	Senate Bill
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SVBAPCC	Sacramento Valley Basinwide Air Pollution Control Council
TAC	toxic air contaminant
TCAPCD	Tehama County Air Pollution Control District
TIS	transportation impact study
VMT	vehicle miles traveled
VOC	volatile organic compound

ES
EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This Draft Environmental Impact Report (Draft EIR) has been prepared for the proposed Black Olive Village (proposed project) by the Town of Paradise, acting as the lead agency.

This executive summary includes background information, a brief description of the project and its alternatives, a summary of environmental impacts, and areas of controversy and issues to be resolved. The remainder of the document and technical appendices provide the discussion and support for the conclusions summarized herein.

ES.2 SUMMARY OF PROPOSED PROJECT

The proposed Black Olive Village is in the Town of Paradise, Butte County, between Chico and Magalia in the lower Sierra Nevada foothills. The project site, which consists of five parcels, is directly west of the intersection of Skyway and Black Olive Drive in an existing commercial area. The General Plan designates the project site as Town Commercial (TC). The site is zoned Community Commercial (CC). These designations provide for a full range of locally and regionally oriented commercial uses, including retail, retail centers, restaurants, service stations, and other uses, and the project is consistent with the General Plan and the Zoning Code. The project requires approval of a Conditional Use Permit for the Safeway store and adjacent retail space in accordance with CC zoning district requirements for a large retail project.

There are 19 residential and commercial structures and outbuildings on the site. Only one of these buildings is occupied. The site has three short asphalt driveways from Skyway, which provide access to the various residential structures, an asphalt parking lot, and a gravel parking area. Surrounding development is primarily commercial, with some residential on the west and northwest.

The proposed project would result in the creation of 67,473 square feet of retail uses on 7.63 acres, which would consist of a 54,471-square-foot Safeway-branded grocery store, a 9-station (18 pumps) fueling center with illuminated canopy, a 1,002-square-foot fueling center kiosk, 7,800 square feet of additional retail adjoining the store, a 4,200-square-foot restaurant pad, and a 276-space parking lot. The grocery store would operate 7 days per week, 24 hours per day. The existing approximately 35,000-square-foot Safeway store in Old Town Plaza on Clark Road would be closed. A new use or tenant for the vacated store has not been identified, and there are no plans to demolish the space.

Off-site frontage improvements to Skyway to accommodate the proposed project would include a primary driveway entrance aligned opposite to Black Olive Drive (which would be a signalized intersection following improvements by the Town in 2017–18, unrelated to the proposed project); a secondary access driveway (northern driveway) for the fueling center; curb, gutter, and sidewalk; and a public bus turnout and shelter on Skyway south of the primary driveway entrance. A 6-foot-wide bicycle and pedestrian pathway would be constructed along the Skyway frontage and dedicated to the Town. Landscaping, consisting of trees, shrubs, and plants, would be installed throughout the parking lot, along Skyway, and along the north, west, and south boundaries of the site.

Delivery truck access to the project is proposed via the northern driveway. Delivery trucks accessing the site would enter via the northern driveway, proceed to the two loading docks via a one-way route at the rear of the Safeway store, and exit via the primary driveway at Black Olive Drive. Smaller delivery trucks would use either driveway to access the site. Although deliveries would be based on sales, it is anticipated there would be 2 or 3 large Safeway delivery trucks per

day, an average of 10 to 15 and up to 20 smaller trucks for Safeway deliveries, and approximately 1.5 fuel deliveries per day for the fueling center.

Water service for the project would be provided by the Paradise Irrigation District (PID). The proposed project would include an on-site wastewater secondary treatment system. Stormwater from the proposed project would be collected into mechanical structures and treated in on-site stormwater detention basins prior to discharge into the Town's stormwater drainage system in Skyway.

The 19 existing structures would be demolished, and 180 trees greater than 10 inches in diameter would be removed. The Town has not identified any of the trees on-site as a heritage tree. The project applicant will be required to obtain a Tree Felling Permit from the Town, and the California Department of Forestry and Fire Protection (Cal Fire) will require the preparation of a Timber Harvest Plan.

Grading of the site to create a level pad for the buildings and parking lot would require cut-and-fill operations and the import of 20,900 cubic yards of fill material. A retaining wall would be installed on the west side of the site, along the property line, at the bottom of a slope created by fill placement. The retaining wall would range in height from 14 to 16 feet along most of the western property line, decreasing to 5 feet near the southwest corner. A retaining wall would also be placed on the north side of the site ranging from 16 feet below the grade of the pad at the northwest corner to 10 feet above the pad grade near the center of the northern property line.

The boundaries of the five existing parcels would be modified to provide for individual parcels for future retail tenants and the restaurant pad.

For a complete description of the proposed project, see Section 2.0, Project Description.

ES.3 ENVIRONMENTAL REVIEW PROCESS

Following the Town's preliminary review of the proposed project, the Town determined the proposed project may have a significant effect on the environment and concluded that an EIR would be required. The Town of Paradise published a Notice of Preparation (NOP) of an EIR on July 28, 2017. This notice was circulated to the public, local, state, and federal agencies, and other interested parties for 30 days to solicit comments on the proposed project. The Town conducted a scoping meeting on August 22, 2017, to receive input on the content of the EIR. The Town received one comment letter from a member of the public, letters from two state agencies (Native American Heritage Commission and Regional Water Quality Control Board), and one letter from a local agency (Butte County Air Quality Management District).

An initial study checklist was prepared, although it was not required pursuant to CEQA Guidelines Section 15063(a). The Initial Study is included in **Appendix B** in this Draft EIR. The Town determined the scope for this EIR based on the Initial Study and comments in response to the NOP. The following environmental topics are addressed in detail the Draft EIR: aesthetics, air quality, greenhouse gas emissions, noise, and traffic. Sections 4.1 through 4.5 in this EIR provide an integrated presentation of the setting, environmental impacts, and mitigation measures. Potential effects of implementing the proposed project, including cumulative effects, are identified, along with mitigation measures recommended to reduce identified impacts. In cases where mitigation would not reduce an impact to a level that is less than significant or no mitigation is available, this fact is noted.

In the Initial Study (Appendix B), several impacts were determined to be less than significant with mitigation incorporated for the following topics: biological resources, cultural resources, geology/soils, hazardous materials, and fire hazard. Mitigation measures identified for these impacts are identified in this Executive Summary.

DRAFT EIR REVIEW PERIOD

The review period for this Draft EIR is 45 days beginning on February 12, 2018. Public comment on the Draft EIR will be accepted in written form until the close of the public comment period, which is March 28, 2018. All comments on the Draft EIR may be sent via regular mail, email, or fax to:

Craig Baker, Community Development Director
Town of Paradise
5555 Skyway
Paradise, CA 95969
Email: cbaker@townofparadise.com
Fax: (530) 877-5059

ES.4 PROJECT ALTERNATIVES

CEQA Guidelines Section 15126.6 sets forth the requirements for consideration and discussion of alternatives to a proposed project. The alternatives to the proposed project evaluated in this Draft EIR are the CEQA-required No Project alternative, and a Reduced Project alternative. Other alternatives considered but not evaluated in detail are also presented in the alternatives analysis. The alternatives analysis also addresses the ability of each alternative to achieve project objectives and the feasibility of the alternative.

ES.5 AREAS OF CONTROVERSY/ISSUES TO BE RESOLVED

The Town received one comment letter from a member of the public during the NOP review period. The Town anticipates that issues of concern to the public may be the size and scale of the project relative to its surroundings, loss of trees, noise, and traffic along Skyway.

ES.6 SUMMARY OF ENVIRONMENTAL IMPACTS

Table ES-1 lists project and cumulative impacts and mitigation measures identified in the Draft EIR and in the Initial Study (**Appendix B** to the Draft EIR).

SIGNIFICANT AND UNAVOIDABLE IMPACTS

The analysis in Sections 4.1 through 4.5 in the Draft EIR determined the proposed project would result in the following significant impacts that cannot be mitigated to a less than significant level:

- Project-level and cumulative operational ozone precursor (NOx) emissions from project-generated vehicle trips (Impact 4.2.3 and Impact 4.2.9)
- Cumulatively considerable operational greenhouse gas (GHG) emissions, with nearly all the emissions attributable to project-generated vehicle trips, which would conflict with GHG reduction targets established in the Assembly Bill (AB) 32 Scoping Plan and Senate Bill (SB) 32 (Impact 4.3.1 and Impact 4.3.2)

- Cumulative (2040) intersection level of service impacts at Skyway and Elliott Road and Skyway and Black Olive Drive due to increased vehicle trips (Impact 4.5.6)

As explained in Section 4.2 (Air Quality), Section 4.3 (Greenhouse Gas Emissions), and Section 4.5 (Transportation and Circulation), it is assumed the proposed project would be a new project because a new use or tenant for the vacated store on Clark Road has not been identified. It is assumed that another business would use that space and have similar commercial use, vehicle trip-generating characteristics. While some of the trips to the new site on Skyway will be redistributed/relocated trips from the existing Safeway location on Clark Road, no trips associated with the existing store were deducted in the analysis of air quality, GHG, and traffic impacts. This provides a worst-case, conservative analysis of operational impacts; thus, the significant and unavoidable impacts are likely overestimated.

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.1 Aesthetics			
4.1.1 The proposed project would result in the removal of trees, grading, and construction of a retail commercial project, but this would not have an adverse effect on scenic vistas.	Less than significant	None required.	Less than significant
4.1.2 The proposed project would change the visual characteristics of the project site, which would be readily visible to motorists on Skyway and from some locations in nearby residential and commercial development.	Potentially significant	**MM 4.1.2a** The applicant shall modify the conceptual landscape plan to indicate the locations of proposed retaining walls. Segmental retaining walls should be used where possible. The proposed landscape plan shall be modified to incorporate shrubs (e.g., ceanothus, coffeeberry, toyon, and western redbud) with moderate to fast growth rates on the slope above the western retaining wall to provide greater coverage and screening beyond that provided by the proposed tree plantings and fescue. An alternative to fescue (a high-water-use grass) shall be considered for ground cover. Native and/or low-water-use plants shall be used as feasible. The conceptual landscape plan shall be modified to reflect these modifications, subject to Town review and approval. **MM 4.1.2b** The final landscape plan shall include self-clinging and/or cascading vine species along all retaining walls. If feasible, vine pockets on the project site shall be used to encourage growth on the opposite side of the walls. Self-clinging and/or cascading vines shall also be incorporated into the landscape plan where sound barriers are recommended (shown in Figure 4.4-3). **MM 4.1.2c** Prior to approval of the proposed tree removal plan, the boundaries of the project site shall be certified by a California-licensed surveyor and reconciled with the proposed tree removal plan (Figure 2.0-5 in the Draft EIR) to determine which trees are proposed for removal. Trees that are not on the applicant's property may not be removed without express permission from the property owner.	Less than significant

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
		MM 4.1.2d Large-diameter trees along the project's north, west, and southern boundaries shall be incorporated into the grading and landscape plan, where practicable and to the extent feasible, before the Town approves the tree removal and landscape plans. Specific efforts should be made to retain tree number T-1424 (48-inch black oak) shown on the applicant's tree removal plan (Figure 2.0-5). Trees to remain in place along the project site boundaries (regardless of property ownership) shall be protected during site grading and construction activities to protect the root systems. Pruning of trees not on the applicant's property shall only be performed with permission of the property owner, and pruning may only be implemented based on recommendations of a California-certified arborist. **MM 4.1.2e** If California sycamore trees are retained in the landscape plan for the parking lot, the landscape plan shall require root barriers be installed to minimize the potential for pavement and sidewalk damage. **MM 4.1.2f** In accordance with the Town's Municipal Code Section 8.12.120, the project applicant shall pay the applicable in-lieu fee identified in the Town Resolution No. 08-31 for each qualified tree to be felled that is not replaced on-site (approximately 40 trees).	
4.1.3 The proposed project would introduce new sources of light and glare on the project site.	Less than significant	None required.	Less than significant
4.1.4 The proposed project would alter the visual quality of the site and increase nighttime lighting, but the project's contribution to cumulative aesthetics impacts in the viewshed of the project site would be less than cumulatively considerable.	Less than significant	None required.	Less than significant

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.2 Air Quality			
4.2.1 The proposed project would not conflict with or obstruct implementation of the applicable air quality attainment plan.	Less than significant	None required.	Less than significant
4.2.2 Construction of the proposed project would result in short-term emissions of criteria air pollutants.	Less than significant	Regulatory Compliance Measures (RCMs) **RCM A** The following measures shall be noted on grading plans and in construction specifications, and implemented during project construction to reduce exhaust emissions. • During all construction activities, all diesel-fueled construction equipment, including but not limited to rubber-tired dozers, graders, scrapers, excavators, asphalt paving equipment, cranes, and tractors, shall be California Air Resources Board (CARB) Tier 3 Certified or better as set forth in Section 2423 of Title 13 of the California Code of Regulations and Part 89 of Title 40 of the Code of Federal Regulations. • All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. Equipment maintenance records shall be kept on-site and made available upon request by the Town. • On-road diesel equipment shall comply with the 5-minute idling restriction identified in Section 2485 of Title 13 California Code of Regulations. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the 5-minute idling limit. • Off-road diesel equipment shall comply with the 5-minute idling restriction identified in Section 2449(d)(3) of the California Air Resources Board's In-Use Off-Road Diesel regulation. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the 5-minute idling limit. • Electrify equipment when feasible.	Less than significant

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
		• Substitute gasoline-powered in place of diesel-powered equipment, where feasible. • Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel. • Schedule activities to minimize the amount of large construction equipment operating simultaneously during any given time period. • Schedule on-road construction truck trips during non-peak hours to reduce peak hour emissions. • Proposed truck routes shall be evaluated to define routing patterns with the least impact to residential communities and sensitive receptors and identify these receptors in the truck route map. **RCM B** The following measures shall be noted on grading plans and in construction specifications, and implemented during project construction to reduce fugitive dust emissions. • Reduce the amount of the disturbed area where possible. • Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible. • All dirt stockpile areas should be sprayed daily as needed, covered, or a BCAQMD-approved alternative method will be used. • Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil-disturbing activities. • Exposed ground areas that will be reworked at dates greater	

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
		than one month after initial grading should be sown with a fast-germinating noninvasive grass seed and watered until vegetation is established. • All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the District. • All roadways, driveways, sidewalks, etc., to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. • Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site. • All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with local regulations. • Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site. • Dust, dirt, or other material track-out shall not extend 25 feet or more in cumulative length from the point of origin from an active operation. All track-out from an active operation shall be removed at the conclusion of each workday or evening shift. • The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off-site. Their duties shall encompass holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Town and the BCAQMD prior to commencement of clearing, demolition, or earthmoving activities.	

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.2.3 Project-generated operational emissions would exceed applicable significance thresholds for NOx, an ozone precursor.	Significant	**MM 4.2.3a** The project applicant shall modify, to the extent feasible, the conceptual landscape plan to use low-ROG-emitting, low-water-use shade trees (e.g., zelkova) in the parking lot instead of the proposed California sycamores and that will achieve a minimum 50 percent shade coverage within 10 years of construction. Other trees listed in the Town's Greater Redevelopment Project Area and Upper Skyway Design Standards should also be considered as an alternative to the proposed sycamore trees if they have the potential to emit less biogenic ROG and use less water than California sycamores. The applicant shall provide a list of the species to be used on a landscaping plan prior to final project approval. **MM 4.2.3b** The applicant shall provide and maintain a kiosk displaying transportation information in a prominent area accessible to employees and patrons. **MM 4.2.3c** The applicant shall provide improvements to the proposed bus stop adjacent to the project site on Skyway to include a covered bench, lighting, and route information. Details shall be included in final site plans and project design documentation. **MM 4.2.3d** The applicant shall implement a "no idling" program for heavy-duty diesel vehicles in the loading dock area, including the installation of electrical connections at loading docks for the connection of trucks equipped with electrical hookups to eliminate the need to operate engines to power transport refrigeration units at the loading docks. Signage advising vehicle drivers of the idling restrictions and electrical hookup shall be placed at the loading dock and near truck entrances to the loading area.	Significant and unavoidable
4.2.4 The proposed project would generate CO emissions, but this would not result in localized concentrations of mobile-source CO that would exceed applicable air quality standards	Less than significant	None required.	Less than significant

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact		Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.2.5	Construction of the proposed project would generate diesel particulate matter emissions.	Less than significant	None required.	Less than significant
4.2.6	The proposed project would generate toxic air contaminant (TAC) emissions from truck delivery operations and retail fueling center dispensing activities, but TAC concentrations would not exceed applicable standards.	Less than significant	None required.	Less than significant
4.2.7	Construction of the proposed project could result in airborne emissions of asbestos or lead-based paint.	Potentially significant	**MM 4.2.7** The project applicant shall complete an investigation of the potential for-asbestos-containing materials (ACM) and lead-based paint (LBP) to be present in buildings to be demolished and soils throughout the project site. The investigation report, which shall be prepared by a professional qualified to perform such investigations, shall be submitted to the Town of Paradise. All abatement recommendations in the report shall be implemented prior to demolition and any activity that would involve soil disturbance associated with demolition and/or grading. The applicant's contractor(s) shall be certified by the State to perform abatement and must comply with all applicable abatement and disposal requirements. The contractor(s) shall be required to provide proper notification to CARB and BCAQMD, as appropriate, in accordance with its requirements. The Town shall not issue a grading and/or demolition permit until the applicant has submitted the results of abatement and testing indicating that naturally occurring asbestos (NOA), ACM, and/or LBP have been remediated and disposed of in accordance with federal NESHAP regulations, federal and state hazardous waste regulations, and federal and state OSHA regulations, as appropriate. The contractor shall consult with BCAQMD staff to determine whether a permit is required for LBP abatement and shall obtain permits as necessary.	Less than significant

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.2.8 The proposed project would not include uses that would create objectionable odors affecting a substantial number of people.	Less than significant	None required.	Less than significant
4.2.9 Operation of the proposed project, in combination with cumulative development in the NSVAB, would result in a cumulatively considerable net increase in NOx emissions, an ozone precursor for which the region is nonattainment.	Significant and unavoidable	Implement mitigation measures MM 4.2.3a through MM 4.2.3d.	Significant and unavoidable
4.2.10 Operation of the proposed project, in combination with cumulative development in the Town of Paradise, would generate TAC emissions, but the project's contribution would not be cumulatively considerable.	Less than signfiicant	None required.	Less than significant
4.2.11 Operation of the proposed project, in combination with cumulative development, would not result in a cumulatively considerable contribution to mobile source CO emissions.	Less than significant	None required.	Less than significant
4.3 Greenhouse Gas Emissions			
4.3.1 The proposed project would result in greenhouse gas emissions that would further contribute to significant impacts on the environment.	Significant and unavoidable	Implement mitigation measures MM 4.2.3a through MM 4.2.3d.	Significant and unavoidable
4.3.2 The proposed project would generate GHG emissions that would be cumulatively considerable. The project would therefore conflict with the reduction targets established in AB 32 and SB 32.	Significant and unavoidable	None feasible beyond mitigation measures MM 4.2.3a through MM 4.2.3d.	Significant and unavoidable
4.4 Noise			
4.4.1 Construction of the proposed project could generate or expose persons to excessive noise, groundborne vibration, and groundborne noise.	Potentially significant	**MM 4.4.1** The project applicant shall ensure through contract specifications and grading notes that construction best management practices (BMPs) are implemented by contractors to reduce construction noise levels. The construction BMPs shall	Less than significant

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
		include the following: • In conformance with Section 9.18.160 of the Town's Municipal Code, construction activities that would create noise clearly audible across a residential zoned or a commercial zoned property shall be prohibited between 7:00 p.m. and 7:00 a.m. on weekdays and Saturdays or at any time on Sundays or holidays. • Construction equipment shall be properly muffled according to industry standards and in good working condition. • Noise-generating construction equipment and construction staging areas shall be located away from sensitive uses, where feasible. • Noise attenuation measures shall be implemented to the extent feasible, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources. • Electric air compressors and similar power tools shall be used rather than diesel equipment, where feasible. • Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes. • The use of high impact equipment such as hoe rams and jackhammers shall be limited within 15 feet of nearby structures. • Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow building owners and residents in the surrounding area to contact the job superintendent. If the Town or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.	

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
4.4.2 Operation of the proposed project would generate noise from customer parking lots, delivery trucks, and building mechanical equipment.	Potentially significant	**MM 4.4.2a** The project applicant shall install a minimum 6-foot-high solid noise barrier on the northern property line adjacent to the Safeway store truck entry lane and a minimum 6-foot-high solid noise barrier around the loading dock area, as shown in Figure 4.4-3 in the Draft EIR. Prior to approval of grading/improvement plans, the Town shall ensure the noise barriers are shown on the site plan. **MM 4.4.2b** To ensure noise from delivery trucks traveling along the truck entry lane or unloading does not exceed the Town of Paradise's nighttime limit, the speed limit on the truck entry lane shall be limited to 5 miles per hour. This requirement shall be included as a condition of approval. The applicant shall post signage that specifies the maximum speed limit (5 mph) restriction; the signage shall be posted at the northern driveway entrance to the truck delivery lane and along the lane on the west side leading to the delivery area. The Town shall establish a mechanism for adjacent residents to report concerns with truck delivery and loading dock noise and/or violations of the speed limit restrictions, and to require the applicant to remedy the situation, as necessary. Mitigation measure MM 4.2.3e shall also be implemented, which requires electrical hookups at the loading dock for truck refrigeration units. **MM 4.4.2c** To ensure noise from the supermarket building's mechanical equipment does not exceed the Town's nighttime L_{eq} 45 dB limit, the project applicant shall install a solid noise barrier (parapet wall) of at least the height of the mechanical systems around the perimeter of the store or provide a sound enclosure for each mechanical system. The mechanical system, location, and parapet wall height and/or sound enclosures shall be designed to reduce noise levels to a maximum hourly L_{eq} of 45 dB at the adjacent property lines on the north and west sides of the proposed Safeway building. Prior to issuance of a building permit for the store, the Town shall ensure the project's mechanical plan shows the location of the HVAC system and related sound attenuation features and that the applicant has	Less than significant

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
		provided documentation demonstrating the features will reduce noise levels to a maximum hourly L_{eq} of 45 dB at the adjacent property lines on the north and west sides of the proposed Safeway building. The Town shall establish a mechanism for adjacent residents to report problems with mechanical system noise and to remedy the situation if mechanical system noise is determined to be a nuisance.	
4.4.3 Operation of the proposed project would generate noise due to increased traffic on surrounding streets.	Less than significant	None required.	Less than significant
4.4.4 Project operation would generate additional traffic noise, but this would not result in a substantial contribution to cumulative noise levels that would be cumulatively considerable.	Less than significant	None required.	Less than significant
4.4.5 Project operation, in combination with cumulative development, would generate additional sources of non-transportation noise, but it would not result in a substantial contribution to cumulative noise levels that would be cumulatively considerable.	Less than significant	None required.	Less than significant
4.5 Transportation and Circulation			
4.5.1 The proposed project would add traffic to local intersections, but the Town of Paradise level of service (LOS) standard for intersection operations would not be exceeded.	Less than significant	None required.	Less than significant
4.5.2 Construction-phase traffic associated with the proposed project could result in temporary traffic congestion.	Potentially significant	**MM 4.5.2** Prior to the issuance of grading permits, a Construction Traffic Control Plan (CTCP) shall be submitted by the project applicant or its construction contractor for review and approval by the Town of Paradise Public Works/Engineering Department and implemented throughout project construction. The CTCP shall include a schedule of construction and anticipated methods of handling traffic to ensure the safe flow of traffic and adequate emergency access, including maintaining an open lane for vehicle travel at all times, particularly during the	Less than significant

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
		PM peak hour. The CTCP shall identify methods for coordinating with and notifying the Paradise Police Department and Fire Department and Butte Regional Transit at least 14 days in advance if construction vehicle or equipment traffic activity on Skyway has the potential to cause disruption of traffic flow or transit services.	
4.5.3 The proposed project would result in the addition of two driveways providing access from Skyway, which could create traffic hazards.	Potentially significant	**MM 4.5.3a** The project applicant shall install striped channel island and a right-turn-only sign at the northern access driveway to prohibit left turn movements from the driveway onto Skyway. **MM 4.5.3b** The project applicant shall improve the Skyway/Black Olive Drive intersection by constructing exclusive left turn pockets on both the Black Olive Drive approaches (project driveway approach and westbound approach). **MM 4.5.3c** The project applicant shall change the signal phasing for side street left turns at the Skyway/Black Olive Drive intersection from "permissive" to "protected." This may be implemented by the applicant, with the signal phasing design subject to Town review and approval, or the applicant shall provide sufficient funding to the Town so that it may contract the work to a qualified vendor. **MM 4.5.3d** The Town shall re-optimize the signal timings for the Skyway corridor between Neal Road and Elliott Road. This may be implemented by the applicant, with the signal timing design subject to Town review and approval, or the applicant shall provide sufficient funding to the Town so that it may contract the work to a qualified vendor.	Less than significant
4.5.4 The proposed project would include driveways and an internal circulation pattern that would provide sufficient emergency access.	Less than significant	None required.	Less than significant
4.5.5 The addition of project traffic to cumulative conditions could result in a decline in level of service at two study intersections (Skyway/Black	Significant and unavoidable	**MM 4.5.5** Pay applicable Town of Paradise transportation impact fees.	Significant and unavoidable

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
Olive Drive and Skyway/Elliott Road) and would increase queuing at those intersections.			
Mitigation Measures Included in Initial Study (Appendix B)			
Biological Resources			
Potential disturbance of nesting/breeding birds during construction.		**MM 2.4.1** If clearing and/or construction activities would occur during the bird breeding season (typically January through July for raptors and February 15 through August 15 for other birds), preconstruction surveys to identify active nests shall be conducted within 3 days of construction initiation, particularly vegetation clearing and ground-disturbing activities. Surveys must be performed by a qualified biologist for the purposes of determining presence/absence of active nest sites within the proposed impact area, including construction access routes and a 500-foot buffer (if feasible). If no active nests are found, no further mitigation is required. Surveys shall be repeated if relevant construction activities are delayed or postponed. **MM 2.4.2** If an active nest is located during preconstruction surveys, construction activities shall be restricted as necessary to avoid disturbance of the nest until it is deemed inactive by a qualified biologist. Restrictions shall include establishment of exclusion zones (no ingress of personnel or equipment) at a minimum radius of 300 feet around an active raptor nest and 100 feet around other active bird nest(s). Activities permitted within exclusion zones and the size may be adjusted through consultation with the CDFW. **MM 2.4.3** Vegetation containing active nests that must be removed as part of the project shall be removed during the non-breeding season (August 16 through December 31), but only provided that the nest(s) are confirmed no longer active.	
Potential disturbance of roosting bats during demolition and site preparation activities		**MM 2.4.4** Construction-related activities shall occur only during daylight hours. **MM 2.4.5** Prior to the removal of any trees or buildings, a	

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
		bat survey shall be performed by a qualified biologist between March 1 and July 31. If bat roosts are identified, the Town shall require that the bats be safely flushed from the sites where roosting habitat is planned to be removed prior to roosting season (typically May to August) and prior to the onset of construction activities. If maternity roosts are identified during the maternity roosting season (typically May to September), they must remain undisturbed until a qualified biologist has determined the young bats are no longer roosting. If roosting is found to occur on-site, replacement roost habitat (e.g., bat boxes) shall be provided to offset roosting sites removed. If no bat roosts are detected, no further action is required if the trees are removed or the vacant building are demolished prior to the next breeding season. If removal/demolition is delayed, an additional survey shall be conducted 30 days prior to removal/demolition to ensure that a new colony has not established itself. **MM 2.4.6** If a female or maternity colony of bats are found in trees on the project site, and the project can be constructed without the elimination or disturbance of the roosting colony (e.g., if the colony roosts in a large tree not planned for removal), a qualified biologist shall determine what buffer zones will be employed to ensure the continued success of the colony. Such buffer zones may include a construction-free barrier of 200 feet from the roost and/or the timing of the construction activities outside of the maternity roosting season (after July 31 and before March 1). **MM 2.4.7** If an active nursery roost is documented on-site and demolition and/or tree removal cannot be performed outside of the maternity roosting season, bats shall be excluded from the site after July 31 and before March 1 to prevent the formation of maternity colonies. Nonbreeding bats shall be safely evicted, under the direction of a bat specialist in coordination with the CDFW.	
Cultural Resources			

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
Potential discovery of previously unidentified cultural resources, tribal cultural resources, paleontological resources, and/or human remains		**MM 2.5.1** Treatment of previously unidentified archaeological and paleontological deposits. Construction personnel involved in excavation and grading activities shall be informed of the possibility of discovering archaeological or paleontological resources at any location and the protocol to be followed if resources are found. The Town shall ensure the grading plan notes include specific reference to the potential discovery of such resources. If prehistoric or historical archaeological deposits are discovered during construction, the project applicant and/or contractor shall stop all work within 25 feet of the discovery and an archaeologist shall assess the situation, consult with agencies as appropriate, and make recommendations regarding the treatment of the discovery. The project applicant and/or contractor shall avoid impacts to archaeological deposits to the extent feasible, but if such impacts cannot be avoided, the deposits shall be evaluated for their California Register eligibility. If the deposit is not eligible for the California Register, no further protection of the finds is necessary. If the deposits are California Register eligible, they shall be protected from project-related impacts, or such impacts shall be mitigated. Mitigation may consist of but is not necessarily limited to systematic recovery and analysis of archaeological deposits, recording the resource, preparation of a report of findings, and accessioning recovered archaeological materials at an appropriate curation facility. Public educational outreach may also be appropriate. If potentially unique paleontological resources (fossils) are discovered during project construction, work shall be halted immediately within 25 feet of the discovery, the Town shall be notified, and a professional paleontologist shall be retained to determine the significance of the discovery. The paleontologist shall establish procedures for paleontological resource surveillance throughout project construction and for temporarily halting or redirecting work to permit sampling, identification, and evaluation of fossils. These procedures shall be	

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
		implemented throughout project construction. Excavated finds shall be offered to a State-designated repository such as the Museum of Paleontology at the University of California, Berkeley or the California Academy of Sciences, or to California State University, Chico. **MM 2.5.2** Treatment of previously unidentified human remains. The project applicant and/or contractor shall treat any human remains encountered during ground-disturbing activities in accordance with California Health and Safety Code Section 7050.5. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the Butte County coroner has determined the manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation or to his or her authorized representative. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel/construction workers shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American most likely descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.	
Geology and Soils			
Seismic and soils hazards		**MM 2.6.1** The project applicant shall prepare and submit a final, design-level geotechnical report to the Town of Paradise. The project's grading and building plans shall demonstrate that they incorporate all applicable recommendations of the design-level geotechnical study and comply with all applicable requirements of the latest adopted version of the California Building Standards Code. A licensed professional engineer shall	

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
		prepare the plans, including those that pertain to seismic safety, soil engineering, cut/fill, structural foundations, pipeline excavation, and installation. All on-site soil engineer activities shall be conducted under the supervision of a licensed geotechnical engineer or certified engineering geologist.	
Hazards and Hazardous Materials			
Potential to encounter contaminated soils		**MM 2.8.1** In accordance with the recommendations of the Phase I ESA prepared for the project site, the project applicant shall have a qualified environmental professional perform a limited subsurface investigation of all RECs and significant data gaps identified in the Phase I ESA. The limited subsurface investigation shall include, at a minimum, soil sampling and laboratory testing to determine the presence of contaminants, a determination of whether contaminant levels exceed any applicable public standards, and recommendations to address contaminants of concern. Should the limited subsurface investigation identify contamination or contamination be discovered during site development, a Risk Management Plan shall be prepared and implemented that (1) identifies the contaminants of concern and the potential risk each contaminant would pose to human health and the environment during construction and post-development and (2) describes measures to be taken to protect workers and the public from exposure to potential site hazards. Measures could include options such as physical site controls during construction, remediation, long-term monitoring, post-development maintenance or access limitations, or some combination thereof. Depending on the nature of contamination, if any, appropriate agencies shall be notified (e.g., Town of Paradise Fire Department). If needed, a Site Health and Safety Plan that meets Occupational Safety and Health Administration (OSHA) requirements shall be prepared and in place prior to commencement of work in any contaminated area.	

TABLE ES-1: SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance After Mitigation
Wildland fire hazards		**MM 2.8.2** Prior to issuance of a building permit, the project applicant shall submit documentation from the Paradise Irrigation District verifying that the project's water system is capable of meeting the minimum fire flows required by the Town of Paradise Fire Marshal. If the system is not capable of meeting the required fire flows, the project applicant shall submit documentation showing the approved water system improvement plans to upgrade the existing system and detailing the financial arrangements to fund the necessary improvements.	

1.0
INTRODUCTION

1.1 PROJECT OVERVIEW

This Draft Environmental Impact Report (Draft EIR) has been prepared for the proposed Black Olive Village (proposed project) located in a commercial area in the Town of Paradise, Butte County. The proposed project would result in the creation of 67,473 square feet of retail uses on 7.63 acres, which would consist of a 54,471-square-foot Safeway-branded grocery store, a 9-station (18 pumps) fueling center with illuminated canopy and 1,002-square-foot fueling center kiosk, 7,800 square feet of additional retail, a 4,200-square-foot restaurant pad, and a parking lot accessed by two driveways off Skyway.

1.2 PURPOSE OF THE DRAFT EIR

This Draft EIR has been prepared in conformance with the California Environmental Quality Act (CEQA) to evaluate the environmental effects of the proposed project that may have a significant effect on the environment. For the purposes of CEQA, the term *project* refers to the whole of an action which has the potential for a direct physical change or reasonably foreseeable indirect change in the environment (CEQA Guidelines Section 153789[a]).

The Town of Paradise, acting as the lead agency, has prepared this Draft EIR to provide the public and responsible and trustee agencies with information about the potential environmental effects of the proposed project. As described in the provisions of CEQA and in Section 15121(a) of the CEQA Guidelines, an EIR is a public informational document that assesses potential environmental effects of the proposed project as well as identifies mitigation measures and alternatives to the proposed project that could reduce or avoid its adverse environmental impacts.

1.3 ENVIRONMENTAL REVIEW PROCESS

The review and certification process for the EIR will involve the following procedural steps:

NOTICE OF PREPARATION

In accordance with Section 15082 of the CEQA Guidelines, the Town of Paradise published a Notice of Preparation (NOP) of an EIR on July 28, 2017. The Town was identified as the lead agency for the proposed project. This notice was circulated to the public, local, state, and federal agencies, and other interested parties for 30 days to solicit comments on the proposed project. The Town conducted a scoping meeting on August 22, 2017, to receive input on the content of the EIR. The NOP is included in **Appendix A**. Written comments received by the Town in response to the NOP during the review period were considered during preparation of the Draft EIR and are included in **Appendix A**.

DRAFT EIR

This document constitutes the Draft EIR for the Black Olive Village project. This Draft EIR contains a description of the project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives. Upon completion of the Draft EIR, the Town will file the Notice of Completion (NOC) with the California Office of Planning and Research to begin the public review period (Public Resources Code Section 21161). Concurrent with the NOC, the Town will provide a Notice of Availability of the Draft EIR for public review and invite comment from the general public, agencies, organizations, and other interested parties.

The review period for this Draft EIR is 45 days beginning on February 12, 2018. Public comment on the Draft EIR will be accepted in written form until the close of the public comment period, which is March 28, 2018. All comments on the Draft EIR may be sent via regular mail, email, or fax to:

Craig Baker, Community Development Director
Town of Paradise
5555 Skyway
Paradise, CA 95969
Email: cbaker@townofparadise.com
Fax: (530) 877-5059

RESPONSE TO COMMENTS/FINAL EIR

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to all written comments regarding the adequacy and completeness of the Draft EIR received during the public review period.

CERTIFICATION OF THE EIR/PROJECT CONSIDERATION

The Paradise Town Council will review and consider the Final EIR. If the Town Council finds that the Final EIR is an adequate and complete analysis of the environmental impacts associated with the project, the Town Council may certify the Final EIR at a public hearing. The rule of adequacy generally holds that the EIR can be certified if it (1) shows a good faith effort at full disclosure of environmental information and (2) provides sufficient analysis to allow decisions to be made regarding the project in contemplation of its environmental consequences.

Following review and consideration of the Final EIR, the Town may take action to approve, approve with conditions, revise, or reject the project. A decision to approve the project would be accompanied by specific conditions of approval, imposing all feasible mitigation measures recommended in the EIR as adopted, by written findings in accordance with CEQA Guidelines Section 15091, and, if applicable, by a statement of overriding considerations pursuant to CEQA Guidelines Section 15093. A mitigation monitoring and reporting program, as described below, would also be adopted for mitigation measures that have been incorporated into or imposed upon the project to reduce or avoid significant effects on the environment. The program would be designed to ensure that these measures are carried out during project implementation.

MITIGATION MONITORING AND REPORTING PROGRAM

CEQA Guidelines Section 15097 requires lead agencies to adopt a mitigation monitoring and reporting program (MMRP) to describe mitigation measures that have been adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment. The specific reporting or monitoring program required by CEQA is not required to be included in the EIR; however, the MMRP will be presented to the Town Council for adoption as a separate document. Throughout the EIR, mitigation measures have been clearly identified and presented in language that will facilitate establishment of a monitoring and reporting program.

1.4 ORGANIZATION OF THE DRAFT EIR

Sections 15122 through 15132 of the CEQA Guidelines identify the content requirements for Draft and Final EIRs. An EIR must include a description of the environmental setting, an environmental impact analysis, mitigation measures, alternatives, significant irreversible environmental changes, growth-inducing impacts, and cumulative impacts.

Following the Town's preliminary review of the proposed project, the Town determined the proposed project may have a significant effect on the environment and concluded that an EIR would be required. An initial study checklist was prepared, although it was not required pursuant to CEQA Guidelines Section 15063(a). The Initial Study is included in **Appendix B**. The Town determined the scope for this EIR based on the Initial Study and comments in response to the NOP.

The following environmental topics are addressed in detail this Draft EIR: aesthetics, air quality, greenhouse gas emissions, noise, and traffic. Sections 4.1 through 4.5 in this EIR provide an integrated presentation of the setting, environmental impacts, and mitigation measures. Potential effects of implementing the proposed project, including cumulative effects, are identified, along with mitigation measures recommended to reduce identified impacts. In cases where mitigation would not reduce an impact to a level that is less than significant or no mitigation is available, this fact is noted.

In the Initial Study (**Appendix B**), several impacts were determined to be less than significant with mitigation incorporated for the following topics: biological resources, cultural resources, geology/soils, hazardous materials, and fire hazard. Mitigation measures identified for these impacts are identified in the Initial Study and in the Executive Summary and will be included in the MMRP for the proposed project.

This Draft EIR is organized as follows:

EXECUTIVE SUMMARY

This section includes the following: an overview of the project, areas of controversy, a summary of the alternatives to the project, and a concise summary of the project's environmental impacts and associated mitigation measures.

SECTION 1.0 – INTRODUCTION

This section summarizes the purpose of the Draft EIR, describes the environmental procedures that are to be followed according to state law, discusses the intended uses of the EIR, describes the EIR's scope and organization, and includes a summary of comments received on the NOP.

SECTION 2.0 – PROJECT DESCRIPTION

This section provides a detailed description of the proposed project and project objectives, along with background information and physical characteristics consistent with CEQA Guidelines Section 15124. It also describes the intended uses of the EIR and includes a list of agencies expected to use the EIR in their decision making and a list of permits and other approvals required to implement the project.

SECTION 3.0 – INTRODUCTION TO THE ANALYSIS

This section describes the approach to the project-specific and cumulative environmental analysis and general assumptions used in the analysis. Impacts not requiring detailed evaluation in the Draft EIR are also presented in this section.

SECTION 4.0 – ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

Section 4.0 contains an analysis of environmental topic areas as identified below. Each subsection contains a description of the existing setting of the project area, identifies project-related impacts, and recommends mitigation measures consistent with the requirements of CEQA Guidelines Sections 15125 through 15126.4. As required by CEQA Section 15130, an EIR is to discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. Each topical section contains an analysis of the cumulative setting, potential cumulative impacts, and recommended mitigation measures.

SECTION 5.0 – OTHER CEQA TOPICS

This section discusses and analyzes the various topical issues mandated by CEQA. These include significant environmental effects that cannot be avoided if the proposed project is implemented, growth-inducing impacts, and an analysis of energy conservation as required by CEQA Guidelines Appendix F.

SECTION 6.0 – ALTERNATIVES

The alternatives analysis consists of the following components: an overview of CEQA requirements for alternatives analysis, descriptions of the alternatives evaluated, a description of alternatives considered but rejected for further analysis in the Draft EIR, a comparison between the anticipated environmental effects of the alternatives and those of the proposed project, and identification of an environmentally superior alternative.

SECTION 7.0 – REPORT PREPARATION

This section lists all authors and agencies that assisted in the preparation of the report by name, title, and company or agency affiliation.

APPENDICES

The appendices include technical reports and other materials used to prepare the Draft EIR.

2.0
PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The proposed Black Olive Village project is in the Town of Paradise, Butte County, between Chico and Magalia in the lower Sierra Nevada foothills. The project site is directly west of the intersection of Skyway and Black Olive Drive (see **Figure 2.0-1**).

2.2 EXISTING LAND USE AND ENVIRONMENTAL SETTING

The project site is in an urbanized portion of the town that includes a mix of commercial and residential uses. The project site is 7.63 acres and comprises five individual parcels (Assessor's Parcel Numbers 052-211-007, -021, -036, and -037, and 052-182-092). There are 19 residential and commercial structures and outbuildings on the site. Only one of these buildings is occupied. The site has three short asphalt driveways from Skyway, which provide access to the various residential structures, an asphalt parking lot, and a gravel parking area.

Elevations on the site range from 1,640 feet above mean sea level (amsl) on the west, which is the lowest portion of the site, to 1,681 amsl on the north. The central portion of the site in the north–south direction is higher in elevation than the western and eastern boundaries, forming a low ridge, and the overall site slopes gently to the south.

The western part of the site slopes toward Honey Run. There are numerous trees throughout the site and along the project boundaries, ranging in diameter from a few inches to 30–40 inches. However, a large portion of the project site contains disturbed habitat, which occurs between the vacant residential structures and driveways and along the northern portion of the property. Much of the project site is dominated by Scotch broom, bromes, periwinkle, Himalayan blackberry, and other invasive plant species.

Surrounding uses include single-family homes to the west, commercial mini-storage units and single-family homes to the north, commercial uses and single-family homes to the east, across Skyway, and commercial uses and single-family homes to the south.

GENERAL PLAN LAND USE DESIGNATION AND ZONING

The General Plan designates the project site as Town Commercial (TC). The project site is zoned Community Commercial (CC). These designations provide for a full range of locally and regionally oriented commercial uses, including retail, retail centers, restaurants, service stations, and other uses.

2.3 PROJECT OBJECTIVES

The overall purpose of the proposed project is to bring a greater mix of neighborhood-serving goods and services that would be an additional source of local tax revenue and employment opportunities, which would further contribute to a healthy local economy in Paradise while retaining existing businesses.

The specific objectives of the proposed project, as identified by the Town, are as follows:

1) Optimize the infill use of underutilized land for commercial activity where current zoning and existing infrastructure allow for such uses, and where traffic volumes and customer patronage would support profitable retail businesses that would provide new sales tax revenue and additional employment opportunities for local residents.

2) Facilitate development of a new commercial project that contributes to a positive physical image and visual identity, complements and enhances the town's traditional design characteristics, and helps preserve the sense of small-town community in a natural environment.

3) Provide a new retail center in a single location that is readily accessible for local retail, restaurant, and fuel services to reduce traffic trips generated by town residents and commuters, to minimize travel distances (vehicle miles traveled), and to encourage pedestrian activity.

4) Develop a new retail project in a location where customer and delivery access and off-street parking can be safely provided.

5) Expand the town's pedestrian and bicycle network in the commercial core by providing additional connectivity and bus turnouts on Skyway.

6) Site and design a new retail center in a manner that avoids significantly important natural habitat areas having high value for wildlife, significantly important permanent and intermittent stream courses and drainage areas, areas sensitive for cultural resources, and the town's designated scenic corridors and gateways.

2.4 PROJECT CHARACTERISTICS

The proposed project would result in the creation of 67,473 square feet of retail uses on 7.63 acres consisting of a 54,471-square-foot Safeway-branded grocery store, a 9-pump fueling center (18 fueling positions) with illuminated canopy, a 1,002-square-foot fueling center kiosk, 7,800 square feet of additional retail adjoining the store, and a 4,200-square-foot pad for a high-turnover, sit-down restaurant (see **Figure 2.0-2**).

The Safeway store is anticipated to include general merchandise sales, grocery sales, alcohol sales (for off-site consumption), a pharmacy, outdoor storage (sidewalk displays), and a Signature Cafe. The store would operate 7 days per week, 24 hours per day and employ approximately 125 persons. Future employment for the adjacent retail space, fueling station, and restaurant is estimated to total between 70 and 90 jobs.

The existing approximately 35,000-square-foot Safeway store in Old Town Plaza on Clark Road would be closed. A new use or tenant for the vacated store has not been identified, and there are no plans to demolish the space.

SAFEWAY STORE AND RETAIL SHOPS BUILDING DESIGN

The project proposes a Craftsman-inspired, contemporary mountain theme for the Safeway building façade and adjoining future tenant retail space. The main building would be masonry block with various architectural treatments on all four sides. The building would be accented with a mixture of gable roofs over the two main entries, varying roofline parapet offsets, architectural pop-outs, a mixture of wall finishes, an outdoor trellis, patio areas, and articulated entry vestibules). A mixture of metal awnings and timber trellis work would be used throughout the façade and along the pedestrian pathway to provide shade and an interplay between light and shadow. The proposed color palette is earth tones such as beige, dark and light gray, and taupe. Multicolor accent walls would be used to create visual interest.

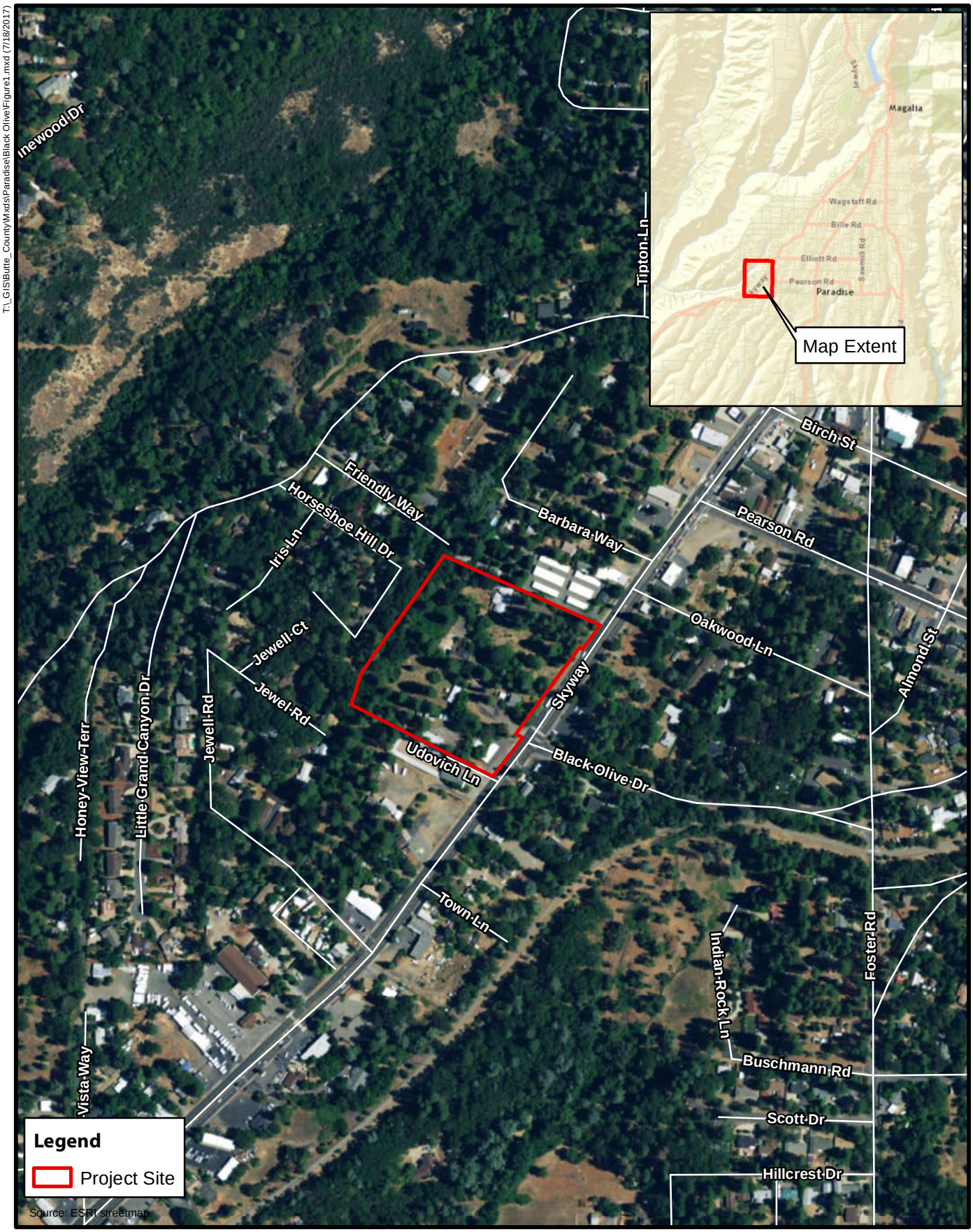

Figure 2.0-1
Project Location

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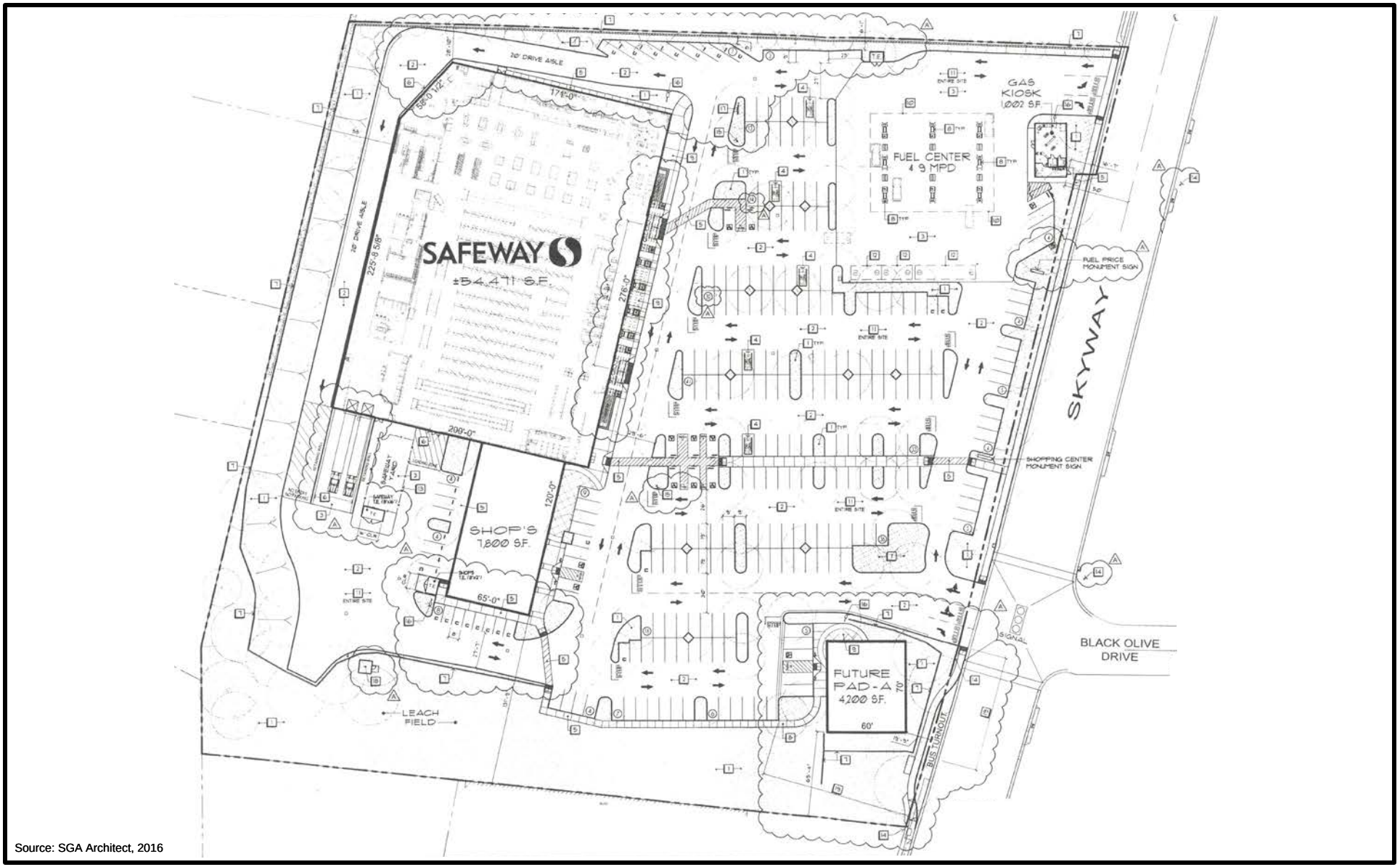

Source: SGA Architect, 2016

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FIGURE 2.0-2
Site Plan

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The tallest point on the proposed Safeway building is a gable above the main entrance. The distance between the finished floor elevation and the top of the gable is 35.0 feet, which meets Town standards for maximum height in commercial districts. **Figure 2.0-3a** illustrates the front elevation that would face Skyway.

The west, south, and north elevations would be masonry block with a mix of wall finishes (**Figure 2.0-3b**).

The building would be in the western part of the site, set back approximately 310 feet from Skyway, and separated from Skyway by the parking lot and the proposed fueling center. There would be an 8-foot-high Black Olive Village monument sign along the Skyway frontage.

Safeway Fueling Center

The façade and canopy at the fueling center and kiosk would reflect the design and color palette of the store (see **Figure 2.0-3c**). The maximum height of the canopy would be 21.5 feet. A 12-foot-tall fuel price monument sign would be erected on the Skyway frontage near the fueling center.

Restaurant Pad

The proposed project includes a pad for a future restaurant. No structures are proposed as part of the project. If an application for a restaurant is submitted in the future, the Town would review the site plan and design prior to issuing a building permit.

ACCESS, PARKING, AND ON-SITE CIRCULATION

Off-site frontage improvements to Skyway to accommodate the proposed project would include a primary driveway entrance aligned opposite to Black Olive Drive (which would be a signalized intersection following improvements by the Town in 2017–18, unrelated to the proposed project); a secondary access driveway (northern driveway) for the fueling center; curb, gutter, and sidewalk; and a public bus turnout and shelter on Skyway south of the primary driveway entrance (**Figure 2.0-2**).

The parking lot would have 276 spaces consisting of 264 regular spaces and 12 accessible spaces, which exceeds the Town's requirements for parking for the proposed project. The parking lot would be landscaped and illuminated as described in the Landscaping and Lighting subsection, below. Shopping cart corrals would be situated throughout the parking lot.

A 6-foot-wide bicycle and pedestrian pathway would be constructed along the Skyway frontage and dedicated to the Town. The project would accommodate pedestrian/bicycle connectivity via a path of travel bisecting the center of the project to connect to the Safeway store and adjoining retail. The project would also include "wayfinding" iconic elements for the visitor/shopper, such as planters with seating benches under a well-lit trellis/canopy, shade trees, and other various pedestrian amenities that would promote pedestrian travel.

Delivery truck access to the project is proposed via the northern driveway. Delivery trucks accessing the site would enter via the northern driveway, proceed to the two loading docks via a one-way route at the rear of the Safeway store, and exit via the primary driveway at Black Olive Drive. Smaller delivery trucks would use either driveway to access the site. The Safeway store loading docks would be approximately 4.5 feet below grade. Delivery trucks would use recessed bay doors with sealed gaskets to reduce noise from off-loading trailers. Local deliveries would be through an at-grade roll-up door and a Mondoor (a type of "floating" door). Although deliveries would be based on sales, it is anticipated there would be 2 or 3 large Safeway delivery trucks per day, an average of 10 to 15 and up to 20 smaller trucks for Safeway deliveries, and approximately 1.5 fuel deliveries per day for the fueling center.

UTILITIES

Water service for the project would be provided by the Paradise Irrigation District (PID). There is a private water main on-site, which would be reconfigured to provide for looping of the water system where possible to serve future retail tenant demand. Each individual parcel would be metered independently, in accordance with PID requirements for service. The line serving the site would be extended and/or replaced as necessary to connect to existing lines in Skyway. The Paradise Fire Department has confirmed that fire flow would be adequate. The project would include water-conserving features in restrooms and use drought-tolerant plantings to minimize irrigation water demand.

The proposed project would include an on-site wastewater secondary treatment system. All wastewater in Paradise is regulated by the State Water Resources Control Board (SWRCB) under resolution R5-2016-0089 approving the local agency management for the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of On-Site Wastewater Systems. The Town of Paradise Public Works Department has reviewed the proposed project and has determined the site has adequate capacity to support the dispersal of secondary treated wastewater from the proposed uses. The wastewater equipment building would be in the southwest corner of the site, near the truck delivery area, with the leach field to the south and east. The equipment building would be approximately 8 feet tall and 100 square feet with a beige exterior and a brown metal roof.

Stormwater from the proposed project would be collected into mechanical structures and treated in on-site stormwater detention basins prior to discharge into the Town's stormwater drainage system in Skyway.

Electricity and natural gas service would be provided by the Pacific Gas and Electric Company (PG&E), which has distribution lines along Skyway.

The proposed project would include a 45-kilowatt natural gas generator that would be used for emergency backup power in the event of an electrical power outage at the store.

Source: SGA Architect, 2016

Not To Scale

FIGURE 2.0-3a
Front Elevation

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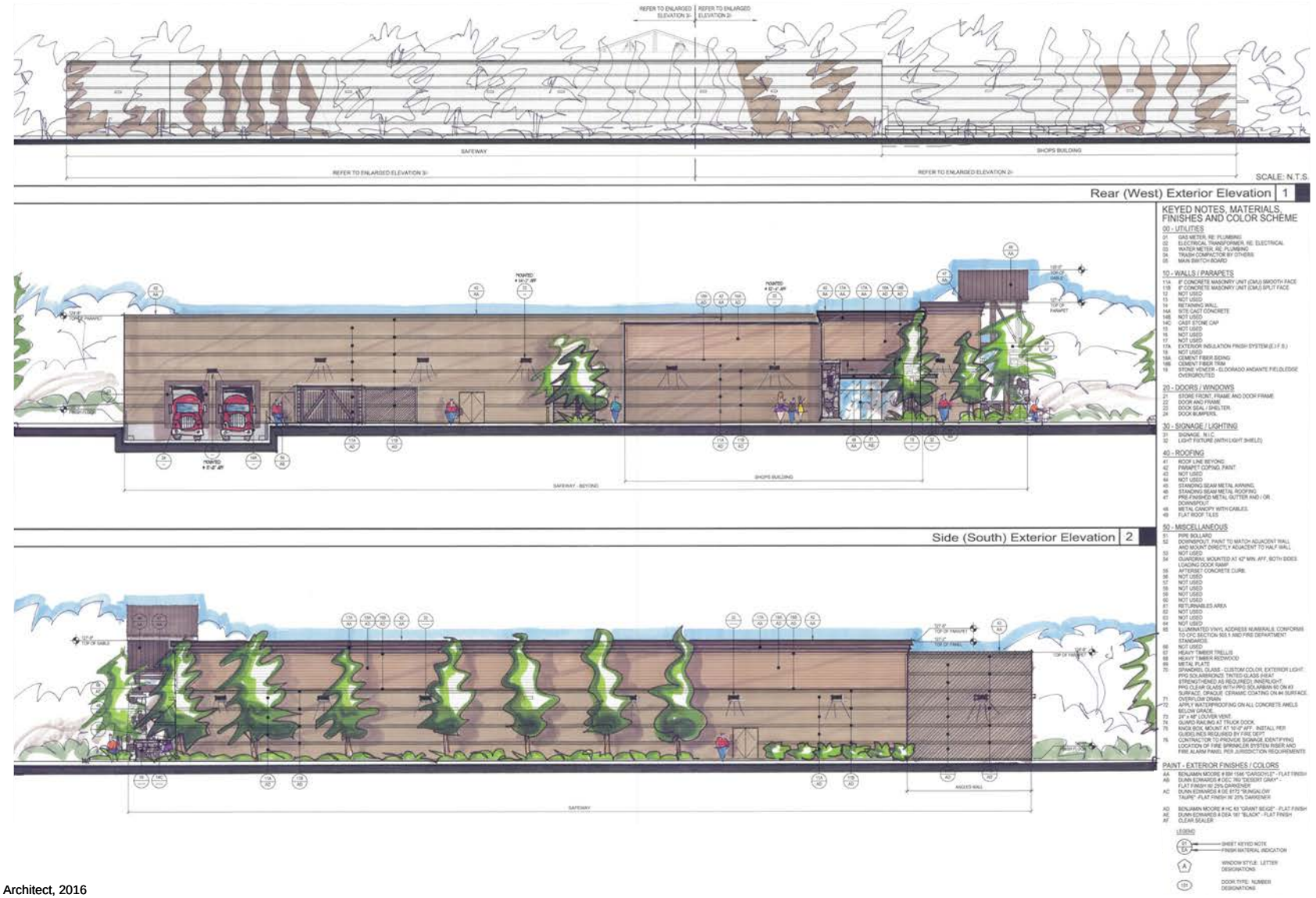

Source: SGA Architect, 2016

FIGURE 2.0-3b

Not To Scale

West, South, and North Elevations

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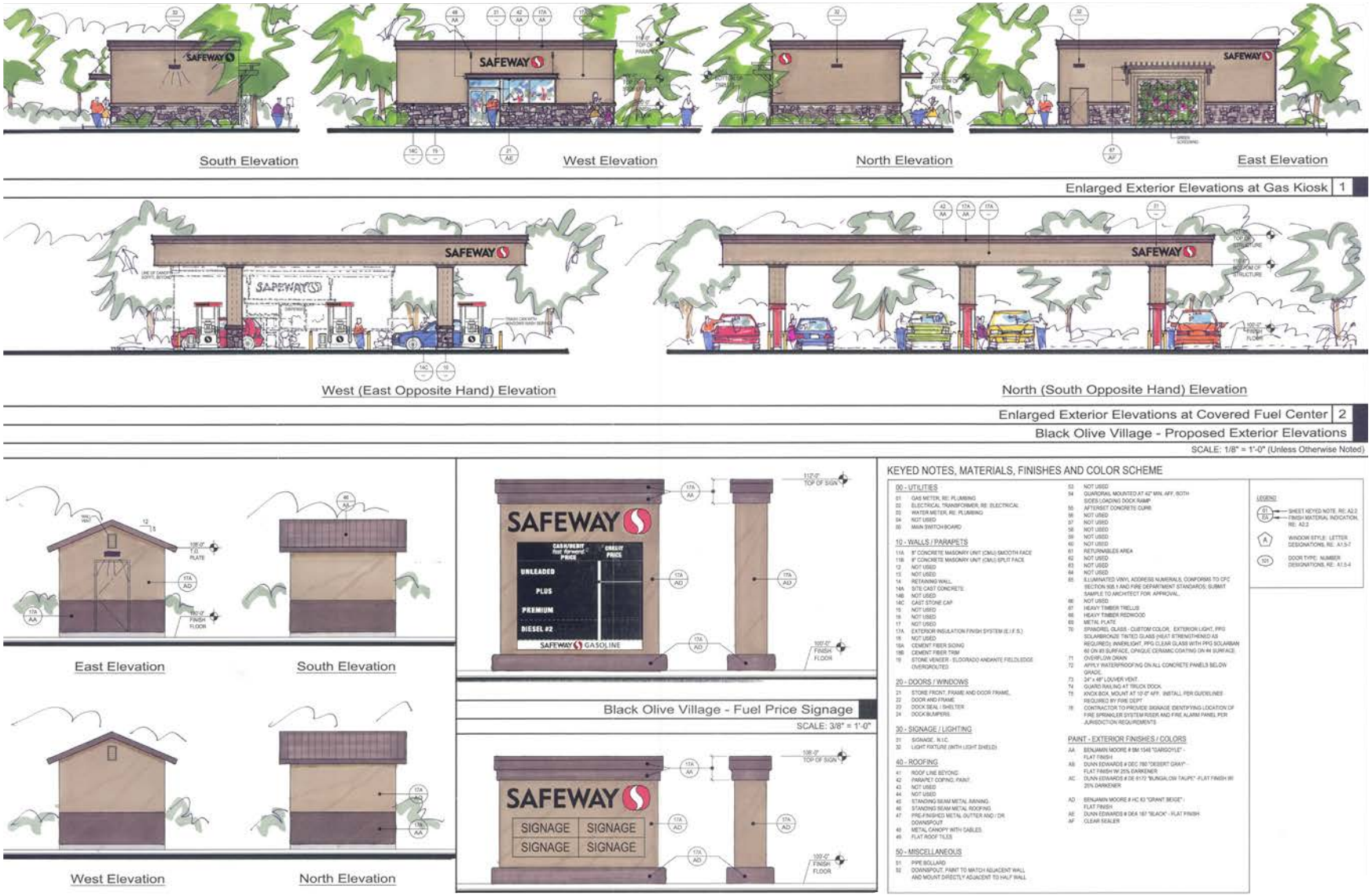

Source: SGA Architect, 2016

Not To Scale

FIGURE 2.0-3c
Fueling Center and Signage

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Energy Conservation

The proposed Safeway store would incorporate the following features to promote energy conservation:

- Energy Management System (EMS), which allows off-site monitoring and control of heating, air conditioning, refrigeration, and lighting.
- Energy-efficient heating, ventilating, and air conditioning (HVAC) units.
- High-efficiency LED lighting, including interior and exterior lighting, refrigerator case illumination, and parking lot lighting.
- A white membrane roof, which reduces building energy consumption and reduces the heat island effect.
- Refrigeration using non-ozone-depleting refrigerants. Equipment would be mounted close to refrigerated cases, which in turn reduces the amount of copper piping, insulation, and the potential for leaking refrigerant.
- Recycling of 90 percent of after-market packaging at the Safeway store.

SITE PREPARATION AND CONSTRUCTION CONSIDERATIONS

Project development would involve the demolition and removal of 19 existing residential and commercial structures on the site (approximately 29,000 square feet total), clearing of land including the removal of 180 trees larger than 10 inches in diameter, and cut/fill and grading.

As noted above, the central portion of the site in the north–south direction is higher in elevation than the western and eastern boundaries, forming a low ridge, and the site slopes gently to the south. Grading of the site to create a level pad for the buildings and parking lot would require cut operations on the eastern half of the site totaling 24,100 cubic yards and fill operations on the western half totaling 45,000 cubic yards. A net total of 20,900 cubic yards of fill material would need to be imported. The preliminary grading plan is shown in **Figure 2.0-4**.

A retaining wall would be installed on the west side of the site, along the property line, at the bottom of a slope created by fill placement. As viewed from off-site residential properties on the west, the retaining wall would appear above grade relative to the property lines and range in height from 14 to 16 feet along most of the western property line, decreasing to 5 feet near the southwest corner. Above the retaining wall, a 12-foot-high slope with a 34 percent grade (approximately 1 vertical-to-3-horizontal) slope would be created, extending upward to the building pad. A retaining wall would also be placed on the north side of the site ranging from 16 feet below the grade of the pad at the northwest corner to 10 feet above the pad grade near the center of the northern property line. The retaining wall appear above-grade, as viewed from the off-site properties to the northwest and below-grade as viewed from the commercial property (mini-storage) on the north.

Existing trees on the project site greater than 10 inches in diameter that are proposed to be removed are shown in **Figure 2.0-5**. Most of the trees on-site are pine, oak, and cedar. The current proposed plan would retain five trees in the southwest corner of the site (four oak trees and one walnut tree). Although some of the trees are larger diameter (e.g., more than 36 inches), the Town has not identified any of the trees on-site as a heritage tree. The Town of Paradise will require the project applicant to obtain a Tree Felling Permit, and the California Department of Forestry and Fire Protection (Cal Fire) will require the preparation of a Timber Harvest Plan.

LANDSCAPING AND LIGHTING

A conceptual landscape plan has been prepared for the project site. As shown on the plan, the parking lot would include approximately 50 California sycamore (*Platanus racemosa*) trees placed throughout the lot. Ponderosa pine (*Pinus ponderosa*) trees (approximately 20) are proposed along the Skyway frontage and the main driveway entrance and restaurant pad area. Incense cedar and dogwood trees are proposed along the northern boundary of the site. These trees would provide parking lot shading in accordance with the Town's minimum 50 percent shading requirement. Shrubs and ground cover plantings would be installed in planters along the northern boundary, Skyway frontage, and southern boundary. On the west side of the site (rear of the Safeway building), landscaping is proposed to include ponderosa pine and valley oak (*Quercus lobata*) trees with mixed fescue species ground cover on the slope leading to a retaining wall on the property line (see Site Preparation and Construction Considerations, below, for additional information about the retaining wall). Of the 185 existing trees on the site, 180 larger than 10 inches in diameter (31-inch circumference) would be removed. The five oak and walnut trees that would remain are in the southwest corner of the site. The landscape plan proposes approximately 140 replacement trees. Chapter 15.36 of the Town's Municipal Code sets forth the requirements for landscaping for commercial projects and the Town's process for approving landscape plans. The applicant will be required to submit a final landscape plan for Town approval. Section 8.12.120 of the Town's Municipal Code identifies requirements for tree felling and replacement.

The project proposes the use of 18-foot-tall LED light fixtures throughout the parking lot (indicated as S1, S2, and S3 on **Figure 2.0-6**). The lights would have full cutoff shielding to prevent upward light emanation and light spillover onto adjacent properties. For fixtures along the north side (S2 on **Figure 2.0-6**), the fixtures would also include house-side shielding. In addition to lighting on the building façade, exterior lighting for security would be placed on the north, west, and south sides of the Safeway building (S4 on **Figure 2.0-6**). The lights would be mounted at a height of approximately 14 feet above the finished floor elevation (see **Figure 2.0-3b** for fixture locations). Wall-mounted lights would be shielded to prevent the direct projection of light onto adjacent properties. The fueling center canopy and kiosk would also include lighting.

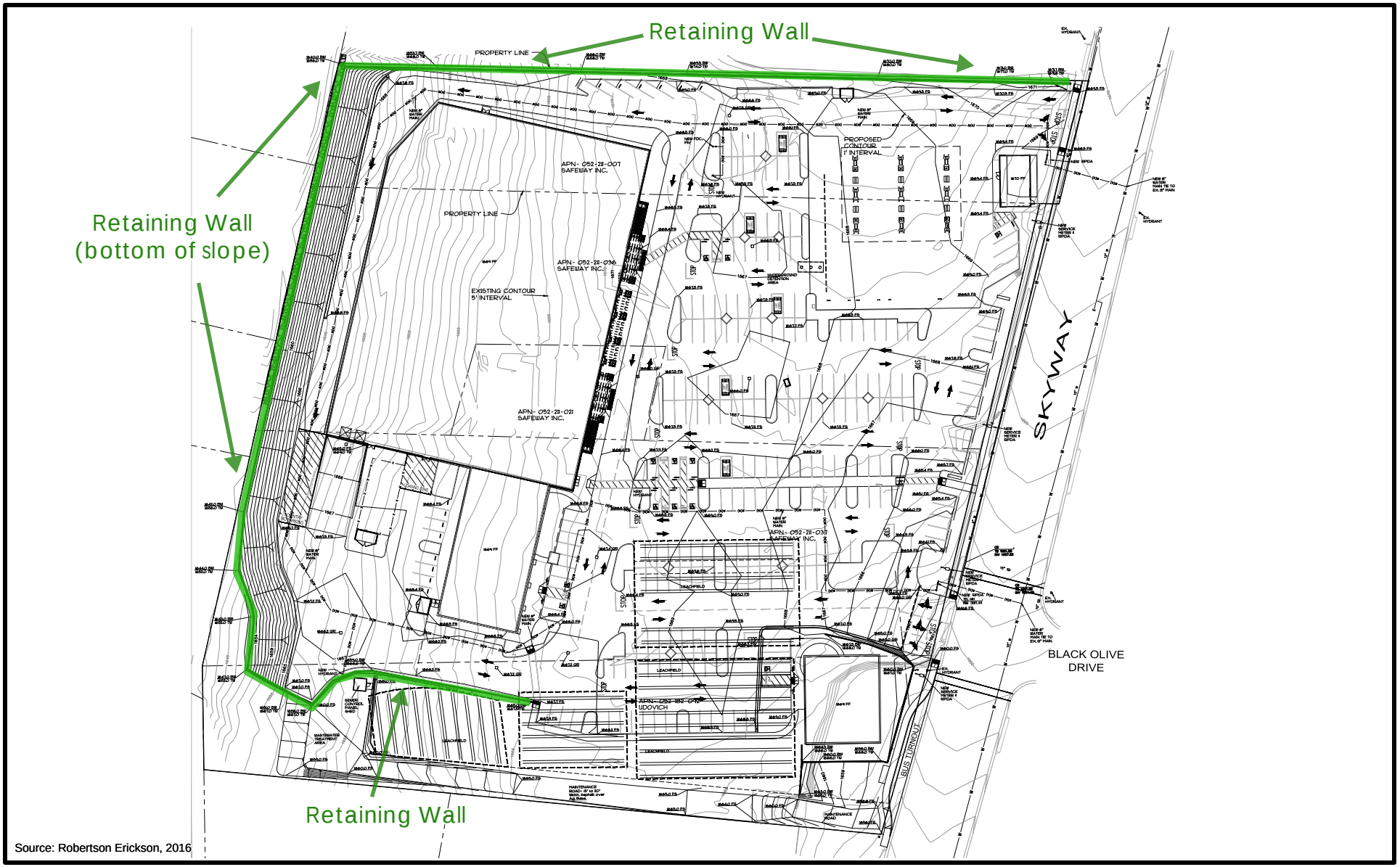
CONSTRUCTION SCHEDULE

Construction of the Safeway store, adjoining retail tenant space, and fueling center is anticipated to occur in a single phase and would begin in early 2019, with the project completed and ready for occupancy by early 2020. The Town has not received an application for the proposed restaurant pad. Site preparation and grading are expected to take approximately 5 months. This would be followed by building construction, paving, finish work, and landscaping, which is expected to take approximately 11 months. Construction staging would be on-site, which would include heavy equipment and materials storage.

The proposed project would incorporate a variety of measures intended to promote energy conservation (as well as reduce air emissions) during construction. These include:

- Cement mix would contain 15–20 percent fly ash (a waste product of coal-fired electrical generation) or 25–30 percent slag (a byproduct of steel manufacturing). The use of these materials reduces the production of greenhouse gases.

- The project would make use of non-reinforced thermoplastic, which can be recycled and has better impact resistance than fiber-reinforced plastic.



Source: Robertson Erickson, 2016

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FIGURE 2.0-4
Preliminary Grading Plan

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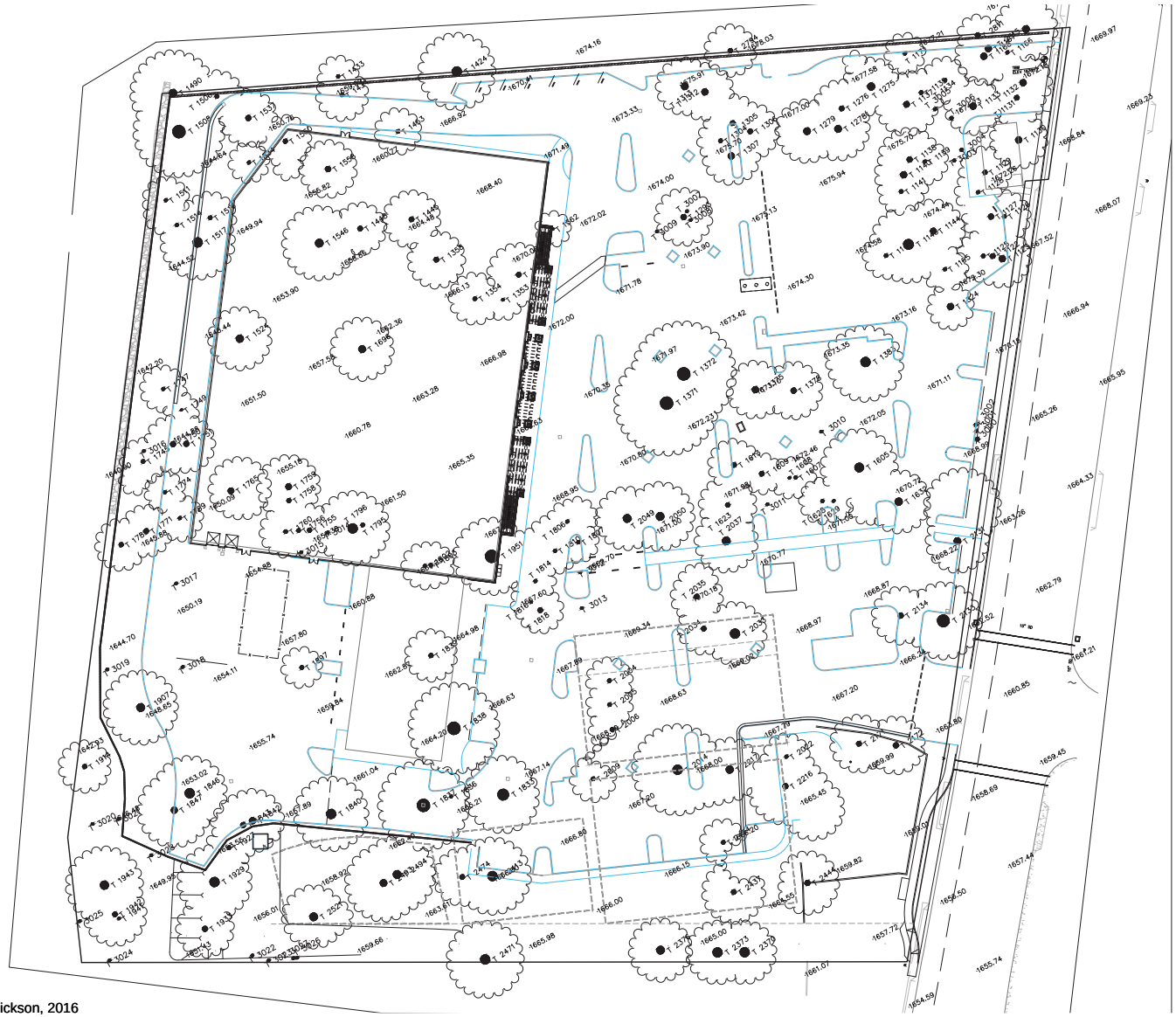

Source: Robertson Erickson, 2016

Trees to Be Removed

Tree Table			Tree Table	
Tree No.	TRUNK DIA.-SPECIES		Tree No.	TRUNK DIA.-SPECIES
1122	20-IN PINE		1774	12-IN B. OAK
1123	24-IN PINE		1789	18-IN B. OAK
1125	16-IN B. OAK		1795	17-IN B. OAK
1126	14-IN PINE		1796	35-IN PINE
1127	23-IN PINE		1802	12-IN L. OAK
1128	10-IN B. OAK		1803	11-IN B. OAK
1129	16-IN PINE		1806	12-IN B. OAK
1130	25-IN PINE		1807	10-IN B. OAK
1131	18-IN PINE		1810	10-IN B. OAK
1132	21-IN PINE		1814	12-IN B. OAK
1133	22-IN PINE		1816	11-IN B. OAK
1134	12-IN PINE		1818	12-IN L. OAK
1135	15-IN PINE		1832	26-IN L. OAK
1137	23-IN PINE		1833	42-IN PINE
1138	22-IN PINE		1836	10-IN B. WALNUT
1139	13-IN PINE		1837	36-IN PINE
1140	24-IN PINE		1838	40-IN PINE
1141	15-IN PINE		1840	35-IN PINE
1142	14-IN B. OAK		1842	24-IN PINE
1143	42-IN PINE		1843	23-IN PINE
1144	20-IN PINE		1846	37-IN PINE
1165	12-IN B. OAK		1847	15,18-IN B. OAK
1166	10-IN D. FIR		1897	16-IN CEDAR
1167	26-IN PINE		1907	31-IN B. OAK
1168	31-IN PINE		1914	16-IN B. OAK
1171	13-IN D. FIR		1927	16-IN B. OAK
1275	29-IN PINE		1929	34-IN PINE
1276	27-IN PINE		1933	24-IN PINE
1278	30-IN PINE		1951	44-IN PINE
1279	28-IN PINE		2004	10,11-IN B. WALNUT
1293	34-IN PINE		2005	12-IN B. WALNUT
1304	15-IN PINE		2006	12-IN B. WALNUT
1305	23-IN PINE		2009	16-IN D. FIR
1306	25-IN PINE		2014	48-IN B. OAK
1307	23-IN PINE		2022	11-IN B. OAK
1312	27-IN PINE		2033	41-IN RWD
1313	32-IN PINE		2034	22-IN W. FIR
1324	27-IN CED		2035	26-IN W. FIR
1353	10-IN BL. MAPLE		2037	30-IN CEDAR
1354	14-IN L. OAK		2049	35-IN RWD
1358	21-IN NN MAPLE		2050	32-IN PINE
1360	18-IN L. OAK		2131	27-IN DEODAR C.
1362	30-IN B. WALNUT		2133	42-IN DEODAR C.
1371	48-IN L. OAK		2134	22-IN SYC
1372	37-IN B. OAK		2171	14-IN SILK TR.
1375	23-IN CEDAR		2172	22-IN W. FIR
1378	20-IN SYC		2216	24-IN SILK TR.
1383	35-IN B. OAK		2217	32-IN PINE
1424	48-IN B. OAK		2370	34-IN PINE
1433	11-IN B. OAK		2373	37-IN CEDAR
1434	15-IN L. OAK		2376	33-IN PINE
1445	20-IN T. POPLAR		2413	39-IN PINE
1448	19-IN B. OAK		2434	15-IN B. WALNUT
1453	15-IN B. OAK		2437	19-IN SYC
1490	32,11,15-IN L. OAK		2444	22-IN SYC
1506	15-IN B. OAK		2471	41-IN PINE
1508	60+ IN LIV OAK		2474	19-IN CEDAR
1511	11-IN L. OAK		2493	23-IN PINE
1514	10-IN L. OAK		2494	36-IN PINE
1516	12-IN B. OAK		2521	36-IN PINE
1517	36-IN PINE		2794	17-IN HEAVEN
1524	30-IN PINE		2811	17-IN PINE
1534	11-IN B. OAK		2815	32-IN PINE
1537	25-IN PINE		3000	32-IN CEDAR
1546	35-IN B. OAK		3001	15-IN B. OAK
1558	22-IN L. OAK		3002	11-IN HEAVEN
1560	19-IN PINE		3003	19-IN PINE
1605	32-IN D. FIR		3004	17-IN PINE
1607	22-IN L. OAK		3005	21-IN PINE
1608	10-IN L. OAK		3006	18-IN PINE
1609	21-IN CEDAR		3007	26-IN PINE
1613	24-IN CYPRES		3008	28-IN PINE
1623	16-IN SYC.		3009	24-IN D. FIR
1628	13-IN L. OAK		3010	25-IN L. OAK
1629	10-IN B. OAK		3011	34-IN CEDAR
1632	30-IN D. FIR		3012	30-IN CEDAR
1696	32-IN PINE		3013	12-IN B. OAK
1745	32-IN PINE		3014	16-IN B. OAK
1747	12-IN B. OAK		3015	11-IN B. WALNUT
1749	10-IN PINE		3016	10-IN L. OAK
1750	19-IN PINE		3017	37-IN B. OAK
1751	22-IN PINE		3018	21-IN B. OAK
1755	18-IN B. OAK		3019	36-IN PINE
1756	15-IN B. OAK		3020	17-IN B. OAK
1758	20-IN PINE		3021	15-IN B. OAK
1759	30-IN PINE		3022	24-IN PINE
1760	13-IN B. OAK		3023	26-IN G. PINE
1765	11-IN B. OAK		3026	10-IN B. OAK
1769	11-IN B. OAK		3027	10-IN B. OAK
1771	10,12-IN L. OAK		3028	12-IN B. OAK

Trees to Remain

Tree No.	TRUNK DIA.-SPECIES
1941	12-IN B. OAK
1942	22-IN B. OAK
1943	18,21-IN B. OAK
3024	10-IN B. WALNUT
3025	10-IN B. OAK

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FIGURE 2.0-5

Tree Removal Plan

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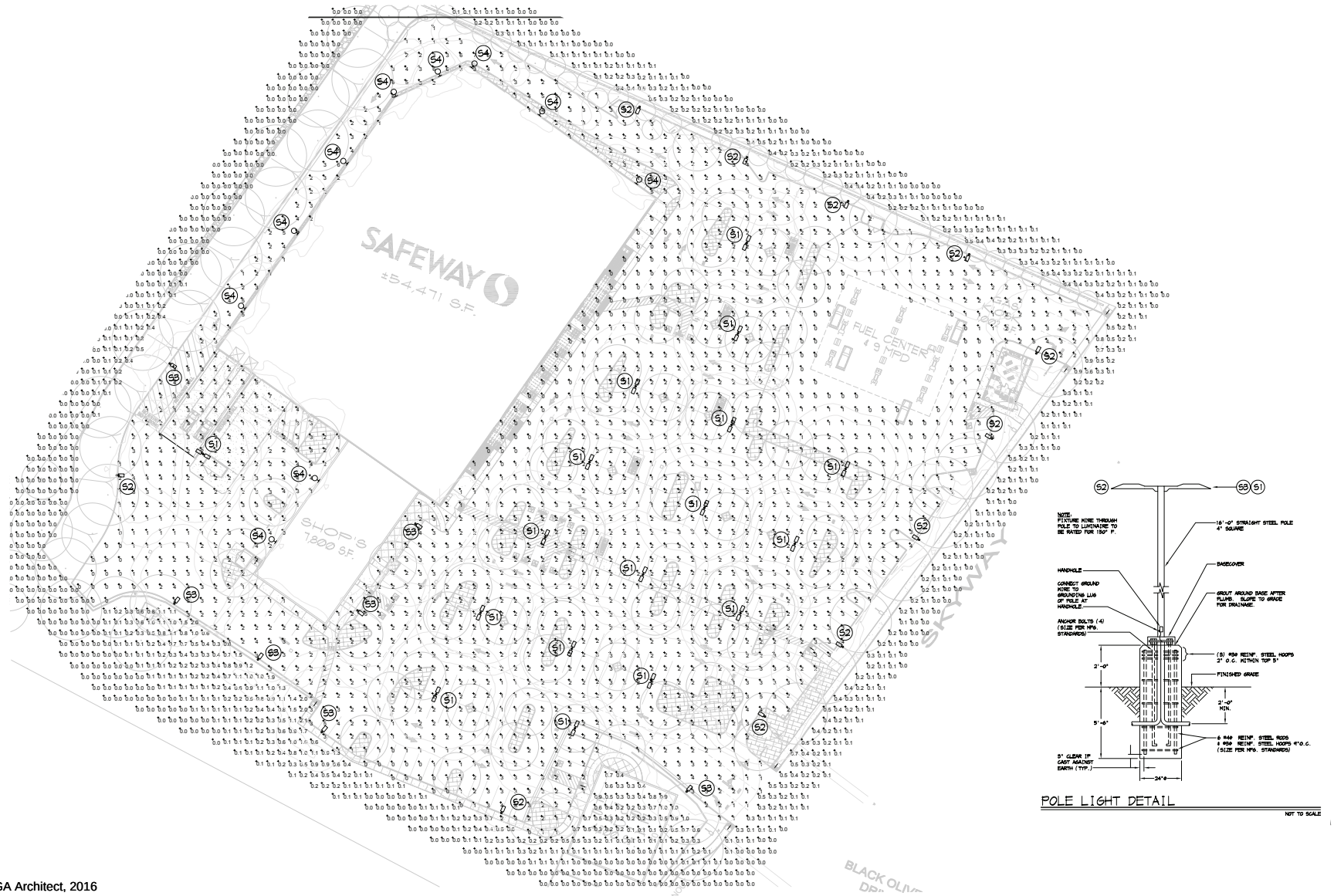

Source: SGA Architect, 2016

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FIGURE 2.0-6
Lighting Plan

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- Plant-based oil would be used as a concrete release agent in lieu of a petroleum-based product. The plant-based oil is nontoxic and biodegradable.
- Exterior and interior paint would be a low-volatile organic compound (VOC) paint, which reduces air pollutant emissions.
- During construction, the project would use 55-gallon drums and 275-gallon totes for paint, reducing the number of 1- and 5-gallon buckets needed for the project.
- The project would use steel that contains approximately 85–-90 percent recycled steel, reducing the amount of mining and manufacturing energy.
- The project would incorporate recycled plastic baseboards and shelving.
- Construction and Demolition (C&D) program – Safeway would capture and recycle as much as feasible the metals, woods, floor and ceiling tiles, concrete, asphalt, and other materials produced during the demolition and construction of the proposed project.

LOT LINE MODIFICATIONS

The project site consists of five separate parcels, the boundaries of which would be modified to provide for individual parcels for future retail tenants and the restaurant pad.

2.5 INTENDED USES OF THE DRAFT EIR

The Town of Paradise is the lead agency for the proposed project. The EIR is intended to disclose to the public the proposed project's details, analyses of the proposed project's potential environment impacts, and identification of feasible mitigation that will reduce potentially significant impacts to less than significant levels. The Town Council will consider the information contained in the EIR in making its decision to approve or deny the proposed project.

TOWN OF PARADISE ACTIONS

The following is a list of discretionary approvals and permits anticipated by the Town for actions proposed as part of the project:

- Certification of the EIR
- Approval of architectural designs and landscape plans
- Issuance of grading, tree felling, and building permits
- Site Plan approval for the proposed fueling center
- Conditional Use Permit approval for the Safeway store and adjacent retail space in accordance with CC zoning district requirements for a large retail project
- Approval of lot line modifications

OTHER AGENCY APPROVALS AND PERMITS

In addition to the above Town actions, the project may require approvals and permits from other public agencies for which this EIR may be used, including, without limitation, the following:

- Regional Water Quality Control Board, Central Valley Region (Phase II Municipal Stormwater Permit requirements as implemented by the Town of Paradise Post-Construction Standards Plan)
- State Water Resources Control Board (Notice of Intent for Construction General Permit coverage)
- Butte County Air Quality Management District (Authority to Construct and Permit to Operate for fueling center)
- Butte County Environmental Health (septic system and underground fuel storage tank permits)
- California Department of Forestry and Fire Protection (Timber Harvest Plan)

3.0
INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS

The following is an introduction to the project-specific and cumulative environmental analysis and general assumptions used in the analysis. The reader is referred to the individual technical sections (Sections 4.1 through 4.5) in this Draft Environmental Impact Report (Draft EIR) regarding specific assumptions, methodology, and significance criteria used in the analysis.

ANALYSIS ASSUMPTIONS GENERALLY USED TO EVALUATE THE IMPACTS OF THE PROJECT

APPROACH TO THE PROJECT ANALYSIS

Sections 4.1 through 4.5 in this Draft EIR contain a description of current setting conditions (including the applicable regulatory framework), evaluation of the direct and indirect environmental effects resulting from implementation of the proposed project, identification of measures that mitigate the identified significant environmental effects, and, if applicable, identification of whether significant environmental effects of the proposed project would remain after application of proposed mitigation measures.

As stated in Section 2.0, Project Description, the existing approximately 35,000-square-foot Safeway store in Old Town Plaza on Clark Road would be closed. There are no plans to demolish the space, and a new use or tenant for the vacated store has not been identified. Because the existing building would remain, the transportation impact study (TIS) prepared for the proposed project (Traffic Works 2017) assumed that another business would use that space and have similar commercial, vehicle trip-generating characteristics; thus, the proposed project would be a "new" project. Some of the trips to the new site on Skyway would be redistributed/relocated trips from the existing Safeway location on Clark Road, and the effect of that redistribution was used to evaluate intersection level of service (LOS) impacts. However, because no trips associated with the existing store were deducted in the TIS, this assumption was carried through the operational air and greenhouse gas (GHG) emissions analyses of mobile emissions. This approach provides a worst-case, conservative analysis of operational emissions. It also likely overestimates the project's operational air and GHG emissions impacts because the trips generating the emissions are assumed to be new trips, even though they are primarily existing trips that already occur locally under existing conditions.

ORGANIZATION OF TECHNICAL SECTIONS

The individual technical sections of the Draft EIR follow the following format.

Existing Setting

This subsection includes a description of the physical conditions associated with the technical area of discussion, consistent with California Environmental Quality Act (CEQA) Guidelines Section 15125(a). The existing setting is generally based on conditions as they existed when the Notice of Preparation for the project was released in July 2017.

Regulatory Framework

This subsection describes the federal, state, regional, and local plans, policies, laws, and regulations that apply to the technical area of discussion.

CEQA Guidelines Section 15125(d) requires an EIR to identify any inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans. The relevant land use plan for the proposed project is the Town of Paradise General Plan. Relevant policies are

listed, along with a consistency review, in each section. According to CEQA, policy conflicts do not, in and of themselves, constitute a significant environmental impact. A policy inconsistency would be a significant adverse environmental impact if it is related to a policy adopted for the purpose of avoiding or mitigating an environmental effect and it is anticipated that the inconsistency would result in a significant adverse physical impact. Any such associated physical impacts are discussed in this Draft EIR under the specific topical sections.

Impacts and Mitigation Measures

The Impacts and Mitigation Measures subsection of each technical section identifies direct and indirect environmental effects associated with implementation of the proposed project and identifies proposed measures to mitigate environmental effects, where significant impacts are identified. A statement is included in each impact discussion identifying the level of significance the impact will have before and after mitigation. Standards of significance are identified and utilized to determine whether identified environmental effects are considered "significant" and require the application of mitigation measures. Each environmental impact analysis is supported by substantial evidence included in the discussion.

This Draft EIR uses the following terminology to describe environmental effects of the proposed project:

Standards of Significance: A set of criteria used by the lead agency to determine at what level or "threshold" an impact would be considered significant. Significance criteria used in this Draft EIR include the CEQA Guidelines; factual or scientific information; regulatory performance standards of local, state, and federal agencies; and adopted Town policies and ordinances.

Less Than Significant Impact: A less than significant impact would cause no substantial change in the environmental (no mitigation required).

Significant Impact: A significant impact would cause (or would potentially cause) a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of project effects using specified standards of significance. Mitigation measures and/or project alternatives are identified to reduce project effects to the environment.

Significant and Unavoidable Impact: A significant and unavoidable impact would result in a substantial change in the environment that cannot be avoided or mitigated to a less than significant level if the project is implemented.

Less Than Cumulatively Considerable Impact: The project's contribution to a cumulative impact is less than significant when evaluated in the context of reasonably foreseeable development in the surrounding area, and the project's contribution to the impact would not be cumulatively considerable.

Cumulatively Considerable Impact: A cumulative considerable impact would result in a new substantial change in the environment from effects of the project when evaluated in the context of reasonably foreseeable development in the surrounding area, and the project's contribution would be cumulatively considerable.

MITIGATION MEASURES

Feasible mitigation measures that could minimize significant adverse impacts are discussed, after which the impact discussion notes whether the impact has been mitigated to a less than significant level or remains significant and unavoidable. CEQA requires that mitigation to lessen the environmental impact be feasible. CEQA Guidelines Section 15126.4(a)(1) states, "An EIR shall describe feasible measures which could minimize significant adverse impacts..." Feasible is defined as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors" (CEQA Section 21061.1).

APPROACH TO THE CUMULATIVE IMPACT ANALYSIS

CEQA requires that an environmental impact report contain an assessment of the cumulative impacts that could be associated with the proposed project. According to CEQA Guidelines Section 15130(a), "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." The term *cumulatively considerable* means that the incremental effects of an individual 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 (as defined by CEQA Guidelines Section 15065). As defined in CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. Per Section 15355, a cumulative impact occurs from "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time."

In addition, Section 15130(b) identifies the following elements as necessary for an adequate cumulative analysis:

1. Either:

    A. A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or

    B. A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.

2. A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and

3. A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Where a lead agency is examining a project with an incremental effect that is not cumulatively considerable, the lead agency need not consider that effect significant, but is to briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

Definition of Cumulative Setting

CEQA Guidelines Section 15130(a) requires that an EIR "discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." CEQA Guidelines Section 15130(b) states, "The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."

The primary environmental impact associated with the proposed project is associated with vehicle trips because the project would result in a larger store than the existing store and would include a fueling center, adjoining retail, and a pad for a restaurant. For purposes of the cumulative analysis, the TIS (Traffic Works 2017) assumed Town of Paradise General Plan buildout in combination with traffic growth rates (which are a function of population and employment) in the Butte County Association of Governments' travel demand model. As such, the TIS generally establishes the cumulative setting for the Draft EIR as buildout under the General Plan. The proposed project is consistent with the adopted General Plan land use designation for the site, as well as with the site's zoning.

Cumulative operational criteria pollutant and precursor emissions from project-generated traffic are considered in a larger regional context (North Sacramento Valley Planning Area), for which the applicable plan is the Northern Sacramento Valley Planning Area 2015 Triennial Air Quality Attainment Plan (SVBAPPC 2015). The quantity of GHG emissions that it takes to ultimately result in climate change is not precisely known, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, greenhouse gas impacts on global climate change are inherently cumulative.

EFFECTS NOT EVALUATED IN DETAIL IN THE DRAFT EIR

Based on the analysis in the Initial Study (**Appendix B**), the following topics included in Appendix G of the CEQA Guidelines were determined to result in less than significant impacts with mitigation incorporated, less than significant impacts, or no impact, and are not further evaluated in the Draft EIR.

- Agriculture and forestry resources (no impact)
- Biological resources (less than significant with mitigation incorporated)
- Cultural resources, including tribal cultural resources (less than significant with mitigation incorporated)
- Geology and soils (less than significant with mitigation incorporated)
- Hazards and hazardous materials (less than significant with mitigation incorporated)
- Hydrology and water quality (less than significant/no impact)
- Land use and planning (no impact)
- Mineral resources (no impact)
- Population and housing (no impact)

- Public services (less than significant impact/no impact)
- Recreation (no impact)
- Utilities and service systems (less than significant impact)

REFERENCES

SVBAPCC (Sacramento Valley Basinwide Air Pollution Control Council). 2015. *Northern Sacramento Valley Planning Area 2015 Triennial Air Quality Attainment Plan*.

Traffic Works, LLC. 2017. *Transportation Impact Study for Black Olive Village*.

4.0
ENVIRONMENTAL IMPACTS

4.1 Aesthetics

This section addresses the existing visual resources at the project site and vicinity, and evaluates the potential impacts of the proposed project on aesthetics and light/glare. Relevant General Plan policies and design guidelines are identified.

Comments expressed by the public during the review period of the Notice of Preparation (NOP) pertaining to aesthetics focused on the proximity of the truck delivery route and proposed retaining walls to residential property lines and the effect this would have on views, truck headlights, and loss of trees near the property lines. These concerns and potential effects are evaluated in this section.

4.1.1 EXISTING SETTING

REGIONAL AND LOCAL SCENIC RESOURCES

Paradise is in the western foothills of the Sierra Nevada in the northern Sacramento Valley, approximately 10 miles northeast of Chico. From the valley floor where Chico is situated, the terrain rises to the east and northeast toward Paradise to an elevation of approximately 2,000 feet on the west and 2,800 feet at the eastern town limits. Volcanic activity several million years ago created a regional landscape characterized by rock-strewn lower slopes covered primarily with grasses, low plants and shrubs, and a few trees. The topography transitions from the lower slopes to steep-sided buttes and ridges as the elevation increases toward Paradise. Along with the transition in slope and elevation, the diversity and number of trees increases, creating an overall natural-appearing, semi-forested landscape in the town. The tree canopy is dominated by tall ponderosa pines and shorter oaks and deciduous tree varieties.

Scenic vistas include natural features such as topography, watercourses, rock outcrops, natural vegetation, and man-made alterations to the landscape. Skyway, the primary roadway providing access to Paradise from the west, follows a ridge toward town. Heading west, it offers expansive views across the Sacramento Valley to the west and south. There are intermittent views of Butte Creek Canyon with its steep rock walls while traveling east and west on Skyway, depending on location.

Paradise is largely a residential community, with local-supporting uses and services. The town's peaceful and restful qualities are, in large part, a function of its low-rise buildings, varying architectural styles ranging from rustic to traditional, and urban forest. The form and character of the town are primarily distinguished by what is visible from roadways.

The project site is in an urbanized part of town, between Neal Road and Pearson Road, west of the intersection of Skyway and Black Olive Drive. It is in the western part of the Greater Redevelopment Project Area and Upper Skyway, for which the Town of Paradise has adopted design standards.

PROJECT SITE

Visual Characteristics

The site is developed with 19 residential and commercial structures and outbuildings. Three short asphalt driveways from Skyway provide access to the various residential structures, an asphalt parking lot, and a gravel parking area. The central portion of the site in the north–south direction is higher in elevation than the western and eastern boundaries, forming a low ridge. The overall slope of the site is to the south.

The project site contains 185 trees that are 10 inches or greater in diameter (primarily pine and oak) with varying heights and some understory (tree locations are shown on **Figure 2.0-5** in Section 2.0, Project Description). Some large-diameter trees (e.g., a 48-inch black oak on the north side of the site and ponderosa pine on the west side) may constitute a visually amenity because of their appearance, height, and/or canopy, but the Town has not identified any of the trees on-site as a heritage tree. Large trees may also provide shade, depending on location and sun angle, and serve as a visual buffer from off-site views into the project site. The site does not contain any rock outcroppings or historic features.

In the immediate vicinity of the project site, the view is dominated primarily by Skyway itself, by mature trees, and to a lesser extent by low-rise commercial development consisting of small, individual structures of varying architecture and aesthetic qualities, parking lots, some native vegetation, and landscaping (**Photo 1** and **Photo 2**).

The trees and understory generally tend to make the site more natural-appearing than the commercial properties adjoining the site, primarily because of large trees in the foreground as viewed from Skyway (**Photo 3**). While the site appears less developed compared to adjoining properties, the existing buildings, structures, and roadways scattered throughout the site (**Photo 1** and **Photo 4**) diminish its aesthetic value. In general, the characteristics of the site and its surroundings, including the segment of Skyway that passes by the site, are not visually distinct or unique. The site is visible to motorists on Skyway only for a few seconds.

PHOTO 1: VIEW ALONG SKYWAY LOOKING NORTH (PROJECT SITE ON LEFT)

PHOTO 2: VIEW FROM BLACK OLIVE DRIVE, LOOKING SOUTHWEST (PROPOSED PRIMARY DRIVEWAY ACCESS TO PROJECT SITE ON RIGHT)

PHOTO 3: VIEW FROM SKYWAY LOOKING SOUTH (PROJECT SITE ON RIGHT)

PHOTO 4: VIEW OF PROJECT SITE FROM BLACK OLIVE DRIVE/SKYWAY INTERSECTION

Figure 4.1-1 shows the general locations of residential areas around the site. The project site is readily visible from residences on commercial property (Colonial Mini-Storage) adjoining the site to the north and northwest.[1] These residences are accessed by a private driveway off Skyway. The site is also visible from residences to the southwest, some of which are accessed via Jewell Court. There are public views of the site from a residential area on Horseshoe Hill Drive, a small street off Honey Run Road. A segment of that roadway is parallel to the project's western boundary, with homes between the site and Horseshoe Hill Drive. Views of the site from the roadway are obscured by the homes and intervening vegetation. However, the homes on parcels that adjoin the project site have direct views of the vegetated slope that leads upward to the low ridge on the site. Because of the rise in elevation toward the east, Skyway is not visible from the residential area on Horseshoe Hill Drive. The site is also visible to residential development southwest of the site.

Scenic Corridors

While the project site is readily visible from Skyway, it is not situated within any of the Town-designated gateway or scenic highway corridors as depicted on the General Plan Land Use Diagram. The combination of topography and tree cover obscures views to the west (toward Butte Creek Canyon and Honey Run) from Skyway. The site is not visible from Butte Creek Canyon or Honey Run, and the site cannot be seen from any state- or county-designated scenic highway.

[1] The off-site commercial property was originally a motel with individual units. Some of the units have been converted to residences.

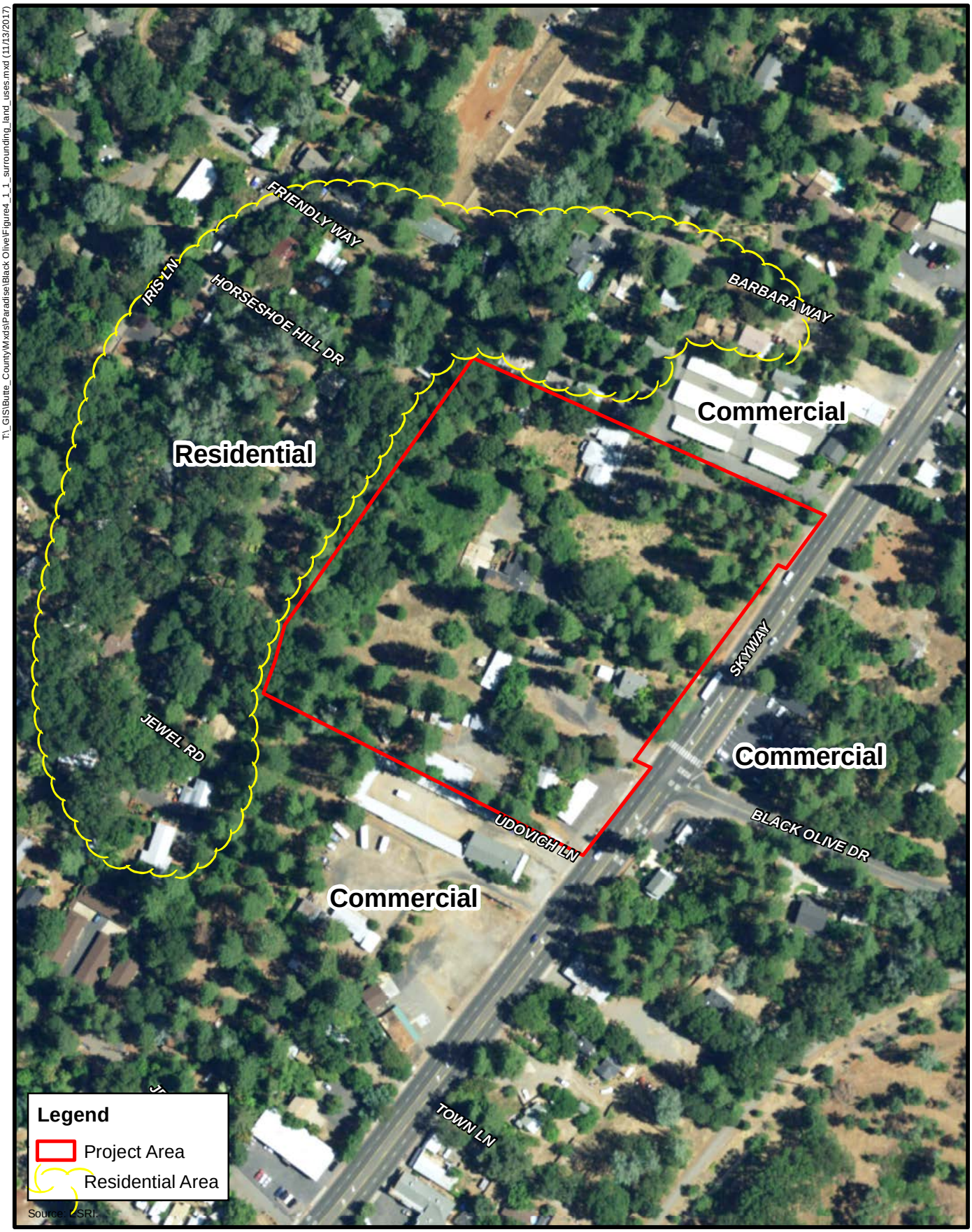

FIGURE 4.1-1
Surrounding Land Uses

Michael Baker INTERNATIONAL

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Light and Glare

There are no existing sources of light or glare on the project site. Overall, the project site and adjoining properties are generally dark at night, with low levels of lighting emanating primarily from nearby buildings' exterior lighting and to a greater degree from vehicle headlights on Skyway. Glare is minimal.

4.1.2 REGULATORY FRAMEWORK

LOCAL

Town of Paradise General Plan

The applicable plan pertaining to the evaluation of the proposed project's visual resources impacts is the Town of Paradise General Plan, which includes policies intended to protect the town's visual character and promote visually attractive development through appropriate site and architectural design. The Land Use Element and the Open Space/Conservation/Energy Element include policies that are designed to protect scenic resources and to reduce light and glare impacts. The policies listed in **Table 4.1-1** are relevant to the analysis, followed by a consistency determination. No inconsistencies have been identified. While Town staff has done its best to ascertain consistency, the Town Council makes the ultimate decision regarding consistency with the General Plan.

TABLE 4.1-1
CONSISTENCY WITH GENERAL PLAN POLICIES

Policy Number	Text of General Plan Policy	Consistency Determination
LUP-55	Commercial structures shall be limited to a height of no greater than 35 feet.	The highest point on the proposed Safeway building is a gable above the main entrance. The distance between the finished floor elevation and the top of the gable is 35 feet.
LUP-56	Moderate and large-scale commercial parking areas shall be appropriately screened and landscaped utilizing native, drought-tolerant, and low-maintenance plant materials.	A conceptual landscape plan has been prepared for the project. The parking lot would include landscaping along Skyway. Landscaping consisting of trees, shrubs, and a ground cover would be installed between the two driveways and from the main drive to the southern property line. Before issuing a building permit, the Town will require the project applicant to submit a final landscape plan for review and approval to ensure it complies with the Town's Landscape Ordinance.
OCEP-5	The Town shall strive to locate new buildings and other structures, including utility lines, that would otherwise block vistas or degrade the natural landscape, outside of scenic view corridors.	The segment of Skyway between Pearson Road and Neal Road where the project site is located is not within a Skyway scenic view corridor as defined in the General Plan. The site is not a scenic vista, and there are no scenic vistas visible from the project site. Although the site contains numerous trees, there are buildings, structures, and roadways on the site that diminish its value as a natural landscape. The project site is an infill site situated between two developed commercial properties and across Skyway from commercial development. Therefore, because the project would be outside scenic view corridors and would not block vistas or degrade the natural landscape, the proposed project would be consistent with this policy.

TABLE 4.1-1
CONSISTENCY WITH GENERAL PLAN POLICIES

Policy Number	Text of General Plan Policy	Consistency Determination
OCEP-14	Reforestation and maintenance of trees shall be encouraged along road corridors.	There are existing mature pine trees along the project frontage. The project's conceptual landscape plan indicates that ponderosa pines would be planted along the project's frontage on Skyway as part of project landscaping.
OCEP-20	Views of development from other properties should be considered when making decisions on compatibility of development.	The Environmental Setting subsection and the impact analysis presented in this section of the Draft EIR describe views of the project site and anticipated changes in visual quality relative to residential and commercial properties adjoining the site.
OCEP-41	Landscaping plans shall be required for all new commercial and public parking facilities and shall be consistent with the design standards contained in the town landscape ordinance.	See LUP-56.

Town of Paradise Municipal Code

Development standards for commercial projects related to aesthetic elements such as building heights, lot coverage, and setbacks are established in Section 17.20.400 (Site Development Regulations) of the Municipal Code. For the Community Commercial district, the maximum building height is 35 feet. The minimum front yard setback is 50 feet from a public street (centerline) and 30 feet from a private road (centerline). The minimum side or rear yard setback is 0 feet. The maximum building coverage is 50 percent. Sign regulations are set forth in Chapter 17.37 of the code.

Chapter 15.36 of the Town's Municipal Code establishes the requirements for landscaping for commercial projects and the Town's process for approving landscape plans.

Town of Paradise Design Standards

The project site is in the southern portion of the Greater Redevelopment Project Area and Upper Skyway component of the Town of Paradise Design Standards (Paradise 2010). The purpose of the standards is to preserve the sense of small-town community in a natural mountain environment; contribute to a positive physical image and identity while preserving the surrounding environment; provide design assistance to the development community, architects/designers, and property owners; promote high-quality development that stimulates investment in the economic vitality of Paradise; and facilitate the development of projects that establish a sense of place while complementing the character of traditional design established in the town's existing neighborhoods.

As it relates to aesthetics, the Redevelopment Project Area and Upper Skyway Design Standards include narrative descriptions and illustrations that address building design (scale/height/massing, architectural features, materials and textures, colors, windows, awnings), site design (landscaping, fences/walls, lighting), signage, and streetscape design (e.g., landscaping and trees).

The Design Standards address lighting for commercial developments to ensure all features and sources have a scale, design, and color that complements the character and design of the surrounding structures and developments while minimizing spill, glow, and glare impacts to adjacent and surrounding properties. The standards include provisions for storefront lighting, canopy and entry lighting, location and design, parking lot lighting, and nighttime lighting. The standards also require that new development incorporate appropriate design measures, including structure placements, parking lot layout, and lighting features, to minimize the visual impact of large-scale commercial retail developments.

The Design Standards are focused on design and are not mandatory, except to the extent that some design elements are expressly prohibited. The standards are intended to be used in conjunction with the Paradise General Plan, Zoning Code, and Municipal Code and engineering design standards and related documents. Where any conflict arises, the Town codes and standards would supersede the Design Standards. The final determination of the project's consistency with design standards and regulations would be accomplished through the Town's design review process prior to issuance of a grading or building permit for the proposed project.

4.1.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Appendix G of the 2017 California Environmental Quality Act (CEQA) Guidelines provides a list of topics related to aesthetics that may be considered in an EIR. For purposes of this Draft EIR, the proposed project would have a significant effect on the environment if it would:

1) Have a substantial adverse effect on a scenic vista.

2) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

3) Substantially degrade the existing visual character of quality of the site and its surroundings,

4) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

With regard to standards of significance 1 and 3, respectively, the General Plan EIR (Paradise 1994, p. 4-86) considered an aesthetics impact to be significant if the project would obstruct any scenic vista or view open to the public and/or create an aesthetically offensive site open to public view.

IMPACTS NOT EVALUATED IN DETAIL

Scenic Vistas/Scenic Corridors

As noted in Initial Study subsection 2.1.a (**Appendix B**), there are no state-designated scenic highways along the project site frontage, and the site cannot be seen from any state- or county-designated scenic highway. The site is not located in a scenic corridor as defined by the Town of Paradise General Plan. Therefore, the proposed project would have no effect on scenic resources within a state scenic highway or a locally designated scenic corridor. There would be no impact relative to Standard of Significance 2, and this impact is not further evaluated.

Vacated Safeway Store – Potential for Urban Decay or Visual Blight

The existing Safeway store on Clark Road would be vacated. A new owner or tenant has not been identified, and the Town has not received any applications for a new use. A typical community concern with relocated retail projects is the potential for the vacated property to become blighted or cause or contribute to urban decay.

The current CEQA Guidelines Appendix G does not include a checklist item for assessing urban decay. The term *urban decay* is not defined in CEQA or by state statute or judicial decision. Urban decay is a socioeconomic consideration, which generally does not require analysis under CEQA unless there is a chain of cause and effect that significant adverse physical impacts related to economic and social changes and/or effects would occur (CEQA Guidelines Section 15131). Generally, urban decay is associated with extended long-term business vacancies that directly or indirectly result in physical deterioration to properties or structures that is so prevalent, substantial, and lasting for such a significant period of time that it impairs the proper utilization of the properties and structures and affects the health, safety, and welfare of the surrounding community. Physical deterioration includes abandoned buildings, boarded doors and windows, long-term unauthorized use of a property and parking lots, extensive or offensive graffiti painted on buildings, dumping of refuse or overturned dumpsters on properties, dead trees and shrubbery, and uncontrolled weed growth.

Under Section 8.04.005.B.3 of the Municipal Code, adverse impacts on the aesthetic quality of property, giving the appearance of blighted conditions and deteriorated environment is considered a public nuisance. Per Section 8.04.010.G, the Town Council considers the following to be an unlawful public nuisance: A person owning, leasing, occupying, or having charge or possession of any commercial property and maintaining property conditions that are visible from public or other private property which result in the following conditions: abandoned or substantially deteriorated buildings; broken or missing windows or doors; building exteriors that are deteriorated or substantially defaced; graffiti that is not removed within five calendar days after the Town's code enforcement officer has given notice; and overgrown, diseased or dead accumulations of weed or vegetation. The project applicant will be required to ensure the vacated store does not result in conditions that would be considered a public nuisance due to blighted conditions. Because it would be speculative to determine whether the proposed project could result in blighted conditions at the vacated store, and there is an existing regulatory mechanism in place to ensure such conditions do not occur and would be remedied in the event of noncompliance, further evaluation of this topic is not required.

METHODOLOGY

The proposed site plans, building elevations, and renderings prepared by the project applicant's architect and direct observations of the project site from publicly accessible locations were used to determine how the project would alter the existing conditions on the site and whether such changes may require mitigation.

Following professionally accepted practice in visual analysis, visual impacts are defined as a consequence of three primary factors:

- The existing scenic quality of an area;
- The level of viewer exposure and concern with visual change; and
- The level of actual visual change caused by the project.

The project site's overall visual sensitivity was first established based on existing visual quality, viewer exposure, and viewer concern. These factors were then considered together with the level of expected visual change or contrast, and significance. Visual change is an overall measure of contrast in basic visual attributes such as form, line, color, and texture as a result of a proposed project. Thus, a substantial adverse effect may occur when viewers with high levels of overall visual sensitivity (i.e., high viewer concern and visual exposure in settings of high existing visual quality) encounter high levels of visual change (contrast). For the proposed project, the areas of viewer concern are assumed to be views from Skyway and views from residential uses adjoining the project site on the north, west, and south. Commercial uses that adjoin the site on the north, south, and east (across Skyway) are considered to have less viewer concern.

PROJECT IMPACTS AND MITIGATION MEASURES

Scenic Vistas or Views Open to Public (Standard of Significance 1)

Impact 4.1.1 The proposed project would result in the removal of trees, grading, and construction of a retail commercial project, but this would not have an adverse effect on scenic vistas. The impact is **less than significant.**

The project site is located on Skyway in an existing commercial area that is largely developed with low-rise buildings, roadways, parking lots, some native vegetation, and landscaping. It is not situated within any of the Town-designated gateway or scenic highway corridors as depicted on the Land Use Diagram.

Generally, views in the immediate project vicinity are limited and are not visually distinct or unique. The central portion of the site in the north–south direction is higher in elevation than the western and eastern boundaries, forming a low ridge, and contains numerous tall trees that obscure views to the west from Skyway. As such, there are no direct views from Skyway along the project frontage toward Butte Creek Canyon or Honey Run. Views from commercial development on the south and east (across Skyway) are of Skyway itself and commercial development. Views from residential development on the west and commercial and residential development on the north are of the project site and Skyway. The views from these locations have limited scenic value. There are no views, from any direction, of scenic vistas such as rolling grasslands and rock outcrops along lower Skyway to the west and south or more heavily forested areas along upper Skyway to the north.

The proposed project would remove trees and grade the site to create a level building pad, on which the Safeway store and other project features would be constructed. The store building pad would be slightly lower than the highest point of the topographic rise that bisects the site. While there would be more extensive development on the site, which would be readily visible to the local community and the public from all directions, the new features would not obstruct scenic vistas or views open to the public because there are no such views from the project site. The impact would be **less than significant**.

Mitigation Measures

None required.

Changes in Visual Character (Standard of Significance 3)

Impact 4.1.2 The proposed project would change the visual characteristics of the project site, which would be visible to motorists on Skyway and from some locations in nearby residential and commercial development. This impact is **potentially significant**.

Development of the proposed project would result in the demolition of all structures and driveways on the site, removal of 180 of the 185 trees 10 inches or greater in diameter,[2] vegetation clearing, and grading activities, including cut-and-fill and soil import to create a level building pad. New site features would be constructed, which would include a 54,471-square-foot grocery store with 7,800 square feet of retail adjoining the store, a fueling center with an illuminated canopy and a fueling center kiosk, a restaurant pad, and a 276-space parking lot.

The project proposes a Craftsman-inspired, contemporary mountain theme for the Safeway building façade and adjoining future tenant retail space. The main building would be masonry block with various architectural treatments on all four sides. The building would be accented with a mixture of gable roofs over the two main entries, varying roofline parapet offsets, architectural pop-outs, a mixture of wall finishes, an outdoor trellis, patio areas, and articulated entry vestibules (see **Figure 2.0-3a**)**.** A mixture of metal awnings and timber trellis work would be used throughout the façade and along the pedestrian pathway to provide shade and an interplay between light and shadow. The proposed color palette is earth tones such as beige, dark and light gray, and taupe. Multicolor accent walls would be used to create visual interest. The tallest point on the proposed Safeway building is a gable above the main entrance. The distance between the finished floor elevation and the top of the gable is 35.0 feet, which meets Town standards for maximum height in commercial districts.

The building would be in the western part of the site, set back approximately 310 feet from Skyway, and separated from Skyway by the parking lot and the proposed fueling center. There would be an 8-foot-high Black Olive Village monument sign along the Skyway frontage.

The façade and canopy at the fueling center would reflect the design and color palette of the store (see **Figure 2.0-3c**)**.** The maximum height of the canopy would be 21.5 feet. A 12-foot-tall fuel price monument sign would be erected on the Skyway frontage near the fueling center.

The parking lot and perimeter would be landscaped. A conceptual landscape plan has been prepared for the project site. As shown on the plan, the parking lot would include approximately 50 California sycamore (*Platanus racemosa*) trees placed throughout the lot. Ponderosa pine (*Pinus ponderosa*) trees (approximately 20) are proposed along the Skyway frontage and the main driveway entrance and restaurant pad area. Incense cedar and dogwood trees are proposed along the northern boundary of the site. These trees would provide parking lot shading in accordance with the Town's minimum 50 percent shading requirement. Shrubs and ground cover plantings would be installed in planters along the northern boundary, Skyway frontage, and southern boundary. On the west side of the site (rear of the Safeway building), landscaping is proposed to include ponderosa pine and valley oak (*Quercus lobata*) trees with mixed fescue species ground cover on the slope leading to a retaining wall on the property line. Chapter 15.36 of the Town's Municipal Code sets forth the requirements for landscaping for commercial projects

[2] The total number of trees to be removed may decrease, depending on a final survey of property lines, particularly along the northern and western site boundaries. Some trees may not be on the applicant's property.

and the Town's process for approving landscape plans. The applicant will be required to submit a final landscape plan for Town approval.

The introduction of these new features would substantially change the visual characteristics of the site compared to existing conditions. Some viewers may view the visual changes associated with the proposed project neutrally or beneficially, as a sign of growth and development. Conversely, other viewers may perceive the loss of trees on the site to allow construction of a large retail project as a negative or adverse change because trees are an intrinsic element of the visual landscape in the town.

Views of the Project from Skyway

The proposed project would result in a substantial visual change on the site with the addition of a new retail center, which would be readily visible from Skyway. The greatest number of viewers would be motorists (local community members, commuters, and visitors) on Skyway because it is the primary and most heavily traveled roadway through the town. However, under normal traffic flow, the project would only be visible for a few seconds. The proposed architectural features described above would minimize the mass and scale of the store, and the materials and color palette would help reduce the potential for visual contrast relative to nearby commercial properties. As noted above, the highest point on the store would be a decorative gable over the main entrance, which would meet the Town's height requirements for a commercial district. Because the store would be set back approximately 310 feet from Skyway and would have a landscaped parking lot and frontage landscaping, this would tend to visually diminish the mass and scale of the store structure itself, particularly as viewed from Skyway.

The project site is an infill site in an area planned for commercial development, and the proposed project is consistent with the site's existing General Plan land use designation and zoning. As such, changes in the visual characteristics of the project site were anticipated. With the design features included in the proposed project, the project would not be visually inconsistent with adjacent commercial development on the north, south, and east (across Skyway) or other commercial development in the immediate vicinity.

Views of the Project from Adjacent Publicly Accessible Residential Areas

There are public views of the site from a residential subdivision on the west side on Horseshoe Hill Drive, as well as views from some residences on the north side of the site. Some residences to the south have views of the project site. Two changes in the visual quality of the site would be visible to adjacent residential development: placement of retaining walls and removal of trees. The most apparent change that would be visible to off-site residential properties would be associated with cut-and-fill activities to create a level building pad, which would result in raising the west side of the project site to the highest point of the site (the ridge that bisects the site in a north–south direction). The project would result in placement of fill on the west side of the ridge, which would require construction of retaining walls.

Figure 2.0-4 in Section 2.0, Project Description, shows the locations of proposed retaining walls. A solid masonry retaining wall would be installed on the west side of the site, along the property line, at the bottom of a slope created by fill placement. The retaining wall would range in height from 14 to 16 feet along most of the western property line, decreasing to 5 feet around the southwest corner where the proposed truck delivery bay would be located. Above the retaining wall, a landscaped slope would lead to the truck delivery driveway at the rear of the store. The conceptual landscape plan submitted by the applicant includes a combination of ponderosa pine and valley oak trees with fescue grass ground cover. A solid masonry retaining wall would

also be constructed on the property line on the north side of the site, ranging from 16 feet below the grade of the pad at the northwest corner to 10 feet above the pad grade near the center of the northern property line and extending east to Skyway. The retaining walls along the north, northwest, west, and southwest sides would be above grade (i.e., elevated) relative to viewers on the adjoining residential properties.

As established in the Town's Municipal Code, the minimum rear and side setback for commercial property is 0 feet. The Town does not have prohibitions on the placement of retaining walls along the property line for a commercial project or limits on the height of retaining walls. Although there are no restrictions on retaining wall development, the retaining walls along the north, northwest, west, and southwest boundaries of the project site would introduce a visual element that would be out of character with the natural landscape and would be readily visible to off-site viewers. The walls would also obscure views of the existing features and trees and vegetation on the site, which may be valued by these viewers.

As described in the discussion of Impact 4.4.2 in Section 4.4, Noise, the proposed project would result in the need for sound barriers along the north and southwest sides of the site, as shown in **Figure 4.4-3** (mitigation measure **MM 4.4.2a**). Similar to retaining walls, these barriers would be new, engineered features that would be readily visible to off-site residential viewers and would block views of trees and vegetation on the project site.

There are 185 existing trees on the site that are more than 10 inches in diameter (31-inch circumference). Some of these include large-diameter trees along the project boundary (e.g., a 48-inch-diameter black oak on the north side of the site) and trees on the west slope of the ridge that may be considered a visual amenity, provide a natural-appearing landscape when viewed from residential properties, and partially obscure views of the site, as well as providing shade, depending on location and sun angle. Development of the proposed project is expected to result in the removal of 180 of the 185 trees (see **Figure 2.0-5** in Section 2.0, Project Description), including those along the north and west property lines. The five oak and walnut trees that would remain are in the southwest corner of the site. The conceptual landscape plan proposes approximately 140 replacement trees on-site, some of which are proposed for the slope above the retaining wall on the west side. The removal of trees along the north, northwest, west, and southern boundaries of the site to accommodate the proposed project would result in more direct views of the project's features from off-site locations. Tree removal may also result in changes in shade cover for off-site properties.

Based on comments received from the public during the scoping process, there may be some uncertainty as to whether some of the large-diameter trees along the project boundaries are on the applicant's property or on property owned by others. An official survey would be required to determine whether the trees to be removed are on property under the applicant's control.

The removal of trees on the project site to accommodate the proposed project, in combination with the construction of retaining walls and noise barriers, would substantially alter the site's visual quality and may be subjectively perceived as visually intrusive or offensive to residents of adjacent homes that have views of the project site. This impact is **potentially significant**.

Mitigation Measures

MM 4.1.2a The applicant shall modify the conceptual landscape plan to indicate the locations of proposed retaining walls. The proposed landscape plan shall be modified to incorporate shrubs (e.g., ceanothus, coffeeberry, toyon, and western redbud) with moderate to fast growth rates on the slope above the

western retaining wall to provide greater coverage and screening beyond that provided by the proposed tree plantings and fescue. An alternative to fescue (a high-water-use grass) shall be considered for ground cover. Native and/or low-water-use plants shall be used as feasible. The conceptual landscape plan shall be modified to reflect these modifications, subject to Town review and approval.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Prior to submittal of final plan for Town approval and implemented during construction*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to approving final landscape plan*

MM 4.1.2b The final landscape plan shall include self-clinging and/or cascading vine species along all retaining walls. If feasible, vine pockets on the project site shall be used to encourage growth on the opposite side of the walls. Self-clinging and/or cascading vines shall also be incorporated into the landscape plan where sound barriers are recommended (shown in **Figure 4.4-3**).

Mitigation Responsibility: *Project applicant*

Mitigation Timing: *Prior to submittal of final plan for Town approval and implemented during construction*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to approving final landscape plan*

MM 4.1.2c Prior to approval of the proposed tree removal plan, the boundaries of the project site shall be certified by a California-licensed surveyor and reconciled with the proposed tree removal plan (Figure 2.0-5 in the Draft EIR) to determine which trees are proposed for removal. Trees that are not on the applicant's property may not be removed without express permission from the property owner.

Mitigation Responsibility: *Project applicant*

Mitigation Timing: *Prior to submittal of final tree removal plan for Town approval*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to approving tree removal plan and final landscape plan*

MM 4.1.2d Large-diameter trees along the project's north, west, and southern boundaries shall be incorporated into the grading and landscape plan, where practicable and to the extent feasible, before the Town approves the tree removal and landscape plans. Specific efforts should be made to retain tree number T-1424

(48-inch black oak) shown on the applicant's tree removal plan (Figure 2.0-5). Trees to remain in place along the project site boundaries (regardless of property ownership) shall be protected during site grading and construction activities to protect the root systems. Pruning of trees not on the applicant's property shall only be performed with permission of the property owner, and pruning may only be implemented based on recommendations of a California-certified arborist.

Mitigation Responsibility: *Project applicant*

Mitigation Timing: *Prior to submittal of final grading and landscape plans for Town approval and implemented during construction*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to approving final landscaping and grading plans*

MM 4.1.2e If California sycamore trees are retained in the landscape plan for the parking lot, the landscape plan shall require root barriers be installed to minimize the potential for pavement and sidewalk damage.

Mitigation Responsibility: *Project applicant*

Mitigation Timing: *Prior to submittal of final grading plan for Town approval and implemented during construction*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to approving final landscape plan*

MM 4.1.2f In accordance with the Town's Municipal Code Section 8.12.120, the project applicant shall pay the applicable in-lieu fee identified in the Town Master Fee Schedule Resolution for each qualified tree to be felled that is not replaced on-site (approximately 40 trees).

Mitigation Responsibility: *Project applicant*

Mitigation Timing: *Grading/building permit application (site plan submittal)*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to approving tree removal plan and issuing permits*

The conceptual landscape plan proposes ponderosa pine and valley oak trees, which are common in the project area, for the west slope above the retaining wall. However, in the professional opinion of the EIR preparer's landscape architecture staff, the height of the trees with fescue planting underneath above a tall retaining wall such as that proposed for the west side of the site along the property line would not be as effective a visual buffer as would occur if tall

shrubs and ground cover are included to create a denser understory, which is included in mitigation measure **MM 4.1.2a**. The recommended modifications to the landscape plan would create a vegetated slope more similar in appearance to the existing terrain and topography, which would reduce the visual impact.

Under Mitigation measure **MM 4.1.2b**, the use of self-clinging and/or cascading vines would help soften the appearance of retaining walls and noise barriers.

Mitigation measures **MM 4.1.2c** and **MM 4.1.2d** would protect, to the extent feasible, large-diameter trees that are a visual amenity, provide shade at some locations along the project boundary and off-site properties, and may act as a buffer to block views of the project from off-site residences.

The proposed conceptual landscape plan includes California sycamore trees as the primary shade tree in the parking lot. These trees have a high potential to cause root damage (i.e., the shallow root system can cause pavement and sidewalk damage), which is a safety hazard as well as being visually unattractive. If California sycamore trees are planted, mitigation measure **MM 4.1.2e** would help minimize these effects.[3]

Payment of the in-lieu fee for trees not replaced on-site in accordance with Town Municipal Code Section 8.12.120, as required under mitigation measure **MM 4.1.2f**, would ensure the proposed project mitigates tree removal in accordance with Town requirements.

With implementation of mitigation measures **MM 4.2.1a** through **MM 4.2.1f**, impacts related to changes in visual quality of the site and its surroundings would be reduced to **less than significant**.

The Redevelopment Project Area and Upper Skyway Design Standards include narrative descriptions and illustrations that address building design (scale/height/massing, architectural features, materials and textures, colors, windows, awnings), site design (landscaping, fences/walls, lighting), signage, and streetscape design (e.g., landscaping and trees). The proposed project has been designed in general conformance with the standards. The final determination of the project's consistency with design standards and regulations would be accomplished through the Town's design review process prior to issuance of a grading or building permit for the proposed project.

Lighting and Glare (Standard of Significance 4)

Impact 4.1.3 The proposed project would introduce new sources of light and glare on the project site. The impact is **less than significant.**

There are two typical types of light intrusion. First, light emanates from the interior of structures and passes through windows. Second, light projects from exterior sources, such as street lighting, security lighting, and landscape lighting. "Light spill" is typically defined as the presence of unwanted and/or misdirected light on properties adjacent to the property being illuminated. Light introduction can be a nuisance to adjacent residential areas and diminish the view of the clear night sky. Sky glow is the light that illuminates the sky above a particular site/location and reflects off moisture and other tiny particles in the atmosphere. Perceived glare is the unwanted and

[3] Mitigation measure MM 4.2.3e identified in Section 4.2, Air Quality, to help reduce biogenic reactive organic gas (ROG) emissions would replace the California sycamore trees that would be planted in the parking lot with lower ROG-emitting varieties such as zelkova. These species have lower root damage potential than California sycamore.

potentially objectionable sensation as observed by a person when looking directly into the light source of a luminaire. Glare also results from sunlight reflection off flat building surfaces, with glass typically contributing the highest degree of reflectivity.

The grocery store and fueling center would operate 7 days per week, 24 hours per day. Each would be a new source of light and glare on the site compared to existing conditions. Subsequent use of the restaurant pad would also add to light and glare effects. There is some nighttime lighting on adjacent commercial properties, but because of the size of the project and the intensity of development, the amount of lighting would be readily apparent and would likely be subjectively perceived as a substantial amount of new light relative to the surrounding properties.

Nighttime Lighting and Glare

The project proposes the use of 18-foot-tall LED light fixtures throughout the parking lot (indicated as S1, S2, and S3 on **Figure 2.0-6**). The light source would be 3500K lamps, which would provide a neutral color (as compared to lower-K-value lamps in which the light appears blueish-white). The lights would have full cutoff shielding to prevent upward light emanation and light spillover onto adjacent properties. For fixtures along the north side (S2 on **Figure 2.0-6**), the fixtures would also include house-side shielding. In addition to lighting on the building façade, exterior lighting for security would be placed on the north, west, and south sides of the Safeway building (S4 on **Figure 2.0-6**). The lights would be mounted at a height of approximately 14 feet above the finished floor elevation (see **Figure 2.0-3b** for fixture locations). Wall-mounted lights would be shielded to prevent the direct projection of light onto adjacent properties. In addition, the proposed project would include an Energy Management System (EMS), which allows monitoring and controlling of all operational and security lighting features. As shown in **Figure 2.0-6**, light spillover is not predicted to occur on off-site properties. Nearly all of the pole-mounted lights would be in the parking lot, and the store building would provide a visual buffer between residences to the north and west. Some lighting may be visible to residences to the southwest.

The fueling center canopy and kiosk would also include lighting; however, the fueling center is situated along Skyway and directly south of the off-site mini-storage business. There are no residential uses adjoining that location that would have direct views of parking lot lighting.

Vehicles traveling along Skyway are an existing source of nighttime lighting and glare from headlights during the late fall, winter, and early spring. With the proposed project, vehicles turning out of and onto Skyway at the main access at Black Olive Drive would be a new source of nighttime lighting and possibly glare from headlights. However, there are no residential uses on the east side of Skyway with direct views of the driveways that would be affected by vehicle headlights at the primary driveway. Shopping center customers entering the project from Skyway via the northern driveway to access the fueling center and parking lot would be a source of nightline lighting and associated glare. In the vicinity of the proposed fueling center, there are no residential uses immediately adjoining the site that would be affected by light and glare from headlights. However, residential uses are sited farther west, close to the property boundary, on the north. The cut-and-fill activities to create a level site would result in construction of a retaining wall along the property line that would extend aboveground as viewed by those residents whose homes are accessed by the private driveway through the commercial property. In addition, as required under mitigation measure **MM 4.4.2a**, a noise barrier would be constructed along the northern property line as shown in **Figure 4.4-3**. This barrier would block direct views of headlights and truck lighting at those properties. On the west (rear) side of the site, the truck delivery driveway would be situated at a higher elevation than the residences, with an intervening landscaped slope. Because trucks would be traveling parallel to the property line, and at a higher elevation, this would minimize direct views of truck headlights and associated glare. On the southwest side

near the delivery bay, truck headlights would be elevated relative to the viewer and would also be blocked by the noise barrier. As such, light and glare from truck deliveries would not be a substantial source of light and glare that would adversely affect nighttime views in the area.

The Town's Design Standards address lighting for commercial developments to ensure all features and sources have a scale, design, and color that complements the character and design of the surrounding structures and developments, while minimizing spill, glow, and glare impacts to adjacent and surrounding properties. The standards include provisions for storefront lighting, canopy and entry lighting, location and design, parking lot lighting, and nighttime lighting. The standards also require that new development incorporate appropriate design measures, including structure placements, parking lot layout, and lighting features, to minimize the visual impact of large-scale commercial retail developments. The final determination of the project's consistency with design standards and regulations would be accomplished through the Town's design review process prior to issuance of a grading or building permit for the proposed project.

Daytime Glare

Vehicle windshields in the parking lot could be a source of reflective glare during the day. However, except for a few parking spaces along the northern driveway, the parking spaces are situated between the center and the east side of the site, along Skyway. The proposed project would include landscaping with trees to provide at least 50 percent shading in the parking lot, which would reduce the potential for daytime glare.

The front of the proposed store, facing east and toward Skyway, would include extensive windows (**Figure 2.0-3a**). The store will be set back approximately 300 feet from Skyway. Glare, if any, would be reduced and shielded by shade trees and would not have effect on motorists on Skyway. As shown on **Figure 2.0-3b**, the rear and sides of the store would not include windows that could be a source of glare which could affect adjacent residential uses. On the south, there is only one window near the front of the store.

Summary

The proposed project would not be a source of substantial nighttime lighting and glare or daytime glare that would adversely affect views in the area. The impact would be **less than significant**.

Mitigation Measures

None required.

4.1.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The geographic context for the analysis of cumulative aesthetics effects is the project site and immediate surroundings within the immediate viewshed of the project site along Skyway, the extent of which is shown in **Photo 1** and **Photo 2**.

The General Plan EIR (Paradise 1994, p. 4-86) concluded that with implementation of policies and implementation measures in the General Plan, improvement standards, and the Town's tree ordinance, impacts on scenic resources would be less than significant.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Changes in Visual Quality and Light and Glare

Impact 4.1.4 The proposed project would alter the visual quality of the site and increase nighttime lighting, but the project's contribution to cumulative aesthetics impacts in the viewshed of the project site would be less than cumulatively considerable. The cumulative impact is **less than significant.**

The proposed project would result in changes in the visual quality of the project site, as described in Impacts 4.1.2 and 4.1.3. Development in the site's viewshed includes commercial uses. The project site is an infill property along Skyway and is situated in an area that is developed with and planned for commercial uses. The visual quality in the vicinity has already been affected by commercial development. Future development in the area would represent a logical expansion of the existing commercial uses serving the surrounding community. Each future development project would be subject to the Town's General Plan policies and implementation measures, development standards for commercial districts, and the Greater Redevelopment Project Area and Upper Skyway Design Standards, which are intended to ensure new development blends with the visual character of the surrounding area. Development of the proposed project would not alter the significance of the overall change relative to that analyzed in the General Plan EIR. There are no other approved but not yet constructed commercial projects in the immediate vicinity of the project site similar in scale to the proposed project, nor are there or vacant or underutilized parcels that could accommodate a large retail center. As such, there are no projects that would, in combination with the proposed project, substantially degrade the visual quality of the immediate area or contribute nighttime lighting which would diminish nighttime views. Therefore, the proposed project's contribution would be less than cumulatively considerable, and the cumulative impact would be **less than significant**.

Mitigation Measures

None required.

REFERENCES

Paradise, Town of. 1994. *1994 General Plan.*

———. 2010. *Design Standards – Greater Redevelopment Project Area and Upper Skyway*.

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4.2 Air Quality

This section includes a description of existing air quality conditions, a summary of applicable regulations, and an analysis of potential air quality impacts associated with the proposed project. The analysis considers construction of the project and long-term operation, and evaluates the project's effects on criteria air pollutants (e.g., ozone precursors) and toxic air contaminants, including diesel particulate matter. Greenhouse gases (GHGs) are evaluated in Section 4.3, Greenhouse Gas Emissions.

The Town received one comment letter on the Notice of Preparation (NOP) concerning air quality. The letter from the Butte County Air Quality Management District (BCAQMD) is included in **Appendix A**. The information in the comment was considered in the preparation of this section, including emissions modeling for criteria air pollutants using the California Emissions Estimator Model (CalEEMod) and identification of mitigation measures/best practices to reduce criteria pollutants, potential asbestos hazards, and requirements for permitting for the proposed fueling center.

4.2.1 EXISTING SETTING

NORTHERN SACRAMENTO VALLEY AIR BASIN

The proposed project is located in Butte County, which is in the Northern Sacramento Valley Air Basin (NSVAB). The NSVAB consists of a total of seven counties: Sutter, Yuba, Colusa, Butte, Glenn, Tehama, and Shasta. The NSVAB is bounded on the north and west by the Coast Ranges and on the east by the southern portion of the Cascade Mountains and the northern portion of the Sierra Nevada. These mountain ranges reach heights in excess of 6,000 feet above mean sea level, with individual peaks rising much higher. The mountains form a substantial physical barrier to locally created pollution as well as that transported northward on prevailing winds from the Sacramento metropolitan area (SVBAPCC 2015).

Butte County's environmental conditions are conducive to potentially adverse air quality conditions. The basin area traps pollutants between two mountain ranges to the east and the west. This problem is exacerbated by a temperature inversion layer that traps air at lower levels below an overlying layer of warmer air. Prevailing winds in the area are from the south and southwest. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. Growth and urbanization in the NSVAB have also contributed to an increase in emissions.

AIR POLLUTANTS OF CONCERN

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws. These regulated air pollutants are known as criteria air pollutants and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO_X), sulfur dioxide (SO_2), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), lead, and fugitive dust are primary air pollutants. Of these, CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Sources and health effects commonly associated with criteria pollutants are summarized in **Table 4.2-1.**

TABLE 4.2-1
CRITERIA AIR POLLUTANTS SUMMARY OF COMMON SOURCES AND EFFECTS

Pollutant	Major Man-Made Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NOx) in the presence of sunlight. VOCs are also commonly referred to as reactive organic gases (ROGs). Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.
Particulate Matter (PM_{10} & $PM_{2.5}$)	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned; when gasoline is extracted from oil; or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2011

Other pollutants, such as carbon dioxide, a natural byproduct of animal respiration that is also produced in the combustion process, have been linked to such phenomena as climate change. While there are no adopted thresholds for their release, Assembly Bill (AB) 32 and Senate Bill (SB) 32 require the state to reduce greenhouse gas (GHG) emissions, which are discussed further in Section 4.3, Greenhouse Gas Emissions. GHG emissions do not jeopardize the air basin's attainment status.

AMBIENT AIR QUALITY

Criteria Pollutants

Ambient air quality in the county can be inferred from ambient air quality measurements conducted at air quality monitoring stations. Existing levels of ambient air quality and historical trends and projections in the region are documented by measurements made by the Butte County Air Quality Management District, the air pollution regulatory agency in the air basin that maintains air quality monitoring stations. The nearest air quality monitoring site to the project site is located at 4405 Airport Road in Paradise, approximately 3 miles south of the project site. This monitoring station measures ambient concentrations of ozone and airborne fine particulate matter ($PM_{2.5}$). The closest monitoring station that measures airborne coarse particulate matter (PM_{10}) is the Chico – East Avenue station, approximately 11 miles to the west. Ozone, PM_{10}, and $PM_{2.5}$ are the primary pollutants affecting the air basin. **Table 4.2-2** shows historical occurrences of ozone, PM_{10}, and $PM_{2.5}$ pollutant levels exceeding state and federal ambient air quality standards for the three-year period from 2014 through 2016.

TABLE 4.2-2
AMBIENT AIR QUALITY MONITORING DATA

Pollutant Standards	2014	2015	2016
Paradise – 4405 Airport Road Monitoring Station			
Ozone (O_3)			
Max 1-hour concentration (ppm)	0.116	0.086	0.088
Max 8-hour concentration (ppm) (state/federal)	0.085 / 0.085	0.078 / 0.079	0.078 / 0.079
Number of days above state 1-hour standard	1	0	0
Number of days above state/federal 8-hour standard	14 / 11	9 / 8	15 / 13
Fine Particulate Matter ($PM_{2.5}$)			
Max 24-hour concentration ($\mu g/m^3$) (state/federal)	56.5 / *	58.3 / *	27.2 / *
Number of days above federal standard	*	*	*
Chico – East Avenue Monitoring Station			
Coarse Particulate Matter (PM_{10})			
Max 24-hour concentration ($\mu g/m^3$) (state/federal)	47.6 / 40.1	66.4 / 67.8	57.0 / 58.1
Number of days above state/federal standard	0 / 0	8 / 0	8 / 0

Source: CARB 2017a
Notes: $\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million
** = No data is currently available from CARB to determine the value*

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes, such as petroleum refining and chrome-plating operations; commercial operations, such as gasoline stations and dry cleaners; and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects associated with TACs are diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches.

To date, the California Air Resources Board (CARB) has designated nearly 200 compounds as TACs. Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to a relatively few compounds.

Most recently, CARB identified diesel particulate matter (diesel PM) as a toxic air contaminant. Diesel PM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. Diesel PM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. Diesel PM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of diesel PM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (EPA 2002, pp. 1-1 and 1-2). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. Diesel PM poses the greatest health risk among the TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

Residential areas are considered to be sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Children are considered more susceptible to health effects of air pollution due to their immature immune systems and developing organs (OEHHA 2007). As such, schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities.

The closest existing sensitive receptors to the project site are residences adjoining the project property line to the west and residences located on commercial property adjoining the project property line to the north (see **Figure 4.1-1** in Section 4.1, Aesthetics). The closest residential receptor to the proposed fueling center, which would be an operational source of TACs, is approximately 235 feet north of the site, but it is separated from the proposed fueling center site by a mini-storage business. The next closest receptors range from 265 to 440 feet away from the site. The closest school is CORE Butte Charter School approximately 2,000 feet (0.38 mile) to the east.

ODORS

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The BCAQMD (2014) CEQA Air Quality Handbook (Table 7.1) identifies the types of projects that should be considered potential odor sources. None of the listed odor sources are on the project site or in the vicinity of the site.

ASBESTOS AND LEAD-BASED PAINT

Naturally occurring asbestos (NOA) most commonly occurs in ultramafic rock (i.e., igneous and metamorphic rock with low silica content) that has undergone partial or complete alteration to serpentine rock (or serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, is associated with ultramafic rock, particularly near geologic faults. NOA is known to occur in certain areas of Butte County; however, based on mapping by the BCAQMD (2014; Figure 2), a review of a map compiled by the California Department of Conservation (2000), and site-specific soils/geology information (Geosphere Consultants 2014), the project site does not contain ultramafic rocks and is not located in an area where NOA is expected to be present. Nonetheless, according to the Phase I Environmental Site Assessment (ESA) prepared for the proposed project (Bureau Veritas 2014), a greenish rock generally resembling serpentinite, which may contain NOA, was observed in the driveway for 5824 Skyway, but it was unknown if the observed rock originated on the property or was placed on-site.

Asbestos may be a component of building materials such as walls, ceilings, insulation, or fire-proofing in older (pre-1979 buildings). According to the Phase I ESA, several of the buildings on the project site were constructed prior to 1979, indicating the potential presence of asbestos-containing materials (ACM). Lead-based paint (LBP) may also be present in buildings and surrounding soil.

4.2.2 REGULATORY FRAMEWORK

Ambient air quality standards have been promulgated at the local, state, and federal levels. The federal Clean Air Act of 1971 and the Clean Air Act Amendments (1977) established the national ambient air quality standards (NAAQS), which are regulated by the US Environmental Protection Agency (EPA). The State of California has also adopted its own California ambient air quality standards (CAAQS), which are regulated by CARB. Implementation of the project would occur in the Butte County portion of the NSVAB, which is under the air quality regulatory jurisdiction of the BCAQMD and is subject to the rules and regulations adopted by the air district to achieve the national and state ambient air quality standards. Federal, state, regional, and local laws, regulations, plans, and guidelines that are relevant to the proposed project are summarized below.

FEDERAL AND STATE

Ambient Air Quality Standards

The Clean Air Act of 1971 established NAAQS, with states retaining the option to adopt more stringent standards or to include other pollution species. These standards are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect those sensitive receptors most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other

disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Both the State of California and the federal government have established health-based ambient air quality standards for six air pollutants. As shown in **Table 4.2-3**, these pollutants include ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

TABLE 4.2-3
FEDERAL AND STATE AMBIENT AIR QUALITY ATTAINMENT STATUS FOR BUTTE COUNTY

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone (O_3)	8 Hours	0.070 ppm (137$\mu g/m^3$)	N	0.070 ppm	N
	1 Hour	0.09 ppm (180 $\mu g/m^3$)	N	No standard	Not applicable
Carbon Monoxide (CO)	8 Hours	9.0 ppm (10 mg/m^3)	A	9 ppm (10 mg/m^3)	A
	1 Hour	20 ppm (23 mg/m^3)	A	35 ppm (40 mg/m^3)	A
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 $\mu g/m^3$)	A	0.100 ppm	U
	Annual Arithmetic Mean	0.030 ppm (57 $\mu g/m^3$)	—	0.053 ppm (100 $\mu g/m^3$)	A
Sulfur Dioxide (SO_2)	24 Hours	0.04 ppm (105 $\mu g/m^3$)	A	0.14 ppm (365/$\mu g/m^3$)	A
	1 Hour	0.25 ppm (665 $\mu g/m^3$)	A	0.075 ppm (196/$\mu g/m^3$)	A
	Annual Arithmetic Mean	—	—	0.030 ppm (80/$\mu g/m^3$)	A
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 $\mu g/m^3$	N	No standard	Not applicable
	24 Hours	50 $\mu g/m^3$	N	150 $\mu g/m^3$	U
Particulate Matter – Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12 $\mu g/m^3$	N	15 $\mu g/m^3$	U/A
	24 Hours	—	—	35 $\mu g/m^3$	N
Lead	30-Day Average	1.5 $\mu g/m^3$	A	—	A
	Calendar Quarter	—	—	1.5 $\mu g/m^3$	A
	Rolling 3-Month Average	—	—	0.15 $\mu g/m^3$	—

Source: CARB 2015, 2016

Notes: A = attainment; N = nonattainment; U = unclassified; mg/m^3 = milligrams per cubic meter; ppm = parts per million; ppb = parts per billion; $\mu g/m^3$ = micrograms per cubic meter

Air Quality Attainment Plans

In 1994, the air districts in the North Sacramento Valley Planning Area (NSVPA), a subsection of the greater Sacramento Valley Air Basin that includes the BCAQMD jurisdiction, prepared an Air Quality Attainment Plan for ozone. This plan was updated in 1997, 2000, 2003, 2006, 2009, 2012, and again in 2015. Like the preceding plans, the 2015 plan focuses on the adoption and implementation of control measures for stationary sources, area-wide sources, indirect sources, and public information and education programs. The 2015 plan also addresses the effect that pollutant transport has on the NSVPA's ability to meet and attain the state standards.

The Air Quality Attainment Plan for the NSVPA provides local guidance for air basins to achieve attainment of ambient air quality standards. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. Areas for which there is insufficient data available are designated unclassified. The attainment status for the Butte County portion of the NSVAB is included above in **Table 4.2-3**. The region is nonattainment for state 1-hour ozone, state and federal 8-hour ozone, state 24-hour and annual PM_{10}, federal 24-hour $PM_{2,5}$, and state annual $PM_{2.5}$ standards (CARB 2015).

Toxic Air Contaminant Regulations

In 1983, the California legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the federal Clean Air Act (42 United States Code Section 7412[b]) is a TAC. Under state law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

The State of California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as toxic air contaminants. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. CARB has, to date, established formal control measures for eleven TACs, all of which are identified as having no safe threshold.

TACs from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High-priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

Since the last update to the TAC list in December 1999, CARB has designated 244 compounds as TACs (CARB 2011). Additionally, CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the

estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

California Diesel Risk Reduction Plan

In September 2000, CARB adopted the Diesel Risk Reduction Plan (DRRP), which recommends many control measures to reduce the risks associated with diesel PM and achieve a goal of 85 percent reduction in human health cancer risk associated with diesel PM emissions by 2020. The DRRP incorporates measures to reduce emissions from diesel-fueled vehicles and stationary diesel-fueled engines. CARB's ongoing efforts to reduce diesel-exhaust emissions from these sources include the development of specific statewide regulations, which are designed to further reduce diesel PM emissions. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions.

Since the initial adoption of the DRRP in September 2000, CARB has adopted numerous rules related to the reduction of diesel PM from mobile sources, as well as the use of cleaner-burning fuels. Transportation sources addressed by these rules include public transit buses, school buses, on-road heavy-duty trucks, and off-road heavy-duty equipment.

California Building Energy Efficiency Standards

The California Building Energy Efficiency Standards require the design of building shells and building components to conserve energy. The California Energy Commission adopted changes to the 2016 Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code). The 2016 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential Standards include improvements for attics, walls, water heating, and lighting. New efficiency requirements for elevators and direct digital controls are included in the nonresidential Standards. The 2016 Standards also include changes made throughout all sections to improve the clarity, consistency, and readability of the regulatory language. The 2016 Building Energy Efficiency Standards are 28 percent more efficient than previous standards for residential construction and 5 percent better for nonresidential construction. Energy-efficient buildings require less electricity, and increased energy efficiency reduces fossil fuel consumption and decreases pollutant emissions.

National Emission Standards for Hazardous Air Pollutants

Airborne asbestos is regulated in accordance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) asbestos regulations. Federal and state regulations prohibit emissions of asbestos from demolition or construction activities. Following identification of friable asbestos, federal and state Occupational and Safety Health Administration (OSHA) regulations require that asbestos trained and certified abatement personnel perform asbestos abatement and that all asbestos-containing materials removed from on-site structures must be hauled to a licensed receiving facility and disposed of under proper manifest by a transportation company certified to handle asbestos. These regulations specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers and require notice to federal and/or local government agencies prior to beginning demolition or renovation that could disturb asbestos-containing materials.

As noted in the BCAQMD comment letter on the Notice of Preparation, the BCAQMD is not delegated locally to enforce the NESHAP for asbestos where projects involving demolition have the potential to release asbestos-containing materials. As such, the BCAQMD does not have a corresponding rule or regulation. Instead, demolition/notification is required for compliance with the asbestos NESHAP and must be submitted by the asbestos removal contractor to the California Air Resources Board.

LOCAL

Butte County Air Quality Management District

In Butte County, the air quality regulating authority is the BCAQMD, which adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs. The district also regulates agricultural burning. Other responsibilities include monitoring air quality, preparing clean air plans, and responding to citizen complaints concerning air quality.

The BCAQMD develops regulations to improve air quality and protect the health and welfare of Butte County residents and their environment. BCAQMD rules and regulations (BCAQMD 2017) applicable to the project area include, but are not limited to, the following:

- ***Regulation II, Rule 200, Nuisance***. No person shall discharge from any non-vehicular source such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.

- ***Regulation II, Rule 201, Visible Emissions***. A person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

  – As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the US Bureau of Mines, or

  – Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described above.

- ***Regulation II, Rule 202, Particulate Matter Concentration***. A person shall not discharge into the atmosphere from any source particulate matter in excess of 0.3 grains per cubic foot of gas at standard conditions.

- ***Regulation II, Rule 205, Fugitive Dust Emissions***. No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

  – As the dust remains visible in the atmosphere beyond the property line of the emission source; or

  – The dust emission exceeds 20 percent opacity for a period or periods aggregating more than three minutes in any one hour if the dust emission is the result of movement of a motorized vehicle.

No person shall conduct active operations without implementing the applicable best available control measures to minimize fugitive dust emissions from each fugitive dust source type within the active operation.

No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. All track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

- ***Regulation II, Rule 220, Hold-Open Latch Requirement for Retail Service Stations***. All new or existing retail service stations, regardless of gasoline throughput, shall install and maintain in good working order hold-open latches on all gasoline dispensing nozzles by January 1, 1990, except where prohibited by the local fire authority.

- ***Regulation II, Rule 221, Phase I Vapor Recovery Requirements***. No owner or operator shall transfer, permit the transfer, or provide equipment for the transfer of gasoline, unless a CARB-certified Phase I vapor recovery system is installed on the stationary storage tank and used during the transfer.

- ***Regulation II, Rule 222, Phase II Vapor Recovery Requirements***. As of January 13, 1989, no owner or operator of a retail service station shall transfer, permit the transfer, or provide equipment for the transfer of gasoline from a stationary storage tank at a retail service station into a motor vehicle fuel tank unless CARB-certified Phase II vapor recovery system is installed and used during the transfer.

- ***Regulation IV, Rule 400, Permit Requirements***. Requires any person constructing, altering, or operating a source that emits or may emit air contaminants to obtain an Authority to Construct or Permit to Operate from the Air Pollution Control Officer and to provide an orderly procedure for application, review, and authorization of new sources and of the modification and operation of existing sources of air pollution.

The BCAQMD regulates levels of TACs through a permitting process that covers both construction and operation. In evaluating TACs, the California Air Pollution Control Officers Association (CAPCOA) (2009) Health Risk Assessments for Proposed Land Use Projects identifies Type A and B land use projects with the potential to cause long-term public health risk impacts. Type A land use projects involve new facilities or facility activities that emit TACs with a potential to impact receptors. A gasoline station is one of several types of facilities that require assessment.

- **Type A** projects generally involve stationary sources of air pollutants (and are therefore subject to permitting by the BCAQMD), but they may also involve mobile sources, such as road traffic, delivery vehicles, or diesel-powered locomotives, and be further distinguished as point or area sources. A point source is a single, identifiable source of air emissions such as a stack or collection of isolated vents. With area sources, air pollutant emissions are dispersed across a certain land use, such as a landfill, construction site, or wastewater lagoon. Regardless of the nature of the source, and pursuant to Government Code Section 65850.2 and Health and Safety Code Sections 42301.6–42301.9, projects with the potential to emit dust, soot, odors, fumes, vapors, or other volatile compounds that are within 1,000 feet of the outer boundary of a school or school site must be forwarded to the BCAQMD for review.

- **Type B** land use projects are residential, commercial, and institutional developments that will place receptors in the vicinity of an existing TAC source; for example, a residential subdivision within a certain distance of a freeway interchange or a rendering plant. If a

project will provide a place for people to live, recreate, learn, or convalesce, it should be considered a receptor in the context of an existing TAC source.

Town of Paradise General Plan

The Open Space/Conservation/Energy Element of the General Plan contains the following objective pertaining to air quality: OCEO-8, Comply with the standards, provisions, and objectives of the Butte County Air Quality Attainment Plan.[1] The General Plan does not contain any air quality–related policies specific to development projects.

4.2.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Appendix G of the 2017 CEQA Guidelines includes a list of topics related to air quality that may be considered in an EIR. For purposes of this Draft EIR, the proposed project would have a significant effect on the environment if it would:

1) Conflict with or obstruct implementation of any applicable air quality plan.

2) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

3) Expose sensitive receptors to substantial pollutant concentrations.

4) Create objectionable odors affecting a substantial number of people.

5) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

The BCAQMD uses screening criteria to determine whether modeling for criteria air pollutants is necessary, as shown in **Table 4.2-4**. To determine whether a proposed project meets the screening criteria, per the BCAQMD (2014) CEQA Air Quality Handbook, the size and metric for the land use type (units or thousands of square feet) should be compared with that of the proposed project. If the screening criteria are met by a proposed project, then further quantification of criteria air pollutants is not necessary and a less than significant impact for criteria air pollutants may be assumed.

If a project exceeds the size provided by the screening criteria for a given land use type, then modeling is required, and quantification of criteria air pollutants are compared to the BCAQMD thresholds shown in **Table 4.2-5**.

The thresholds are based on BCAQMD Rule 430, State New Source Review, which incorporates stationary source permitting significance thresholds required by California Health and Safety Code Section 40918. Per the BCAQMD CEQA Air Quality Handbook, emissions that equal or exceed the designated threshold levels are considered potentially significant and should be mitigated to the

[1] The current applicable plan for Butte County is the NSVPA 2015 Triennial Air Quality Attainment Plan. There is no Butte County Air Quality Attainment Plan.

maximum extent feasible. The BCAQMD (2014) includes a number of mitigation measures in its CEQA Air Quality Handbook.

TABLE 4.2-4
BCAQMD SCREENING CRITERIA

Land Use Type	Model Emissions for Projects Greater Than
Single-Family Unit Residential	30 units
Multi-Family (Low Rise) Residential	75 units
Commercial	15,000 square feet
Educational	24,000 square feet
Industrial	59,000 square feet
Recreational	5,500 square feet
Retail	11,000 square feet

Source: BCAQMD 2014, Table 4-1

TABLE 4.2-5
BCAQMD-RECOMMENDED SIGNIFICANCE THRESHOLDS

Project-Generated Emissions	Significance Level	
	Construction	Operation
ROG	Max 137 lbs/day not to exceed 4.5 tons/year	25 lbs/day
NO_x	Max 137 lbs/day not to exceed 4.5 tons/year	25 lbs/day
PM_{10}	80 lbs/day	80 lbs/day

Source: BCAQMD 2014, Table 4-2

Toxic Air Contaminant Thresholds

The fueling center component of the proposed project is a Type A TAC-emitting project, as defined by CAPCOA for purposes of health risk assessments. The BCAQMD has not adopted thresholds of significance for projects with new sources of TACs. However, the BCAQMD recommends mitigating impacts below an incremental increased cancer risk of 10 in one million and a non-cancer risk hazard index (HI) of 1.0 (BCAQMD 2014, Table ES-2).

METHODOLOGY

Criteria Pollutants and Precursors

Air quality impacts were assessed in accordance with methodologies recommended by CARB and the BCAQMD. Criteria air pollutant emissions were modeled using CalEEMod version 2016.3.1 (see **Appendix C**). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operation from a variety of land use projects.

Construction

Construction emissions were estimated using the CalEEMod computer program for Butte County and the project type and the project's grading and site plans (**Figure 2.0-2** and **Figure 2.0-4**, respectively, in Section 2.0, Project Description). The square footage of buildings to be demolished was based on estimated dimensions using aerial photographs (Google Earth). Paving area was estimated based on the site plan and information provided by the applicant. Construction equipment requirements, usage rates, and duration of each construction activity used in the model were based on model default assumptions and information provided by the applicant, The schedule assumes a total project construction duration of approximately 16 months. Specific assumptions are included in **Appendix C**.

Operation

Operational emissions are primarily the result of vehicle trips generated by the proposed project. Trip generation rates and the trip distances identified in the project's transportation impact study (**Appendix E**) were used in CalEEMod to estimate mobile criteria pollutant and precursor emissions. Area source emissions are based on CalEEMod defaults for land use types in the project.

It should be noted that the estimate of mobile emissions reflects the assumption in the project's transportation impact study that the proposed project would result in new trips, even though the supermarket component of the project is the relocation of an existing use. This approach provides a conservative, worst-case estimate of mobile emissions from the project.

Health Effects of Increased Operational Emissions

Criteria pollutants that would be generated by the proposed project are associated with some form of health risk. Those risks are summarized in **Table 4.2-1**. Adverse health effects induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, the number and character of exposed individuals [e.g., age, gender]). In particular, ozone precursors (ROG and NOx) affect air quality on a regional scale. Health effects related to ozone are therefore the product of emissions generated by numerous sources throughout a region. As such, specific health outcomes from criteria pollutant emissions would be limited and cannot be solely traced to the incremental contribution from a single project.

Existing models have limited sensitivity to small changes in criteria pollutant concentrations, and attempting to correlate the small amount of project-generated criteria pollutants such as NOx (approximately 75 pounds per day) to specific health effects or additional days of nonattainment would not yield meaningful results. Consequently, an analysis of impacts on human health associated with project-generated regional ROG and NOx emissions is not included in this section.

However, because localized pollutants generated by a project can directly affect adjacent sensitive receptors, the analysis of project-related impacts on human health focuses on those localized pollutants with the greatest potential to result a significant, material impact on human health. Consistent with the current state of practice and published guidance by CAPCOA (2009), the Office of Environmental Health Hazard Assessment (OEHHA) (2015), and CARB (2000), the analysis in this EIR focuses only on those pollutants with the greatest potential to result in a significant, material impact on human health, which are TACs, including diesel PM; locally concentrated CO (i.e., CO hot spots); and airborne asbestos potentially resulting from demolition and site preparation activities.

Toxic Air Contaminants

The proposed project includes a 9-pump, 18-station retail gasoline fueling center located in the northeast portion of the project site. Activities at gasoline-dispensing facilities can release TACs into the air including the organic compounds benzene, toluene, and xylene. Benzene is a potent carcinogen and is one of the highest risk air pollutants regulated by CARB. Toluene and xylenes are not considered carcinogens, but they (along with benzene) can contribute to chronic health conditions.

A Health Risk Assessment (HRA) was completed to support the CEQA analysis regarding the potential impacts on the health of nearby potential sensitive receptors due to TACs generated by the long-term operation of the fueling center. The complete HRA, which includes the model inputs and assumptions, can be found in **Appendix C**. The HRA is not intended to meet any potential HRA requirements resulting from siting and permitting this new stationary source of TACs. Prior to issuance of permits, the BCAQMD will be responsible for preparing any necessary evaluations in accordance with its rules and regulations.

TAC emissions associated with the proposed fueling center were quantified using the CAPCOA (1997) Gasoline Service Station Industrywide Risk Assessment Guidelines, and TAC dispersion was modeled using the EPA's AERSCREEN program. The health risks associated with the pollutant concentrations associated with the proposed fueling center were modeled in accordance with the OEHHA (2015) Air Toxics Program Guidance Manual for Preparation of Health Risk Assessments, using the CARB Hotspots Analysis and Reporting Program Version 2 (HARP 2) Risk Assessment Standalone Tool (RAST) program version 17023. A health risk assessment (HRA) was completed to analyze the potential impacts due to TAC emissions from long-term operation of the proposed fueling center. It should be noted that the methodology to quantify TAC concentrations and health risk is based on a screening analysis to determine whether further modeling is required. Based on the screening HRA results, no further modeling was required. Because the screening analysis is based on conservative, worst-case assumptions, the analysis overestimates the actual risk.

Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. The amount to which the receptors could be exposed, which is a function of concentration and duration of exposure, is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). For construction-related diesel PM, current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. Diesel PM impacts associated with construction activities were evaluated qualitatively due to the short-term duration of construction (approximately 16 months) and small amount of acreage to be disturbed (approximately 7.6 acres).

Locally Concentrated Carbon Monoxide

The BCAQMD has not identified screening criteria for the analysis of potential CO hot spots. However, the Sacramento Metropolitan Air Quality Management District (SMAQMD) (2009) provides a screening methodology in its Guide to Air Quality Assessment in Sacramento County that provides lead agencies with a conservative indication of whether project-generated vehicle trips will result in the generation of CO emissions that contribute to an exceedance of the SMAQMD thresholds of significance. The SMAQMD's recommended screening criteria are divided into two tiers. The proposed project was analyzed under Tier 2 because it did not meet the criteria for Tier 1. Under the second tier, a proposed project will result in a less than significant impact on air quality for local CO if the project will not result in an affected intersection experiencing more

than 31,600 vehicles per hour; will not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway, or other locations where horizontal or vertical mixing of air will be substantially limited; and the mix of vehicle types at the intersection is not anticipated to be substantially different from the Sacramento average (as identified by the EMFAC or CalEEMod models).

Airborne Asbestos and Lead-Based Paint

The potential for release of airborne asbestos (as NOA and/or ACM) and lead-based paint emissions from demolition was evaluated qualitatively based on information available from agency mapping, the project's preliminary geologic/soils investigation and Phase I ESA, and cultural resources assessment.

PROJECT IMPACTS AND MITIGATION MEASURES

Consistency with the 2015 Air Quality Attainment Plan (Standard of Significance 1)

Impact 4.2.1 The proposed project would not conflict with or obstruct implementation of the applicable air quality attainment plan. The impact is **less than significant**.

As part of its enforcement responsibilities, the EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the California Clean Air Act requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The North Sacramento Valley Planning Area 2015 Triennial Air Quality Attainment Plan is the most recent air quality planning document covering Butte County (SVBAPCC 2015). Air quality attainment plans are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls describing how the state will attain ambient air quality standards for ozone and particulate matter. State law makes CARB the lead agency for all purposes related to the Air Quality Attainment Plan. Local air districts prepare air quality attainment plans and submit them to CARB for review and approval. The NSVPA 2015 Triennial Air Quality Attainment Plan includes forecast ROG and NOx emissions (ozone precursors) for the entire NSVPA region through the year 2020. These emissions are not apportioned by county or municipality. As previously stated, the Butte County portion of the NSVPA is classified as nonattainment for state and federal ozone standards (see **Table 4.2-3**).

Per the BCAQMD (2014), a project would conflict with or obstructs implementation of the applicable attainment plan if it would result in or induce growth in population, employment, land use, or regional vehicle miles traveled (VMT) that is inconsistent with the growth (and therefore the emissions projection) assumptions in the applicable attainment plan. The BCAQMD CEQA Air Quality Handbook recommends utilizing the Butte County Association of Governments (BCAG) (2014) Long-Term Regional Growth Forecasts to assess whether the proposed project's growth in population, employment, or regional VMT are consistent with the growth assumptions in the 2015 Air Quality Plan.

The proposed project does not have a residential component; therefore, no regional growth in population and housing demand would occur due to implementation of the proposed project. The

project is expected to employ up to 215 persons. The existing Safeway store (which would be closed once the new store is completed) employs approximately 75 persons, and along with the future tenant retail, would result in a net increase of approximately 150 jobs in the town. The BCAG Growth Forecasts estimate an increase in employment in Butte County of 7,898 persons by 2020. The additional employment resulting from the proposed project would be a small portion (less than 2 percent) of the anticipated growth in the region already identified in the forecasts. In addition, the proposed project is consistent with the land use designation of Town Commercial in the Paradise General Plan and the zoning of Community Commercial, so the employment-generating uses associated with the project are consistent with the land use assumptions for the site.

The proposed project would not exceed the BCAG growth forecasts for employment. Therefore, the project would not conflict with or obstruct implementation of the 2015 Triennial Air Quality Plan, and this impact would be **less than significant**.

Mitigation Measures

None required.

Short-Term Construction-Generated Pollutant Emissions (Standard of Significance 2)

Impact 4.2.2 Construction of the proposed project would result in short-term emissions of criteria air pollutants. The impact is **less than significant**.

Construction activities such as clearing, excavation and grading operations, construction vehicle traffic, and wind blowing over exposed earth would generate exhaust emissions and fugitive particulate matter emissions that would temporarily affect local air quality. Activities such as painting, sealing, and paving would release ROGs that could cause a temporary increase in local ozone levels. Predicted unmitigated maximum daily construction-generated emissions for the proposed project are summarized in **Table 4.2-6**.

As shown in **Table 4.2-6**, during construction, short-term daily emissions associated with the development of the proposed project would not exceed the BCAQMD significance thresholds, and the impact would be **less than significant**.

TABLE 4.2-6
CONSTRUCTION-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS – UNMITIGATED
(MAXIMUM POUNDS PER DAY)

Construction Activities	ROG	NO_X	Total PM_{10}	Total $PM_{2.5}$
2018 maximum daily emissions	4.7	75.0	20.8	12.3
2019 maximum daily emissions	92.9	29.1	2.8	1.6
Maximum Daily Emissions of All Years of Construction	*92.9*	*75.0*	*20.8*	*12.3*
BCAQMD Significant Impact Threshold	137	137	$PM_{10} + PM_{2.5}$ < 80	$PM_{10} + PM_{2.5}$ < 80
Exceed BCAQMD Threshold?	**No**	**No**	**No**	**No**

*Source: CalEEMod version 2016.3.1. See **Appendix C** for emission model outputs.*
Notes: Project construction activities are assumed to occur over a 15-month period.

Although unmitigated emissions would not exceed BCAQMD thresholds, the following regulatory compliance measures (RCM) would ensure best management practices consistent with those recommended by BCAQMD for reducing diesel exhaust emissions and the requirements of BCAQMD Rule 205 for fugitive dust control are implemented during construction. These measures would be included as Conditions of Approval. As shown in **Table 4.2-7**, below, implementation of these measures would result in a substantial (50 percent) reduction in PM emissions. There would be an estimated 22 percent reduction in NOx emissions, which would help reduce precursor emissions in a region that is nonattainment for ozone.

Regulatory Compliance Measures (RCM)

RCM A The following measures shall be noted on grading plans and in construction specifications, and implemented during project construction to reduce exhaust emissions.

- During all construction activities, all diesel-fueled construction equipment, including but not limited to rubber-tired dozers, graders, scrapers, excavators, asphalt paving equipment, cranes, and tractors, shall be California Air Resources Board (CARB) Tier 3 Certified or better as set forth in Section 2423 of Title 13 of the California Code of Regulations and Part 89 of Title 40 of the Code of Federal Regulations.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. Equipment maintenance records shall be kept on-site and made available upon request by the Town.
- On-road diesel equipment shall comply with the 5-minute idling restriction identified in Section 2485 of Title 13 California Code of Regulations. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the 5-minute idling limit.
- Off-road diesel equipment shall comply with the 5-minute idling restriction identified in Section 2449(d)(3) of the California Air Resources Board's In-Use Off-Road Diesel regulation. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the 5-minute idling limit.
- Electrify equipment when feasible.
- Substitute gasoline-powered in place of diesel-powered equipment, where feasible.
- Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel.
- Schedule activities to minimize the amount of large construction equipment operating simultaneously during any given time period.
- Schedule on-road construction truck trips during non-peak hours to reduce peak-hour emissions.

- Proposed truck routes shall be evaluated to define routing patterns with the least impact to residential communities and sensitive receptors and identify these receptors on the truck route map.

Implementation Responsibility:	*Project applicant*
Action/Timing:	*Include notes on grading plan and implement during construction*
Compliance Monitoring:	*Town of Paradise Public Works and Planning Division*
Verification Action/Timing:	*Prior to approving final grading plan and during construction*

RCM B The following measures shall be noted on grading plans and in construction specifications, and implemented during project construction to reduce fugitive dust emissions.

- Reduce the amount of the disturbed area where possible.
- Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
- All dirt stockpile areas should be sprayed daily as needed, covered, or a BCAQMD-approved alternative method will be used.
- Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil-disturbing activities.
- Exposed ground areas that will be reworked at dates greater than one month after initial grading should be sown with a fast-germinating noninvasive grass seed and watered until vegetation is established.
- All disturbed soil areas not subject to revegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the District.
- All roadways, driveways, sidewalks, etc., to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with local regulations.

- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site.

- Dust, dirt, or other material track-out shall not extend 25 feet or more in cumulative length from the point of origin from an active operation. All track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

- The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust off-site. Their duties shall encompass holidays and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Town and the BCAQMD prior to commencement of clearing, demolition, or earthmoving activities.

Implementation Responsibility: *Project applicant*

Action/Timing: *Include notes on grading plan and implement during construction*

Compliance Monitoring: *Town of Paradise Public Works and Planning Division*

Verification Action/Timing: *Prior to approving final grading plan and during construction*

Implementation of regulatory compliance measures A (diesel exhaust emissions) and B (fugitive dust) would reduce criteria pollutant and precursor emissions, which would further minimize potential impacts to nearby sensitive receptors due to the project's construction-related emissions, as shown in **Table 4.2-7**, thus ensuring the impact remains **less than significant.**

TABLE 4.2-7
CONSTRUCTION-RELATED CRITERIA POLLUTANT AND PRECURSOR EMISSIONS – MITIGATED
(MAXIMUM POUNDS PER DAY)

Construction Activities	ROG	NO_X	Total PM_{10}	Total $PM_{2.5}$
2018 maximum daily emissions	2.2	59.2	9.2	5.5
2019 maximum daily emissions	92.9	22.1	2.3	1.3
Maximum Daily Emissions of All Years of Construction	*92.9*	*59.2*	*9.2*	*5.5*
Percentage Reduction from Unmitigated Emissions	2.5%	22%	51%	51%
BCAQMD Significant Impact Threshold	137	137	PM10 + PM2.5 < 80	PM10 + PM2.5 < 80
Exceed BCAQMD Threshold?	**No**	**No**	**No**	**No**

*Source: CalEEMod version 2016.3.1. See **Appendix C** for emission model outputs.*

Notes: Project construction activities are assumed to occur over a 15-month period. Emissions estimates account for the quantifiable components of the exhaust emissions and fugitive dust control regulatory compliance measures A and B.

Operational Criteria Air Pollutants and Ozone Precursors (Standard of Significance 2)

Impact 4.2.3 Project-generated operational emissions would exceed applicable significance thresholds for NOx, an ozone precursor. The impact is considered **significant.**

The project would result in long-term operational emissions of criteria air pollutants and ozone precursors. Project-generated increases in emissions would be predominantly associated with motor vehicle use. Trip generation rates and the trip distances identified in the project's transportation impact study (**Appendix E**) were used in CalEEMod to estimate mobile criteria pollutant and precursor emissions. Area sources, such as the use of landscape maintenance equipment and architectural coatings, would also contribute to overall increases in emissions, but these do not represent a substantial amount of the emissions. Predicted maximum daily emissions are summarized in **Table 4.2-8**.

As shown in **Table 4.2-8**, operational daily emissions associated with the development of the proposed project would exceed the BCAQMD significance threshold for NOx. Nearly all of the NOx emissions are the result of mobile sources. As noted above, the estimate of mobile emissions reflects the assumption in the project's transportation impact study that the proposed project would result in new trips, even though the supermarket component of the project is the relocation of an existing use. This approach provides a conservative, worst-case estimate of mobile emissions from the project. Area and energy use–related emissions generally represent less than a few percent of operational emissions.

TABLE 4.2-8
LONG-TERM OPERATIONAL CRITERIA POLLUTANT AND PRECURSOR EMISSIONS – UNMITIGATED

Source	Emissions			
	ROG	NOx	PM_{10}	$PM_{2.5}$
Summer Emissions (Pounds per Day)				
Area	2.2	<0.01	<0.01	<0.01
Energy	0.1	0.7	0.06	0.06
Mobile	15.0	70.7	6.2	1.8
Total	17.3	**71.4**	6.2	1.9
Winter Emissions (Pounds per Day)				
Area	2.2	<0.01	<0.01	<0.01
Energy	0.1	0.7	0.06	0.06
Mobile	10.7	65.2	6.2	1.8
Total	*12.9*	**65.9**	6.2	1.9
BCAQMD Potentially Significant Impact Threshold (Daily Emissions)	25	25	PM_{10} + $PM_{2.5}$ < 80	PM_{10} + $PM_{2.5}$ < 80
Exceed BCAQMD Daily Threshold?	**No**	**Yes**	**No**	**No**

*Source: CalEEMod version 2016.3.1. See **Appendix C** for emission model outputs.*

Note: Emissions estimates account for trip generation and trip distances from the transportation impact study (Traffic Works 2017).

The BCAQMD CEQA Air Quality Handbook states that any project generating more than 25 pounds per day of ROG or NOx or 80 pounds per day of particulate matter should make every feasible attempt to mitigate below those thresholds, and it identifies potential mitigation measures to reduce impacts due to operational emissions. **Table 4.2-9** lists the potential mitigation measures and their applicability to the proposed project.

Of the 21 potential measures listed in **Table 4.2-9**, 14 are already included in the proposed project design. Those measures would have a positive, but not quantifiable, effect on reduction of project precursor emissions. Four additional, feasible potential mitigation measures have been identified to help reduce operational-related criteria pollutant and precursor emissions.

TABLE 4.2-9
BCAQMD POTENTIAL AIR QUALITY IMPACT POTENTIAL MITIGATION MEASURES

	Potential Mitigation Measure	Quantifiable Reduction?	Implementation
1	Improve job/housing balance opportunities within communities.	No	Project Design
3	Provide a pedestrian-friendly and interconnected streetscape to make walking more convenient, comfortable and safe (including appropriate signalization and signage).	No	Project Design
4	Provide good access to/from the development for pedestrians, bicyclists, and transit users.	No	Project Design
5	Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles. Design should provide 50% tree coverage within 10 years of construction using low ROG-emitting, low maintenance native drought-resistant trees.	No	**MM 4.2.3a**
6	Pave and maintain the roads and parking areas	No	Project Design
7	Development is within 1/4 mile of transit centers and transit corridors.	No	Project Design
8	Increase the building energy rating by 20% above Title 24 requirements. Measures used to reach the 20% rating cannot be double counted.	Yes	Infeasible
9	Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible.	No	Project Design
10	Install high efficiency heating and cooling systems.	No	Project Design
11	Orient 75 percent or more of homes and/or buildings to be aligned north/south to reduce energy used to cool buildings in summer.	No	Project Design
12	Utilize high efficiency gas or solar water heaters	No	Project Design
13	Utilize double-paned windows.	No	Project Design
14	Utilize low energy street lights (i.e., sodium).	No	Project Design
15	Utilize energy-efficient interior lighting.	No	Project Design
16	Use roofing material with a solar reflectance values meeting the EPA/DOE Energy Star rating to reduce summer cooling needs.	No	Project Design
17	Provide and maintain a kiosk displaying transportation information in a prominent area accessible to employees and patrons.	No	**MM 4.2.3b**
18	If the project is located on an established transit route, provide improved public transit amenities (i.e., covered transit turnouts, direct pedestrian access, covered bench, smart signage, route information displays, lighting etc.).	No	**MM 4.2.c**

TABLE 4.2-9
BCAQMD POTENTIAL AIR QUALITY IMPACT POTENTIAL MITIGATION MEASURES

	Potential Mitigation Measure	Quantifiable Reduction?	Implementation
19	Provide on-site eating, refrigeration. and food vending facilities (for employees).	No	Project Design
20	Implement a "no idling" program for heavy-duty diesel vehicles, which includes signage, citations, etc.	No	**MM 4.2.3d**
21	Require the installation of electrical connections at loading docks and the connection of trucks equipped with electrical hookups to eliminate the need to operate engines to power transport refrigeration at the loading docks.	No	**MM 4.2.3d**

Source: BCAQMD 2014, Table C-1

Mitigation Measures

MM 4.2.3a The project applicant shall modify, to the extent feasible, the conceptual landscape plan to use low-ROG-emitting, low-water-use shade trees (e.g., zelkova) in the parking lot instead of the proposed California sycamores and that will achieve a minimum 50 percent shade coverage within 10 years of construction. Other trees listed in the Town's Greater Redevelopment Project Area and Upper Skyway Design Standards should also be considered as an alternative to the proposed sycamore trees if they have the potential to emit less biogenic ROG and use less water than California sycamores. The applicant shall provide a list of the species to be used on a landscaping plan prior to final project approval.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Prior to submittal of final landscape plan for Town approval and implemented during construction*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to approving final landscape plan*

MM 4.2.3b The applicant shall provide and maintain a kiosk displaying transportation information in a prominent area accessible to employees and patrons.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Include in site plan and implemented during occupancy*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to issuing occupancy permit*

MM 4.2.3c The applicant shall provide improvements to the proposed bus stop adjacent to the project site on Skyway to include a covered bench, lighting, and route information. Details shall be included in final site plans and project design documentation.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Include in site plan and implemented during occupancy*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to approving site plan (bus stop improvements) and issuing occupancy permit*

MM 4.2.3d The applicant shall implement a "no idling" program for heavy-duty diesel vehicles in the loading dock area, including the installation of electrical connections at loading docks for the connection of trucks equipped with electrical hookups to eliminate the need to operate engines to power transport refrigeration units at the loading docks. Signage advising vehicle drivers of the idling restrictions and electrical hookup shall be placed at the loading dock and near truck entrances to the loading area.

Mitigation Responsibility: *Project applicant*

Mitigation Action/ Timing: *Include in site plan and implemented during occupancy*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to approving site plan (electrical hookups) and issuing occupancy permit (signage)*

Mitigation measure **MM 4.2.3a** presents an alternative to the applicant's conceptual landscape design for the parking lot, which would help reduce biogenic ROG precursor emissions, consistent with BCAQMD Measure 5 in Table 4.2-9. Biogenic ROG compounds are ozone precursor gases emitted by plants. While one or a few trees would not emit a significant volume of ROG, the combination of landscape trees and plants in an urban area combined have the potential to produce substantial emissions.[2] The project's conceptual landscape plan proposes California sycamore (*Platanus racemosa*) trees in the parking lot. While the number of proposed trees, along with other tree species, would meet the Town's 50 percent shade requirement, California sycamore trees are one of several trees that are known to produce high levels of biogenic ROG (University of California 2012). The use of a lower-ROG-emitting tree such as zelkova (an elm species), Chinese elm, or arbutus, for example, would help reduce biogenic ROG emissions, although such a reduction is not quantifiable in the CalEEMod software.

Mitigation measure **MM 4.2.3b** requires the applicant to provide and maintain a kiosk displaying transportation information in a prominent area accessible to employees and patrons. This measure would promote the use of public and alternate transportation for customers and employees and potentially reduce VMT in the community, thereby reducing mobile emissions. This

[2] For example, 10,000 mature sweetgum trees (*Liquidambar styraciflua*) could emit a quantity of ROG every sunny hour that is roughly equivalent to the evaporation of 12 gallons of gasoline (University of California 2012).

mitigation measure would provide a reduction of operational emissions that is not quantifiable in the CalEEMod software.

Mitigation measure **MM 4.2.3c** would provide improved public transit amenities. The proposed project design already includes a bus stop along Skyway with a bus turnout area as discussed in Section 4.5, Transportation and Circulation. Further improvement to this amenity to provide a covered bench, lighting, and route information would encourage the use of public transportation by employees and patrons. This mitigation measure would provide a reduction of operational emissions that is not quantifiable in the CalEEMod modeling software.

Mitigation measure **MM 4.2.3d** requires the implementation of a "no idling" program for heavy-duty diesel vehicles in the loading dock area, including the installation of electrical connections at loading docks for the connection of trucks equipped with electrical hookups. This would , which would otherwise be a source of emissions. Signage advising vehicle drivers of the idling restrictions and electrical hookup is required to be placed at the loading dock and near truck entrances to the loading area. This mitigation measure would provide a reduction of operational emissions that is not quantifiable in the CalEEMod software and a reduction in noise generated in the loading dock area.

Implementation of mitigation measures **MM 4.2.3a** through **4.2.3d** would help reduce impacts resulting from operational emissions. These mitigation measures and those identified in **Table 4.2-9** would provide benefits that are significant efforts to reduce project impacts and to improve regional air quality. However, reductions of criteria pollutants and precursor emissions are not quantifiable in CalEEMod. The largest source of operational emissions would (conservatively) be associated with vehicle trips. Some reduction in mobile emissions could be achieved through mitigation measures **MM 4.2.3b** and **MM 4.2.3c**, but implementation of these mitigation measures would not reduce mobile emissions below the threshold of significance. Therefore, impacts from long-term operational precursor emissions (NOx) would remain **significant and unavoidable**.

Local Mobile-Source CO Pollutant Concentrations (Standard of Significance 3)

Impact 4.2.4 The proposed project would generate CO emissions, but this would not result in localized concentrations of mobile-source CO that would exceed applicable air quality standards. The impact is **less than significant**.

Carbon monoxide exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours.[3] However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger car, resulting in steady decreases in CO emissions.

With the addition of project traffic, the busiest intersection would be Skyway and Elliott Road during the PM peak hour. The maximum hourly traffic volume is predicted to be 2,629 vehicles (Traffic Works 2017), which is substantially less than the SMAQMD's screening criteria of 31,600

[3] Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of transportation infrastructure. LOS is most commonly used to analyze intersections by categorizing traffic flow with corresponding safe driving conditions. LOS A is considered the most efficient level of service and LOS F the least efficient.

vehicles per hour. Therefore, the project would not contribute to localized concentrations of mobile-source CO that would exceed applicable air quality standards, and the impact would be **less than significant**.

Mitigation Measures

None required.

TAC Emissions During Construction Activities (Standard of Significance 3)

Impact 4.2.5 Construction of the proposed project would generate diesel particulate matter emissions. The impact is **less than significant**.

The closest existing sensitive receptors to the project site are residential properties adjoining the project property line to the west, and residential homes located on commercial property adjoining the project property line to the north and south and across Skyway to the east. The closest school is CORE Butte Charter School approximately 2,000 feet (0.38 mile) to the east.

The proposed project would result in the generation of diesel PM emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities. Concentrations of mobile-source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (CARB 2005). Construction of the proposed project is anticipated to be completed within approximately 16 months. The use of diesel-powered equipment during construction would be temporary and episodic and would not be concentrated in areas closest to off-site sensitive receptors. As shown in **Table 4.2-7**, implementation of regulatory compliance measures A and B, identified in **Impact 4.2.2**, would reduce total PM construction emissions by 50 percent, per BCAQMD-recommended diesel exhaust and dust control practices. This would result in a similar reduction in exhaust PM, of which diesel PM is a component, thus further ensuring construction impacts due to diesel PM emissions would be **less than significant.**

Mitigation Measures

None required.

TAC Emissions During Operation (Standard of Significance 3)

Impact 4.2.6 The proposed project would generate toxic air contaminant (TAC) emissions from truck delivery operations and retail fueling center dispensing activities, but TAC concentrations would not exceed applicable standards. The impact is **less than significant**.

The closest existing sensitive receptors to the project site are residential properties adjoining the project property line to the west, and residential homes located on commercial property adjoining the project property line to the north and south and across Skyway to the east. The closest school is CORE Butte Charter School approximately 2,000 feet (0.38 mile) to the east.

Diesel Particulate Matter

The primary source of diesel PM resulting from long-term operation of the proposed project would be delivery trucks to the grocery store, retail shops, and fueling center. Based on information provided by the project applicant, daily deliveries would average 10 to 15 small trucks or vans, 2 to 3 large truck deliveries to the grocery store, and 1 to 2 large truck deliveries to the fueling center.

Implementation of mitigation measures to reduce truck idling at loading docks would reduce diesel PM emissions from delivery trucks. Because the daily volume of delivery vehicles would be low and truck idling would be limited, truck deliveries are not expected to significantly contribute to diesel PM emissions already generated by vehicle traffic in the area.[4]

The proposed project would include a backup generator to provide electricity in the event of a power outage. The fuel source for the generator would be natural gas, not diesel. Therefore, the generator would not be a source of diesel exhaust emissions.

Fueling Center Emissions

The proposed project includes a 9-pump, 18-station retail fueling center located in the northeast portion of the project site with direct access from Skyway. Activities at gasoline dispensing facilities can release TACs into the air including the organic compounds benzene, toluene, and xylene. Benzene is a potent carcinogen and is one of the highest risk air pollutants regulated by CARB. Toluene and xylenes are not considered carcinogens, but they (along with benzene) can contribute to chronic health conditions.

Motor vehicles and motor vehicle–related activity account for over 90 percent of benzene emissions in California. A well-maintained vapor recovery system can decrease emissions of benzene by more than 90 percent compared with an uncontrolled facility. All new gas stations in California are required to implement Phase I (for the gasoline storage tank) and Phase II (for the refueling nozzles) vapor recovery systems. While gasoline dispensing facilities account for a small part of total benzene emissions, near-source exposures for large facilities (more than 3.6 million gallons per year throughput) can be significant (CARB 2005). As shown in the analysis below, the proposed fueling center would be considered a large facility. The project applicant will be required to obtain an authority to construct (ATC) and a permit to operate (PTO) from the BCAQMD.

Health Risk Assessment

An HRA was prepared that analyzes the potential health risk impacts due to TAC emissions from long-term operation of the proposed fueling center. The approach to the analysis is summarized under the Methodology subheading, above. The complete HRA is included in **Appendix C** of this Draft EIR. As noted above, methods for quantifying risk are based on conservative, worst-case assumptions. In addition, the results do not represent actual human health risk but are conservative screening-level results to determine whether further analysis is necessary.

Another consideration in interpreting the results of a health risk assessment is that TACs are emitted from a variety of common sources such as passenger vehicle and truck exhaust, dry cleaners, gasoline stations, industrial facilities, and painting operations. As such, TACs are present in daily life and present a cumulative risk from numerous environmental sources and thus pose health risks. In a quantified HRA, such as that prepared for the proposed project's fueling center, the cancer health risk value represents the increased probability of an adverse health effect beyond the risk that already exists from other sources unrelated to the project.

[4] By comparison, CARB (2005) recommends that sensitive land uses not be sited within 1,000 feet of uses such as a distribution center with 100 or more trucks per day. Conversely, it is reasonable to assume a project with substantially fewer than 100 truck deliveries would not pose a substantial diesel PM health risk.

The predicted maximum 1-hour concentration and average annual concentration of benzene, toluene, and xylene at the closest sensitive receptor to the fueling center (a residence approximately 235 feet north of the proposed fueling center site) is shown in **Table 4.2-10**, along with the associated incremental increase in additional cancer risk.

TABLE 4.2-10
PROPOSED FUELING CENTER TAC CONCENTRATIONS AND HEALTH RISK

Chemical	Max 1-hour Concentration ($\mu g/m^3$)	Average Annual Concentration ($\mu g/m^3$)	Calculated Incremental Cancer Risk Probability (in a million)
Benzene	1.4162	0.1133	8.9
Toluene	8.6750	0.6940	0
Xylene	8.6750	0.6940	0
BCAQMD-Recommended Threshold			10
Exceeds Threshold?			**No**

*Source: Modeled by Michael Baker International using AERSCREEN v16216; RAST Run – *HARP – HRACalc v17023 9/18/2017 9:35:47 AM – Cancer Risk; CAPCOA 1997*

Notes: Path = Inhalation only; 30-year exposure scenario; risk shown is at 72 meters (235 feet) from source

As shown in **Table 4.2-10**, the predicted incremental increase in cancer risk probability is 8.9 in one million for the closest sensitive receptor to the proposed fueling center. This impact would be **less than significant** because it would not exceed the BCAQMD-recommended threshold of 10 in one million.

The chronic health risk hazard index (HI) was calculated using the total concentrations for each of the three pollutants. The hazard index is a numerical representation of the potential effect of the chemical on specific organs or body system. **Table 4.2-11** shows the calculated health risk index for each chemical evaluated.

TABLE 4.2-11
PROPOSED FUELING CENTER TAC CONCENTRATIONS CHRONIC HEALTH RISK HAZARD

Pollutant Name	Concentration ($\mu g/m^3$)	Central Nervous System	Reproductive System & Developmental	Respiratory System	Eyes	Hematological System
Benzene	0.1133	0	0	0	0	0.0378
Toluene	0.6940	0.0023	0.0023	0.0023	0	0
Xylenes	0.3142	0.0004	0	0.0004	0.0004	0
Total Hazard Index (HI)		**0.0027**	**0.0023**	**0.0027**	**0.0004**	**0.0378**
BCAQMD-Recommended Threshold		1.0	1.0	1.0	1.0	1.0
Exceeds Threshold?		**No**	**No**	**No**	**No**	**No**

*Source: RAST Run – *HARP – HRACalc v17023 9/18/2017 9:35:47 AM – Chronic Risk*

Notes: Path = Inhalation only; target organs or systems with 0 HI not shown; HI shown is at 72 meters from source

As shown in **Table 4.2-11**, the hazard index is below the BCAQMD-recommended threshold of significance of 1.0 at the closest sensitive receptor, and therefore the impact would be **less than significant**.

Mitigation Measures

None required.

Construction-Generated Airborne Asbestos and Lead-Based Paint Emissions (Standard of Significance 3)

Impact 4.2.7 Construction of the proposed project could result in airborne emissions of asbestos or lead-based paint. The impact is **potentially significant**.

Construction of the proposed project would involve demolition of existing buildings on the site, which may contain ACM and/or LBP due to their age. The project site is underlain by weathered volcanic bedrock and not ultramafic rock that is typically associated with NOA, and the project vicinity is not indicated on any published mapping as located in an area where NOA is known to be present. However, as identified in the Phase I ESA, a greenish rock that may be serpentinite was found on-site, which may contain asbestos. As noted in the Phase I ESA, it is likely the rock was placed as driveway material. Because ACM and/or LBP may be in the buildings to be demolished and the constituents of the greenish rock in the driveway are unknown, it is conservatively assumed there is the potential for NOA, ACM, and/or LBP to be released during site preparation (demolition and grading), which could pose a human health and/or environmental risk if measures are not in place to control emissions and remove contaminated materials in accordance with applicable disposal requirements. This is a **potentially significant** impact.

Mitigation Measures

MM 4.2.7 The project applicant shall complete an investigation of the potential for asbestos-containing materials (ACM) and lead-based paint (LBP) to be present in buildings to be demolished and soils throughout the project site. The investigation report, which shall be prepared by a professional qualified to perform such investigations, shall be submitted to the Town of Paradise. All abatement recommendations in the report shall be implemented prior to demolition and any activity that would involve soil disturbance associated with demolition and/or grading. The applicant's contractor(s) shall be certified by the State to perform abatement and must comply with all applicable abatement and disposal requirements. The contractor(s) shall be required to provide proper notification to CARB and BCAQMD, as appropriate, in accordance with its requirements. The Town shall not issue a grading and/or demolition permit until the applicant has submitted the results of abatement and testing indicating that naturally occurring asbestos (NOA), ACM, and/or LBP have been remediated and disposed of in accordance with federal NESHAP regulations, federal and state hazardous waste regulations, and federal and state OSHA regulations, as appropriate. The contractor shall consult with BCAQMD staff to determine whether a permit is required for LBP abatement and shall obtain permits as necessary.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Prior to any demolition and ground disturbance*

Compliance Monitoring: *Town of Paradise Public Works Department and Planning Division*

Verification Action/Timing: Prior to approving demolition and grading permits

Mitigation measure **MM 4.2.7** requires investigation, remediation, and disposal of sources of NOA, ACM, and LBP in accordance with applicable regulatory requirements and appropriate notification(s). These regulations have been promulgated to protect human health and the environment from potential airborne hazards associated with asbestos and lead, compliance with which would reduce impacts to **less than significant**.

Odors (Standard of Significance 4)

Impact 4.2.8 The proposed project would not include uses that would create objectionable odors affecting a substantial number of people. The impact is **less than significant.**

Heavy-duty construction equipment used for the construction of the proposed project would emit odors. However, construction activity would be short term and finite in nature. Equipment exhaust odors would dissipate and would be minimized by the implementation of regulatory compliance measures A and B, identified in **Impact 4.2.2**, which would reduce diesel exhaust emissions and control fugitive dust. For these reasons, construction of the proposed project would not create objectionable odors affecting a substantial number of people. Thus, the impact is considered **less than significant.**

For operational odor impacts, the project proposes land uses including a grocery store, retail shops, a restaurant, and a fueling center (gas station), none of which is identified as an odor source in Table 7.1 of the BCAQMD CEQA Air Quality Handbook. In addition, the BCAQMD has adopted a nuisance rule that addresses the exposure of "nuisance or annoyance" air contaminant discharges. BCAQMD Regulation II, Rule 200 states that no person shall discharge from any non-vehicular source such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property. If public complaints are sufficient to cause the odor source to be considered a public nuisance, then the BCAQMD can require the identified source to incorporate mitigation measures to correct the nuisance condition. The bakery in the store may be an odor source, but typically such odors are not viewed as offensive. Therefore, no substantial operational odor impacts are anticipated, and the impact would be less than significant.

Mitigation Measures

None required.

4.2.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The cumulative setting for criteria pollutant air quality includes existing, approved, proposed, and reasonably foreseeable development in the Northern Sacramento Valley Air Basin, which is a seven-county region. The air districts in the NSVAB have adopted the 2015 Triennial Air Quality Attainment Plan (SVBAPCC 2105). This plan was developed for the purpose of achieving and maintaining healthful air quality throughout the air basin. Like the previous attainment plans, the

2015 plan focuses on the adoption and implementation of control measures for stationary sources, area-wide sources, and indirect sources, and addressed public education and information programs. The 2015 plan also addressed the effect that pollutant transport has on the NSVAB's ability to meet and attain the state standards.

For impacts such as potential release of airborne asbestos during construction, the impacts are localized and limited in both duration and frequency. Activities must be managed in accordance with health and safety regulations to minimize off-site impacts. As such, the project's contribution would not be cumulatively considerable, and further evaluation is not required. Similarly, construction odors, if any, would be transient. The proposed project would not be a permanent source of odors, and there are no odor sources in the immediate project vicinity with which the proposed project would combine to create a cumulative impact.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Criteria Air Pollutants and Ozone Precursors (Standard of Significance 5)

Impact 4.2.9 Operation of the proposed project, in combination with cumulative development in the NSVAB, would result in a cumulatively considerable net increase in NOx emissions, an ozone precursor for which the region is nonattainment. The cumulative impact is **significant and unavoidable**.

Assessment of cumulative impacts is based on the projected increases in emissions attributable to the proposed project, as well as the project's consistency with the applicable air quality attainment plan. As discussed above in the Regulatory Framework subsection, Butte County is designated nonattainment for ozone and $PM_{2.5}$.

Construction-related criteria air pollutant and precursor emissions would be short-term and localized and would not contribute substantially to regional ozone emissions. However, as identified under **Impact 4.2.3**, operation of the proposed project would exceed thresholds of significance for NOx, a precursor to ozone. Regulatory compliance measure RCM A, which would be included as a condition of approval and implemented during construction to reduce diesel exhaust emissions as explained in **Impact 4.2.2**,[5] and mitigation measures **MM 4.2.3a** through **MM 4.2.3d** are on-site measures that would reduce some of the project's emissions of NOx. In addition, potential mitigation measures have been identified that are included in the proposed project design. Most of the mitigation measures identified would provide benefits that are not quantifiable but are still reasonable and feasible efforts to reduce project impacts and help improve regional air quality. However, implementation of these on-site measures would not reduce operational NOx impacts to levels that would not exceed thresholds.

While on-site mitigation is the BCAQMD's preferred approach, the other option to further reduce emissions is through off-site mitigation, as described in the BCAQMD CEQA Air Quality Handbook. A project applicant may participate in an off-site mitigation program, coordinated through BCAQMD, within the region (Butte County), or through the payment of fees equal to the amount of emissions exceeding the annual threshold over the expected length of the exceedance, which is 25 years for commercial projects (BCAQMD 2014).

[5] As indicated in Impact 4.2.2, unmitigated construction emissions would not exceed BCAQMD thresholds; therefore, no mitigation measures are required. RCM A ensures compliance with BCAMQD recommended measures.

As noted in **Impact 4.2.3**, the estimate of mobile emissions reflects the assumption in the project's transportation impact study that the proposed project would result in new trips, even though the supermarket component of the project is the relocation of an existing use. This approach provides a conservative, worst-case estimate of mobile criteria air pollutant and precursor emissions at the project level because it does not discount precursor emissions associated with the existing store.

Therefore, it is conservatively concluded that the proposed project's contribution to long-term operational impacts would be cumulatively considerable, and the cumulative impact would remain **significant and unavoidable**.

Mitigation Measures

Implement mitigation measures **MM 4.2.3a** through **MM 4.2.3d**.

TAC Emissions

Impact 4.2.10 Operation of the proposed project, in combination with cumulative development in the Town of Paradise, would generate TAC emissions, but the project's contribution would not be cumulatively considerable. The cumulative impact is **less than significant**.

Cumulative impacts due to TAC emissions from the project would be the result of the project's operational emissions added to emissions from existing and foreseeable future sources. The BCAQMD recommends a 1,000-foot screening circle around a proposed project to identify existing sources of TACs. While the proposed project would be a source of new TAC emissions from fuel dispensing at the fueling center, the emissions would not exceed BCAQMD thresholds, and there are no existing permitted sources of TACs within 1,000 feet of the proposed project that are regulated under AB 2588 (CARB 2017b). As such, the proposed project's contribution would not be cumulatively considerable. Mobile sources of TACs, including benzene and diesel PM, in the project vicinity are primarily from traffic along Skyway. Diesel PM accounts for 70 percent of the cancer risks due to vehicle traffic on typical California highways (CARB 2005). The project's addition of 3 to 5 heavy trucks and 10 to 15 small trucks or vans per day for deliveries would not add significantly to the diesel PM emitted due to mobile sources in the area. The cumulative impact of TACs on nearby sensitive receptors would be **less than significant**.

Mitigation Measures

None required.

Localized CO Emissions

Impact 4.2.11 Operation of the proposed project, in combination with cumulative development, would not result in a cumulatively considerable contribution to mobile source CO emissions. The cumulative impact is **less than significant**.

Intersection level of service (LOS) on Skyway near the proposed project in the cumulative plus project scenario (year 2040) is projected to be LOS E at Black Olive Drive and LOS E at Elliott Road (Traffic Works 2017). In the 2040 cumulative plus project scenario, the busiest intersection would be Skyway and Elliott Road during the PM peak hour. The maximum hourly traffic volume is predicted to be 2,808 vehicles (Traffic Works 2017), which is substantially less than the SMAQMD's screening criteria of 31,600 vehicles per hour. Therefore, the project would not result in a

cumulatively considerable contribution to localized CO emissions, and the cumulative impact would be **less than significant**.

Mitigation Measures

None required.

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4.3 Greenhouse Gas Emissions

This section analyzes the impact of construction and operation of the project on greenhouse gas (GHG) emissions and includes information about the relationship between GHG emissions and climate change, regulations and plans that have been adopted to address climate change, an estimate of GHG emissions produced by the project, and the project's consistency with relevant plans.

In its comments on the Notice of Preparation (NOP) (**Appendix A**), the Butte County Air Quality Management District (BCAQMD) recommended the latest version of the California Emissions Estimator Model (CalEEMod) be used to quantify construction and operational GHG emissions and impacts. As explained in greater detail in the Methodology subsection, below, CalEEMod was used to estimate GHG emissions.

3.1 EXISTING SETTING

Certain gases in the earth's atmosphere, classified as greenhouse gas emissions, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (IPCC 2014, pp. 3 and 5).

Table 4.3-1 describes the primary GHGs attributed to global climate change, including a description of their physical properties, primary sources, and contribution to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weigh each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is

understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013, p. 467).

TABLE 4.3-1
GREENHOUSE GASES

Greenhouse Gas	Description
Carbon Dioxide (CO_2)	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
Methane (CH_4)	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about12 years.[2]
Nitrous Oxide (N_2O)	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. Nitrous oxide is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]

Sources: [1] EPA 2016a, [2] EPA 2016b, [3] EPA 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or micro climates. From the standpoint of the California Environmental Quality Act (CEQA), greenhouse gas impacts on global climate change are inherently cumulative.

GREENHOUSE GAS EMISSION SOURCES

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural emissions sectors (CARB 2014). California is a significant emitter of CO_2e in the world and produced 459 million gross metric tons of CO_2e in 2012 (CARB 2014). In the state, the transportation sector is the largest emitter of GHGs, followed by electricity generation (CARB 2014). Emissions of CO_2 are byproducts of fossil fuel combustion. CH_4, a highly potent greenhouse gas, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2

through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing carbon dioxide from the atmosphere.

EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to provide the world with a scientific view on climate change and its potential effects. According to the IPCC (2014), global average temperature is expected to increase relative to the 1986–2005 period by 0.5–8.6 degrees Fahrenheit (°F) (0.3 to 4.8 degrees Celsius [°C]) by the end of the twenty-first century (2081–2100), depending on future GHG emission scenarios. According to the California Natural Resources Agency (CNRA) (2012), temperatures in California are projected to increase 2.7°F above 2000 averages by 2050 and, depending on emission levels, 4.1–8.6°F by 2100.

Physical conditions beyond average temperatures could be indirectly affected by the accumulation of GHG emissions. For example, changes in weather patterns resulting from increases in global average temperature are expected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. Based on historical data and modeling, the California Department of Water Resources (2008) projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050. An increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the Sierra Nevada until spring could flow into the Central Valley concurrently with winter storm events (CNRA 2012). This scenario would place more pressure on California's levee/flood control system.

Another outcome of global climate change is sea level rise. The sea level rose approximately 7 inches during the last century and, assuming that sea level changes along the California coast continue to track global trends, the sea level along the state's coastline in 2050 could be 10–18 inches higher than in 2000 and 31–55 inches higher by the end of this century (CNRA 2012).

As California's existing climate changes over time, the ranges of various plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the state if suitable conditions are no longer available (CNRA 2012).

Changes in precipitation patterns and increased temperatures are expected to alter the distribution and character of natural vegetation and the associated moisture content of plants and soils. An increase in the frequency of extreme heat events and drought is also expected. These changes are expected to lead to increased frequency and intensity of large wildfires (CNRA 2012).

Cal-Adapt is a climate change scenario planning tool developed by the California Energy Commission that downscales global climate model data to local and regional resolution under two emissions scenarios: the A-2 scenario represents a business-as-usual future emissions scenario, and the B-1 scenario represents a lower GHG emissions future. According to Cal-Adapt (2017), annual average temperatures in the project area are projected to rise by 3.0–5.3°F by 2100, with the range based on low and high emissions scenarios.

3.2 REGULATORY FRAMEWORK

STATE

California has adopted various administrative initiatives and legislation relating to climate change, much of which set aggressive goals for GHG emissions reductions in the state. Although lead agencies must evaluate climate change and greenhouse gas emissions of projects, the State CEQA Guidelines do not require or suggest specific methodologies for performing an assessment or specific thresholds of significance and do not specify GHG reduction mitigation measures. Instead, the guidelines allow lead agencies to choose methodologies and make significance determinations based on substantial evidence, as discussed in further detail below. In addition, no state agency has promulgated binding regulations for analyzing GHG emissions, determining their significance, or mitigating significant effects in CEQA documents. Thus, lead agencies exercise their discretion in determining how to analyze GHGs.

California Global Warming Solutions Act (Assembly Bill 32)

The primary acts that have driven GHG regulation and analysis in California include the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599), which instructs the California Air Resources Board (CARB) to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. The act directed CARB to set a greenhouse gas emissions limit based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner. The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020.

AB 32 Scoping Plan

CARB adopted the Scoping Plan to identify how the state would achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business as usual"). The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations occurred through the end of year 2013.

Key elements of the first Scoping Plan included:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions.

- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.

- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, heavy-duty truck measures, and the Low Carbon Fuel Standard.

- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation (CARB 2008).

In December 2008, CARB adopted its first version of its Climate Change Scoping Plan, which contained the main strategies California will implement to achieve the mandate of AB 32 (2006) to reduce statewide GHG emissions to 1990 levels by 2020.

In May 2014, CARB released and subsequently adopted the First Update to the Climate Change Scoping Plan to identify the next steps in reaching the goals of AB 32 (2006) and evaluate the progress made between 2008 and 2012. According to this update, California is on track to meet the near-term 2020 GHG limit and is well-positioned to maintain and continue reductions beyond 2020. This update also reported the trends in GHG emissions from various emissions sectors (e.g., transportation, building energy, agriculture) (CARB 2014).

On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan (2017 Scoping Plan), which lays out the framework for achieving the mandate of SB 32 (2016) to reduce statewide GHG emissions to at least 40 percent below 1990 levels by the end of 2030 (CARB 2017).

The 2017 Scoping Plan includes guidance to local governments in Chapter 5, including plan-level GHG emissions reduction goals and methods to reduce communitywide GHG emissions. In its guidance, CARB recommends that "local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals." CARB further states that "it is appropriate for local jurisdictions to derive evidence-based local per capita goals [or some other metric that the local jurisdiction deems appropriate, such as mass emissions or per service population] based on local emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets" (CARB 2017).

Senate Bill 32

In August 2016, Governor Brown signed Senate Bill (SB) 32 (Amendments to California Global Warming Solutions Action of 2006), which extends California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by Executive Order B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in Executive Orders S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

Other Legislation

Table 4.3-2 provides a brief overview of the other California legislation relating to climate change that may directly and/or indirectly affect the emissions associated with the proposed project.

TABLE 4.3-2
CALIFORNIA STATE CLIMATE CHANGE LEGISLATION

Legislation	Description
Assembly Bill 1493 and Advanced Clean Cars Program	Assembly Bill 1493 (the Pavley Standard) (Health and Safety Code Sections 42823 and 43018.5) aims to reduce GHG emissions from noncommercial passenger vehicles and light-duty trucks of model years 2009–2016. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO_2e emissions and 75 percent fewer smog-forming emissions. *Applicability to proposed project*: Would help reduce GHG emissions from project customers' and visitors' vehicle trips.
Low Carbon Fuel Standard (LCFS)	Executive Order S-01-07 (2007) requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California. The regulation took effect in 2010 and is codified at Title 17, California Code of Regulations, Sections 95480–95490. The LCFS will reduce greenhouse gas emissions by reducing the carbon intensity of transportation fuels used in California by at least 10 percent by 2020. *Applicability to proposed project*: Would help reduce GHG emissions from project customers' and visitors' vehicle trips and delivery trucks.
Renewables Portfolio Standard (Senate Bill X1-2 & Senate Bill 350)	California's Renewables Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020. The 33 percent standard is consistent with the RPS goal established in the Scoping Plan. The passage of Senate Bill 350 in 2015 updates the RPS to require the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. The bill will make other revisions to the RPS program and to certain other requirements on public utilities and publicly owned electric utilities. *Applicability to proposed project:* The Pacific Gas and Electric Company (PG&E) is the electricity provider in Paradise. The RPS may indirectly help reduce GHG emissions associated with project energy demand.
Senate Bill 375*	SB 375 (codified in the Government Code and the Public Resources Code) took effect in 2008 and provides a new planning process to coordinate land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires metropolitan planning organizations (MPOs) to incorporate a Sustainable Communities Strategy in their Regional Transportation Plans that will achieve GHG emissions reduction targets by reducing vehicle miles traveled (VMT) from light-duty vehicles through the development of more compact, complete, and efficient communities. *Applicability to proposed project:* The project site is an infill site in an existing commercial area, is consistent with existing zoning, is situated along the main roadway through the town, and would provide expanded local retail options, which would help reduce VMT.

TABLE 4.3-2
CALIFORNIA STATE CLIMATE CHANGE LEGISLATION

Legislation	Description
California Building Energy Efficiency Standards	In general, the California Building Energy Efficiency Standards require the design of building shells and building components to conserve energy. The California Energy Commission adopted changes to the 2016 Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code). The 2016 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential Standards include improvements for attics, walls, water heating, and lighting. New efficiency requirements for elevators and direct digital controls are included in the nonresidential Standards. The 2016 Standards also include changes made throughout all of its sections to improve the clarity, consistency, and readability of the regulatory language. The 2016 Building Energy Efficiency Standards are 28 percent more efficient than previous standards for residential construction and 5 percent better for nonresidential construction. Energy-efficient buildings require less electricity, and increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. *Applicability to proposed project*: The project is new construction that is required to comply with the most current energy standards at the time of construction.
California Green Building Standards	The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code went into effect January 1, 2017. *Applicability to proposed project*: The project is new construction that is required to comply with the most current CALGreen regulations at the time of construction.

** Senate Bill 375 is codified at Government Code Sections 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, 14522.1, 14522.2, and 65080.01, as well as at Public Resources Code Sections 21061.3 and 21159.28 and Chapter 4.2.*

California Executive Orders

In addition to the legislation identified in **Table 4.3-2**, two Executive Orders—California Executive Order S-03-05 (2005) and California Executive Order B-30-15 (2015)—highlight GHG emissions reduction targets, although such targets have not been adopted by the State and remain only a goal of the Executive Orders. Specifically, Executive Order S-03-05 seeks to achieve a reduction of GHG emissions of 80 percent below 1990 levels by 2050, and Executive Order B-30-15 seeks to achieve a reduction of GHG emissions of 40 percent below 1990 levels by 2030. The Executive Orders are not laws but do provide the governor's direction to state agencies in their actions to reinforce existing laws. For instance, as a result of the AB 32 legislation, the State's 2020 reduction target is backed by the adopted AB 32 Scoping Plan, which provides a specific regulatory framework of requirements for achieving the 2020 reduction target. The State-led GHG reduction measures identified in **Table 4.3-2**, such as the Low Carbon Fuel Standard and the Renewables Portfolio Standard, are largely driven by the AB 32 Scoping Plan. Executive Orders S-03-05 and B-30-15 do not have any such framework and therefore provide no specific emissions reduction mechanisms.

REGIONAL

Butte County Air Quality Management District

The BCAQMD (2014) provides direction and recommendations for the analysis of GHG impacts of a project and approach to mitigation measures in its CEQA Air Quality Handbook. The BCAQMD has not adopted GHG emissions thresholds. The guidance provided in the handbook was used to prepare the analysis, as described in more detail in the Methodology subsection, below.

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy

The 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTS/SCS), prepared by the Butte County Association of Governments (BCAG), specifies the policies, projects, and programs necessary over a 20+ year period to maintain, manage, and improve the region's transportation system. The RTP/SCS is the region's long-range plan to meet the requirements of California's Sustainable Communities and Climate Change Act of 2008 (Senate Bill 375), which calls on regions throughout California to develop a Sustainable Communities Strategy to accommodate future population growth and reduce greenhouse gas emissions from cars and light trucks. The RTP/SCS is also intended to be consistent with the California Transportation Plan developed by the California Department of Transportation (Caltrans) (BCAG 2016).

Butte County Climate Action Plan

Butte County adopted a Climate Action Plan in 2014. The plan applies only to unincorporated areas of the county.

LOCAL

Town of Paradise General Plan

The Town's General Plan includes goals and objectives intended to address maintaining and improving air quality (CG-5), reducing reliance on automobiles (CG-6 and CO-11), and increasing energy efficiency (OCEO-14). While development consistent with such goals and objectives could help reduce GHG emissions, the General Plan does not contain policies that specifically address GHG reduction.

The Town of Paradise does not have an adopted climate action plan or any other plan to quantify existing GHG inventories or provide goals and measures to reduce GHG emissions in the town.

3.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Appendix G of the 2017 CEQA Guidelines includes a list of topics related to GHGs that may be considered in an EIR. For purposes of this Draft EIR, the proposed project would have a significant effect on the environment if it would:

1) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The State CEQA Guidelines provide guidance to lead agencies for determining the significance of project-level GHG emissions. Section 15064.4(b) provides that, when assessing the significance of impacts from GHG emissions, a lead agency should consider all of the following.

- The extent to which the project may increase or reduce GHG emissions as compared with existing conditions.
- Whether the project's GHG emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

AB 32 establishes the requirement for reducing statewide GHGs to 1990 emissions levels by 2020. A number of air quality management agencies throughout the state have drafted or adopted varying threshold approaches and guidelines for analyzing 2020 operational GHG emissions in CEQA documents. The different thresholds include (1) compliance with a qualified GHG reduction strategy, (2) performance-based reductions, (3) numeric "bright-line" thresholds, and (4) efficiency-based thresholds. The California Supreme Court decision in the *Center for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company* (November 30, 2015, 62 Cal. 4th 204) (hereafter Newhall Ranch) decision confirmed that there are multiple potential pathways for evaluating project-level GHG emissions consistent with CEQA, depending on the circumstances of a given project.

The BCAQMD (2014, Table ES-2) has not established numeric screening criteria for GHG emissions, but it states that if the lead agency jurisdiction has not adopted a climate action plan or general plan goals and policies, the BCAQMD recommends that the lead agency consider a project's total emissions in relation to the AB 32 Scoping Plan goals (and additional state goals as they are promulgated) or the thresholds established by other jurisdictions. Numeric thresholds may either be a bright-line threshold or an efficiency metric (metric tons CO_2e per capita or metric tons per square feet).

The Town of Paradise has not adopted a climate action plan. The Paradise General Plan does not contain goals or policies that specifically address how GHG emissions reduction may be achieved, nor does it include thresholds of significance for evaluating GHG emissions using either a bright-line or an efficiency-based approach. As such, it is appropriate to evaluate the proposed project's impacts against thresholds established by another jurisdiction. The adjoining air districts are the Tehama County Air Pollution Control District (TCAPCD), Northern Sierra AQMD (which comprises Nevada, Sierra, and Plumas counties), Glenn County APCD, Colusa County APCD, and Feather River AQMD (comprising Sutter and Yuba counties). Except for the TCAPCD, none of these districts has established or adopted a threshold for determining the significance of GHG impacts. The TCAPCD established a conservative screening criterion of 900 metric tons of CO_2e per year for operational emissions to determine which projects would require further analysis and mitigation with regard to climate change. The TCAPCD screening threshold is based on a market capture rate determined by the California Air Pollution Control Officers Association (CAPCOA) in its 2008 CEQA and Climate Change document (TCAPCD 2015).

The next closest air districts with adopted GHG thresholds of significance are the Placer County Air Pollution Control District (PCAPCD) and the Sacramento Metropolitan Air Quality Management District (SMAQMD). The TCAPCD threshold is more conservative than the thresholds promulgated by the PCAPCD and the SMAQMD. An efficiency metric was considered for the analysis; however, an efficiency metric has not been developed for Paradise. The GHG reduction targets in the Butte County CAP are not applicable to incorporated communities in the county. Therefore, the Town of Paradise in its discretion is using the TCAPCD screening level of 900 metric tons of CO_2e for the GHG analysis, which is consistent with the approach identified in the Newhall Ranch decision needed to appropriately analyze a project's GHG emissions.

The Newhall Ranch decision also identified the need to analyze both near-term and post-2020 emissions, as applicable, stating that an "EIR taking a goal-consistency approach to CEQA significance may in the near future need to consider the project's effects on meeting longer term emissions reduction targets." As noted above, all current CEQA greenhouse gas threshold concepts recommended by expert agencies are based on AB 32's requirement to reduce statewide GHG emissions to 1990 levels by 2020. However, SB 32 establishes a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. CARB released the 2017 update to the AB 32 Scoping Plan in December 2017, and local air district guidance on addressing project-level GHG impacts in relation to the 2030 target outlined under SB 32 is forthcoming. While not legally binding on local land use agencies, Executive Order S-03-05 has set forth a longer-term reduction target to reduce GHG emissions by 80 percent below 1990 levels by 2050. Because the proposed project is a retail project that would be constructed in one phase and operational by 2020, a quantified estimate of post-2020 emissions is not required; however, impacts are considered qualitatively. As indicated in the impact analysis below, the project's operational emissions would be cumulatively considerable in the near term, so it is reasonable to assume emissions would also be cumulatively considerable post-2020 and beyond.

METHODOLOGY

The BCAQMD recommends that CEQA analyses addressing the potential impacts of project-generated greenhouse gas emissions include the following:

- An inventory of the project's construction and operational sources of GHGs and the time periods when emissions are expected, distinguishing district-permitted stationary sources from mobile and other non-permitted sources.
- The current state of the science with respect to GHGs and climate change and the existing regulatory environment.
- The non-project GHG setting representing the baseline for determining the project's impact.
- Identification of the thresholds of significance applicable to the proposed project. The lead agency may consider thresholds of significance adopted or recommended by other lead agencies, or adopt its own thresholds, provided the decision is supported by substantial evidence. Alternatively, the lead agency may consider thresholds based on the goals of Assembly Bill 32.

GHG emissions impacts were assessed in accordance with the methodologies recommended by CARB and the BCAQMD. GHG emissions were modeled using CalEEMod Version 2016.3.1 (see **Appendix C**). Project GHG emissions were calculated using the default settings for Butte County

contained in CalEEMod, with the exception that vehicle miles traveled (VMT) were used instead of trip generation rates to estimate mobile operational emissions, as explained below.

The primary source of GHG emissions would be operational emissions associated with vehicle trips to and from the project. VMT is the measurement of the distance that a vehicle associated with a project or a population travels. This metric is used to measure a project's GHG from mobile sources, effectiveness of the multimodal transportation networks (e.g., transit, pedestrian, and bicycle), and the diversity of land uses in an area.

VMT is typically expressed in miles per day and is calculated by multiplying the number of daily project generated trips by the anticipated trip length. The average Home-Based Other trip length in Paradise (3.57 miles) was obtained from the BCAG Travel Demand Model and used in the transportation impact study (TIS) for the proposed project. The projected VMT is estimated differently for external trips and pass-by trips, considering the difference in their travel patterns and trip lengths. A trip length of 0.1 mile was used for pass-by trips since they would nearly all originate on and return to Skyway immediately adjacent to the project site. The proposed project is anticipated to result in an increase in VMT of 18,708 miles per day (Traffic Works 2017).

As noted in Section 3.0, Introduction to the Analysis, for purposes of the analysis it is assumed the proposed project would be a "new" project because a new use or tenant for the vacated store on Clark Road has not been identified. It is assumed that another business would use that space and have similar commercial use, vehicle trip-generating characteristics. While some of the trips to the new site on Skyway will be redistributed/relocated trips from the existing Safeway location on Clark Road, no trips associated with the existing store were deducted in the TIS. This provides a worst-case, conservative analysis of operational GHG emissions because the trips generating GHG emissions are assumed to be "new" trips, even though they are primarily existing trips that already occur locally under existing conditions and therefore a portion of the GHG emissions also already occurs. As a result, this approach likely overestimates the project's operational GHG emissions impacts.

Although construction would be short term (approximately 16 months), construction emissions were amortized based on the average life of a commercial project (30 years) and added to the operational emissions to conservatively estimate the total GHG emissions.

An upstream emission source (also known as life-cycle emissions) refers to emissions that were generated during the manufacture of products to be used for construction of the project. These emissions originate from the manufacture of cement, from the manufacture of steel, and/or from the transportation of building materials to the seller. The upstream emissions were not estimated because they are not within the control of the project applicant and to do so would be speculative. Additionally, the California Air Pollution Control Officers Association White Paper on CEQA and Climate Change notes that information needed to characterize [life-cycle emissions] would be speculative at the CEQA analysis level (CAPCOA 2008, p. 65). Therefore, pursuant to CEQA Guidelines Sections 15144 and 15145, upstream/life-cycle emissions are speculative and no further discussion is necessary.

PROJECT IMPACTS AND MITIGATION MEASURES

Generate Greenhouse Gas Emissions (Standard of Significance 1)

Impact 4.3.1 The proposed project would result in greenhouse gas emissions that would further contribute to significant impacts on the environment. The proposed project's contribution would be cumulatively considerable. The cumulative impact would be **significant and unavoidable**.

GHG emissions associated with new development occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust, as well as long-term regional emissions, primarily associated with new vehicular trips and indirect source emissions, such as electricity usage and energy usage in water distribution, sewage treatment, and solid waste disposal.

Construction GHG Emissions

The estimated quantity of annual and total unmitigated GHG emissions generated by the proposed project's construction activities is shown in **Table 4.3-3**.

TABLE 4.3-3
CONSTRUCTION-RELATED GREENHOUSE GAS EMISSIONS – UNMITIGATED

Construction Year	CO_2e (Metric Tons per Year)
2018	607.1
2019	176.7
Total	**783.8**
Amortized Construction Emissions	
783.8 0 metric tons/30 years	**26.1**

*Source: CalEEMod version 2016.3.1. See **Appendix C** for emission model outputs.*
Notes: Project construction activities are assumed to occur over a 15-month period.

Construction would generate approximately 784 metric tons of CO_2e. This total is amortized over the expected 30-year life of the project and included in the operational GHG emissions below. The project's estimated maximum annual emissions of 607 metric tons of CO_2e (in 2018) would not exceed the threshold. Therefore, the impact of construction-related GHG emissions would be **less than cumulatively considerable**.

Operational GHG Emissions

The project would result in long-term operational emissions of GHGs. Project-generated emissions would be predominantly associated with customer vehicle trips. To a lesser extent, indirect source emissions, such as electricity usage and energy usage in water distribution, sewage treatment, and solid waste disposal, would also contribute to overall GHG emissions.

The Safeway store component of the proposed project would incorporate the following energy-conserving design and operational features, which would help reduce GHG emissions:

- Energy Management System (EMS), which allows off-site monitoring and control of heating, air conditioning, refrigeration, and lighting.

- Energy-efficient heating, ventilating, and air conditioning (HVAC) units.
- High-efficiency LED lighting, including interior and exterior lighting, refrigerator case illumination, and parking lot lighting.
- A white membrane roof, which reduces building energy consumption and reduces the heat island effect.
- Refrigeration using non-ozone-depleting refrigerants. Equipment would be mounted close to refrigerated cases, which in turn reduces the amount of copper piping, insulation, and the potential for leaking refrigerant.
- Recycling 90 percent of after-market packaging, which reduces GHGs associated with solid waste operations at landfills.

Predicted maximum annual GHG emissions are summarized in **Table 4.3-4**.

TABLE 4.3-4
PROJECT OPERATIONS GREENHOUSE GAS EMISSIONS – UNMITIGATED

Emissions Source	Metric Tons CO_2e per Year
Construction (amortized over 30 years)	26.1
Area	<0.01
Energy	774.6
Mobile	2,474.3
Waste	186.2
Water	26.3
Total	**3,487.4**
Annual Threshold Comparison	
Significant Impact Threshold	**900**
Exceed Threshold?	**Yes**

*Source: CalEEMod version 2016.3.1 See **Appendix C** for emission model outputs.*

Note: Emissions estimates account for trip generation and trip distances from the transportation impact study (Traffic Works 2017).

As shown in **Table 4.3-4**, the project's estimated maximum annual emissions of 3,487 metric tons of CO_2e per year would exceed the threshold of 900 metric tons of CO_2e per year. The project's unmitigated contribution to GHG emissions would therefore be cumulatively considerable, and the cumulative impact would be **significant**. Most of the emissions are related to mobile sources (customer trips). As noted above, this is a conservative, worst-case estimate, and emissions are overestimated. In addition, it is likely that future regulatory mandates (such as those listed in **Table 4.3-2**), technological advances, and/or final project design features are anticipated to result in GHG emissions that are lower than the levels presented in this Draft EIR.

Mitigation Measures

Implement mitigation measures **MM 4.2.3a** through **MM 4.2.3d** (see Section 4.2, Air Quality).

The Town of Paradise does not have a plan or mitigation program for reducing GHG emissions that can be applied to the proposed project. However, Tables 6-1 and 6-2 in the BCAQMD CEQA Air Quality Handbook list several potential mitigation measures to reduce impacts due to operational GHG emissions for non-transportation and transportation sources. These measures are listed in **Table 4.2-9** in Section 4.2, Air Quality. **Table 4.2-9** also indicates which measures either would be part of project design or would be required under mitigation measures **MM 4.2.3a** through **MM 4.2.3d,** which would help reduce some of the project's operational GHG emissions. Implementation of mitigation measures **MM 4.2.3b, MM 4.2.3c**, and **MM 4.2.3d** would have a positive, but not quantifiable (in CalEEMod), effect on reduction of project operational GHG emissions. **Table 4.3-5** shows the mitigated project operational GHG emissions with the implementation of reduction measures that can be quantified.

TABLE 4.3-5
PROJECT OPERATIONS GREENHOUSE GAS EMISSIONS – MITIGATED

Emissions Source	Metric Tons CO_2e per Year
Construction (amortized over 30 years)	26.1
Area	< 0.01
Energy	665.7
Mobile	2,474.3
Waste	186.2
Water	23.1
Total	**3,349.2**
Percent Reduction	**3.2%**
Annual Threshold Comparison	
Significant Impact Threshold	**900**
Exceed Threshold?	**Yes**

*Source: CalEEMod version 2016.3.1 See **Appendix C** for emission model outputs.*

*Note: Emissions estimates account for trip generation and trip distances from the transportation impact study (Traffic Works 2017) and the quantifiable components of the mitigation measures listed in **Table 4.2-9**, specifically, low flow plumbing fixtures, and high efficiency lighting.*

As shown in **Table 4.3-5**, there would be a reduction in GHG emissions with mitigation, and there would be additional reductions with implementation of strategies that cannot be quantified, but the proposed project's mitigated operational GHG emissions would still exceed the threshold.

Because the proposed project's operational emissions would be cumulatively considerable in the near term, based on a conservative analysis, it is reasonable to conclude that emissions would also be cumulatively considerable post-2020 and beyond. Therefore, cumulative impacts from long-term operational GHG emissions would remain **significant and unavoidable**.

Consistency with Applicable Plans (Standard of Significance 2)

Impact 4.3.2 The proposed project would generate GHG emissions that would be cumulatively considerable, based on a conservative analysis. The project would therefore conflict with the reduction targets established in AB 32 and SB 32. The impact is **significant and unavoidable**.

AB 32 Scoping Plan/SB 32

As discussed in Impact 4.3.1, the proposed project would exceed the operational threshold applied to the project. The proposed project's GHG emissions would therefore conflict with AB 32 and SB 32, and there is no feasible mitigation beyond mitigation measures **MM 4.2.3b** through **MM 4.2.3d** to avoid or substantially reduce the project's contribution. This would be a **significant and unavoidable** cumulative impact.

Butte County 2016 RTP/SCS

The Butte County 2016 RTP/SCS is the region's long-range plan to meet the requirements of California's Sustainable Communities and Climate Change Act of 2008 (Senate Bill 375). Policies that are relevant to the proposed project are listed in **Table 4.3-6**, along with a consistency analysis.

TABLE 4.3-6
BUTTE COUNTY 2016 RTP/SCS POLICIES

Policy	Text of Policy	Consistency Analysis
6.1.1	Support the construction of bike facilities and access to transit as designated in the local alternative transportation plans.	The proposed project would include a bus turnout on Skyway, along which Butte County Transit operates regular service. It would also include bicycle racks.
13.1.2	Provide convenient travel choices including transit, driving, ridesharing, walking, and biking.	The project site is an infill site on Skyway (the main north–south roadway) in an existing commercial area, is consistent with existing zoning, and would provide expanded and more conveniently located local retail options readily accessible by driving, transit, walking, and bicycling.
13.1.4	Increase the use of transit, ridesharing, walking and biking in major corridors and communities.	The proposed project would include a bus turnout on Skyway, along which Butte County Transit operates regular service. It would also include bicycle racks. The project would encourage pedestrian and bicycle activity by including a path of travel bisecting the center of the project to connect to the Safeway store and adjoining retail and Skyway.
13.2.2	Manage the efficiency of the transportation system to improve traffic flow.	The applicant would construct improvements at the Black Olive Drive/Skyway intersection to improve flow, and the Town would modify signal timing on Skyway to reduce level of service (LOS) impacts at nearby intersections (MM 4.5.3c). The project applicant will be required to pay traffic impact mitigation fees to address future improvements under cumulative conditions.
13.3.2	Work towards reducing bottlenecks and increase safety by improving operations.	See the analysis of Policy 13.2.2, above.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

As explained previously, the quantity of GHGs that it takes to ultimately result in climate change is not precisely known, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or micro climates. Under CEQA, greenhouse gas impacts on global climate change are inherently cumulative, and no further analysis beyond that presented in Impacts 4.3.1 and 4.3.2 is required.

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4.4 Noise

This section describes the existing noise environment in the vicinity of the project site and the potential for the proposed project to result in noise impacts exceeding the Town of Paradise's applicable noise level criteria. Data used to prepare this section was taken from the transportation impact study prepared by Traffic Works (2017) and information obtained by measuring and modeling existing and future noise levels at the project site and in the surrounding area.

Comments received from the public during the NOP review (**Appendix A**) addressed the potential need for a sound wall to minimize delivery truck circulation noise, which is addressed in this section.

4.4.1 FUNDAMENTALS OF SOUND AND ENVIRONMENTAL NOISE

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), 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. A typical noise environment consists of a base of steady background noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These sources can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway. Perceptions of sound and noise are highly subjective from person to person.

The decibel scale is used to measure sound and it uses the hearing threshold (20 micropascals) as a point of reference, defined as 0 decibels (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.

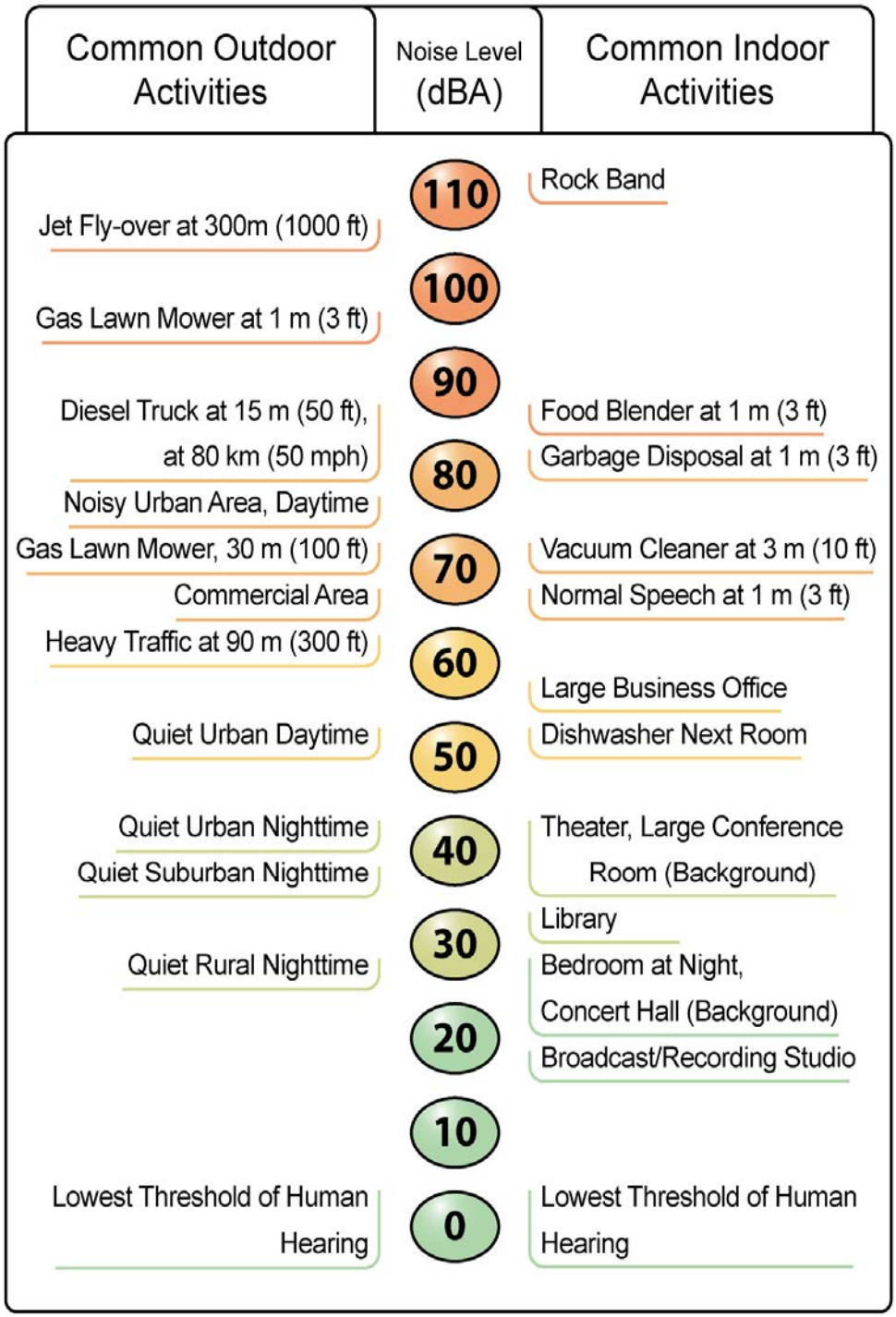
The perceived loudness of sounds is dependent on many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by A-weighted sound levels. There is a strong correlation 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.

Addition of Decibels

The decibel scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. 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 dB is generally perceived as a doubling in loudness. For example, a 70 dB sound is half as loud as an 80 dB sound and twice as loud as a 60 dB sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions (FTA 2006). Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

Typical noise levels associated with common noise sources are depicted in **Figure 4.4-1**.

FIGURE 4.4-1
TYPICAL COMMUNITY NOISE LEVELS



Source: Caltrans 2012

Sound Propagation and Attenuation

Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (FHWA 2006). No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. For line sources, an overall attenuation rate of 3 dB per doubling of distance is assumed (FHWA 2006).

Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dB, while a solid wall or berm reduces noise levels by 5 to 10 dB (FHWA 2006). The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dB with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dB or more.

Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined in **Table 4.4-1**.

The A-weighted decibel sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter, which can accurately measure environmental noise levels to within about plus or minus 1 dB. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dB.

TABLE 4.4-1
DEFINITIONS OF ACOUSTICAL TERMS

Term	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	A 24-hour average L_{eq} with a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
Community Noise Equivalent Level, CNEL	A 24-hour average L_{eq} with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dB, moderate in the 60 to 70 dB range, and high above 70 dB. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dB and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dB at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dB) and commercial locations (typically 60 dB). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dB) or dense urban or industrial areas (65 to 80 dB). Regarding increases in A-weighted noise levels, the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans.
- Outside of the laboratory, a 3 dB change is considered a just-perceivable difference.
- A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial.
- A 10 dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Effects of Noise on People

Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even in a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated by chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a workplace noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dB averaged over 8 hours. If the noise is above 90 dB, the allowable exposure time is correspondingly shorter.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes of annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. For ground vehicles, a noise level of about 55 dB L_{dn} is the threshold at which a substantial percentage of people begin to report annoyance.

4.4.2 FUNDAMENTALS OF ENVIRONMENTAL GROUNDBORNE VIBRATION

Sources of earthborne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration. For the purposes of this analysis, a PPV descriptor with units of inches per second is used to evaluate construction-generated vibration for building damage and human complaints.

Table 4.4-2 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

TABLE 4.4-2
HUMAN REACTION AND DAMAGE TO BUILDINGS FOR CONTINUOUS OR FREQUENT INTERMITTENT VIBRATION LEVELS

Peak Particle Velocity (inches/second)	Human Reaction	Effect on Buildings
0.006–0.019	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: Caltrans 2004

4.4.3 EXISTING SETTING

NOISE-SENSITIVE RECEPTORS

Noise-sensitive land uses are those that may be subject to stress and/or interference from excessive noise. Noise-sensitive land uses include schools, hospitals, and institutional uses such as churches and museums. Typically, residential uses are also considered noise-sensitive receptors. Industrial and commercial land uses are generally not considered sensitive to noise. Noise-sensitive receptors in the project area include single-family homes adjacent to the project site (see **Figure 4.1-1** in Section 4.1, Aesthetics). The closest noise-sensitive receptors are residential units approximately 15 feet to the north on commercially zoned property adjoining the project site. Residential properties on Horseshoe Hill Drive also adjoin the project site to the west, but the homes are farther from the site boundary.

EXISTING AMBIENT NOISE LEVELS

Existing ambient noise levels in the project area were measured on June 6, 2017, consisting of four short-term noise measurements (see **Appendix D**). The measurements were taken with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator.

The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the project site. The 10-minute measurements were taken between 4:15 and 5:30 p.m. on Tuesday, June 6, 2017. Short-term (L_{eq}) measurements are considered representative of the noise levels throughout the day. Noise monitoring locations are shown in **Figure 4.4-2.** The average noise levels and sources of noise measured at each location are listed in **Table 4.4-3.**

TABLE 4.4-3
EXISTING NOISE MEASUREMENTS

Site #	Location	Date and Time	Primary Noise Sources	Noise Level Statistics		
				L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)
1	Skyway and Pearson Road intersection	June 6, 2017 4:29 PM	Traffic	71.5	60.0	80.8
2	Skyway and Black Olive Drive intersection (proposed project site)	June 6, 2017 4:43 PM	Traffic	74.5	48.5	83.6
3	Foster Road and Black Olive Drive intersection	June 6, 2017 4:57 PM	Traffic	62.4	46.8	75.9
4	Skyway and Jewell Road intersection	June 6, 2017 5:15 PM	Traffic	74.5	46.5	82.9

*See **Appendix D** for noise measurement outputs.*

As shown, the ambient recorded noise levels near the project site ranged from 62.4 dB to 74.5 dB L_{eq}. The most common noise in the project vicinity is produced by automotive vehicles (cars, trucks, buses, motorcycles). Traffic moving along roadways produces a sound level that remains relatively constant and is part of the town's minimum ambient noise level. Vehicular noise varies

with the volume, speed, and type of traffic. Slower traffic produces less noise than fast-moving traffic. Trucks typically generate more noise than cars. Infrequent or intermittent noise also is associated with vehicles, including sirens, vehicle alarms, slamming of doors, garbage and construction vehicle activity, and honking of horns. These noises add to urban noise and are regulated by a variety of agencies.

EXISTING ROADWAY NOISE LEVELS

Existing roadway noise levels were calculated for the roadway segments in the vicinity of the project area using the Federal Highway Administration (FHWA) Highway Noise Prediction Model (FHWA-RD-77-108) and traffic volumes from the transportation impact study (Traffic Works 2017 [**Appendix E** in this Draft EIR]). The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (energy rates) utilized in the FHWA model were modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (Caltrans). The Caltrans data shows that California automobile noise is 0.8 to 1.0 dB higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dB lower than national levels. The average daily noise levels along these roadway segments are presented in **Table 4.4-4**.

TABLE 4.4-4
EXISTING CALCULATED TRAFFIC NOISE LEVELS

Roadway Segment	Existing Conditions				
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance (feet) from Roadway Centerline to:		
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour
Skyway					
Elliott Road to Pearson Road	16,119	60.0	100	46	—
Pearson Road to Project	19,116	60.9	114	53	—
Project to Black Olive Drive	19,116	60.9	114	53	—
Black Olive Drive to Neal Road	22,113	61.5	126	58	—
Pearson Road					
Skyway to Black Olive Drive	6,912	56.3	57	—	—
Black Olive Drive					
Skyway to Foster Road	4,158	50.5	—	—	—

*Source: Based on traffic data in the transportation impact study prepared by Traffic Works (2017). Traffic noise levels were calculated using the FHWA roadway noise prediction model. Refer to **Appendix D** for traffic noise modeling assumptions and results.*

Notes: ADT = average daily trips; dBA = A-weighted decibels; CNEL = Community Noise Equivalent Level

T:_CS\Work\Paradise_Magalia, Cities of\Black Olive Village

Not To Scale

FIGURE 4.4-2
Noise Measurement Locations

Michael Baker INTERNATIONAL

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4.4.4 REGULATORY FRAMEWORK

STATE

California Noise Control Act of 1973

California Health and Safety Code Sections 46000 through 46080, known as the California Noise Control Act, find that excessive noise is a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. The act also finds that there is a continuous and increasing bombardment of noise in urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens through the control, prevention, and abatement of noise. It is the policy of the State to provide an environment for all Californians that is free from noise which jeopardizes their health or welfare.

Governor's Office of Planning and Research

The Governor's Office of Planning and Research (OPR) (2017), has published the General Plan Guidelines, which provide guidance for the acceptability of projects in specific noise environments based on average daily noise conditions (CNEL/L_{dn}). However, it is important to note that the OPR guidance does not take local conditions into account, including a particular community's sensitivity to noise, noise reduction goals, or assessment of the relative importance of noise pollution. As a result, noise standards developed by local jurisdictions typically differ somewhat from the OPR guidance. In the case of the proposed project, the Town has adopted local noise standards, which are most relevant to the noise conditions in Paradise. Therefore, this analysis is based on local standards, and the OPR guidance is not considered.

LOCAL

Town of Paradise General Plan

The applicable plan pertaining to the evaluation of noise impacts of the proposed project is the Town of Paradise General Plan Noise Element, which includes established noise level standards that are intended to protect community residents from harmful and annoying noise levels. The policies listed in **Table 4.4-5** are relevant to the analysis, followed by a consistency determination. While Town staff has done its best to ascertain consistency, the Town Council makes the ultimate decision regarding consistency with the General Plan.

TABLE 4.4-5
CONSISTENCY WITH GENERAL PLAN POLICIES

Policy Number	Text of General Plan Policy	Consistency Determination
NP-1	Where proposed nonresidential land uses are likely to produce noise levels exceeding the performance standards of Table 6.4-1 [Table 4.4-6, below] at existing or planned noise-sensitive uses, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.	An acoustical analysis has been prepared for the proposed project, and the results are presented in Impact 4.4.2, which identifies mitigation measures to reduce noise to levels that will meet Town standards.
NP-4	Where noise mitigation measures are required to achieve the standards of Tables 6.4-1 [Table 4.4-6, below] and 6.4-2 [Table 4.4-7, below], the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers should be considered a supplemental means of achieving noise standards after all practical design-related noise mitigation measures have been integrated into the project.	Based on the results of the acoustical analysis, noise barriers will be required (see Impact 4.2.2) as mitigation.
NP-5	Acoustical analyses should be prepared in accordance with the requirements of Table 6.4-3.	An acoustical analysis has been prepared and includes existing ambient noise level measurements (Table 4.4-3), estimated existing CNEL (Table 4.4-4), and projected future CNEL (Table 4.4-10). Comparisons of estimated project-generated noise was compared to Town noise standards in Impacts 4.4.1 and 4.4.2. Appropriate mitigation is recommended where noise levels are predicted to exceed Town standards. Noise levels after implementation of mitigation are estimated. Mitigation measures include programs for residents in adjacent homes to report concerns with operational noise.
NP-8	The Town should endeavor quiet residential areas by limiting traffic and noise-generating uses in such areas.	Mitigation measures have been identified to reduce project operational noise related to truck deliveries and mechanical systems operation to achieve the most restrictive (nighttime) Town noise standard at adjacent residential properties.

The Town's General Plan noise level performance standards for new projects affected by non-transportation sources are identified in **Table 4.4-6**. The Town's General Plan maximum allowable noise exposure from transportation noise sources are identified in **Table 4.4-7**.

TABLE 4.4-6
NOISE LEVEL PERFORMANCE STANDARDS FOR NEW PROJECTS AFFECTED BY OR INCLUDING NON-TRANSPORTATION SOURCES

Noise Level Descriptor	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly L_{eq}, dB	50	45
Maximum level, dB	70	65

Source: Paradise 1994
Note: Each of the noise levels specified above shall be lowered by 5 dBA for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

TABLE 4.4-7
MAXIMUM ALLOWABLE NOISE EXPOSURE TRANSPORTATION NOISE SOURCES

Land Use	Outdoor Activity Areas [a] Ldn/ CNEL, dB	Interior Spaces	
		Ldn/ CNEL, dB	Leq, dB [b]
Residential	60 [c]	45	—
Transient Lodging	60 [c]	45	—
Hospitals, Nursing Homes	60 [c]	45	—
Theaters, Auditoriums, Music Halls	—	—	35
Churches, Meeting Halls	60 [c]	—	40
Office Buildings	60 [c]	—	45
Schools, Libraries, Museums	—	—	45
Playgrounds, Neighborhood Parks	70	—	—

Source: Paradise 1994
Notes:
a. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.
b. As determined for a typical worst-case hour during periods of use.
c. Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Town of Paradise Municipal Code

The Town has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise-sensitive land uses. Chapter 9.18 of the Municipal Code discusses noise control:

- Per Section 9.18.140 (Loading and unloading), "It is unlawful and in violation of this chapter for any person to load, unload, open, close or otherwise handle boxes, crates, containers, building materials, garbage cans or similar objects between the hours of ten p.m. and six a.m. in such a manner that creates noise clearly audible across a residential zoned or a commercial zoned real property boundary."

- Per Section 9.18.160 (Construction or demolition—Generally), "It is unlawful and in violation of this chapter for any person to operate or cause the operation of any tools equipment used in construction, drilling, repair, alteration, or demolition work between the hours seven

p.m. and six a.m. on weekdays or at any time on Sundays or holidays, in such a manner that creates noise clearly audible across a residential zoned or a commercial zoned real property boundary."

4.4.5 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Appendix G of the 2017 CEQA Guidelines includes a list of topics related to noise that may be considered in an EIR. For purposes of this Draft EIR, the proposed project would have a significant effect on the environment if it would result in:

1) Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or of applicable standards of other agencies.

2) Exposure of persons to or generation of an excessive groundborne vibration or groundborne noise level.

3) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

4) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

5) For a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or a public use airport, exposure of people residing or working in the project area to excessive noise levels.

6) For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels.

Impacts Not Evaluated in Detail

As explained in Issues 2.12.d and 2.12.e in subsection 2.12, Noise, in the Initial Study (**Appendix B**), the project site is located approximately 3 miles north of the Paradise Skypark and 12 miles east of the Chico Municipal Airport. A review of the Butte County Comprehensive Airport Land Use Compatibility Plan (Butte County Airport Land Use Commission 2000) shows the project site located outside of any noise impact zones for both the Paradise Skypark and the Chico Municipal Airport. There are no private airstrips in the vicinity. Therefore, standards of significance 5 and 6 are not addressed further in this Draft EIR.

METHODOLOGY

This analysis of the existing and future noise environments is based on noise level monitoring, noise prediction modeling, and empirical observations. The residential uses in the vicinity of the project site are considered noise-sensitive receptors.

Short-Term Construction Noise

Predicted noise levels at nearby noise-sensitive land uses were calculated utilizing typical noise levels and usage rates associated with construction equipment, derived from representative data obtained from similar construction projects. Construction noise levels were predicted assuming an average noise attenuation rate of 6 dB per doubling of distance from the source.

Groundborne Vibration

Groundborne vibration levels associated with construction-related activities as well as operations were evaluated utilizing typical groundborne vibration levels associated with construction equipment and heavy-duty trucks, obtained from the Federal Transit Administration (FTA) data. Potential groundborne vibration impacts were evaluated taking into account the distance from construction activities to nearby land uses and typically applied criteria for structural damage.

Long-Term Operational Noise

Predicted noise levels associated with noise sources resulting from long-term operation of the proposed project were calculated based on representative data obtained from existing literature and noise assessments prepared for similar projects. Operational noise levels were calculated at the project site property lines and nearby land uses for comparison to the Town's noise standards.

Traffic Noise

The potential for the project to permanently increase traffic noise is addressed under the following scenarios: the future plus project and the cumulative plus project. Traffic noise levels were calculated using the FHWA roadway noise prediction model (FHWA-RD-77-108) based on California vehicle reference noise emission factors and traffic data obtained from the transportation impact study prepared for the project. Additional input data included vehicle speeds, ground attenuation factors, and roadway widths. Predicted noise levels were calculated at a distance of 100 feet from the near-travel-lane centerline.

Non-Transportation-Related Noise

Delivery Truck On-Site Circulation

The circulation of delivery trucks behind the Safeway store at the proposed Black Olive Village project was modeled as a stationary noise source due to the low speed of the trucks and infrequent passage. For purposes of the analysis, it was assumed a worst-case hour with 2 semi-trucks and 8 smaller truck or vans arriving would generate 10 pass-by events. Modeled noise levels for pass-by events were compared to the Town's L_{max} standard, which provides a conservative, worst-case condition. Because deliveries would be intermittent and would not be a continuous source of noise, L_{max} is an appropriate measure of intermittent noise sources. Detailed methodology, assumptions, and results are provided in **Appendix D** of this Draft EIR.

Loading Dock Operations

To estimate anticipated noise levels for loading dock operations at the Black Olive Village project, reference noise levels were taken from a study in 2009 that measured the noise levels at a Safeway store with a similar loading bay configuration and delivery operations as the proposed project. Detailed methodology, assumptions, and results are provided in **Appendix D** of this Draft EIR.

Mechanical Systems

Heating, ventilation, and air conditioning (HVAC) system noise and system size (measured in tons) can vary greatly. The analysis assumes a 115-ton HVAC system with a worst-case noise L_{eq} of 90 dB at 3 feet (EPA 1971) and a location on the rooftop near the west edge of the proposed Safeway building at a distance of 60 feet from the nearest residential property line. Noise levels at the

adjacent property lines were estimated using the inverse-square law, which results in a 6 dB loss (or attenuation) per doubling of distance.

PROJECT IMPACTS AND MITIGATION MEASURES

Short-Term Construction Noise and Vibration (Standards of Significance 1, 2, 3, and 4)

Impact 4.4.1 Construction of the proposed project could generate or expose persons to excessive noise, groundborne vibration, and groundborne noise. The impact is **potentially significant.**

Construction Noise

Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., land clearing, grading, excavation, paving). Noise generated by construction equipment, including earthmovers, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than 1 minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). Typical noise levels associated with individual construction equipment are listed in **Table 4.4-8.**

TABLE 4.4-8
TYPICAL CONSTRUCTION NOISE LEVELS

Equipment	Typical Noise Level (dBA) at 50 Feet from Source	
	L_{max}	L_{eq}
Air Compressor	80	76
Backhoe/Front-End Loader	80	76
Compactor (ground)	80	73
Concrete Mixer Truck	85	81
Concrete Mixer (vibratory)	80	73
Concrete Pump Truck	82	75
Concrete Saw	90	83
Crane	85	77
Dozer/Grader/Excavator/Scraper	85	81
Drill Rig Truck	84	77
Generator	82	79
Gradall	85	81
Hydraulic Break Ram	90	80
Jackhammer	85	78
Impact Hammer/Hoe Ram (mounted)	90	83
Pavement Scarifier/Roller	85	78

Equipment	Typical Noise Level (dBA) at 50 Feet from Source	
	L_{max}	L_{eq}
Paver	85	82
Pneumatic Tools	85	82
Pumps	77	74
Truck (dump/flat-bed)	84	80

Source: FTA 2006

As shown in **Table 4.4-8**, the loudest piece of equipment could reach a noise level L_{eq} of 83 dB at 50 feet from the source. Since construction noise levels drop off at a rate of about 6 dB per doubling of distance between the noise source and receptor, the loudest piece of equipment will reach a noise level L_{eq} of 89 dB at 25 feet from the source. This is a **potentially significant** impact.

Vibration

Construction activities are expected to use equipment such as backhoes, bulldozers, front loaders, and earthmoving and compacting equipment, which includes compactors, scrapers, and graders. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. This evaluation uses Caltrans's (2004) recommended standard of 0.2 inches per second peak particle velocity with respect to the prevention of structural damage for older residential buildings. This is also the level at which vibrations may begin to annoy people in buildings. **Table 4.4-9** lists typical vibration levels for the primary construction equipment that would be used on the project site. The values are approximations.

Construction activities would occur throughout the project site and would not be concentrated for long periods of time at the point closest to the nearest structure. Based on the vibration levels presented in **Table 4.4-9**, ground vibration generated by heavy-duty equipment would not be anticipated to exceed approximately 0.2 inches per second peak particle velocity at the closest building, a residence northwest of the site. However, actual groundborne vibration transmitted to a structure by construction equipment and that vibration's effect(s) would depend on the frequency of the vibration, the underlying rock or soil type, the moisture content of the soil, the type of building foundations, and the type of building construction. For example, an older building may be more susceptible to groundborne vibration than a new building. As such, construction vibration impacts are considered **potentially significant**.

TABLE 4.4-9
TYPICAL CONSTRUCTION EQUIPMENT VIBRATION LEVELS

Equipment Type	Peak Particle Velocity at 25 Feet (inches per second)	Peak Particle Velocity at 15 Feet (inches per second)
Large Bulldozer	0.089	0.191
Loaded Trucks	0.076	0.163
Jackhammer	0.035	0.075
Small Bulldozer/Tractor	0.003	0.006

Source: FTA 2006; Caltrans 2004

Mitigation Measures

MM 4.4.1 The project applicant shall ensure through contract specifications and grading notes that construction best management practices (BMPs) are implemented by contractors to reduce construction noise levels. The construction BMPs shall include the following:

- In conformance with Section 9.18.160 of the Town's Municipal Code, construction activities that would create noise clearly audible across a residential zoned or a commercial zoned property shall be prohibited between 7:00 p.m. and 7:00 a.m. on weekdays and Saturdays or at any time on Sundays or holidays.
- Construction equipment shall be properly muffled according to industry standards and in good working condition.
- Noise-generating construction equipment and construction staging areas shall be located away from sensitive uses, where feasible.
- Noise attenuation measures shall be implemented to the extent feasible, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources.
- Electric air compressors and similar power tools shall be used rather than diesel equipment, where feasible.
- Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes.
- The use of high impact equipment such as hoe rams and jackhammers shall be limited within 15 feet of nearby structures.
- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow building owners and residents in the surrounding area to contact the job superintendent. If the Town or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.

Mitigation Responsibility:	*Project applicant*
Mitigation Action/Timing:	*Include notes on grading plan and implemented during construction*
Compliance Monitoring:	*Town of Paradise Public Works Department and Planning Division*
Verification Action/Timing:	*Prior to approving grading plan and during construction*

Mitigation measure **MM 4.4.1** would reduce construction-related noise and groundborne vibration by requiring the applicant's construction contractor(s) to implement construction BMPs and to comply with the Town's limits on the time of day for construction activities, which would reduce impacts to **less than significant**.

Non-Transportation Operational Noise (Standards of Significance 1, 3, and 4)

Impact 4.4.2 Operation of the proposed project would generate noise from customer parking lots, delivery trucks, and building mechanical equipment. The impact is **potentially significant**.

Parking Lot

The project would include a large, at-grade parking lot on-site. Noise sources in the proposed parking area may include noise events from vehicle movement, engines starting and stopping, doors slamming, car alarms and horns, shopping carts, and conversations.

The large parcel on the north side of the project site contains a mini-storage facility. However, there is also a residence west of the mini-storage buildings, approximately 420 feet from Skyway. This residence is the closest noise-sensitive use to the proposed parking lot. The proposed parking lot encompasses nearly half of the project site and is centered on the eastern portion of the site. It is assumed that the majority of parking lot noise would emanate from the centers of main circulation within the parking lot.

The closest main circulation area to the residence on the parcel to the north comprises 30 parking stalls located between the fueling center and the north end of the Safeway store. These 30 parking stalls are centered approximately 150 feet from the nearest residence. Assuming each stall will fill and empty once per hour during the peak hours, 60 car arrival and departure events would be anticipated. The L_{eq} at the nearest residence would be 43.6 dB. Calculations are presented in **Appendix D**. This noise level is less than the Town's daytime limit of L_{eq} 50 dB or nighttime limit of L_{eq} 45 dB. Seven proposed parking stalls near the northern property line would be centered about 40 feet from the nearest residence. It is assumed that these stalls would be less frequently used and would fill and empty once every 4 hours. The L_{eq} would be 40.8 dB at 50 feet and 42.7 dB at the nearest noise-sensitive land use (see **Appendix D** for calculations). Therefore, the impact due to noise resulting from parking lot activity would be **less than significant.**

Supermarket Delivery Truck Circulation

The proposed entry route for supermarket delivery trucks is a 20-foot-wide aisle on the north and west sides of the Safeway store, with centerlines 15 feet from the northern property line and 35 feet from the western property line. Small and medium-sized delivery trucks may use the same entry route or proceed directly to the unloading area on the south side of the Safeway store. Trucks would depart the unloading area into the parking lot to the east. Based on information provided by the project applicant, daily deliveries would average 10 to 15 small trucks or vans (up to 20) and 2 to 3 large truck deliveries to the store. The proposed project would create a level pad for the Safeway store up to 28 feet above adjacent properties. In addition, the entry route would be next to the store, creating the potential for reflected sound. Deliveries would be intermittent and would not be a continuous source of noise.

Using the reference level for a truck pass-by event and accounting for terrain and sound reflections, the estimated L_{max} at the northern property line would be 68.3 dB.[1] Detailed assumptions and calculations are provided in **Appendix D**. This noise level would exceed the Town's nighttime standard of L_{max} 65 dB. This would be a **significant** impact. The noise at the western property line would be L_{max} 57.1 dB, which would not exceed the Town's daytime or nighttime standards.

Supermarket Loading Dock and Other Delivery Operations

The project would result in truck deliveries to the Safeway store, the retail shops, and the fueling center. The proposed site plan includes a two-truck depressed loading dock at the southeast corner of the Safeway store and an at-grade loading zone for small to medium-sized trucks near the center of the south side of the Safeway store. Noise sources due to truck deliveries could include truck entry, backup (including backup alarms), idling engines, truck-trailer cooling systems, unloading activities, and truck departure.

In creating a level pad for the proposed Safeway and loading dock at Black Olive Village, the applicant proposes to place fill material upslope of a retaining wall 8 to 16 feet high that would be constructed along the project site boundary on the west, which would create a 12-foot-high slope above the wall leading to the leveled building pad surface. The intervening terrain between the existing residences and the proposed Safeway and its loading dock would act as a noise barrier for some of the noise from loading dock operations.

Loading dock operational noise was analyzed for noise sources from trucks in the reversing area and at the loading dock. The resulting noise at the western property line and 50 feet back from the line was calculated. See **Appendix D** for calculations and assumptions. The highest noise levels calculated would be L_{eq} 53.6 and L_{max} dB 73.6 at the western property line near the truck reversing area. These noise levels would exceed the Town's daytime standards of L_{eq} 50 dB and L_{max} 70 dB. This would be a **significant** impact.

Mechanical Equipment

The project would include roof-mounted HVAC equipment on all the proposed buildings. Because of the Safeway store's building size and its proximity to residential uses to the west and north, the HVAC system from the supermarket has the greatest potential for a noise impact. HVAC system noise can vary greatly, and the proposed system size and its location on the supermarket has not yet been specified. Assuming a 115-ton HVAC system with a worst-case noise L_{eq} of 90 dB at 3 feet (EPA 1971) and a location on the rooftop near the west edge at a distance of 60 feet from the nearest residential property line, the L_{eq} would be 64 dB. This noise level would exceed the Town's nighttime noise limit of L_{eq} 45 dB. This impact would be **significant**.

Other mechanical system sources of noise would be roof-mounted refrigeration units and a natural gas backup generator (which would only be used in case of an electrical power loss). Noise from these sources would be less than that created by the HVAC equipment.

Mitigation Measures

MM 4.4.2a The project applicant shall install a minimum 6-foot-high solid noise barrier on the northern property line adjacent to the Safeway store truck entry lane and a

[1] As explained in the Methodology subsection, the estimate of L_{max} provides a worst-case, conservative analysis.

minimum 6-foot-high solid noise barrier around the loading dock area, as shown in Figure 4.4-3 in the Draft EIR. Prior to approval of grading/improvement plans, the Town shall ensure the noise barriers are shown on the site plan.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Include on site plan and implemented during construction*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to approving final site and grading plans*

MM 4.4.2b To ensure noise from delivery trucks traveling along the truck entry lane or unloading does not exceed the Town of Paradise's nighttime limit, the speed limit on the truck entry lane shall be limited to 5 miles per hour. This requirement shall be included as a condition of approval. The applicant shall post signage that specifies the maximum speed limit (5 mph) restriction; the signage shall be posted at the northern driveway entrance to the truck delivery lane and along the lane on the west side leading to the delivery area. The Town shall establish a mechanism for adjacent residents to report concerns with truck delivery and loading dock noise and/or violations of the speed limit restrictions, and to require the applicant to remedy the situation, as necessary. Mitigation measure MM 4.2.3e shall also be implemented, which requires electrical hookups at the loading dock for truck refrigeration units.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Include on site plan*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to issuing occupancy permit (signage) and during occupancy*

MM 4.4.2c To ensure noise from the supermarket building's mechanical equipment does not exceed the Town's nighttime L_{eq} 45 dB limit, the project applicant shall install a solid noise barrier (parapet wall) of at least the height of the mechanical systems around the perimeter of the store or provide a sound enclosure for each mechanical system. The mechanical system, location, and parapet wall height and/or sound enclosures shall be designed to reduce noise levels to a maximum hourly L_{eq} of 45 dB at the adjacent property lines on the north and west sides of the proposed Safeway building. Prior to issuance of a building permit for the store, the Town shall ensure the project's mechanical plan shows the location of the HVAC system and related sound attenuation features and that the applicant has provided documentation demonstrating the features will reduce noise levels to a maximum hourly L_{eq} of 45 dB at the adjacent property lines on the north and west sides of the proposed Safeway building. The Town shall establish a mechanism for adjacent residents to report problems with mechanical system noise and to remedy the situation if mechanical system noise is determined to be a nuisance.

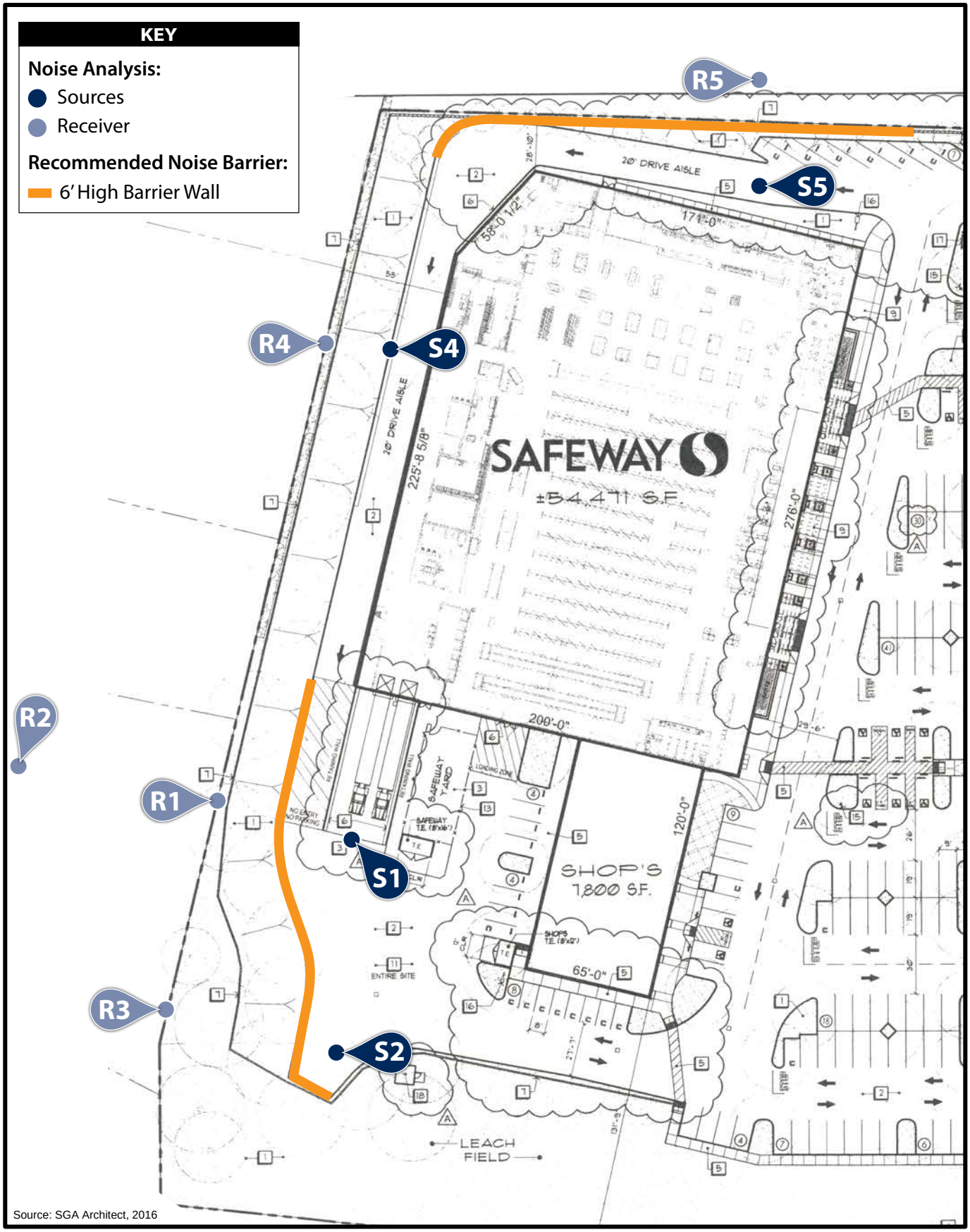
Mitigation Responsibility:	*Project applicant*
Mitigation Action/Timing:	*Include on building plan*
Compliance Monitoring:	*Town of Paradise Planning Division*
Verification Action/Timing:	*Prior to issuing building permit (parapet wall) and during occupancy*

Mitigation measure **MM 4.4.2a** requires a 6-foot-high solid sound wall to be installed along the northern property and a 6-foot-high solid sound wall to be installed around the loading dock area, as shown in **Figure 4.4-3**. This barrier would reduce the noise due to truck circulation at the closest sensitive receptors (residences) on the north side of the proposed Safeway store to L_{max} 60.8 dB (see **Appendix D** for calculations and assumptions). However, this noise level would still exceed the Town's nighttime standard of L_{max} 65 dB. Therefore, mitigation measure **MM 4.4.2b** is required to ensure truck speeds do not exceed 5 miles per hour, and electrical hookups are at the loading dock so truck refrigeration units are not operated while the trailer is at the loading dock. With implementation of these mitigation measures, the project would meet the Town's applicable nighttime noise standards, and the impact due to noise resulting from delivery truck circulation would be reduced to a **less than significant** level**.**

Implementation of mitigation measure **MM 4.4.2a** would result in the construction of sound walls along the southwest and north sides of the Safeway store, as shown in **Figure 4.4-3**. These walls would be a new artificial-appearing element in the visual landscape that may be perceived as visually obtrusive. This visual impact is evaluated in Impact 4.1.2 in Section 4.1, Aesthetics. To minimize the visual impact of the sound walls on the southwest and north sides, the applicant will be required to install additional landscaping to soften the visual appearance of the sound walls in accordance with mitigation measure **MM 4.1.2**.

Implementation of mitigation measure **MM 4.4.2c** would ensure that operational noise from the proposed Safeway building mechanical equipment does not exceed a maximum hourly L_{eq} of 45 dB at the closest noise-sensitive receptors. It would also provide a mechanism for off-site residents to report problems with mechanical system noise, particularly if it occurs in the evening, and for the Town to require the applicant to implement corrective action if nighttime noise is a nuisance.

T:_CSWork\Paradise_Magalia, Cities of\Black Olive Village\Appendix



Source: SGA Architect, 2016

0 30 60
FEET

FIGURE 4.4-3
Recommended Noise Barrier Locations

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Vehicle Traffic Operational Noise (Standards of Significance 1, 3, and 4)

Impact 4.4.3 Operation of the proposed project would generate noise due to increased traffic on surrounding streets. The impact is **less than significant.**

Traffic

As shown in **Table 4.4-10**, increases in vehicular traffic would result in a maximum increase of 0.8 dB in the project area. To determine whether there would be a substantial permanent increase in ambient noise levels, this analysis uses a 3 dB increase as a threshold, which is considered a just-perceivable difference. Since the proposed project would not increase noise levels above 3 dB along the roadway segments analyzed, the project would have a **less than significant** impact.

Mitigation Measures

None required.

4.4.6 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The geographic extent of the cumulative setting for noise consists of the project site and vicinity. Ambient noise levels in the project area are primarily affected by vehicle traffic on nearby area roadways. As a result, the primary factor for cumulative noise impact analysis is the consideration of future noise typically associated with vehicle traffic.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Cumulative Operational Traffic Noise

Impact 4.4.4 Project operation would generate additional traffic noise, but this would not result in a substantial contribution to cumulative noise levels that would be cumulatively considerable. The cumulative impact is **less than significant.**

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to buildout of the proposed project and other projects in the vicinity. A project's contribution to a cumulative traffic noise increase would be considered significant when the combined effect exceeds the perception level (i.e., auditory level increase) threshold. The combined effect compares the cumulative with project condition to existing conditions. This comparison accounts for the traffic noise increase generated by the project combined with the traffic noise increase generated by projects in the cumulative project list. The following criteria were used to evaluate the combined effect of the cumulative noise increase:

- Combined Effect. The cumulative with project noise level (future with project) would cause a significant cumulative impact if a 3.0 dB increase over existing conditions occurs and the resulting noise level exceeds the applicable exterior standard at a sensitive use. Although there may be a significant noise increase due to the proposed project in combination with other related projects (combined effects), it must also be demonstrated that the project has an incremental effect. In other words, a significant portion of the noise increase must be due to the proposed project.

TABLE 4.4-10
FUTURE PROJECT TRAFFIC NOISE LEVELS

Roadway Segment	Future without Project					Future with Project					Difference in dBA @ 100 Feet from Roadway
	ADT	dBA @ 100 Feet from Roadway Centerline	Distance (feet) from Roadway Centerline to:			ADT	dBA @ 100 Feet from Roadway Centerline	Distance (feet) from Roadway Centerline to:			
			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour			60 CNEL Noise Contour	65 CNEL Noise Contour	70 CNEL Noise Contour	
Skyway											
Elliott Rd. to Pearson Rd.	19,017	60.7	111	52	—	19,008	60.7	111	107	—	0.0
Pearson Rd. to Project	23,148	61.7	130	60	—	25,218	62.1	138	95	—	0.4
Project to Black Olive Dr.	23,148	61.7	130	60	—	25,317	62.1	138	101	—	0.4
Black Olive Dr. to Neal Rd.	27,441	62.4	146	68	—	27,585	62.5	146	122	—	0.1
Pearson Road											
Skyway to Black Olive Dr.	8,532	57.3	66	—	—	8,964	57.5	69	—	—	0.2
Black Olive Drive											
Skyway to Foster Rd.	4,914	51.2	—	—	—	5,841	52.0	—	—	—	0.8

*Source: Based on traffic data in the transportation impact study prepared by Traffic Works (2017). Traffic noise levels were calculated using the FHWA roadway noise prediction model. Refer to **Appendix D** for traffic noise modeling assumptions and results.*

Notes: ADT = average daily trips; dBA = A-weighted decibels; CNEL = Community Noise Equivalent Level

- Incremental Effects. The future with project causes a 1.0 dB increase in noise over the future without project noise level.

A significant impact would result only if both the combined and incremental effects criteria have been exceeded. Noise by definition is a localized phenomenon, and it reduces as distance from the source increases. Consequently, only the proposed project and growth due to occur in the project site's general vicinity would contribute to cumulative noise impacts. **Table 4.4-11** lists the traffic noise effects along roadway segments in the project vicinity for existing, future without project, and future with project conditions, including incremental and net cumulative impacts.

TABLE 4.4-11
CUMULATIVE NOISE SCENARIO

Roadway Segment	Existing	Future without Project	Future with Project	Combined Effects	Incremental Effects	Cumulatively Significant Impact?
	CNEL dBA @ 100 Feet from Roadway Centerline	CNEL dBA @ 100 Feet from Roadway Centerline	CNEL dBA @ 100 Feet from Roadway Centerline	Difference in dBA Between Existing and Future with Project	Difference in dBA Between Future without Project and Future with Project	
Skyway						
Elliott Rd. to Pearson Rd.	60.0	60.7	60.7	0.7	0.0	No
Pearson Rd. to Project	60.9	61.7	62.1	1.2	0.4	No
Project to Black Olive Dr.	60.9	61.7	62.1	1.2	0.4	No
Black Olive Dr. to Neal Rd.	61.5	62.4	62.5	1.0	0.1	No
Pearson Road						
Skyway to Black Olive Dr.	56.3	57.3	57.5	1.2	0.2	No
Black Olive Drive						
Skyway to Foster Rd.	50.5	51.2	52.0	1.5	0.8	No

*Source: Based on traffic data in the transportation impact study prepared by Traffic Works (2017). Traffic noise levels were calculated using the FHWA roadway noise prediction model. Refer to **Appendix D** for traffic noise modeling assumptions and results.*

Notes: ADT = average daily trips; dBA = A-weighted decibels; CNEL = Community Noise Equivalent Level

As indicated in **Table 4.4-11**, the proposed project would not result in long-term mobile noise impacts based on project-generated traffic as well as cumulative and incremental noise levels. None of the roadway segments would exceed both the Incremental Effects and the Combined Effects criteria; thus, none of the roadway segments would be significantly impacted. Therefore, the proposed project in combination with cumulative background traffic noise levels would not be cumulatively considerable, and the cumulative impact would be **less than significant**.

Mitigation Measures

None required.

Cumulative Non-Transportation Noise

Impact 4.4.5 Project operation, in combination with cumulative development, would generate additional sources of non-transportation noise, but the project's contribution would not be cumulatively considerable. The cumulative impact is **less than significant**.

Non-transportation-related noise associated with the project would consist of construction activities, truck deliveries, parking lot use, and mechanical systems operation. These activities produce noise that is site-specific, with noise levels fluctuating throughout the day and night. While there is some commercial development in the vicinity of the project, it is limited to small buildings with small parking areas and minimal customer traffic activity. As such, the proposed project's non-transportation noise would not combine with noise from nearby commercial business activity that would be cumulatively considerable. The cumulative impact would be **less than significant**.

Mitigation Measures

None required.

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———. 2012. *IS/EA Annotated Outline.* http://www.dot.ca.gov/ser/vol1/sec4/ch31ea/chap31ea.htm.

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4.5 Transportation and Circulation

This section evaluates traffic impacts associated with implementation of the proposed project, including impacts on study intersections; parking; pedestrian, bicycle, and transit facilities; and emergency access. Traffic Works prepared a transportation impact study (TIS) for the proposed project in September 2017. The study is included in **Appendix E** and the results are summarized throughout this section.

The Town did not receive any comments during the Notice of Preparation (NOP) review period concerning traffic or circulation.

4.5.1 EXISTING SETTING

EXISTING ROADWAY NETWORK

- **Skyway** is classified as a principal arterial according to the California Road System Maps published by the California Department of Transportation (Caltrans). Butte County classifies Skyway as a major collector. Regardless of the technical classification, Skyway is the most heavily travelled roadway in Paradise and is the primary roadway through the commercial core. The Skyway corridor in the study area consists of three zones that are each different and distinct from each other.

  – Skyway south of Pearson Road: Within this segment, Skyway has a five-lane cross section with two travel lanes in each direction and a center turn lane. The speed limit changes from 50 miles per hour (mph) south of Neal Road to 35 mph north of Neal Road. Land uses in this section are generally a mix of commercial and offices fronting Skyway. There is no on-street parking. According to Butte County 2013/2014 traffic counts, this roadway segment carries approximately 23,230 vehicles per day. The project site is located in this zone.

  – Skyway between Pearson Road and Elliott Road: This segment through the downtown area has a three-lane cross section with one lane in each direction and a center turn lane. There are multiple crosswalks and enhanced midblock pedestrian crossings at select locations. Sidewalks are present on both sides of Skyway with widths varying from 5 to 8 feet. On-street parking exists on both sides of Skyway. Land uses in this segment are predominantly commercial/retail.

  – Skyway north of Elliott Road: The cross section of Skyway in this segment consists of a five-lane roadway including a two-way left turn lane. At Bille Road, Skyway transitions to a two-lane undivided roadway. The land uses in this section are primarily commercial. There is no on-street parking and the speed limit is 30 to 35 mph. The segment carries in excess of 20,000 vehicles per day. The Town maintains an optimized and highly coordinated signal system to manage the near capacity existing traffic volumes.

- **Black Olive Drive** is a 25-mph two-lane roadway with one lane in each direction. There are no continuous sidewalks or bicycle lanes on Black Olive Drive between Skyway and Pearson Road. A new west leg at the intersection of Skyway and Black Olive Drive is proposed as the main access for the project. There is a two-way stop at Foster Road.

- **Pearson Road** is a four-lane roadway with two lanes in each direction (within the project area). Pearson Road is a major east–west arterial in Paradise.

- **Elliott Road** is a significant east–west connector roadway. It has a two-lane cross section and a posted speed limit of 25 mph.

The study intersections that were analyzed in detail are listed below and shown on **Figure 4.5-1**.

1) Skyway and Elliott Road
2) Skyway and Pearson Road
3) Skyway and North Project Driveway (proposed, does not exist)
4) Skyway and Black Olive Drive
5) Skyway and Neal Road
6) Pearson Road and Black Olive Drive
7) Black Olive Drive and Foster Road

Level of Service Standards

Level of service (LOS) is a term commonly used by transportation practitioners to measure and describe the operational characteristics of the roadway network (i.e., intersections, roadway segments, freeway facilities, etc.). This term uses letter grades, A through F, to represent the perspective of drivers, with LOS A representing optimum conditions (free-flow traffic with no congestion) and LOS F representing severe congestion (stop-and-go conditions).

Signalized Intersections

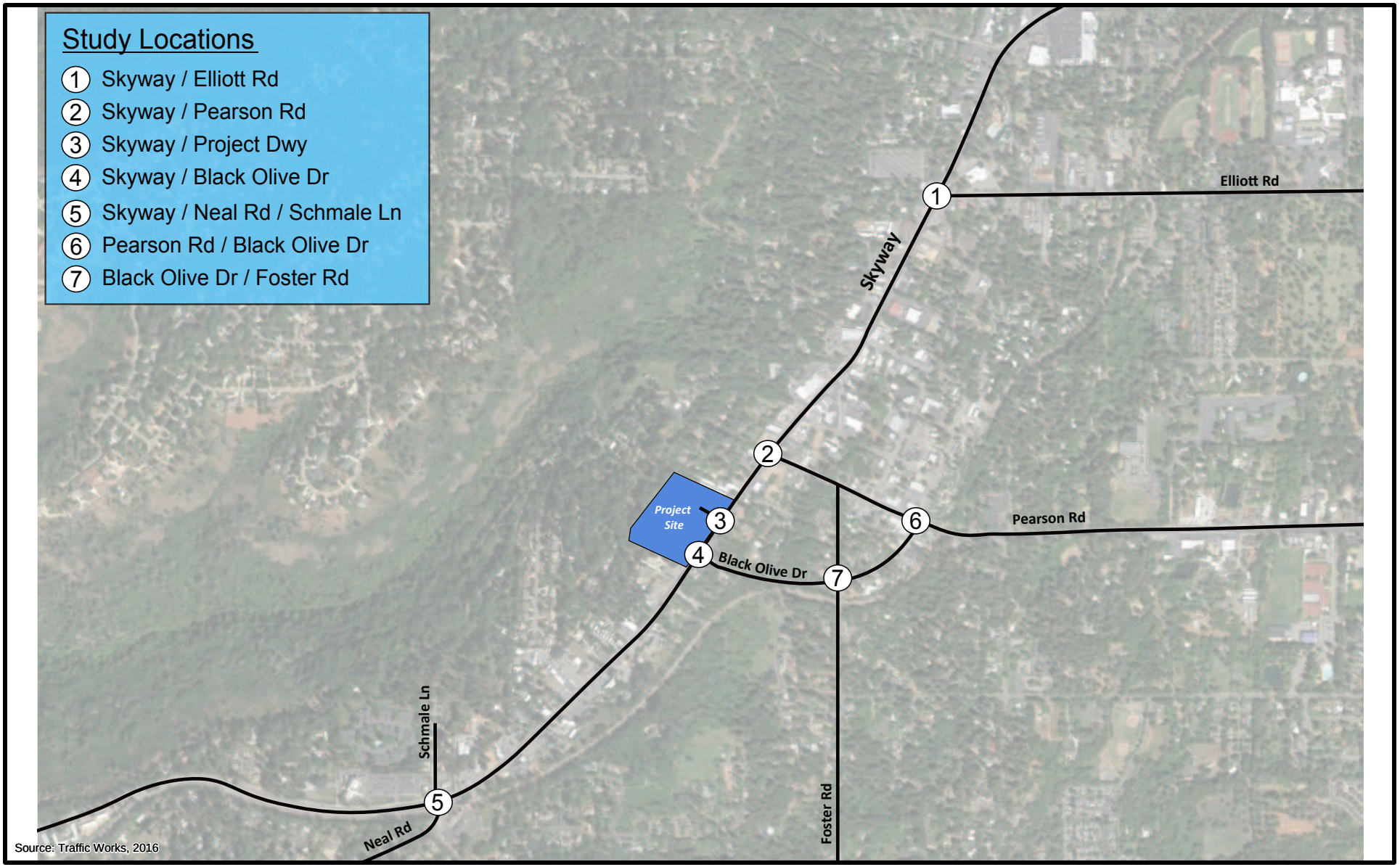
Chapter 16 of the Highway Capacity Manual (HCM) 2010 provides LOS methodology for analysis of signalized intersections. The LOS for signalized intersections is based on the average control delay measured in seconds per vehicle for the overall intersection and is determined using the delay thresholds shown in **Table 4.5-1**.

Unsignalized Intersections

Similarly, the analysis methodology for unsignalized (all-way stop-controlled and side-street stop-controlled) intersections is described in Chapter 17 of the HCM 2010. The LOS for all-way stop-controlled intersections is based on the average control delay in seconds per vehicle for the overall intersection. For side-street stop-controlled intersections, the LOS is determined based on the average control delay in seconds per vehicle for the worst approach/movement. **Table 4.5-1** also shows the delay thresholds and corresponding levels of service for unsignalized intersections. As shown in the table, the delay ranges for unsignalized intersections are less than for signalized intersections, as drivers expect less delay at unsignalized intersections.

For unsignalized (all-way stop-controlled and two-way stop-controlled) intersections, the average control delay and LOS operating conditions are calculated by approach (e.g., northbound) and movement (e.g., northbound left turn) for those movements that are subject to delay. In general, the operating conditions for unsignalized intersections are presented for the worst approach. **Table 4.5-1** summarizes the relationship between LOS and average control delay at unsignalized intersections.

T:_CS\Work\Paradise_Magalia, Cities of\Black Olive Village



Not To Scale

FIGURE 4.5-1
Study Area Intersections

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TABLE 4.5-1
SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

LOS	Description of Operations	Average Delay (seconds per vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Free flow conditions	< 10	< 10
B	Stable conditions with some affect from other vehicles	10 to 20	10 to 15
C	Stable conditions with significant affect from other vehicles	20 to 35	15 to 25
D	High-density traffic conditions still with stable flow	35 to 55	25 to 35
E	At or near capacity flows	55 to 80	35 to 50
F	Over capacity conditions	> 80	> 50

Source: Traffic Works 2017

Existing Traffic Operations

Planned Transportation Improvements

A traffic signal will be constructed in 2017 or 2018 at the Skyway/Black Olive intersection prior to development of the Black Olive Village project. The signal has already been funded under a Highway Safety Improvement Program (HSIP) project to improve the safety of left turn movements from Black Olive Drive and is completely unrelated to the proposed project. With this improvement, some of the traffic traveling on Skyway south of Pearson Road is anticipated to re-route to the improved Skyway/Black Olive Drive intersection and utilize Black Olive Drive, changing localized travel patterns. To account for this re-routing of traffic in the traffic analysis, approximately 30 percent of the existing northbound right turning and westbound left turning traffic volumes at the Skyway/Pearson Road intersection were diverted from the Skyway/Pearson Road intersection to the same movements at the Skyway/Black Olive Road intersection. Corresponding volume adjustments were made at the Pearson Road/Black Olive Drive and Black Olive Drive/Foster Road intersections.

Baseline Conditions, Intersection Configurations, Control, and Traffic Volumes

Baseline conditions represent existing traffic conditions adjusted for the anticipated traffic patterns described above in the planned HSIP project.

AM and PM peak-hour turning movement counts were conducted at the project study intersections in March and April 2017 at times when local schools were in session. The project study intersection locations are shown in **Figure 4.5-1.** The baseline AM and PM peak-hour traffic volumes, including the planned signal, are shown in Figure 3 and Figure 4, respectively, in **Appendix E.**

Baseline Conditions LOS Intersection Analysis

The modified traffic volumes described above were used for the baseline analysis since the modified conditions will exist prior to the project. The baseline conditions LOS for the project study intersections are presented in **Table 4.5-2**. As shown, all study intersections currently operate at acceptable conditions during the weekday AM and PM peak hours.

TABLE 4.5-2
BASELINE CONDITIONS LOS SUMMARY

Intersection		Control	Peak Hour	Baseline	
				Delay	LOS
1	Skyway and Elliott Road	Traffic Signal	AM	27.5	C
			PM	24.0	C
2	Skyway and Pearson Road	Traffic Signal	AM	17.8	B
			PM	23.0	C
3	Skyway and North Project Driveway (proposed, does not exist)	Side-Street Stop	—	—	—
			—	—	—
4	Skyway and Black Olive Drive	Traffic Signal	AM	10.5	B
			PM	16.6	B
5	Skyway and Neal Road	Traffic Signal	AM	17.6	B
			PM	34.9	C
6	Pearson Road and Black Olive Drive	Traffic Signal	AM	11.1	B
			PM	13.1	B
7	Black Olive Drive and Foster Road	Side-Street Stop	AM	6.4	A
			PM	7.7	A

Source: Traffic Works 2017

Baseline Conditions Vehicle Queuing Analysis

The modified traffic volumes described above were used for the baseline queuing analysis. The baseline condition 95th percentile queue length summary is presented in **Table 4.5-3**. As shown, the 95th percentile northbound queue length at the Skyway/Pearson Road intersection will likely extend to approximately 700 feet under baseline conditions.

BICYCLE AND PEDESTRIAN FACILITIES

The Skyway corridor and the project area currently have a mix of bicycle and pedestrian facilities. Cycling, both on Skyway south of Pearson Road and on Pearson Road east of Skyway, is very difficult because of the high vehicular volumes and lack of shoulders along the roadway. Bicycle lanes exist on Skyway north of Pearson Road and on Pearson Road east of Black Olive Drive. There are no bicycle lanes on Black Olive Drive between Skyway and Pearson Road.

There are discontinuous sidewalks on Skyway between Pearson Road and Neal Road (through the project frontage). In the downtown area (Pearson Road to Elliott Road), new sidewalks were constructed on Skyway with the Downtown Paradise Safety Project with widths varying between 5 and 8 feet. Crosswalks across Skyway were also improved in the downtown area. Sidewalks exist on the north side of Pearson Road, on the north side of Elliott Road, and on both sides of Neal Road between Skyway and Circlewood Drive. No sidewalks exist on Black Olive Drive.

TABLE 4.5-3
BASELINE CONDITIONS VEHICLE QUEUING SUMMARY

Intersection	Distance to Nearest Upstream Intersection (feet)	95th Percentile Queue Length (feet)	
		AM Peak	PM Peak
Skyway and Elliott Road			
Northbound	925	192	206
Southbound	530	480	272
Eastbound	850	109	85
Westbound	525	330	332
Skyway and Pearson Road			
Northbound	350	71	723
Southbound	325	326	300
Westbound	575	220	180
Skyway and Black Olive Drive			
Northbound	880	50	136
Southbound	575	193	129
Westbound	935	307	204
Skyway and Neal Road			
Northbound	1,100	184	491
Southbound	675	197	315
Eastbound	170	37	149
Westbound	235	139	104
Pearson Road and Black Olive Drive			
Northbound	790	114	113
Southbound	325	61	68
Eastbound	290	91	217
Westbound	350	104	108
Black Olive Drive and Foster Road			
Eastbound	935		
Westbound	790		

Source: Traffic Works 2017

TRANSIT SERVICE

Butte Regional Transit operates the B-Line public transit service in Paradise via three fixed routes. Routes 41, 40, and 31 all operate in the study area. Route 41 is a regional route that runs between Magalia and Chico through Paradise. Route 40 is an express route that runs between Paradise and Chico during the school year. Route 40 and Route 41 both follow the same route from the

transit station in downtown Paradise on Skyway to Chico. Route 31 is a regional service that runs between Paradise and Oroville, Monday through Friday.

There are multiple existing bus stops along Skyway in the project vicinity. The closest bus stop is just south of Pearson Road, approximately 315 feet northeast of the project property line, served by Routes 40 and 41.

4.5.2 REGULATORY FRAMEWORK

STATE

California Department of Transportation

Caltrans has jurisdiction over state highways. Caltrans controls all construction, modification, and maintenance of state highways. Any improvements to these roadways would require Caltrans' approval. Caltrans' (2002) Guide for the Preparation of Traffic Impact Studies provides consistent guidance for Caltrans staff who review local development and land use change proposals. The guide also informs local agencies about the information needed for Caltrans to analyze the traffic impacts to state highway facilities, which include freeway segments, on- or off-ramps, and signalized intersections.

Senate Bill 743

Senate Bill (SB) 743 was signed into law on September 27, 2013. Among other things, SB 743 creates a process to change the way transportation impacts are analyzed under the California Environmental Quality Act (CEQA). SB 743 adds Chapter 2.7, Modernization of Transportation Analysis for Transit-Oriented Infill Projects, to Division 13 (Section 21099) of the Public Resources Code. SB 743 started a process that could change the way transportation impacts are analyzed under CEQA. These changes will shift agencies away from using auto delay, level of service, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant traffic impacts in California. SB 743 includes amendments that allow cities and counties to opt out of traditional level of service standards where congestion management programs are used and requires the state Office of Planning and Research (OPR) to update the CEQA Guidelines and establish "criteria for determining the significance of transportation impacts of projects within transit priority areas." As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses."

The OPR released the Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA for public review on January 20, 2016 (OPR 2016). The public comment period ended on February 29, 2016. The revised proposal currently proposes the use of vehicle miles traveled (VMT) as a metric for evaluating traffic impacts. In November 2017, OPR transmitted its proposed CEQA Guideline implementing SB 743 to the California Natural Resources Agency. Once the final draft of changes to the CEQA Guidelines is published, certification and adoption by the Secretary for Resources will be required before the amendments go into effect. Cities and counties will then have two years to implement the new guidelines.

REGIONAL

Butte County 2016 Regional Transportation Plan/Sustainable Communities Strategy

The 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTS/SCS), prepared and adopted by the Butte County Associated of Governments (BCAG), specifies the policies, projects, and programs necessary over a 20+ year period to maintain, manage, and improve the region's transportation system. The Butte County 2016 RTP/SCS covers the 24-year period between 2016 and 2040. BCAG is the federally designated Metropolitan Planning Organization and the State-designated Regional Transportation Planning Agency for Butte County. The RTP/SCS provides a foundation for transportation decisions by local, regional, and state officials. This foundation is based on a vision of an efficient and environmentally sound multimodal system.

The RTP/SCS is the region's long-range plan to meet the requirements of California's Sustainable Communities and Climate Change Act of 2008 (Senate Bill 375), which calls on regions throughout California to develop a Sustainable Communities Strategy to accommodate future population growth and reduce greenhouse gas emissions from cars and light trucks. The RTP/SCS is also intended to be consistent with the California Transportation Plan developed by Caltrans (BCAG 2016).

Guiding policies applicable to the proposed project are:

6.1.1 Support the construction of bike facilities and access to transit as designated in the local alternative transportation plans.

6.1.3 Support projects and policies for bicycles on the fixed route transit system (bike racks, etc.).

10.3.1 Assist member jurisdictions in developing and implementing strategies and design criteria that make new commercial and residential developments friendly to pedestrians and bicyclists.

13.1.2 Provide convenient travel choices including transit, driving, ridesharing, walking, and biking.

13.1.4 Increase the use of transit, ridesharing, walking and biking in major corridors and communities.

13.2.2 Manage the efficiency of the transportation system to improve traffic flow.

13.3.2 Work towards reducing bottlenecks and increase safety by improving operations.

LOCAL

Town of Paradise General Plan

The Town's General Plan Circulation Element identifies roadway and non-motorized travel goals and policies that have been adopted to ensure that the town's transportation system will have adequate capacity to serve planned growth. The policies listed in **Table 4.4-4** are relevant to the analysis, followed by a determination of the proposed project's consistency with each policy. While Town staff has done its best to ascertain consistency, the Town Council makes the ultimate decision regarding consistency with the General Plan.

TABLE 4.5-4
CONSISTENCY WITH GENERAL PLAN POLICIES

Policy Number	Text of General Plan Policy	Consistency Determination
CP-1	The town shall strive to maintain a level of service (LOS) D or better as the standard for new and existing roadways in the Paradise planning area. LOS D or better should be maintained on all local streets within the town limits, and LOS C or better should be maintained whenever feasible.	Impact 4.5.6 (cumulative) concludes that the project's contribution to cumulative impacts would be cumulatively considerable because it would worsen anticipated cumulative LOS E conditions at the Skyway/Black Olive Drive and Skyway/Elliott Road intersections in the PM peak hour. Feasible mitigation is not available to result in LOS D or better conditions.
CP-4	New land use development shall be required to mitigate its share of the circulation impacts it creates.	The proposed project will be required to pay applicable transportation impact fees (MM 4.5.6)
CP-7	The feasibility of synchronization of new traffic signals to improve traffic flow shall be investigated.	Mitigation measures MM 4.5.2(c) and MM 4.5.2(d) specify requirements for signal optimization.
CP-13	Automobile dependency within Paradise should be reduced for local residents and visitors by implementing congestion management and trip reduction plan program that decrease the number of vehicle miles travelled which, in turn, reduces air pollution and congestion and saves energy.	The proposed project would include sidewalk improvements and a bus turnout. Relocation of the existing Safeway store to Skyway and additional retail would provide a convenient location for residents, visitors, and commuters, which may help reduce VMT. Travel demand management strategies have been considered as a mitigation option but are not particularly appropriate or effective for grocery stores, fuel stations, and restaurants as these trips are not conducive to car/vanpooling, telecommuting, work-shift management, and similar strategies.
CP-17	Whenever the LOS D is reached on roadways within Paradise, the town shall explore all feasible alternatives for improving traffic flow, rather than automatically implementing a road widening project.	Impact 4.5.6 (cumulative) concludes that the project's contribution to cumulative impacts would be cumulatively considerable because it would worsen anticipated cumulative LOS E conditions at the Skyway/Black Olive Drive and Skyway/Elliott Road intersections in the PM peak hour. The analysis presents options for mitigation that do not assume road widening. However, these mitigation options would not reduce the cumulative impact, and the impact would be unavoidable.

Town of Paradise Municipal Code

Chapter 17.38 – Off-Street Parking and Loading Facilities

Chapter 17.38 ensures that off-street parking and loading facilities are provided for new development. Section 17.38.1000 defines minimum off-street parking for different land uses.

- Food sales – 1 space per 200 square feet
- Restaurant, predominantly fixed table – 1 space per 4 persons seating capacity plus 1 space per 2 employees at maximum shift
- Retail sales, retail service – 1 space per 250 square feet
- Service station – 1 space per employee at maximum shift

Section 17.38.800 defines the requirements for private off-street loading space for the handling of goods, materials, and equipment.

- Buildings 15,000 square feet or greater of gross floor area (including building conversions): 1 off-street loading space, plus 1 additional space for each additional 30,000 square feet of gross floor area
- Buildings less than 15,000 square feet or greater of gross floor area are not required to install an off-street loading space.

The proposed project would require 260 off-street parking stalls and 2 off-street loading spaces to meet Town standards. The proposed design would exceed Town standards by providing 276 spaces consisting of 264 regular spaces and 12 accessible spaces. The proposed project would also include two loading docks for large trucks and one loading space for small to medium-sized trucks or vans that would be accessible via the northern driveway. All delivery truck turning movements for unloading would occur on-site. The project meets required standards.

The Town of Paradise does not specify a bicycle parking requirement.

4.5.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Appendix G of the 2017 CEQA Guidelines includes a list of topics related to transportation and circulation that may be considered in an EIR. For purposes of this Draft EIR, the proposed project would have a significant effect on the environment if it would:

1) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

2) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

3) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

4) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

5) Result in inadequate emergency vehicle access.

6) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Based on Policy CP-1 in the Town of Paradise General Plan, the Town strives to maintain LOS D or better for all new and existing roadways. The policy is understood to apply to intersection operations, as there is no separate discussion of intersections. The transition point between LOS D and LOS E was therefore used as the criteria and threshold for determining significant operational impacts (standard of significance 1).

The Town of Paradise does not have an established threshold for vehicle queuing. Some cities/local agencies have adopted guidelines indicating that vehicle queue lengths should not exceed the available storage pocket lengths for exclusive left and right turn lanes or extend through the next adjacent intersection for through movements.

Impacts Not Evaluated in Detail

As explained in subsection 2.16.c in the Initial Study (**Appendix B**), the closest airport or private airstrip within 2 miles of the proposed project is Paradise Skypark, 2.75 miles to the south. None of the proposed uses on the project site would include features that could interfere with air traffic. Therefore, standard of significance 3 is not addressed further in the Draft EIR.

As explained in subsection 2.16.f in the Initial Study, the proposed project includes pedestrian facilities, bicycle parking, and a bus turnout. These features would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. No comments were received on the NOP indicating additional analysis should be provided. Therefore, standard of significance 6 is not addressed further in this Draft EIR.

METHODOLOGY

The transportation impact study (Traffic Works 2017) was completed in accordance with the requirements and methodologies set forth by the Town of Paradise, the Butte County Association of Governments, Caltrans, and the applicable provisions of CEQA.

Intersection Operations and Queuing

Intersections, rather than midblock roadway segments, are typically the critical capacity-controlling locations for vehicular travel on urban roadway networks and are the primary basis for determining traffic impacts. The basis of analysis is peak-hour level of service and queuing calculations for key intersections in the area. The hours identified as the "peak" hours are generally from about 7:30 to 8:30 AM and 5:00 to 6:00 PM. These peak hours will be identified as the AM and PM peak hours, respectively. The analysis also included a review of bicycle and pedestrian safety conditions in the area.

The potential effect of the proposed project on the study intersections was evaluated during the AM and PM peak hours for the following four scenarios:

- Scenario 1: Baseline Conditions – LOS and queuing based on existing peak-hour volumes, previously existing intersection configurations, and a previously approved signal installation/improvement project
- Scenario 2: Baseline Conditions plus Project – baseline conditions peak-hour volumes plus trips from the proposed project
- Scenario 3: Cumulative Conditions (Year 2040) without the Project – baseline traffic plus anticipated traffic from projected growth in the area based on the County Traffic Model
- Scenario 4: Cumulative Conditions (Year 2040) plus Project – cumulative no project conditions peak-hour volumes plus trips from the proposed project

LOS calculations were performed at the study intersections using SimTraffic microsimulation software. Microsimulation was used to determine LOS instead of Synchro/HCM calculation software because the study intersections on Skyway are closely spaced, tightly coordinated, and known to be congested with significant existing queuing.

A detailed microsimulation analysis was performed to determine the intersection LOS and 95th percentile queue lengths. Simulations were run for 60-minute periods with a 10-minute seeding time. The average of five different 60-minute simulation runs was used to report delays and queue lengths at the study intersections. Averaging multiple simulation runs accounts for variations in traffic and minimizes anomalies in the simulations.

Project Trip Generation

Trip generation rates for each land use (except the Safeway fuel station) of the proposed project were obtained from the Trip Generation Manual, 9th Edition, published by the Institute of Transportation Engineers (ITE).

Considering the unique trip generation nature of a Safeway fuel station and the linked trips that occur with the Safeway store, Safeway fuel station–specific trip generation rates and linking characteristics were used for this land use. The proposed Safeway fuel station, although open to the general public, will offer fuel discounts and incentives for Safeway grocery store shoppers. Considering these incentives, the majority of Safeway fuel station trips are not stand-alone trips; they are linked trips, where the stop at the fueling center is combined or "linked" with a stop at the Safeway grocery store. As explained in the transportation impact study (**Appendix E**), a Safeway fuel station–specific study "Trip Generation Analysis for the Safeway Fuel Center Otis Drive I South Shopping Center – Alameda, CA" dated October 19, 2005, and prepared by Fehr & Peers was used to estimate the peak-hour fuel station trips for the proposed project. Daily and AM peak-hour rates were obtained from the ITE manual, but the percentage of linked trips was obtained from the Safeway-specific study, other general pass-by trips, and net new trips.

Table 4.5-5 shows the daily, AM peak-hour, and PM peak-hour trip generation calculations for the proposed project. As shown in **Table 4.5-5**, the proposed project is estimated to generate up to a total of 9,470 daily trips, 420 AM peak-hour trips, and 935 PM peak-hour trips. These numbers include internal trips (between internal uses), linked trips, and pass-by trips (those already on the adjacent roadway system that make an intermediate stop en route to another destination). The trip rates used for trip generation are shown in **Appendix E.**

Internal trip capture is defined as a reduction of trips within a development having a mix of land uses resulting from the proximity of complementary land uses within the development. Procedures outlined in National Cooperative Highway Research Program Report 684 (Enhancing Internal Trip Capture Estimation for Mixed-Use Developments) were used to calculate internal trips, which is ITE recommended and an industry standard procedure.

Pass-by trips are made by drivers already using the adjacent roadway, who enter the site as an intermediate stop on the way to another destination. The trip may not necessarily be "generated" by the land use under study and thus is not a new trip added to the local transportation system. These trips only appear at the project driveways. Pass-by trip percentages specified in the ITE Trip Generation Handbook were used to estimate the pass-by rates for uses within the proposed project.

Internal trips, pass-by trips, and Safeway-linked trips were all subtracted from the total trips to obtain the external or net new trips. After accounting for internal, linked, and pass-by trips, the project is estimated to generate up to 5,162 net new daily trips, 242 net new AM peak-hour trips, and 376 net new PM peak-hour trips. These are the volumes of traffic that would be added to the adjacent roadway network.

TABLE 4.5-5
PROJECT TRIP GENERATION CALCULATIONS

Land Use	Weekday ADT			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Supermarket	2,785	2,784	5,569	115	70	185	263	253	516
Internal	73	217	290	3	9	12	7	7	14
Pass-By	487	490	977	0	0	0	92	89	181
Non-Pass-By	2,225	2,077	4,302	112	61	173	164	157	321
Shopping Center	167	166	333	4	3	7	14	15	29
Internal	42	22	66	0	0	0	7	4	11
Pass-By	36	50	86	0	0	0	6	9	15
Non-Pass-By	89	94	183	4	3	7	1	2	3
High-Turnover Restaurant	267	267	534	25	20	45	25	16	41
Internal	107	137	244	9	3	12	11	14	25
Pass-By	32	8	40	0	0	0	6	1	7
Non-Pass-By	128	122	250	16	17	33	8	1	9
Safeway Fuel Station	1,517	1,517	3,034	92	91	183	175	174	349
Linked Trips	592	321	913	36	3	39	68	68	136
Pass-By	744	950	1,694	45	70	115	86	84	170
Non-Pass-By	181	246	427	11	18	29	21	22	43
Total Trips	4,736	4,734	9,470	236	184	420	477	458	935
Total Linked Trips	592	321	913	36	3	39	68	68	136
Total Internal Trips	222	376	598	12	12	24	25	25	50
Total Pass-By Trips	1,299	1,498	2,797	45	70	115	190	183	373
Net New Trips	**2,623**	**2,539**	**5,162**	**143**	**99**	**242**	**194**	**182**	**376**

Source: Traffic Works 2017

It should be noted that because the Safeway store is being relocated from its current location on Clark Road, some of the trips to the proposed development on Skyway will be redistributed/relocated trips from the existing Safeway location. To provide a conservative analysis, no trips associated with the existing store were deducted/rerouted from the study intersections because the existing building will remain. It is assumed that another business would use that space and have similar commercial-use, trip-generating characteristics.

Project Trip Distribution

Traffic generated by the project was distributed to the road network based on the location of the project in relation to the population base, major activity centers, and the roadway network. The vast majority of the local Paradise/Magalia population is physically located north and east of the project site. The following trip distribution percentages were used for routing the project traffic:

- 5 percent to/from the south on Skyway
- 5 percent to/from the south on Neal Road
- 10 percent to/from the south on Foster Drive via Black Olive Drive
- 30 percent to/from the east on Pearson Road
- 5 percent to/from the west on Elliott Road
- 25 percent to/from the east on Elliott Road
- 20 percent to/from the north on Skyway (north of Elliott Road)

Project-generated trips were assigned to the adjacent roadway system and intersections based on the distributions outlined above. Figure 5 and Figure 6 in **Appendix E** present the AM and PM peak project traffic volume that would be added at each of the study intersections by the proposed project.

Vehicle Miles Traveled

VMT was calculated for the proposed project for informational purposes and for use in the greenhouse gas emissions analysis (see Section 4.3). VMT is typically expressed in miles per day and is calculated by multiplying the number of daily project-generated trips by the anticipated trip length. The average Home-Based Other trip length in Paradise (3.57 miles) was obtained from the BCAG Travel Demand Model. The projected VMT is estimated differently for external trips and pass-by trips, considering the difference in their travel patterns and trip lengths. A trip length of 0.1 mile was used for pass-by trips because these trips would nearly all originate on, and return to, Skyway immediately adjacent to the project site. The proposed project would result in an increase in VMT of 18,708 miles per day. As explained above, no trips were deducted for reuse of the existing Safeway store by another business, so the VMT estimate is conservative. Neither Butte County nor the Town of Paradise currently has any specific thresholds or significance criteria related to VMT as of the date of this document.

IMPACTS AND MITIGATION MEASURES

Intersection Operations – Baseline plus Project Conditions (Standards of Significance 1 and 2)

Impact 4.5.1 The proposed project would add traffic to local intersections, but the Town of Paradise level of service (LOS) standard for intersection operations would not be exceeded. The impact is **less than significant**.

The proposed project would generate new vehicle trips on the local roadway network. The Town's General Plan Circulation Element policies set the LOS standards at D or better. Baseline plus project LOS was calculated using the baseline plus project traffic volumes and the existing traffic signal timings/coordination scheme except that re-optimized signal timings were utilized for the proposed signal configuration and protected left turn phasing at the Skyway/Black Olive Drive intersection. The baseline plus project conditions AM and PM peak-hour volumes for the study intersections are shown in Figure 7 and Figure 8, respectively, in **Appendix E**. **Table 4.5-6** compares the baseline conditions LOS to the baseline plus project conditions LOS.

TABLE 4.5-6
BASELINE PLUS PROJECT CONDITIONS LOS COMPARISON

Intersection		Control	Peak Hour	Baseline		Baseline plus Project	
				Delay	LOS	Delay	LOS
1	Skyway and Elliott Road	Traffic Signal	AM	27.5	C	32.9	C
			PM	24.0	C	29.4	C
2	Skyway and Pearson Road	Traffic Signal	AM	17.8	B	18.7	B
			PM	23.0	C	29.2	C
3	Skyway and North Project Driveway (proposed, does not exist)	Side-Street Stop	AM	—	—	10.6	B
			PM	—	—	9.6	A
4	Skyway and Black Olive Drive	Traffic Signal	AM	10.5	B	18.1	B
			PM	16.6	B	41.2	D
5	Skyway and Neal Road	Traffic Signal	AM	17.6	B	18.1	B
			PM	34.9	C	33.5	C
6	Pearson Road and Black Olive Drive	Traffic Signal	AM	11.1	B	11.1	B
			PM	13.1	B	15.6	B
7	Black Olive Drive and Foster Road	Side-Street Stop	AM	6.4	A	7.7	A
			PM	7.7	A	7.9	A

Source: Traffic Works 2017

As shown, all of the study intersections are anticipated to operate at acceptable levels of service. Operations at the Skyway/Black Olive Drive intersection are anticipated to degrade from LOS B to LOS D during the PM peak hour with the addition of project traffic and change to east/west protected left-turn phasing. However, the LOS D threshold would not be exceeded. Therefore, this impact would be **less than significant**.

This analysis assumes the current stop sign configuration at the Black Olive Drive/Foster Road intersection, which has vehicles stopping on Black Olive Drive for vehicles on Foster Road. Under the current configuration, the intersection would operate at acceptable LOS with the addition of project traffic. This provides a conservative, worst-case analysis. The change in travel patterns due to a separately planned new signal at the Skyway/Black Olive Drive intersection will result in higher traffic volumes on Black Olive Drive between Skyway and Pearson Road. To better manage the change in travel patterns, stop sign orientation at the Black Olive Drive/Foster Road intersection could be changed to have vehicles on Foster Road stop for vehicles on Black Olive Drive. If the stop sign orientation were to be changed in the future, the Black Olive Drive/Foster Road intersection would continue to operate at acceptable LOS and better than as presented in this

analysis, although the change in orientation is not required to mitigate any impact because none would occur with the addition of project traffic.

Baseline plus Project Conditions Vehicle Queuing Analysis

Estimated vehicle queue lengths along Skyway under baseline conditions are presented in **Table 4.5-7**. As shown, the 95th percentile northbound queue length at the Skyway/Pearson Road intersection will likely extend to approximately 700 feet under baseline conditions.

The proposed project would contribute additional traffic volumes along Skyway in the vicinity of the project. **Table 4.5-7** compares baseline conditions vehicle queuing with baseline plus project conditions vehicle queuing.

TABLE 4.5-7
BASELINE PLUS PROJECT CONDITIONS VEHICLE QUEUING COMPARISON

Intersection	Distance to Nearest Upstream Intersection (feet)	Baseline 95th Percentile Queue Length (feet)		Baseline plus Project 95th Percentile Queue Length (feet)	
		AM Peak	PM Peak	AM Peak	PM Peak
1 Skyway and Elliott Road					
Northbound	925	192	206	202	295
Southbound	530	480	272	563	402
Eastbound	850	109	85	115	81
Westbound	525	330	332	388	379
2 Skyway and Pearson Road					
Northbound	350	71	723	135	1,036
Southbound	325	326	300	369	271
Westbound	375	220	180	220	220
3 Skyway and Proposed North Project Driveway					
Eastbound (proposed)	—	—	—	49	50
4 Skyway and Black Olive Drive					
Northbound	880	50	136	67	843
Southbound	575	193	129	311	220
Eastbound (proposed)	—	—	—	130	303
Westbound	935	307	204	217	160
5 Skyway and Neal Road					
Northbound	1,100	184	491	197	499
Southbound	675	197	315	221	273
Eastbound	170	37	149	42	141
Westbound	235	139	104	142	119

Intersection	Distance to Nearest Upstream Intersection (feet)	Baseline 95th Percentile Queue Length (feet)		Baseline plus Project 95th Percentile Queue Length (feet)	
		AM Peak	PM Peak	AM Peak	PM Peak
6 Pearson Road and Black Olive Drive					
Northbound	790	114	113	97	134
Southbound	325	61	68	59	68
Eastbound	290	91	217	108	253
Westbound	350	104	108	117	123
7 Black Olive Drive and Foster Road					
Eastbound	935	67	89	68	108
Westbound	790	78	86	87	99

Source: Traffic Works 2017

Compared to baseline conditions, the northbound 95th percentile queue at the Skyway/Black Olive Drive intersection is anticipated to increase by approximately 700 feet, and the northbound 95th percentile queue at the Skyway/Pearson Road intersection is anticipated to increase by approximately 300 feet. The northbound queue on Skyway at Pearson Road can be expected to extend back to Black Olive Drive during the PM peak hour. Similarly, a northbound queue of approximately 800 feet should be anticipated extending back from Black Olive Drive. The Town of Paradise does not have an established threshold for vehicle queuing. The Town recognizes that congestion does and will continue to occur on the Skyway corridor during peak periods.

Mitigation Measures

None required.

Project Construction Traffic (Standards of Significance 1 and 2)

Impact 4.5.2 Construction-phase traffic associated with the proposed project could result in temporary traffic congestion. The impact would be short term and **potentially significant**.

Heavy equipment transport to and from the site, soil import trips, demolition and vegetation debris removal, and materials deliveries could impede traffic along Skyway, which could contribute to additional congestion and queuing, particularly during the AM and/or PM peak hours. These activities could also affect response times for emergency response vehicles traveling on Skyway. This is a **potentially significant** impact. However, the number of trips generated during construction would be temporary and would also be substantially fewer than generated by the proposed project at buildout.

Mitigation Measures

MM 4.5.2 Prior to the issuance of grading permits, a Construction Traffic Control Plan (CTCP) shall be submitted by the project applicant or its construction contractor for review and approval by the Town of Paradise Public Works/ Engineering Department and implemented throughout project construction. The CTCP shall include a schedule of construction and anticipated methods of handling traffic to ensure the safe flow of traffic and adequate emergency access, including maintaining an open lane for vehicle travel at all times, particularly during the PM peak hour. The CTCP shall identify methods for coordinating with and notifying the Paradise Police Department and Fire Department and Butte Regional Transit at least 14 days in advance if construction vehicle or equipment traffic activity on Skyway has the potential to cause disruption of traffic flow or transit services.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Prior to and during construction*

Compliance Monitoring: *Town of Paradise Public Works/Engineering Department*

Verification Action/Timing: *Prior to issuing grading permit and during construction*

Mitigation measure **MM 4.5.2** requires the applicant's construction contractor to prepare and implement a Town-approved plan to ensure construction-related traffic, driveway improvements, and utility line connections do not substantially interfere with vehicle operations on Skyway, which would reduce the impact to a **less than significant** level.

Traffic Hazards (Standard of Significance 4)

Impact 4.5.3 The proposed project would result in the addition of two driveways providing access from Skyway, which could create traffic hazards. The impact is **potentially significant**.

The proposed project would result in the addition of two driveways to access the project site, which, if not designed or constructed properly, could create traffic hazards. The main driveway to the parking lot would create a four-way intersection at Black Olive Drive, which would be signalized by 2018. A second driveway (northern driveway) on Skyway would provide access to the fueling center. All delivery truck turning movements for unloading would occur on-site.

Conflicts between vehicles on Skyway and vehicles turning left either out of the project driveway or from Black Olive Drive would cause a **potentially significant** traffic hazard impact.

Mitigation Measures

MM 4.5.3a The project applicant shall install a striped channelizing island and a right-turn-only sign at the northern access driveway to prohibit left turn movements from the driveway onto Skyway.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *During construction*

Compliance Monitoring: *Town of Paradise Public Works/Engineering Department*

Verification Action/Timing: *Prior to approving site plan approval and issuing grading permit*

MM 4.5.3b The project applicant shall improve the Skyway/Black Olive intersection including the following key work items:

- Construct exclusive left turn lanes on both the project site approach and Black Olive approach
- Widen and restripe the Black Olive Drive approach to accommodate the new left turn lane in a proper alignment and with 200 feet of storage length unless reduced by Town approval
- Within and adjacent to the widening area, construct curb & gutter, other drainage features, and modifications necessary to perpetuate drainage in accordance with Town standards
- Make necessary modifications to the traffic signal system (poles, equipment relocation/additions, detection additions, and programming updates)

These improvements may be implemented by the applicant, subject to Town review and approval, or the applicant shall provide sufficient funding to the Town so that it may contract the work to a qualified vendor.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *During construction*

Compliance Monitoring: *Town of Paradise Public Works/Engineering Department*

Verification Action/Timing: *Prior to approving site plan approval and issuing grading permit*

MM 4.5.3c The project applicant shall change the signal phasing for side-street left turns at the Skyway/Black Olive Drive intersection from "permissive" to "protected." This may be implemented by the applicant, with the signal modification design subject to Town review and approval, or the applicant shall provide sufficient funding to the Town so that it may contract the work to a qualified vendor.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Prior to occupancy*

Monitoring Responsibility: *Town of Paradise Public Works/Engineering Department*

Verification Action/Timing: *Prior to issuance of occupancy permit*

MM 4.5.3d The project applicant shall re-optimize the signal timings for the Skyway corridor between and including Neal Road and Elliott Road. This may be implemented by the applicant, with the signal phasing modifications, subject to Town review and approval, or the applicant shall provide sufficient funding to the Town so that it may contract the work to a qualified vendor.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Prior to occupancy*

Compliance Monitoring: *Town of Paradise Public Works/Engineering Department*

Verification Action/Timing: *Prior to issuing occupancy permit*

The Town of Paradise Public Works/Engineering Department specifies standards for the proper design and construction of streets, sidewalks, and other roadway improvements to ensure public safety (Paradise n.d.). The Town uses Butte County's standard details for items not specifically addressed by the Town of Paradise (Butte County n.d.). Compliance with the existing Town of Paradise and Butte County design standards would minimize the potential for the creation of new traffic hazards resulting from project implementation.

With the right-turn-only sign at the northern driveway, mitigation measure **MM 4.5.3a** will ensure that left-turn movements out of the northern access driveway will be prohibited to minimize the potential for left-turn conflicts onto northbound Skyway. In addition, the non-vertical splitter island would further assure compliance with the right-turn only vehicle movement without obstructing truck- turning movements into the driveway from southbound Skyway. With implementation of mitigation measures **MM 4.5.3b** and **MM 4.5.3c**, protected left-turn phasing at the project and opposing approaches would reduce potential hazards due to sight distance limitations at the crest of the vertical curve on Black Olive Drive at the intersection. Mitigation measure **MM 4.5.3d** is necessary to coordinate the changed signal timing at Skyway/Black Olive Drive with signals from Neal Road to Elliot Road. With implementation of these mitigation measures, potential design hazard impacts would be reduced to a **less than significant** level.

The addition of a left-turn lane on Black Olive Drive (mitigation measure **MM 4.5.3b**) would require street widening with related drainage, curb, potentially new sidewalk, and minor signal modification improvements, all of which are anticipated to be constructed within the existing right-of-way. Potential environmental impacts would include short-term air pollutant and greenhouse gas emissions and noise during construction, which are accounted for in the impact analyses for those topics in Sections 4.2, 4.3, and 4.4, respectively, in this Draft EIR. Improvements within the roadway could result in temporary lane closures or narrowing. Implementation of the construction traffic control plan, which is addressed in Impact 4.5.2, would ensure that the project would not substantially interfere with vehicle operations on Skyway, including emergency response.

Emergency Access (Standard of Significance 5)

Impact 4.5.4 The proposed project would include driveways and an internal circulation pattern that would provide sufficient emergency access. The impact is **less than significant**.

Sufficient emergency access is determined by factors such as the number of access points, roadway width, and proximity to fire stations. The proposed project includes two driveways that would be readily accessible from Skyway. The project site is located within 0.5 mile of the Paradise Fire Department fire station. All on-site lane widths would be required to meet the minimum width that can accommodate an emergency vehicle. Prior to building permit approval, the Paradise Fire Department will ensure the project design complies with applicable requirements. Impacts would be **less than significant**.

Mitigation Measures

None required.

4.5.4 CUMULATIVE SETTING, IMPACTS, AND MITIGATION MEASURES

CUMULATIVE SETTING

The cumulative setting for transportation and circulation impacts is buildout of the Town of Paradise General Plan, which is anticipated to occur by the year 2040. Figure 9 and Figure 10 in **Appendix E** present the cumulative conditions AM and PM peak-hour volumes at each of the study intersections. See **Appendix E** for the cumulative conditions LOS analysis calculation sheets and the cumulative conditions AM and PM peak-hour traffic volumes.

ANALYSIS METHODOLOGY

Cumulative background growth rates were calculated based on the traffic volume increases at multiple points along Skyway and at other side street approaches. See **Appendix E** for the growth rate calculations. Multipliers of 1.14 to 1.29 (14 to 29 percent increases in traffic over a period of 23 years) were applied to the study intersections. Future turning movements were developed by applying the growth rates by approach and balancing entry and departure volumes through the study area using the Turns W32 software.

Cumulative impacts associated with construction activities would be short term and limited to the immediate vicinity of the project site, which would not result in a cumulative impact, and this impact is not further analyzed. Impacts pertaining to emergency access would also be site-specific. The proposed project would include two driveways that would be designed to meet Town standards, and signalization optimization at the Skyway/Black Olive Drive intersection would ensure safe operations. The project's contribution would not be cumulatively considerable, and further analysis is not required.

Cumulative Conditions Intersection LOS Analysis

Similar to baseline conditions, 2040 cumulative condition level of service calculations were performed using an average of five SimTraffic microsimulation runs. The signal timings and coordination offsets for all study signals on Skyway were re-optimized for 2040 cumulative condition traffic volumes, as this is a necessary maintenance function over time and would be completed by the Town regardless of the proposed project. **Table 4.5-8** presents the cumulative

condition LOS for the project study intersections. As shown, all the study intersections are anticipated to operate at acceptable LOS conditions in the 2040 cumulative conditions scenario with optimized and coordinated signal timings.

TABLE 4.5-8
CUMULATIVE CONDITIONS LOS SUMMARY

Intersection		Control	Peak Hour	Baseline	
				Delay	LOS
1	Skyway and Elliott Road	Traffic Signal	AM	38.3	D
			PM	39.6	D
2	Skyway and Pearson Road	Traffic Signal	AM	21.5	C
			PM	25.8	C
3	Skyway and North Project Driveway (proposed, does not exist)	Side-Street Stop	—	—	—
			—	—	—
4	Skyway and Black Olive Drive	Traffic Signal	AM	11.7	B
			PM	21.2	C
5	Skyway and Neal Road	Traffic Signal	AM	20.5	C
			PM	44.9	D
6	Pearson Road and Black Olive Drive	Traffic Signal	AM	12.7	B
			PM	20.0	B
7	Black Olive Drive and Foster Road	Side-Street Stop	AM	7.9	A
			PM	8.9	A

Source: Traffic Works 2017

Cumulative Conditions Vehicle Queuing Analysis

Table 4.5-9 presents the cumulative conditions vehicle queuing summary based on the future traffic volumes and intersection conditions outlined above using average values of five simulation runs. As shown, the Skyway/Neal Road, Skyway/Pearson Road, and Skyway/Elliott Road intersections will all experience extensive northbound queuing during the future PM peak hour. The Skyway/Pearson Road and Skyway/Elliott Road intersections should also be expected to experience extensive queuing in the southbound direction during the AM peak hour.

TABLE 4.5-9
CUMULATIVE CONDITIONS VEHICLE QUEUING SUMMARY

Intersection	Distance to Nearest Upstream Intersection (feet)	95th Percentile Queue Length (feet)	
		AM Peak	PM Peak
Skyway and Elliott Road			
Northbound	925	214	**1,250**
Southbound	530	**1,254**	454
Eastbound	850	101	88
Westbound	525	290	385
Skyway and Pearson Road			
Northbound	350	287	**825**
Southbound	325	**519**	**587**
Westbound	575	227	250
Skyway and North Project Driveway			
Eastbound (proposed)	—	—	—
Skyway and Black Olive Drive			
Northbound	880	91	354
Southbound	575	270	111
Eastbound (proposed)	—	—	—
Westbound	935	224	228
Skyway and Neal Road			
Northbound	1,100	258	759
Southbound	675	247	329
Eastbound	170	33	**275**
Westbound	235	175	132
Pearson Road and Black Olive Drive			
Northbound	790	131	164
Southbound	325	66	99
Eastbound	290	140	**335**
Westbound	350	123	152
Black Olive Drive and Foster Road			
Eastbound	935	77	103
Westbound	790	91	105

Source: Traffic Works 2017

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Intersection Operations – Cumulative plus Project Conditions (Standards of Significance 1 and 2)

Impact 4.5.5 The addition of project traffic to cumulative conditions could result in a decline in level of service at two study intersections (Skyway/Black Olive Drive and Skyway/Elliott Road) and would increase queuing at those two intersections. The proposed project's contribution would be cumulatively considerable, and the cumulative impact is **significant and unavoidable**.

The proposed project would generate new vehicle trips on the local roadway network that would contribute to cumulative traffic volumes at study area intersections.

Cumulative plus project traffic volumes were developed by adding the project-generated trips to the cumulative conditions traffic volumes. The cumulative plus project AM and PM peak-hour volumes for the study intersections are shown in Figure 11 and Figure 12, respectively, in **Appendix E** (see **Appendix E** for cumulative plus project AM and PM peak-hour traffic volumes). Cumulative plus project conditions LOS was estimated using the cumulative plus project conditions traffic volumes, optimized signal timings and coordination throughout, and the proposed Skyway/Black Olive Drive intersection configuration with exclusive east/west left turn lanes and protected left turn phasing. **Table 4.5-10** compares the cumulative project conditions LOS with the cumulative plus project conditions LOS.

TABLE 4.5-10
CUMULATIVE PLUS PROJECT CONDITIONS LOS COMPARISON

Intersection		Control	Peak Hour	Cumulative		Cumulative plus Project	
				Delay	LOS	Delay	LOS
1	Skyway and Elliott Road	Traffic Signal	AM	38.3	D	45.5	D
			PM	39.6	D	79.8	**E**
2	Skyway and Pearson Road	Traffic Signal	AM	21.5	C	19.9	B
			PM	25.8	C	31.4	**C**
3	Skyway and North Project Driveway (proposed, does not exist)	Side-Street Stop	AM	—	—	22.0	C
			PM	—	—	8.8	A
4	Skyway and Black Olive Drive	Traffic Signal	AM	11.7	B	18.6	B
			PM	21.2	C	70.2	**E**
5	Skyway and Neal Road	Traffic Signal	AM	20.5	C	22.7	C
			PM	44.9	D	41.0	D
6	Pearson Road and Black Olive Drive	Traffic Signal	AM	12.7	B	12.9	B
			PM	20.0	B	20.3	C
7	Black Olive Drive and Foster Road	Side-Street Stop	AM	7.9	A	8.2	A
			PM	8.9	A	8.9	A

Source: Traffic Works 2017

As shown, under the cumulative plus project conditions, all the study intersections are anticipated to operate at acceptable levels of service except for the Skyway/Black Olive Drive and Skyway/Elliott Road intersections. The Skyway/Black Olive Drive intersection is anticipated to

deteriorate to LOS E with the project-generated traffic during PM peak-hour conditions. The Skyway/Elliott Road intersection is also anticipated to degrade to LOS E with the addition of project traffic in the 2040 study year. The Town's General Plan Circulation Element policies set the level of service standards at LOS D or better.

It should be noted that the signal phasing and coordination offsets must be adjusted between the various study scenarios to obtain optimal traffic operations overall. With the extensive queuing and "at-capacity" conditions anticipated in the cumulative plus project conditions, subtle changes in signal timing and coordination can move the delay and queuing between different locations, but the overall level of congestion remains. After completing numerous simulation runs with differing signal timings, it was determined that a LOS impact is inevitable with the added project traffic in the 2040 future conditions.

Traffic operations in the cumulative plus project conditions will be a function of (1) existing traffic and the present level of queuing and congestion; (2) background growth due to other future development, which may or may not materialize to the degree projected; and (3) trips added by the proposed project. The addition of project traffic will result in the Skyway/Black Olive Drive and Skyway/Elliott Road intersections operating at worse than LOS D conditions in the 2040 horizon year. Therefore, the project's contribution would be cumulatively considerable, and the cumulative impact would be **significant**.

Cumulative plus Project Conditions Vehicle Queuing Analysis

Table 4.5-11 compares the cumulative conditions vehicle queuing with the cumulative plus project conditions vehicle queuing.

TABLE 4.5-11
CUMULATIVE PLUS PROJECT CONDITIONS VEHICLE QUEUING COMPARISON

Intersection	Distance to Nearest Upstream Intersection (feet)	Cumulative 95th Percentile Queue Length (feet)		Cumulative plus Project 95th Percentile Queue Length (feet)	
		AM Peak	PM Peak	AM Peak	PM Peak
1 Skyway and Elliott Road					
Northbound	925	214	**1,250**	136	**2,344**
Southbound	530	**1,254**	454	**1,529**	**597**
Eastbound	850	101	88	99	95
Westbound	525	290	385	444	524
2 Skyway and Pearson Road					
Northbound	350	287	**825**	141	**986**
Southbound	325	**519**	**587**	**374**	**537**
Westbound	375	227	250	256	312
3 Skyway and North Project Driveway					
Eastbound (proposed)	—	—	—	53	55

Intersection	Distance to Nearest Upstream Intersection (feet)	Cumulative 95th Percentile Queue Length (feet)		Cumulative plus Project 95th Percentile Queue Length (feet)	
		AM Peak	PM Peak	AM Peak	PM Peak
4 Skyway and Black Olive Drive					
Northbound	880	91	354	211	**1,986**
Southbound	575	270	111	406	220
Eastbound (proposed)	—	—	—	120	356
Westbound	935	224	228	202	200
5 Skyway and Neal Road					
Northbound	1,100	258	759	289	632
Southbound	675	247	329	262	407
Eastbound	170	33	**275**	46	**239**
Westbound	235	175	132	172	145
6 Pearson Road and Black Olive Drive					
Northbound	790	131	164	149	163
Southbound	325	66	99	69	83
Eastbound	290	140	**335**	148	**348**
Westbound	350	123	152	131	171
7 Black Olive Drive and Foster Road					
Eastbound	935	77	103	92	112
Westbound	790	91	105	93	120

Source: Traffic Works 2017

As shown in **Table 4.5-11**, the 95th percentile queue lengths are anticipated to increase significantly due to the addition of project traffic in the 2040 cumulative plus project conditions scenario. The Skyway corridor traffic volumes can be expected to effectively reach capacity in this scenario. The northbound 95th percentile queue lengths during the PM peak hour at the Skyway/Black Olive Drive and Skyway/Elliott Road intersections are anticipated to increase by more than 1,000 feet with the addition of project traffic.

Mitigation Measures

MM 4.5.4 Pay applicable Town of Paradise transportation impact fees.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Grading/building permit application (site plan submittal)*

Compliance Monitoring: *Town of Paradise Public Works/Engineering Department*

Verification Action/Timing: *Prior to issuing permits*

With future traffic at capacity levels, additional travel lanes on Skyway, an alternate/downtown bypass route that removes traffic from Skyway in the downtown area, or a notable travel demand management/reduction program are the only realistic options for achieving LOS D or better operations with the project in 2040. However, widening of Skyway would be inconsistent with the Town's objectives of creating a safe, inviting, and walkable downtown business environment. An alternate/bypass route would be a significant regional project well beyond the scope of the proposed project. Inadequate consideration of such a concept by the Town and regional authorities renders this mitigation concept infeasible and inappropriate at this time. Travel demand management strategies have been considered as a mitigation option but are not particularly appropriate or effective for grocery stores, fueling centers/gas stations, and restaurants because these trips are not conducive to car/vanpooling, telecommuting, work-shift management, and similar strategies.

Ultimately the most effective and feasible mitigation will be the project applicant's payment of the Town-required standard transportation impact fees. The Town will use these fees to manage the Skyway corridor signals and implement other improvements as determined appropriate over the next 20-plus years.

Other mitigations have been considered and tested, but a solution has not been identified that would improve traffic operations to LOS D or better during cumulative plus project scenario PM peak-hour conditions at each study intersection, or significantly reduce extensive vehicle queuing within the corridor in the future. Therefore, the impact is not fully mitigated and the traffic operations impact is cumulatively **significant and unavoidable**.

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5.0
OTHER CEQA TOPICS

5.1 INTRODUCTION

This section describes the unavoidable significant effects of the proposed project and growth inducement, in accordance with California Environmental Quality Act (CEQA) Guidelines Sections 15126.2(b) through 15126.2(d). It also addresses CEQA Guidelines Appendix F regarding energy conservation.

5.2 SIGNIFICANT AND UNAVOIDABLE IMPACTS

The analyses in Sections 4.1 through 4.5 determined the proposed project would result in the following significant impacts that cannot be mitigated to a less than significant level:

- Project-level and cumulative operational ozone precursor (NOx) emissions from project-generated vehicle trips (Impact 4.2.3 and Impact 4.2.9)
- Cumulatively considerable operational greenhouse gas (GHG) emissions, with nearly all the emissions attributable to project-generated vehicle trips, which would conflict with GHG reduction targets established in the Assembly Bill (AB) 32 Scoping Plan and Senate Bill (SB) 32 (Impact 4.3.1 and Impact 4.3.2)
- Cumulative (2040) intersection level of service impacts at Skyway and Elliott Road and Skyway and Black Olive Drive due to increased vehicle trips (Impact 4.5.6)

As explained in Section 4.2 (Air Quality), Section 4.3 (Greenhouse Gas Emissions), and Section 4.5 (Transportation and Circulation), it is assumed the proposed project would be a "new" project because a new use or tenant for the vacated store on Clark Road has not been identified. It is assumed that another business would use that space and have similar commercial use, vehicle trip-generating characteristics. While some of the trips to the new site on Skyway will be redistributed/relocated trips from the existing Safeway location on Clark Road, no trips associated with the existing store were deducted in the analysis of air quality, GHG, and traffic impacts. This approach provides a worst-case, conservative analysis of operational impacts and thus the significant and unavoidable impacts are overestimated.

5.3 GROWTH-INDUCING IMPACTS

CEQA Guidelines Section 15126.2(d) requires that an EIR evaluate the growth-inducing impacts of a proposed project, and that the analysis should consider:

> *...the way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth... Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also...the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.*

GROWTH INDUCEMENT POTENTIAL

The proposed project would consist of the development of a supermarket, future tenant retail adjoining the supermarket, fueling center, and pad for a restaurant. Water, electric, storm drainage, natural gas, and telephone service would be extended to the project site from

existing facilities in Skyway. The project would include an on-site wastewater system. None of the utility improvements would provide additional capacity beyond that necessary to serve the proposed project. Improvements would be made to the intersection of Skyway and Black Olive Drive to allow for improved traffic circulation and for project ingress/egress. No new roadways would be constructed where none exist, nor would additional capacity be made available on existing roadways. As such, the proposed project would not result in the need for new or expanded infrastructure that would eliminate a physical obstacle to growth.

The project site is in an existing commercial area in Paradise and is consistent with the General Plan land use designation and zoning for the site. The proposed project would result in infill development of a site that is currently underutilized and in an urbanized setting, adjacent to the major roadway through town. No General Plan land use amendment or rezone is proposed that would intensify the use beyond that currently allowed. Land immediately south, east, and north along Skyway is designated for commercial development. The proposed project would not introduce a new or different use that would have the potential to encourage growth other than what is currently allowed under existing zoning at those locations.

The proposed project would not construct housing that would attract new residents. The retail services would be an increased source of local employment opportunities, but this would not result in the need to construct new housing that could result in significant environmental effects.

5.4 ENERGY CONSERVATION

CEQA Guidelines Appendix F, Energy Conservation, requires consideration of project impacts on energy and focuses particularly on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (Public Resources Code Section 21100[b][3]). The potentially significant energy implications of a project must be considered in an EIR to the extent relevant and applicable to the project.

Energy usage is typically quantified using the British thermal unit (BTU). As a point of reference, the approximate amounts of energy contained in common energy sources are as follows:

Energy Source	BTUs
Gasoline	120,388–124,340 per gallon
Diesel Fuel	138,490 per gallon
Natural Gas (compressed gas)	22,453 per pound
Electricity	3,414 per kilowatt-hour

Source: USDOE 2014

Given the nature of the proposed project, the following discussion focuses on the three sources of energy that are most relevant to the project—electricity and natural gas for the proposed retail operations, and transportation fuel for vehicle trips associated with the project.

Total energy usage in California in 2015 was approximately 7,676 trillion BTUs in 2015, which equates to an average of 197 million BTUs per capita (EIA 2017a). Of California's total energy usage, the breakdown by sector is 39.3 percent transportation, 23.9 percent industrial, 17.7 percent commercial, and 19.2 percent residential. Electricity and natural gas in California are generally consumed by stationary users such as residences and commercial and industrial facilities, whereas petroleum consumption is generally accounted for by transportation-related

energy use (EIA 2017b). In 2016, taxable gasoline sales (including aviation gasoline) in California accounted for approximately 15.5 trillion gallons of gasoline (BOE 2016b).

REGULATORY BACKGROUND

Federal and state agencies regulate energy use and consumption through various means and programs. Federal agencies influence and regulate transportation energy consumption through the establishment and enforcement of fuel economy standards for automobiles and light trucks, funding of energy-related research and development projects, and funding for transportation infrastructure improvements. At the state level, the California Public Utilities Commission and the California Energy Commission are two agencies with authority over different aspects of energy. California is exempt under federal law from setting state fuel economy standards for new on-road motor vehicles.

The California Building Energy Efficiency Standards require the design of building shells and building components to conserve energy. The California Energy Commission adopted changes to the 2016 Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code). The 2016 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential standards include improvements for attics, walls, water heating, and lighting. New efficiency requirements for elevators and direct digital controls are included in the nonresidential standards. The 2016 standards also include changes made throughout all sections to improve the clarity, consistency, and readability of the regulatory language. The 2016 Building Energy Efficiency Standards are 28 percent more efficient than previous standards for residential construction and 5 percent better for nonresidential construction. Energy-efficient buildings require less electricity, and increased energy efficiency reduces fossil fuel consumption.

PROJECT ENERGY CONSUMPTION AND CONSERVATION

The project would consume energy in both the short term during project construction and in the long term during project operation. The analysis of electricity/natural gas usage is based on California Emissions Estimator Model (CalEEMod) modeling. The results of CalEEMod modeling are included in **Appendix C** of this Draft EIR. The amount of operational fuel use was estimated using the trip estimate from the proposed project's transportation impact study (Traffic Works 2017) and the California Air Resources Board's EMFAC2014 web database (CARB 2017), which includes assumptions for typical daily fuel usage in Butte County that can be applied to the proposed project.

Construction Phase

Construction activities would require the use of gasoline, diesel fuel, and other fuels. Energy use during construction typically involves the use of motor vehicles both for transportation of workers and equipment and for direct construction actions such as the use of cranes or lifts. Additional energy would be used for power tools and equipment used on-site, including but not limited to gas generators, air compressors, air handlers and filters, and other typical direct construction energy uses.

Using the 2016 Climate Registry General Reporting Protocol (Version 2.1) default emission factors for 2017 (Climate Registry 2017), construction activities would result in the use of approximately 74,400 gallons of diesel fuel over the approximately 16-month construction period (see

Appendix F for data outputs). This usage would constitute approximately 0.00002 percent of typical annual diesel fuel usage in the state (approximately 3 billion gallons in 2016, as reported by the California Board of Equalization [BOE 2016a]), which is not substantial.

Construction activities are not anticipated to result in an inefficient use of energy, as construction contractors would purchase their own gasoline and diesel fuel from local suppliers and would conserve the use of their supplies to minimize costs to the individual project. In addition, imported fill to raise the site grade is expected to be obtained from sources near the site, which would minimize haul truck fuel consumption. Temporary power for electrical equipment would be readily available at the site because it is already served by the Pacific Gas and Electric Company (PG&E).

In addition, the proposed project would incorporate a variety of measures intended to promote energy conservation during construction. These include:

- Cement mix would contain 15–20 percent fly ash (a waste product of coal-fired electrical generation) or 25–30 percent slag (a byproduct of steel manufacturing).
- The project would make use of non-reinforced thermoplastic, which can be recycled and has better impact resistance than fiber-reinforced plastic.
- Plant-based oil would be used as a concrete release agent in lieu of a petroleum-based product. The plant-based oil is nontoxic and biodegradable.
- During construction, the project would use 55-gallon drums and 275-gallon totes for paint, reducing the number of 1- and 5-gallon buckets needed for the project.
- The project would use steel that contains approximately 85–90 percent recycled steel, reducing the amount of mining and manufacturing energy.
- The project would incorporate recycled plastic baseboards and shelving.
- Construction and Demolition (C&D) program – Safeway would capture and recycle as much as feasible the metals, woods, floor and ceiling tiles, concrete, asphalt, and other materials produced during the demolition and construction of the proposed project.

Given the small size of the project and the short-term nature of construction activities, the demand for fuel and other energy resources would not result in the need for new or altered facilities because of project construction.

Operational Phase

The proposed retail project would consume energy for building operation. In addition, vehicle trips generated by the project would consume energy.

Electrical and natural gas energy consumption associated with operation of the proposed project is summarized in **Table 5.0-1**. This usage would constitute approximately 0.005 percent of the typical annual energy consumption of the commercial sector in the state (1.47 trillion BTUs [EIA 2017]), which is not substantial.

TABLE 5.0-1
PROPOSED PROJECT ELECTRICITY AND NATURAL GAS ENERGY CONSUMPTION

Source	Kilowatt-Hours Electricity Annually	kBTU Natural Gas Annually	Total Energy (BTU Equivalents) Annually
Proposed Project	1.89 million (6.46 billion BTUs)	1.48 million (1.48 billion BTUs)	7.94 billion

*Source: CalEEMod version 2016.3.1 (**Appendix C** in this Draft EIR)*

The project would be required to comply with Title 24 Building Energy Efficiency Standards, which establish minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the Title 24 standards significantly reduces energy usage, and it is generally assumed that compliance with Title 24 ensures projects will not result in the inefficient, wasteful, or unnecessary consumption of energy. In addition, the proposed Safeway store would include the following features to promote energy conservation:

- Energy Management System (EMS), which allows off-site monitoring and control of heating, air conditioning, refrigeration, and lighting.
- Energy-efficient heating, ventilating, and air conditioning (HVAC) units.
- High-efficiency LED lighting, including interior and exterior lighting, refrigerator case illumination, and parking lot lighting.
- A white membrane roof, which reduces building energy consumption and reduces the heat island effect.
- Recycling of 90 percent of after-market packaging at the Safeway store.

The electricity provider in Butte County, PG&E, is subject to California's Renewables Portfolio Standard (RPS). The RPS requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020. Renewable energy is generally defined as energy that comes from resources that are naturally replenished within a human timescale such as sunlight, wind, tides, waves, and geothermal heat. The increase in reliance on such energy resources further ensures projects will not result in the waste of finite energy resources.

The proposed fueling center would dispense automotive fuel daily to paying customers. However, this dispensed gasoline would not be used for project operations but rather for those buying and using the fuel. Because of the project site's location on Skyway, the project would predominantly serve travelers already traveling within Paradise and to and from Chico and Magalia who already purchase fuel locally.

According to the transportation impact study prepared for the project (Traffic Works 2017), the proposed project would conservatively generate 5,162 new net daily trips (see **Table 4.5-5** in Section 4.5, Transportation and Circulation). Using EMFAC2014 data for Butte County, these daily traffic trips would conservatively result in the consumption of 736 gallons of automotive fuel (gasoline) (see **Appendix F**). The increased of fuel usage associated with vehicle trips to the proposed project would constitute less than approximately 0.5 percent of typical daily fuel usage in the county (approximately 160,000 gallons), which is not considered substantial. Compared to statewide annual consumption of approximately 15.5 billion gallons in 2016 (BOE

2016b), gasoline use attributable to the proposed project's vehicle trips on an annual basis (approximately 268,600 gallons) would be negligible. Because the federal government continues to require more stringent fuel economy standards, the amount of fuel used would be expected to be lower in the future.

For the reasons described above, the proposed project would not place a substantial demand on regional energy supply or require significant additional capacity, nor would it significantly increase peak and base period electricity demand, or cause wasteful, inefficient, and unnecessary consumption of energy during project construction, operation, and/or maintenance, or preempt future energy development or future energy conservation.

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6.0
ALTERNATIVES

6.1 INTRODUCTION

OVERVIEW

An environmental impact report (EIR) must evaluate a reasonable range of alternatives to the proposed project or to the location of the proposed project that could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. The EIR must evaluate the comparative merits of the alternatives (California Environmental Quality Act [CEQA] Guidelines Section 15126.6).

The CEQA Guidelines define "a range of reasonable alternatives" and thus, limit the number and type of alternatives that need to be evaluated in an EIR. The Guidelines also establish that the environmental effects of alternatives need not be evaluated in the same level of detail as the proposed project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project.

An EIR is not required to analyze alternatives when the effects of the alternative "cannot be reasonably ascertained and whose implementation is remote and speculative" (CEQA Guidelines Section 15126.6[f][3]).

The objectives of the proposed project and environmental impacts requiring mitigation are listed below.

Project Objectives

The objectives of the proposed project are to:

1) Optimize the infill use of underutilized land for commercial activity where current zoning and existing infrastructure allow for such uses, and where traffic volumes and customer patronage would support profitable retail businesses that would provide new sales tax revenue and additional employment opportunities for local residents.
2) Facilitate development of a new commercial project that contributes to a positive physical image and visual identity, complements and enhances the town's traditional design characteristics, and helps preserve the sense of small-town community in a natural environment.
3) Provide a new retail center in a single location that is readily accessible for local retail, restaurant, and fuel services to reduce traffic trips generated by town residents and commuters, to minimize travel distances (vehicle miles traveled), and to encourage pedestrian activity.
4) Develop a new retail project in a location where customer and delivery access and off-street parking can be safely provided.
5) Expand the town's pedestrian and bicycle network in the commercial core by providing additional connectivity and bus turnouts on Skyway.
6) Site and design a new retail center in a manner that avoids significantly important natural habitat areas having high value for wildlife, significantly important permanent and intermittent stream courses and drainage areas, areas sensitive for cultural resources, and the town's designated scenic corridors and gateways.

Impact Avoidance

Alternatives should provide a means of avoiding altogether or reducing the significant environmental impacts that would otherwise result from implementation of the project (CEQA Guidelines Section 15126.6[a]). The analyses in Sections 4.1 through 4.5 concluded that the proposed project would result in the following significant impacts that cannot be mitigated to a less than significant level:

- Project-level and cumulative operational ozone precursor (NOx) emissions from project-generated vehicle trips (Impact 4.2.3 and Impact 4.2.9)
- Cumulatively considerable operational greenhouse gas (GHG) emissions, with nearly all the emissions attributable to project-generated vehicle trips, which would conflict with GHG reduction targets established in the Assembly Bill (AB) 32 Scoping Plan and Senate Bill (SB) 32 (Impact 4.3.1 and Impact 4.3.2)
- Cumulative (2040) intersection level of service impacts at Skyway and Elliott Road and Skyway and Black Olive Drive due to increased vehicle trips (Impact 4.5.6)

Feasibility

Alternatives included and evaluated in the EIR must be feasible. As defined in CEQA Guidelines Section 15364, the term *feasible* means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

6.2 PROJECT ALTERNATIVES AND ANALYSIS

NO PROJECT ALTERNATIVE

CEQA Guidelines Section 15126.6(e)(1) requires that a No Project Alternative be analyzed. The purpose of describing and analyzing a No Project Alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving it.

Description and Analysis

Under the No Project Alternative, the site would remain in its existing condition. There would be no aesthetics, air quality, greenhouse gas emissions, noise, or transportation impacts. This alternative would not achieve any of the proposed project's objectives.

REDUCED PROJECT ALTERNATIVE

Description

Under the Reduced Project Alternative, the fueling center and restaurant pad would not be constructed. The project would be limited to the store and adjoining retail; these components would be identical to the proposed project. This alternative was selected for analysis because the fueling center and restaurant pad generate trips that do not occur with the existing store in its current location, and it is the vehicle trips and associated air pollutant and GHG emissions associated with the proposed project that result in the proposed project's significant and unavoidable impacts. By eliminating the fueling center and restaurant pad, there would be fewer vehicle trips under this alternative.

The adjoining retail is retained in this alternative because it helps delineate the truck delivery area and serves as a visual buffer of the delivery area from the parking lot and Skyway, and it generates minimal trips as compared to the fueling center and restaurant uses. This alternative would include the same driveway and frontage improvements as the proposed project, landscaping, and utilities. The amount of earthwork (cut and fill, soil import, and grading) is assumed to be the same as for the proposed project.

During the scoping process, the Town received comments that it appeared the proposed store was situated as far back on the property as possible, which placed it close to existing residences. With this alternative, there is the potential that the parking lot could be reconfigured slightly, which could allow for shifting the store's location farther from the western property line. However, the distance it could be moved would still be constrained by parking space requirements, the size of the site, and the proximity of Skyway.

Comparative Analysis of Environmental Impacts

Aesthetics

The aesthetics impacts of this alternative would be similar to the proposed project because it would site a new retail development on Skyway and would require the removal of trees and vegetation, existing structures, and grading, which would change the visual characteristics of the site. The architectural features and landscaping, which have been designed to blend with and thus minimize the potential for visual contrast relative to other commercial properties along Skyway, would be the same as the proposed project. The Reduced Project Alternative would have fewer features (fueling center and restaurant pad) along the Skyway frontage, which may be subjectively perceived as less visually intrusive to motorists along Skyway.

This alternative would require retaining walls on the west and north sides, identical to the proposed project, because of the site's topography and required grading to create a building pad and parking lot. Under the proposed project, mitigation measure **MM 4.1.2b** is included to improve the appearance of the retaining walls proposed along the residential property line immediately adjoining the project site on the west and north. Grading and tree removal and construction of the building would still result in direct views of the rear and side of the store. If the store were moved closer to Skyway, this relocation could provide greater visual separation between the western and northern property lines and the store, but the store would still be visible.

As explained in the Noise analysis below, it would not be possible to move the store close enough to Skyway to eliminate the need for a noise barrier along the north side of the store building. The noise barrier along the north side that is mitigation for truck delivery noise would still be required, as would mitigation identified for the proposed project (**MM 4.2.1b**) to improve the appearance of the barrier as viewed from residences.

This alternative would not have lighting associated with the fueling center canopy, which would eliminate one source of nighttime lighting compared to the proposed project. However, identical to the proposed project, the store would have exterior lighting, there would be an illuminated parking lot and vehicle headlights, and truck deliveries along the north and west sides, all of which would be sources of light and glare.

As such, this alternative would not avoid or substantially lessen the potentially significant aesthetic impacts of the proposed project for which mitigation would be required to reduce impacts to less than significant.

Air Quality

The Reduced Project Alternative would result in construction-related air pollutant emissions. Emissions associated with site preparation and grading would be the same as the proposed project, but emissions associated with building construction and finish work (e.g., painting) would be slightly reduced because the fuel center and kiosk and the restaurant pad would not be constructed. As with the proposed project, construction impacts would be less than significant with implementation of measures recommended by the Butte County Air Quality Management District (BCAQMD) (referred to as "Improvement Measures" in Impact 4.1) that would be included as conditions of approval for the project . Under this alternative, building demolition and removal of existing driveways would occur. Impacts related to the potential for airborne asbestos emissions would be the same as the proposed project. Construction and operational odor impacts would be similar to the proposed project.

The fueling center toxic air contaminants (TACs) impact resulting from fuel dispensing would be eliminated with this alternative. However, this was determined to be a less than significant impact for the proposed project. Operational diesel particulate matter (PM) impacts were also determined to be less than significant for the proposed project. Under this alternative, the operational TACs and diesel PM impacts would be slightly reduced because there would be no fuel truck deliveries to the gas station, which would eliminate those emissions.

The Reduced Project Alternative would result in fewer vehicle trips and lower VMT. **Table 6.0-1** compares this alternative's operational emissions with those of the proposed project. As with the proposed project, the emissions are conservative because emissions associated with reuse of the existing store that would be vacated are not deducted. As shown, even with fewer trips, operational nitrogen oxide (NOx) emissions would still be above BCAQMD thresholds. The Reduced Project Alternative would not avoid or substantially lessen the significant and unavoidable operational ozone precursor (NOx) impacts of the proposed project. For NOx emissions to be reduced to levels that would not be cumulatively considerable, the size of the project would have to be reduced so substantially that it would be not likely be economically feasible for the applicant, and it would not meet most of the project objectives.

TABLE 6.0-1
COMPARISON OF PROPOSED PROJECT AND REDUCED PROJECT LONG-TERM OPERATIONAL EMISSIONS

Source	Emissions (Pounds per Day)			
	ROG	NOx	PM_{10}	$PM_{2.5}$
Proposed Project Maximum Daily Emissions	17.3	71.4	6.2	1.9
Reduced Project Alternative Maximum Daily Emissions	15.8	61.0	6.0	1.8
Significant Impact Threshold (Daily Emissions)	25	25	PM_{10} + $PM_{2.5}$ <80	PM_{10} + $PM_{2.5}$ <80

*Source: CalEEMod version 2016.3.1. See **Appendix C** for emission model outputs.*

With fewer trips, this alternative would result in fewer carbon monoxide (CO) emissions, but this impact was determined to be less than significant for the proposed project. The less than significant construction and operational odor impacts would be the same as with the proposed project.

Greenhouse Gas Emissions

The Reduced Project Alternative would generate GHG emissions, but emissions would be reduced compared to the proposed project because there would be fewer trips and the energy demand associated with the fueling center and potential future restaurant would not occur. **Table 6.0-2** compares the Reduced Project Alternative's estimated mitigated GHG emissions with the proposed project. As shown, the Reduced Project Alternative would still exceed the threshold, and the GHG emissions and consistency with Assembly Bill (AB) 32 and Senate Bill (SB) 32 goals impacts would be cumulatively considerable. As with the analysis for NOx, to avoid or substantially lessen GHG impacts, the project would have to be substantially smaller, which may be infeasible and would not meet most of the project objectives. As such, the Reduced Project Alternative would not avoid or substantially lessen the GHG impacts of the proposed project.

TABLE 6.0-2
COMPARISON OF PROPOSED PROJECT AND REDUCED PROJECT
GREENHOUSE GAS OPERATIONAL EMISSIONS (MITIGATED)

Emissions Source	Metric Tons CO_2e per Year
Proposed Project Annual Emissions	3.404.5
Reduced Project Alternative Annual Emissions	3,091.9
Significant Impact Threshold	900

*Source: CalEEMod version 2016.3.1 See **Appendix C** for emission model outputs*

Noise

Construction of the Reduced Project Alternative would result in noise, similar to the proposed project, and the potentially significant impact would require mitigation as identified for the proposed project (mitigation measure **MM 4.4.1**). Parking lot noise would still occur, with the sources in the same locations as the proposed project, but the impact would be less than significant, as identified for the proposed project. Building mechanical equipment noise would be the same as the proposed project because the store size and location on the site would be the same, and mitigation measure **MM 4.4.2c** would be required.

Under this alternative, deliveries would still be made to the store via the truck delivery access route that follows the north and west sides of the building and loading operations on the southwest corner, identical to the proposed project. Sound barriers would be required on the north and southwest, per mitigation measure **MM 4.4.2a**, and as shown in **Figure 4.4-3**. Removal of the fueling center and restaurant pad under this alternative could allow a reconfiguration of the parking lot and the possibility of moving the store building farther from the residences and closer to Skyway to reduce truck delivery noise effects at the closest residences. To eliminate the need for sound barriers altogether, the store and adjoining retail would have to be moved approximately 220 feet toward Skyway, which would encroach on the project frontage and Skyway itself. Moving the building toward Skyway could also interfere with safe and efficient use of the signalized Black Olive Drive/Skyway intersection as the primary driveway to the site. As such, this alternative would not provide a feasible means to avoid or lessen the truck delivery noise impact of the proposed project.

Project traffic–generated noise under this alternative would be slightly reduced compared to the proposed project, which was determined to be less than significant under both the existing plus project and cumulative scenarios.

Transportation and Circulation

The Reduced Project Alternative would generate fewer total trips than the proposed project because it would not include fueling center and restaurant trips. A supplemental analysis was prepared for this alternative (Traffic Works 2017b) and is included in **Appendix E**. **Table 6.0-3** provides a summary comparison of trip generation characteristics for the proposed project and this alternative. Unlike the proposed project, the Reduced Project Alternative would not generate linked trips associated with the fueling center, which typically accounts for most of the linked trips where there is a fueling center and store. In both scenarios, the net new trips reflect the difference between total trips after subtracting internal, pass-by, and linked trips, and no trips associated with the existing store were deducted/rerouted from the study intersections, which provides a conservative estimate.

TABLE 6.0-3
COMPARISON OF PROPOSED PROJECT AND REDUCED PROJECT TRIP GENERATION

Land Use	Weekday ADT			AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Proposed Project									
Total Trips	4,736	4,734	9,470	236	184	420	477	458	935
Total Linked Trips	592	321	913	36	3	39	68	68	136
Total Internal Trips	222	376	598	12	12	24	25	25	50
Total Pass-By Trips	1,299	1,498	2,797	45	70	115	190	183	373
Net New Trips	**2,623**	**2,539**	**5,162**	**143**	**99**	**242**	**194**	**182**	**376**
Reduced Project Alternative									
Total Trips	2,950	2,952	5,902	119	73	192	277	268	545
Total Pass-By Trips	569	573	1,142	0	0	0	106	104	210
Net New Trips	2,383	2,377	4,760	119	73	192	171	164	335

Source: Traffic Works 2017a, 2017b

Using the same methodology as the proposed project transportation impact study, intersection levels of service (LOS) were calculated for the Reduced Project Alternative for the Existing plus Reduced Project scenario and the Cumulative plus Reduced Project Alternative scenario. The results of the analyses are presented in **Table 6.0-4** and **Table 6.0-5**, respectively. As shown, although the delay would decrease at intersections under Existing plus Reduced Project conditions, the LOS for each study intersection would be the same as the proposed project. All intersections would operate acceptably, and the impact would be less than significant, identical to the proposed project. Under cumulative conditions, even though this alternative would have fewer trips, the Skyway/Elliott Road intersection would operate at LOS [TBD] during PM peak-hour conditions under this alternative, which would be a significant impact (Traffic Works 2017b). As explained in Impact 4.5.6 for the proposed project, there is no feasible mitigation that would improve traffic operations to LOS D or better under cumulative conditions. Unlike the proposed project, this alternative would not result in a significant cumulative impact at the Skyway/Black

Olive Drive intersection. However, because the cumulative impact at the Skyway/Elliott Road intersection would not be mitigable, there would still be a significant and unavoidable impact under this alternative.

TABLE 6.0-4
COMPARISON OF PROPOSED PROJECT AND REDUCED PROJECT ALTERNATIVE INTERSECTION LOS

Intersection		Control	Peak Hour	Baseline plus Proposed Project		Baseline plus Reduced Project	
				Delay	LOS	Delay	LOS
1	Skyway and Elliott Road	Traffic Signal	AM	32.9	C	32.0	C
			PM	29.4	C	28.9	C
2	Skyway and Pearson Road	Traffic Signal	AM	18.7	B	18.4	B
			PM	29.2	C	24.7	C
3	Skyway and North Project Driveway	Side-Street Stop	AM	10.6	B	9.8	A
			PM	9.6	A	5.7	A
4	Skyway and Black Olive Drive	Traffic Signal	AM	18.1	B	15.2	B
			PM	41.2	D	31.0	C
5	Skyway and Neal Road	Traffic Signal	AM	18.1	B	18.0	B
			PM	33.5	C	33.5	C
6	Pearson Road and Black Olive Drive	Traffic Signal	AM	11.1	B	10.9	B
			PM	15.6	B	15.0	B
7	Black Olive Drive and Foster Road	Side-Street Stop	AM	7.7	A	5.8	A
			PM	7.9	A	7.5	A

Source: Traffic Works 2017a, 2017b

TABLE 6.0-5
COMPARISON OF PROPOSED PROJECT AND REDUCED PROJECT INTERSECTION LOS (CUMULATIVE)

Intersection		Control	Peak Hour	Cumulative plus Project		Cumulative plus Reduced Project	
				Delay	LOS	Delay	LOS
1	Skyway and Elliott Road	Traffic Signal	AM	45.5	D	41.1	D
			PM	79.8	**E**	73.4	**E**
2	Skyway and Pearson Road	Traffic Signal	AM	19.9	B	19.1	B
			PM	31.4	**C**	27.3	**C**
3	Skyway and North Project Driveway	Side-Street Stop	AM	22.0	C	16.9	C
			PM	8.8	A	6.8	A
4	Skyway and Black Olive Drive	Traffic Signal	AM	18.6	B	16.4	B
			PM	70.2	**E**	48.6	D

TABLE 6.0-5
COMPARISON OF PROPOSED PROJECT AND REDUCED PROJECT INTERSECTION LOS (CUMULATIVE)

Intersection		Control	Peak Hour	Cumulative plus Project		Cumulative plus Reduced Project	
				Delay	LOS	Delay	LOS
5	Skyway and Neal Road	Traffic Signal	AM	22.7	C	21.1	C
			PM	41.0	D	40.3	D
6	Pearson Road and Black Olive Drive	Traffic Signal	AM	12.9	B	12.0	B
			PM	20.3	C	19.2	B
7	Black Olive Drive and Foster Road	Side-Street Stop	AM	8.2	A	8.4	A
			PM	8.9	A	7.2	A

Source: Traffic Works 2017a, 2017b

This alternative would also include two driveways in the same locations as the proposed project, which have the potential to create traffic hazards. Mitigation measure **MM 4.5.3** identified for the proposed project would therefore be required for this alternative, which would reduce impacts to less than significant, identical to the proposed project.

As with the proposed project, this alternative would result in construction activities that could affect traffic operations on Skyway, and mitigation measure **MM 4.5.2** would be required to reduce impacts to less than significant.

Impact Avoidance

The Reduced Project Alternative would not avoid or substantially reduce any of the significant and unavoidable operational air quality, GHG, or traffic impacts of the proposed project. Mitigation measures identified for the proposed project to reduce aesthetic and noise impacts would still be required.

Ability to Achieve Project Objectives

The Reduced Project Alternative would be feasible and would achieve objectives 2, 4, 5, and 6. However, by limiting development to the store and adjoining retail, this alternative would not optimize the infill use of the underutilized site (objective 1), and it would not achieve objective 3 because it would not incorporate all the services that would be provided by the proposed project.

6.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS IN THE EIR

The Town also considered three additional alternatives (Smaller Retail Center on Project Site, Store Expansion at Existing Location, and Off-Site Location). These alternatives were dismissed from detailed evaluation in the Draft EIR for the reasons described below.

SMALLER RETAIL CENTER ON PROJECT SITE

Under this alternative, the store would be the same size as the existing store (approximately 35,000 square feet) with a commensurate reduction in adjoining retail space, resulting in a smaller building footprint. There would be a fueling center and restaurant pad. With a smaller building

footprint, fewer parking spaces would be required to meet Town standards. This modification to the design could allow the building to be moved farther away from residential uses adjacent to the west and north. However, this alternative would still result in aesthetic and truck delivery noise impacts requiring mitigation because, as described for the Reduced Project Alternative, there is insufficient distance on the site to move the building closer to Skyway to avoid the need for a sound barrier. The volume of traffic and related air pollutant and GHG emissions would not be reduced to levels where the significant and unavoidable impacts of the proposed project would be avoided or substantially reduced because, like the proposed project, a store at the new location is conservatively assumed to generate new trips. While this alternative would achieve objectives 2 through 6, it would only partially meet objective 1 because it would not optimize the use of the site. The only difference between this alternative and the proposed project is the size of the store, and environmental impacts would be nearly identical to those of the proposed project. While this alternative is feasible, detailed analysis of this alternative compared to the proposed project would not provide any meaningful information that would foster informed decision-making. Therefore, this alternative was eliminated from further consideration.

STORE EXPANSION AT EXISTING LOCATION

Expansion of the existing store in Old Town Plaza on Clark Road to approximately the same size as the proposed store (without adjoining retail) and no fueling center or restaurant pad would avoid the proposed project's mitigable aesthetic and noise impacts and significant and unavoidable air quality and GHG impacts. Store expansion may require additional parking spaces to meet Town requirements. However, the existing location is constrained by other commercial buildings on the site and the size of the parking lot, so an expanded store at that location may not be feasible. This alternative would not meet many of the project objectives. Therefore, this alternative was eliminated from further consideration.

OFF-SITE LOCATION

CEQA Guidelines Section 15126.6(f)(2) addresses the evaluation of alternative locations for proposed projects as part of an EIR alternatives analysis. This discussion falls under the Guidelines' explanation of the "rule of reason" governing the selection of an adequate range of alternatives for evaluation in the EIR. The key question concerning the consideration of an alternative location to the proposed project is whether any of the significant effects identified for a given project would be avoided or substantially lessened by putting the project in another location. Key objectives of the project are to locate a new, readily accessible retail center where traffic volumes and customer patronage would support the use, and to optimize use of an infill site in a commercial area. There are no vacant parcels along Skyway with Community Commercial (CC) zoning that would be large enough to accommodate the proposed project. The significant and unavoidable impacts of the proposed project are cumulative intersection LOS impacts and operational air pollutant and GHG emissions. Constructing the retail center at another location would not avoid these impacts. Moreover, the added expense of acquiring land rather than using land already under the applicant's control would make an alternative location unduly expensive and therefore infeasible. Therefore, this alternative was eliminated from further consideration.

6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires an EIR to identify the "environmentally superior" alternative from among the range of reasonable alternatives evaluated. **Table 6.0-6** summarizes the result of the comparative analysis. Based on the analysis, the No Project Alternative would be the environmentally superior alternative because it would avoid all the significant environmental impacts of the proposed project. However, it would not meet project objectives.

CEQA Guidelines Section 15126(e)(2) states that if the environmentally superior alternative is the No Project Alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives. The Reduced Project Alternative would be the environmentally superior alternative. However, as noted above, while it would lessen significant impacts, none would be avoided or reduced so substantially as to result in less than significant impacts. The Reduced Project Alternative would achieve some but not all of the project objectives. As noted above, other alternatives were considered, but were not evaluated in detail because they would not reduce or substantially avoid the project's significant environmental impacts.

TABLE 6.0-6
COMPARISON OF ENVIRONMENTAL OF IMPACTS OF ALTERNATIVES

Project Impact	Environmental Impact Significance Comparison		
	Proposed Project Impact Conclusion	Reduced Project Comparison	No Project Comparison
Aesthetics			
Scenic resources	Less than significant	Same as proposed project	No impact
Changes in visual quality and views	Less than significant with mitigation	Similar to proposed project	No impact
Light and glare	Less than significant	Similar to proposed project	No impact
Cumulative visual quality and light and glare	Less than significant	Similar to proposed project	No impact
Air Quality			
Consistency with applicable air quality attainment plan	Less than significant	Same as proposed project	No impact
Short-term construction-generated pollutant emissions	Less than significant	Reduced compared to proposed project	No impact
Operational criteria air pollutants and ozone precursors	Significant and unavoidable	Reduced compared to proposed project, but still significant and unavoidable	No impact
Mobile source CO emissions during operation	Less than significant	Reduced compared to proposed project	No impact
TAC emissions (including diesel PM) during construction	Less than significant with mitigation	Reduced compared to proposed project	No impact
TAC emissions during project operation (fueling center and diesel PM emissions)	Less than significant	Reduced compared to proposed project	No impact
Potential airborne asbestos and lead-based paint emissions during construction	Less than significant with mitigation	Reduced compared to proposed project	No impact
Odors	Less than significant	Same as proposed project	No impact

Project Impact	Environmental Impact Significance Comparison		
	Proposed Project Impact Conclusion	Reduced Project Comparison	No Project Comparison
Cumulative NOx emissions	Significant and unavoidable	Reduced compared to proposed project, but still significant and unavoidable	No impact
Cumulative TAC emissions	Less than significant	Reduced compared to proposed project	No Impact
Cumulative mobile-source CO emissions	Less than significant	Reduced compared to proposed project	No impact
Greenhouse Gas Emissions			
Cumulative GHG emissions	Significant and unavoidable	Reduced compared to proposed project, but still significant and unavoidable	No impact
Consistency with applicable plans	Significant and unavoidable	Reduced compared to proposed project, but still significant and unavoidable	No impact
Noise			
Construction noise and vibration	Less than significant with mitigation	Similar to proposed project	No impact
Operational noise (parking lot, truck deliveries, building mechanical)	Less than significant with mitigation	Similar to proposed project	No impact
Operational traffic noise	Less than significant	Reduced compared to proposed project	No impact
Cumulative operational noise	Less than significant	Reduced compared to proposed project	No impact
Cumulative operational traffic noise	Less than significant	Reduced compared to proposed project	No impact
Transportation and Circulation			

Project Impact	Environmental Impact Significance Comparison		
	Proposed Project Impact Conclusion	Reduced Project Comparison	No Project Comparison
Existing plus project intersection operations	Less than significant	Reduced compared to proposed project	No impact
Construction traffic	Less than significant with mitigation	Similar to proposed project	No impact
Traffic hazards	Less than significant with mitigation	Same as proposed project	No impact
Emergency access	Less than significant	Same as proposed project	No impact
Cumulative intersection operations	Significant and unavoidable	Reduced compared to proposed project, but still significant and unavoidable	No impact

REFERENCES

Traffic Works, LLC. 2017a. *Transportation Impact Study for Black Olive Village*.

———. 2017b. *Transportation Impact Study Supplement – Black Olive Village (Reduced Project Alternative)*.

7.0
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APPENDICES

Appendix A: Notice of Preparation and Comment Letters Received
Appendix B: Initial Study
Appendix C: Air Quality and Greenhouse Gas Emissions Supporting Information
Appendix D: Noise Modeling Results and Supporting Information
Appendix E: Transportation Impact Study
Appendix F: Energy Calculations

Available on CD and at: https://www.townofparadise.com/index.php/our-government/departments/planning

Appendix A – Notice of Preparation and Comment Letters Received

NOTICE OF PREPARATION OF A

DRAFT ENVIRONMENTAL IMPACT REPORT

DATE: **July 28, 2017**

TO: **Responsible Agencies, Organizations, and Interested Parties**

FROM: **Town of Paradise Community Development Department**

SUBJECT: **Environmental Impact Report for the Black Olive Village Project**

In discharging its duties under Section 15021 of the California Environmental Quality Act (CEQA) Guidelines, the Town of Paradise (as lead agency, hereinafter Town) intends to prepare an environmental impact report (EIR), consistent with State CEQA Guidelines Section 15161 (Division 6 of Chapter 3 of Title 14 of the California Code of Regulations, hereinafter the CEQA Guidelines), for the Black Olive Village Project (proposed project).

In accordance with CEQA Guidelines Section 15082, the Town has prepared this Notice of Preparation (NOP) to provide responsible and trustee agencies, and other interested parties, with information describing the proposed project and its potential environmental effects. The purpose of this NOP and notice of public scoping is to solicit comments from public agencies and interested persons regarding the scope and content of the environmental information and analyses, including the significant environmental impacts, reasonable alternatives, and mitigation measures that should be included in the draft EIR. The proposed project location and description are summarized below.

As specified by the CEQA Guidelines, this NOP will be circulated for a 30-day review period. The comment period starts on July 31, 2017 and ends on August 30, 2017**.** Comments may be submitted in writing at any time during the review period, but they must be received by the Town no later than 5:00 PM on August 30, 2017. Comments may be mailed, emailed, or faxed to:

Craig Baker, Community Development Director
Town of Paradise
5555 Skyway
Paradise, CA 95969
Email: cbaker@townofparadise.com
Fax: (530) 877-5059

A scoping meeting for the proposed project will be held at 6:00 PM on August 22, 2017, at Paradise Town Hall located at 5555 Skyway, Paradise, CA 95969. Responsible agencies and members of the public are invited to attend the meeting and provide input on the scope of the draft EIR. Written comments regarding relevant issues may also be submitted at the scoping meeting.

A. PROJECT LOCATION AND SETTING

The proposed Black Olive Village project is located in the central part of the Town of Paradise in an urbanized area directly west of the intersection of Skyway and Black Olive Drive (see Figure 1, Project Location) and comprises assessor parcel numbers: 052-211-007, -021, -036, and -037, and 052-182-092. The site is designated as Town Commercial (T-C) in the Town's General Plan and is zoned Community-Commercial (C-C), which provides for a full range of commercial uses, including retail, restaurants, and service stations. A conditional use permit will be required due to the size of the project.

The project site is 7.63 acres and contains 22 residential and commercial structures and out buildings. All of these buildings, except one, are vacant. Three asphalt driveways provide access to the various residential structures, an asphalt parking lot, a gravel parking area, and areas of open grassy land and trees. Surrounding uses include single-family homes to the north, commercial mini-storage units to the north with single-family homes and other commercial uses beyond, a commercial mini-storage and other commercial uses to the south, across Skyway, and commercial uses and single-family homes beyond to the east.

B. PROJECT DESCRIPTION

The proposed project would result in the construction and operation of 67,473 square feet of retail uses, which would include a Safeway supermarket (54,471 square feet) and 7,800 square feet of additional retail adjoining the store; a 4,200-square-foot restaurant pad that could accommodate high-turnover, sit-down restaurant; a 9-station (18 pumps) fueling center with canopy; a 1,002-square-foot fueling center kiosk; and a landscaped parking lot with 278 parking spaces (see Figure 2, Site Plan). The Safeway store would operate seven days per week, 24 hours per day, and employ approximately 125 persons. The existing approximately 35,000-square-foot Safeway store in Old Town Plaza on Clark Road would be closed. A new use or tenant for the vacated store has not been identified, and there are no plans to demolish the space.

Off-site frontage improvements to Skyway to accommodate the proposed project would include a primary driveway entrance aligned opposite to Black Olive Drive (which would be a signalized intersection following improvements by the Town in 2017-18, unrelated to the proposed project); a secondary access driveway (northern driveway) for the fueling center; curb, gutter, and sidewalk; and a public bus turnout and shelter. Delivery truck access to the project is proposed via the northern driveway. Delivery trucks accessing the site would enter the site via the northern driveway, proceed to the two loading docks via a one-way route at the rear of the Safeway store, and exit via the primary driveway at Black Olive Drive. Smaller delivery trucks would use either driveway to access the site. The Safeway store loading docks would be below grade and use recessed bay doors with sealed gaskets to reduce noise from off-loading trailers. Local deliveries would be through an at-grade roll-up door and a Mondoor.

The project proposes a contemporary mountain theme for the supermarket building façade. The building would be accented with a mixture of gable roofs over the two main entries, varying roofline parapet offsets, architectural pop-outs, a mixture of wall finishes, an outdoor trellis, patio areas, and articulated entry vestibules. There would be two monument signs: one for the Black Olive shopping center (approximately 8 feet tall) and one with fuel prices. Perimeter landscaping

would be designed to minimize sight-line impacts to nearby residential uses. Vegetation would be used to help screen buildings from view of vehicles traveling on Skyway. Parking lot lighting would consist of 20-foot-high fixtures that would be shielded to prevent the direct projection of light on adjacent properties.

Project development would involve the demolition and removal of approximately 22 existing residential and commercial structures on the site (approximately 9,300 square feet total), the clearing of land including the removal of approximately 180 trees larger than 10 inches in diameter, and cut/fill and grading to prepare a level site. A retaining wall would be installed on the west side of the site, along the rear of the building where the truck delivery access would be. Water service for the proposed project would be provided by the Paradise Irrigation District. The project would include an on-site wastewater secondary treatment system. Stormwater from the proposed project would be collected into mechanical structures and treated in on-site stormwater detention basins prior to discharge into the Town's stormwater drainage system.

C. REQUIRED APPROVALS AND PERMITS

Discretionary actions required to be taken by the Town of Paradise may include, but are not limited to, the actions listed below:

- Certification of the EIR
- Approval of architectural designs and landscape plans
- Grading and building permits
- Site plan approval
- Conditional use permit approval
- Issuance of tree-felling permits
- Approval of lot line modifications

The EIR may be used to support additional subsequent approvals, determinations, and/or permits that may be required from local, regional, state, or federal agencies in the processing of the proposed project; agencies include, but are not limited to:

- Regional Water Quality Control Board, Central Valley Region (Region 5)
- Butte County Air Pollution Control District
- Butte County Environmental Health
- State Water Resources Control Board

D. PROBABLE ENVIRONMENTAL EFFECTS

The EIR will analyze potentially significant impacts that could result from construction and operation of the proposed project. The environmental factors that the Town has determined could potentially be affected by the proposed project include aesthetics, air quality, greenhouse gas emissions/climate change, noise, and traffic.

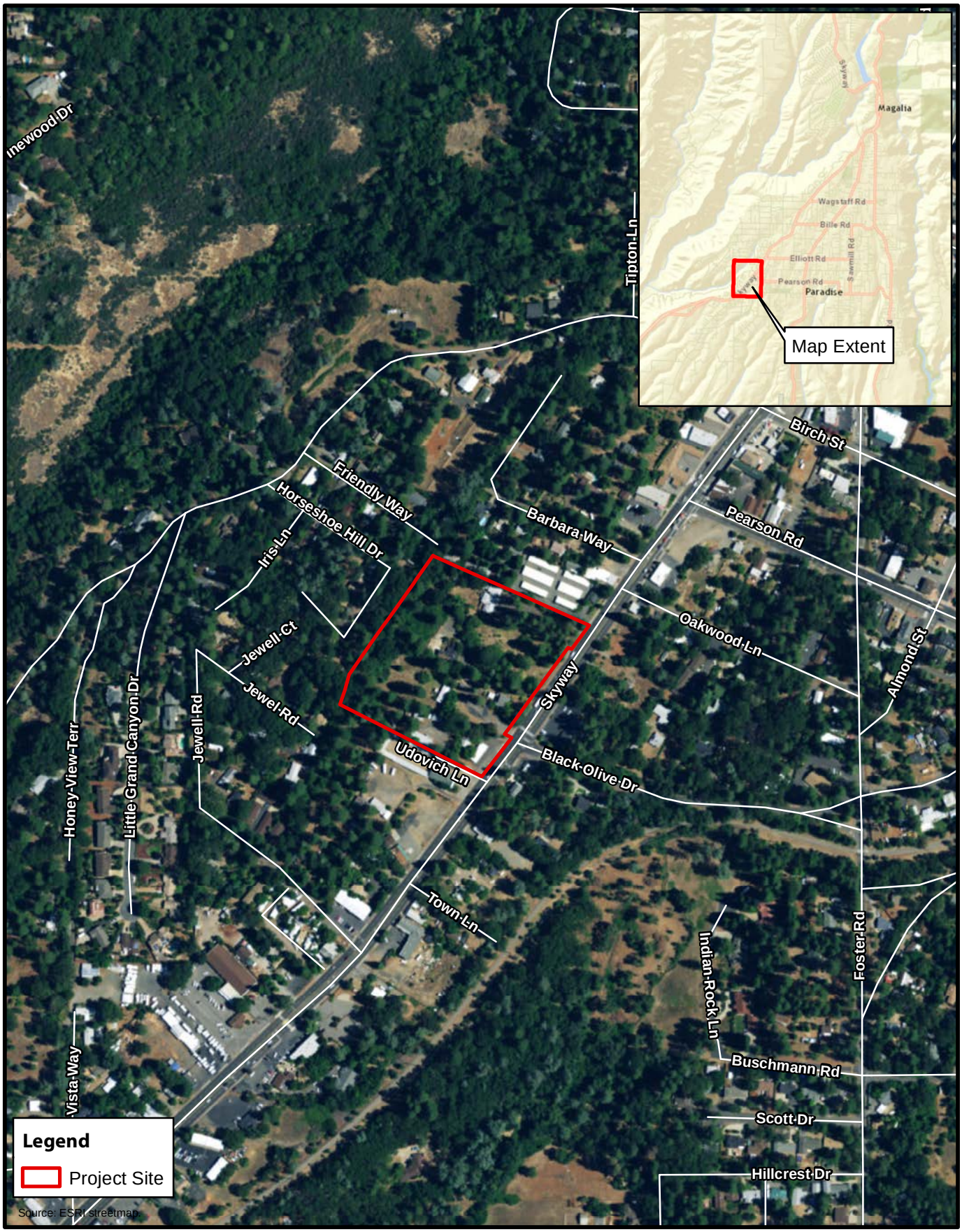
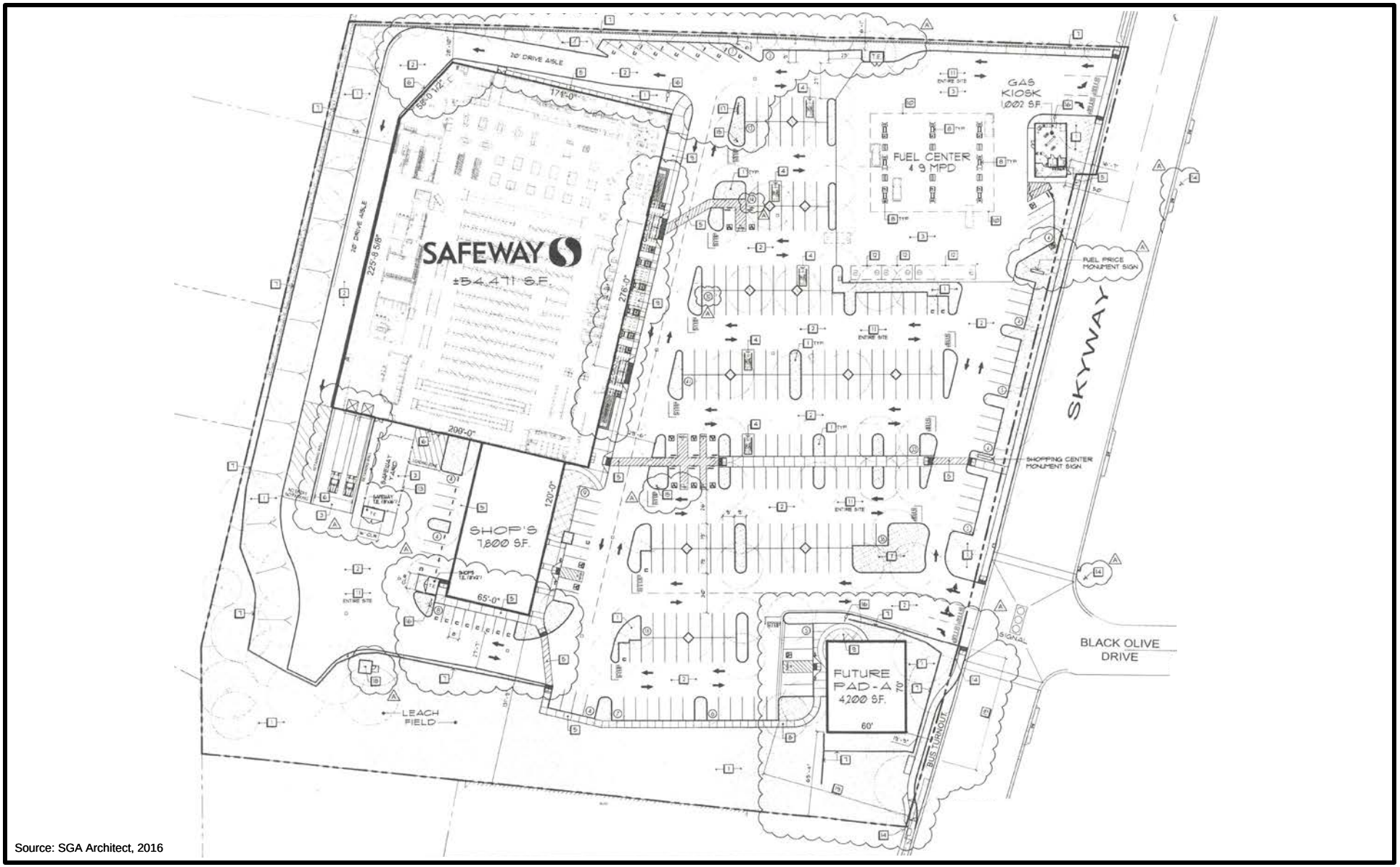


FIGURE 1

Project Location

Michael Baker INTERNATIONAL



Source: SGA Architect, 2016

0 60 120
FEET

FIGURE 2
Site Plan

Michael Baker
INTERNATIONAL

Baker, Craig

From: Jason Mandly [jmandly@bcaqmd.org]
Sent: Tuesday, August 29, 2017 9:35 AM
To: Baker, Craig
Subject: Butte AQMD Comments on Black Olive Village Project
Attachments: Butte AQMD Black Olive Village Comments.pdf

Hello Craig,

Attached are the BCAQMD comments on the Black Olive Village Project NOP. They largely mirror our comments on the application last year.

Thanks,

Jason Mandly
Associate Air Quality Planner

Butte County Air Quality Management District
629 Entler Avenue, Suite 15 - Chico, CA 95928
Phone: (530) 332-9400 ext. 108
FAX: (530) 332-9417
www.butteairquality.com

629 Entler Avenue, Suite 15
Chico, CA 95928

(530) 332-9400
(530) 332-9417 Fax

W. James Wagoner
Air Pollution Control Officer

Robert McLaughlin
Asst. Air Pollution Control Officer

August 28, 2017

Craig Baker, Community Development Director
Town of Paradise
5555 Skyway
Paradise, CA 95969

Re: Black Olive Village Project Notice of Preparation

Dear Mr. Baker,

The Butte County Air Quality Management District (District) appreciates the opportunity to comment on the Notice of Preparation (NOP) for the project listed above. Based on the information reviewed, the District has the following comments:

1. Screening for criteria air pollutants: Based on the District's 2014 CEQA Air Quality Handbook (Handbook), the Black Olive Village Project exceeds the size provided by the screening criteria table in Section 4.3 *Screening for Criteria Air Pollutants*. During the environmental review process, the District recommends using the latest version of CalEEMod to perform modeling and quantification of pollutants created by construction and operational activities to estimate impacts of criteria air pollutants as well as greenhouse gases.
2. The Districts requests that all projects incorporate best practices to minimize air quality and greenhouse gas impacts from diesel particulate matter exhaust from construction equipment, operational toxic air contaminant emissions from mobile and stationary sources, diesel idling during construction phases, and fugitive dust. Examples of best practice measures may be found in Appendix C-1 *Best Practices* of the Handbook. Some of the listed best practice measures are required by federal, state or local regulations.
3. The proposed retail gasoline dispensing facility will require an Authority to Construct Permit from the District prior to construction. If the proposed project anticipates operation of diesel generators or other processes as listed in Appendix A of the Handbook, an Authority to Construct Permit may be required prior to installation.
4. The District is not delegated to locally enforce the National Emissions Standards for Hazardous Air Pollutants (NESHAPS) for asbestos. Information on how to report demolition activities to the United States Environmental Protection Agency and the California Air Resource Board is available at https://www.arb.ca.gov/enf/asbestos/asbestos.htm.
5. The 2014 CEQA Air Quality Handbook and a link to the latest version of CalEEMod are available on the District website at http://bcaqmd.org/planning/.

If you have any questions or comments, please contact the District at (530) 332-9400.

Sincerely,

Jason Mandly
Associate Air Quality Planner

STATE OF CALIFORNIA
NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Fax (916) 373-5471
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

August 24, 2017

Craig Baker
Town of Paradise
5555 Skyway
Paradise, CA 95969

RE: SCH# Black Olive Village Project, SCH 2017082002, Butte County

Dear Mr.Baker:

The Native American Heritage Commission has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code § 21000 et seq.), specifically Public Resources Code section 21084.1, states that a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, § 15064.5 (b) (CEQA Guidelines Section 15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an environmental impact report (EIR) shall be prepared. (Pub. Resources Code § 21080 (d); Cal. Code Regs., tit. 14, § 15064 subd.(a)(1) (CEQA Guidelines § 15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources with the area of project effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code § 21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code § 21084.3 (a)). **AB 52 applies to any project for which a notice of preparation or a notice of negative declaration or mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. § 800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments. **Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws**.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
   a. A brief description of the project.
   b. The lead agency contact information.
   c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code § 21080.3.1 (d)).
   d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code § 21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code § 21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or environmental impact report. (Pub. Resources Code § 21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code § 65352.4 (SB 18). (Pub. Resources Code § 21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code § 21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code § 21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code sections 6254 (r) and 6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code § 21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code section 21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code § 21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code § 21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code section 21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code § 21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code section 21084.3 (b). (Pub. Resources Code § 21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code § 21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a nonfederally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code § 815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code § 5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An environmental impact report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code sections 21080.3.1 and 21080.3.2 and concluded pursuant to Public Resources Code section 21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code section 21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code § 21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code § 65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code § 65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code section 65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code sections 5097.9 and 5097.993 that are within the city's or county's jurisdiction. (Gov. Code § 65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have been already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

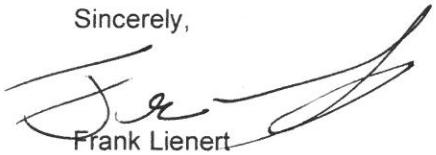
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, section 15064.5(f) (CEQA Guidelines section 15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code section 7050.5, Public Resources Code section 5097.98, and Cal. Code Regs., tit. 14, section 15064.5, subdivisions (d) and (e) (CEQA Guidelines section 15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions, please contact me at my email address: frank.lienert@nahc.ca.gov

Sincerely,



Frank Lienert
Associate Governmental Program Analyst

cc: State Clearinghouse

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

11 September 2017

Mr. Craig Baker, Community Development Director
Town of Paradise
5555 Skyway
Paradise, CA 95969

COMMENTS ON THE NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE BLACK OLIVE VILLAGE PROJECT, STATE CLEARINGHOUSE NUMBER 2017072065, PARADISE, BUTTE COUNTY

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) is a responsible agency for this project, as defined by the California Environmental Quality Act (CEQA). On 10 August 2017, we received your request for comments on the Notice of Preparation for the Black Olive Village Project located on Black Olive Drive, Paradise, Butte County.

The proposed project would entail the construction and operation of 67,473 sq. ft. of retail uses, which would include a Safeway supermarket (54,471 sq. ft.) and 7,800 sq. ft. of additional retail adjoining the store; a 4,200 sq. ft. restaurant pad that could accommodate high turnover, sit down restaurant; a 9-station (18 pumps) fueling center with canopy; a 1,002 sq. ft. fueling center kiosk; and a landscaped parking lot with 278 parking spaces. Off-site frontage improvements would include a primary driveway entrance aligned opposite to Black Olive Drive; secondary access driveway for the fueling center; curb, gutter and sidewalk; and a public bus turnout and shelter. The proposed project would include an on-site wastewater secondary treatment system. Water service would be provided by Paradise Irrigation District. Site preparation requires demolition of structures and tree removal.

Based on our review of the information submitted for the proposed project, we have the following comments:

Isolated wetlands and other waters not covered by the Federal Clean Water Act
Some wetlands and other waters are considered "geographically isolated" from navigable waters and are not within the jurisdiction of the Clean Water Act. (e.g., isolated wetlands, vernal pools, or stream banks above the ordinary high water mark). Discharge of dredged or fill material to these waters may require either individual or general waste discharge requirements from the Central Valley Water Board. If the U.S. Army Corps of Engineers determine that isolated wetlands or other waters exist at the project site, and the project impacts or has potential to impact these non-jurisdictional waters, a Report of Waste Discharge and filing fee must be submitted to the Central Valley Water Board. The Central Valley Water Board will consider the information provided and either issue or waive Waste Discharge Requirements. Failure to obtain waste discharge requirements or a waiver may result in enforcement action.

Any person discharging dredge or fill materials to waters of the State must file a report of waste discharge pursuant to Sections 13376 and 13260 of the California Water Code. Both the requirements to submit a report of waste discharge and apply for a Water Quality Certification may be met using the same application form, found at:
http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (CGP)

Construction activity, including demolition, resulting in a land disturbance of one acre or more must obtain coverage under the CGP. The Black Olive Village Project must be conditioned to implement storm water pollution controls during construction and post-construction as required by the CGP. To apply for coverage under the CGP the property owner must submit Permit Registration Documents electronically prior to construction. Detailed information on the CGP can be found on the State Water Board website:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Post-Construction Storm Water Requirements

Studies have found the amount of impervious surface in a community is strongly correlated with the impacts on community's water quality. New development and redevelopment result in increased impervious surfaces in a community. Post-construction programs and design standards are most efficient when they involve (i) low impact design; (ii) source controls; and (iii) treatment controls. To comply with Phase II Municipal Storm Water Permit requirements the Town of Paradise must ensure that new developments comply with specific design strategies and standards to provide source and treatment controls to minimize the short and long-term impacts on receiving water quality. The design standards include minimum sizing criteria for treatment controls and established maintenance requirements. The proposed project must be conditioned to comply with post construction standards adopted by the Town of Paradise in compliance with their Phase II Municipal Storm Water Permit.

If you have any questions or comments regarding this matter please contact me at (530) 224-4784 or by email at Scott.Zaitz@waterboards.ca.gov.

Scott A. Zaitz

Scott A. Zaitz, R.E.H.S.
Environmental Scientist
Storm Water & Water Quality Certification Unit

SAZ: db

cc w/o
enclosures: State Clearinghouse, Sacramento

From: Dave Schott [mailto:schottprop@sbcglobal.net]
Sent: Friday, August 18, 2017 11:40 AM
To: Baker, Craig
Subject: Black Olive Village Project.

Dear Mr Baker;
Thank you for the opportunity to be involved with the draft environmental impact report regarding the Black Olive Village Project . As the owner of the northerly adjacent property the effects of such a large project are certainly my concern.

As you probably are aware my property consists of 1.75 acres with a 1200 square-foot office facing Skyway, immediately behind which are 12,000 ft.² of mini storage. Behind the ministorage there are five residences which were originally part of the Colonial Lodge. The property extends from Skyway to within roughly 75 feet of the back line of the Safeway property. Naturally the effect on the office and ministorage will be negligible but the effect on the five residences will certainly be very substantial !

I cannot tell you how many times my tenants have observed how quiet and pleasant their homes are, obviously that is in jeopardy. Having been a builder and done some development in Paradise over the last 30 years I am well aware of the responsibilities that come along with development and building , and it's effect on existing neighboring properties and its owners. The town of Paradise and its staff have the responsibility of arbitrating the concerns of both the developer and the people of paradise.

The plans that I were given are identified as preliminary and naturally are limited in their detail and accuracy. With this in mind I have studied them , with a close eye on the northerly property line which I share with Safeway Inc. Having walked the property I have seen no indication of property corners accurately identified . Certainly before these plans go much further I would expect the developer to locate and mark both the northern corner adjacent to skyway and the far northwest corner.

Trusting that I will have the opportunity to give further input I will keep my concerns somewhat brief at this point. Trying to create a flat spot that is close to 7 acres on ground that has the surface contour of a watermelon is certainly a challenge for the designers. Across the northern property line referenced, from Skyway the natural grade rises approximately 10 feet , then falls 40 feet... The proposed retaining wall along this line is a major concern of mine . (see sheet C 2.0) It's location appears to be very close, within several feet of the property line. The entire project looks as if it was shoved as close to this line as possible. Unfortunately 12 feet from this line are the rear of three of the existing residences I spoke of earlier. Combined with the unfortunate choice that all the trucks entering will be driving directly along with the northerly property line it would be obvious that the trucks and the resulting noise and lights would be directly affecting the residence. Simply put I would expect that the referenced retaining wall will project above the finish pavement grade a minimum of 6 feet . This projection would begin at a point east of the homes and continue Westerly to the end of the wall. On the same train of thought in the central portion of the retaining wall adjacent to the drive that accesses the ministorage and residences it appears that the wall will create a vertical section approaching ten feet . For safety purposes, along with noise concerns and site line it would appear the same wall should project above the natural grade of my property by a minimum of 3 feet. In the 13 years since I built the office and ministorage I have had one break-in to the ministorage .The idea of all the customers in the Safeway parking lot gazing at my entrance concerns me from a security standpoint. Stated earlier that as this is preliminary ,I will keep my comments to a minimum and move onto trees.

Please reference sheet T1 . This sheet shows a list of trees to be removed and trees to be retained . The "tree removal list" shows a startling 180 trees to be removed , dwarfing the "trees to remain list" of a whopping 5 ! As I stated earlier creating a 7 acre flat spot is a challenge. Several trees along the northerly property line show removal yet they are shown as on my side of the property line , obviously this is not going to occur ! But there are several trees that are very close or even straddle the property line that are my point of contention. Specifically the tree listed as number 1424 , a Beautiful 48" Black Oak . This one tree is where I'm going to dig in my heels. It's a beautiful example of what a tree should be , an excellent habitat for animals & beautifully shading the referenced

residences. I suspect it either straddles the property line or is on my side of the line . Fortunately, if my interpretation is correct the finish grade of the paved area adjacent to the tree is very close to the existing grade of the tree. Also fortunately it appears a planter area is planned for the vicinity of the tree. I'm sure the landscaping designer, Alpine landscape recognizes the irreplaceable value of such a tree and can design the area adjacent to the tree so that it has the best chance of survival. The design of the retaining wall in this area will need to take into account the viability of this tree. Other trees i.e. #s 1490, 1433, 2794, 2811 are too close to call at this point but I would like to see them retained.

In closing I look forward to being involved with the ongoing design of the Black Oak Village project, and I am glad to see that Safeway Inc. is using some of our local talent SGA Architect Inc., Robertson / Erickson Civil Engineers , and Alpine Landscaping in the design of this project. Please keep me in the loop on this project and I look forward the upcoming scoping meeting.

Sincerely , Dave Schott
Owner : Colonial Storage & Schott Property...877-6157

APPENDIX B – INITIAL STUDY

BLACK OLIVE VILLAGE

INITIAL STUDY

Prepared for:

TOWN OF PARADISE
5555 SKYWAY
PARADISE, CA 95969

Prepared by:

Michael Baker INTERNATIONAL

140 INDEPENDENCE CIRCLE, SUITE C
CHICO, CA 95973

JULY 2017

1. **Project title:** Black Olive Village

2. **Lead agency name and address:** Town of Paradise
5555 Skyway
Paradise, CA 95969

3. **Contact person and phone number:** Craig Baker, Community Development Director
(530) 872-6291

4. **Project location:** West side of Skyway adjacent to the intersection of Skyway and Black Olive Drive
Paradise, CA 95969
Latitude 39°45'08"N, Longitude 121°37'52"W
Section 22 Township 22N Range 3E MDM
(APNs: 052-211-007, -021, -036, and -037, and 052-182-092) (Figure 1)

5. **Project sponsor's name and address:** Scott Gibson Architect, Inc. (Agent for applicant)
2450 Zanella Way, Suite 60
Chico, CA 95928

6. **General Plan designation:** TC (Town Commercial)

7. **Zoning:** CC (Community Commercial)

8. **Description of project:** The proposed project would result in the creation of 67,473 square feet of retail uses on 7.63 acres. The proposed project will involve the demolition and removal of approximately 19 existing residential and commercial structures, the clearing of land including the removal of 180 trees, the grading of the land to provide a relatively level lot, construction of a 54,471-square-foot grocery store, a 9-pump fueling center (18 fueling positions) with illuminated canopy, a 1,002-square-foot fueling center kiosk, 7,800 square feet of additional retail, and a 4,200-square-foot restaurant pad. (Figure 2)

9. **Surrounding land uses and setting:** Surrounding uses include single-family homes to the west, commercial mini-storage units and single-family homes to the north, commercial uses and single-family homes to the east, across Skyway, and commercial uses and single-family homes to the south.

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

    - Regional Water Quality Control Board, Central Valley Region (Region 5, North)
    - Butte County Air Quality Management District

- Butte County Environmental Health
- State Water Resources Control Board
- California Department of Forestry and Fire Protection (Cal Fire)

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3? If so, has consultation begun?

Letters were sent on April 25, 2017, to five California Native American tribes traditionally and culturally affiliated with the project area. No California Native American tribes have requested consultation regarding the proposed project.

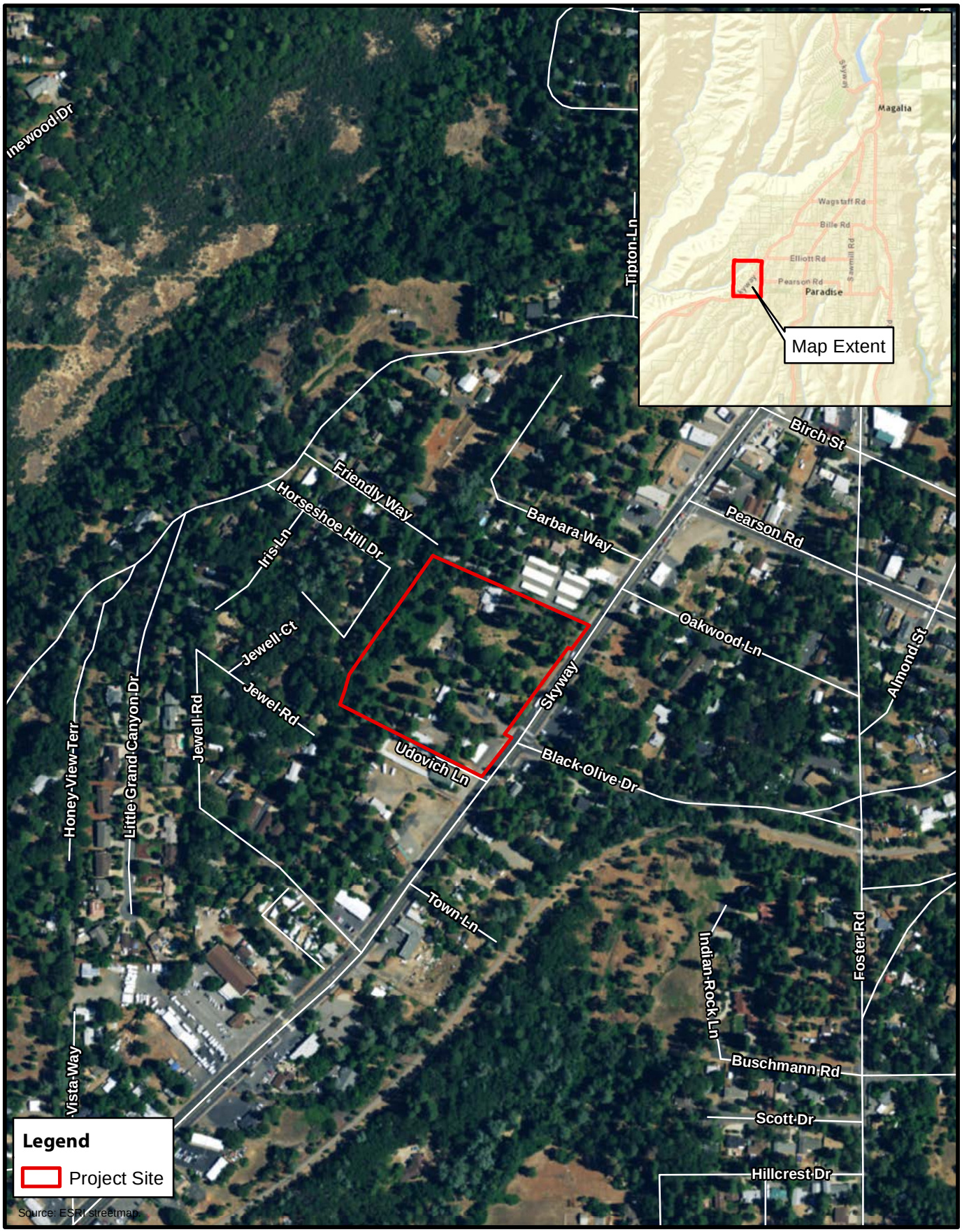
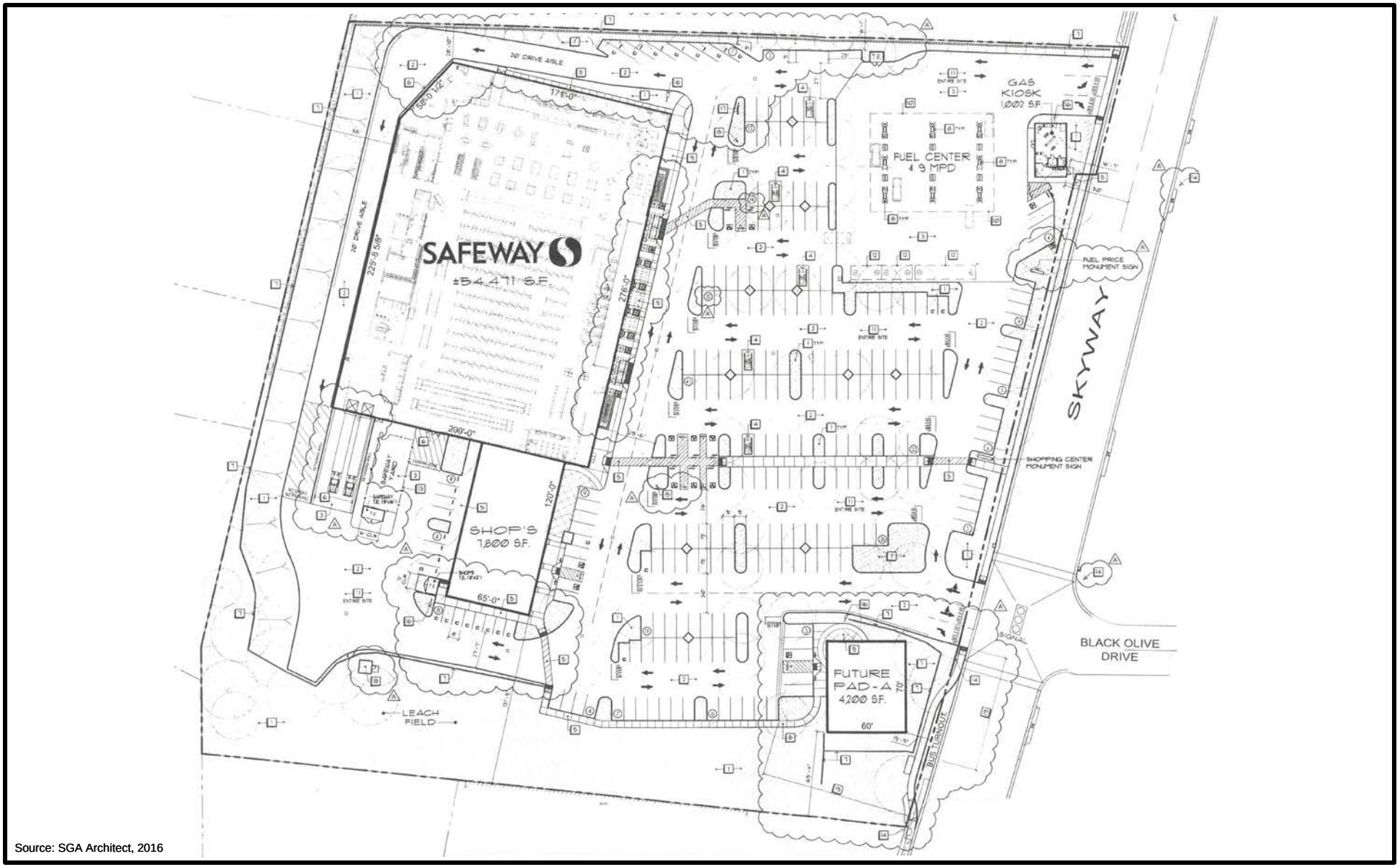


FIGURE 1

Project Location

Michael Baker INTERNATIONAL



Source: SGA Architect, 2016

0 60 120
FEET

FIGURE 2
Site Plan

Michael Baker
INTERNATIONAL

11. Environmental factors potentially affected:

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

☒	Aesthetics	☐	Agriculture and Forest Resources	☒	Air Quality
☐	Biological Resources	☐	Cultural Resources	☐	Geology and Soils
☒	Greenhouse Gases	☐	Hazards and Hazardous Materials	☐	Hydrology and Water Quality
☐	Land Use and Planning	☐	Mineral Resources	☒	Noise
☐	Population and Housing	☐	Public Services	☐	Recreation
☒	Transportation/Traffic	☐	Tribal Cultural Resources	☐	Utilities and Service Systems
☒	Mandatory Findings of Significance				

12. Determination: (to be completed by the lead agency)

On the basis of this initial evaluation:

☐ 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 project proponent. 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" impact 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 or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Craig Baker Printed Name	Town of Paradise Lead Agency
Community Development Director Title	

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.1 AESTHETICS. Would the project:				
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) Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☒	☐	☐	☐

DISCUSSION OF IMPACTS

a) *Potentially Significant Impact.* The General Plan EIR (1994: 4-86) considered an aesthetics impact to be significant if the project would obstruct any scenic vista or view open to the public. The proposed project may alter public views of the site. This is a potentially significant impact that will be further evaluated in the Draft EIR.

b) *No Impact.* The project site has been routinely disturbed from past development. It does not contain any rock outcroppings or distinctive visual features. A cultural/historic records search (SAC-17-74) for the project site was conducted on May 8, 2017, through the Northeast Information Center (NEIC). As described in subsection 2.5, Cultural Resources, the records search concluded that none of the current on-site structures qualify as a historic resource. Skyway is not a state scenic route and is not within the Town's gateway or scenic corridor areas. There would be no impact.

c) *Potentially Significant Impact.* The proposed project would change the visual character of the site, which may alter views of the site from other properties and by the public. This is a potentially significant impact that will be further evaluated in the Draft EIR.

d) *Potentially Significant Impact.* All but one of the existing on-site structures is vacant, and minimal light and/or glare emanates from the project site. The proposed project would introduce new sources of light and glare on the project site. This potentially significant impact will be further evaluated in the Draft EIR.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.2 AGRICULTURE AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997), prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
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 nonagricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526 and by Government Code Section 51104(f)), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forestland or conversion of forestland 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 nonagricultural use?	☐	☐	☐	☒

OVERVIEW

The California Department of Conservation (2014) manages the Farmland Mapping and Monitoring Program (FMMP), which identifies and maps significant farmland. Farmland is classified using a system of five categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The classification of farmland as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance is based on the suitability of soils for agricultural production, as determined by a soil survey conducted by the Natural Resources Conservation Service.

DISCUSSION OF IMPACTS

a) *No Impact*. The entire Town of Paradise, including the proposed project site, is designated as Urban and Built-Up, Grazing, or Other (DOC 2017). The town does not encompass any important farmlands. The project would not result in the conversion of farmland or agricultural land, and no impact would result.

b) *No Impact*. The proposed project site is designated for commercial development and zoned Community Commercial (CC). As such, the project would not conflict with any zoning for agricultural uses. There are no active Williamson Act contracts in the Town of Paradise. The closest parcel(s) that are currently under a Williamson Act contract are located to the northwest of the town limits in the unincorporated county.

c) *No Impact*. The proposed site is not zoned Forest or Timberland, nor does it include any such resources, as there are no forest or timber harvest operations within the town limits. Therefore, there is no impact.

d) *No Impact*. See Issue c) above.

e) *No Impact*. See Issue a) above. The project proposes commercial uses and the site is surrounded by residential and commercial development. Therefore, the project would not result in the conversion of farmland to nonagricultural uses, and there is no impact.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.3 AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☒	☐	☐	☐

OVERVIEW

The project site is located in the Northern Sacramento Valley Air Basin (NSVAB), which also includes Shasta, Tehama, Glenn, Colusa, Sutter, and Yuba counties. The Butte County portion of the Sacramento Valley is designated as a nonattainment area for ozone, coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) for state standards and ozone and $PM_{2.5}$ for federal standards. In Butte County, the air quality regulating authority is the Butte County Air Quality

Management District (BCAQMD). The BCAQMD monitors air quality in the county and serves as the lead agency responsible for implementing and enforcing federal, state, and Butte County air quality regulations. Air pollution sources in the county include seasonal burning of agricultural fields, dust from agricultural operations, and motor vehicle emissions.

DISCUSSION OF IMPACTS

a–e) *Potentially Significant Impact*. Construction and operation of the proposed project would generate air emissions that have the potential to violate air quality standards (which may affect compliance with air quality plans), pose human health risks, create odors, or result in emissions that are cumulatively considerable. These impacts will be further evaluated in the Draft EIR.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.4 BIOLOGICAL RESOURCES. Would the project:				
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 US 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, or regulations, or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native 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 community conservation plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

OVERVIEW

This section describes the natural resources present within and immediately surrounding the project site, which includes a discussion of the special-status species potentially occurring in the area, an analysis of impacts to biological resources that could occur due to implementation of the proposed project, and appropriate mitigation measures to reduce or avoid those impacts. The analysis of biological resources presented in this section is based on a review of the current project description and available literature, as well as a site visit and survey conducted by a Michael Baker International (Michael Baker) biologist on April 26, 2017.

REGULATORY SETTING

This section summarizes laws and regulations that apply to species and habitat. It also identifies environmental review and consultation requirements, as well as permits and approvals that may be required from local, state, and federal agencies, depending on whether protected species or habitats are present and on the location and type of development.

FEDERAL

Endangered Species Act

The federal Endangered Species Act of 1973 (ESA), as amended, established protective measures for federally listed threatened and endangered species, including their habitats, from unlawful take (16 United States Code [USC] Sections 1531–1544). The ESA defines "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Title 50, Part 222, of the Code of Federal Regulations (50 Code of Federal Regulations [CFR] 222) further defines "harm" to include "an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns including feeding, spawning, rearing, migrating, feeding, or sheltering."

Migratory Bird Treaty Act

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Sections 703–711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR Part 21). The majority of birds found in the project area would be protected under the MBTA.

STATE

California Endangered Species Act

Under the California Endangered Species Act (CESA), the California Department of Fish and Wildlife (CDFW) has the responsibility for maintaining a list of endangered and threatened species [California Fish and Game Code (FGC) Section 2070]. The CDFW also maintains a list of "candidate species," which are species formally noticed as being under review for potential addition to the list of endangered or threatened species, and a list of "species of special concern," which serves to monitor species in decline, and others on species "watch lists." State-listed species are fully protected under the mandates of the CESA. Take of protected species incidental to otherwise lawful management activities may be authorized under FGC Section 206.591. Authorization from the CDFW would be in the form of an incidental take permit.

Rare, Threatened, and Endangered Plants

The California Native Plant Society (CNPS) is a nongovernmental agency that classifies native plant species according to current population distribution and threat level in regard to extinction. The CNPS utilizes the data to create and maintain a list of native California plants that have low numbers or limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2017). Potential impacts on populations of CNPS-listed plants receive consideration under CEQA review.

The following identifies the definitions of the CNPS listings:

List 1A: Plants presumed extirpated in California and either rare or extinct elsewhere

List 1B: Plants that are rare, threatened, or endangered in California and elsewhere

List 2A: Plants presumed extirpated in California, but common elsewhere

List 2B: Plants that are rare, threatened, or endangered in California, but are more common elsewhere

All of the plant species on Lists 1 and 2 meet the requirements of the Native Plant Protection Act, Section 1901, Chapter 10, or FGC Sections 2062 and 2067, and are eligible for state listing. Plants appearing on List 1 or List 2 are considered to meet the criteria of CEQA Section 15380, and effects on these species are considered "significant." Classifications for plants on List 3 (plants about which more information is needed) and/or List 4 (plants of limited distribution), as defined by the CNPS, are not currently protected under state or federal law. Therefore, no detailed descriptions are provided or impact analysis was performed on species with these classifications.

California Fish and Game Code

Birds of Prey

Under FGC Section 3503.5, it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by the FGC or any regulation adopted pursuant thereto.

Fully Protected Species

California statutes also afford fully protected status to a number of specifically identified birds, mammals, reptiles, and amphibians. These species cannot be taken, even with an incidental take permit.

LOCAL

Town of Paradise Municipal Code

Municipal Code Chapter 8.12, known as the Town of Paradise Tree Preservation Ordinance, regulates tree removal. The ordinance states that a permit is required for the felling of qualifying trees that measure either 31 inches or greater in circumference or 10 inches or greater in diameter at breast height (dbh). No person shall fell or remove a qualifying tree from real property prior to permit approval. Tree felling permit applications proposing the felling of 9 or more qualifying trees from a single legal parcel within a period of 12 consecutive months is subject to approval or denial

by the Planning Director or the Planning Commission upon referral by the Planning Director, whenever the application is not related to a planning or land use entitlement. Tree removal permit applications are required to contain all of the following information:

A. Name of legal landowner

B. Address of property where qualifying trees are to be felled and/or removed

C. Number, diameter, or circumference (at dbh), tree species type, and location of qualifying trees proposed for felling and/or removal

D. Expected date of commencement of felling and/or removal

E. The reason for the proposed felling and/or removal of each tree

F. History of past tree felling permit of affected property, if applicable

G. A plot plan map if 8 trees or less; and a plot plan map drawn to scale if 9 trees or more

METHODOLOGY

A Michael Baker International biologist conducted an evaluation of the project site on April 26, 2017, to characterize the environmental setting on and adjacent to the project site. The evaluation involved a query of available data and literature from local, state, federal, and nongovernmental agencies, and a site survey to collect site-specific data regarding habitat suitability for special-status species and identify any potentially jurisdictional aquatic or hydrological resources.

Information on species that have the potential to occur on the project site and in the vicinity was obtained from the following:

- US Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) tool (2017a)
- USFWS Critical Habitat Portal (2017b)
- CDFW California Natural Diversity Database (CNDDB) (2017a)
- CNPS Inventory of Rare and Endangered Plants of California (2017)

The USFWS IPaC tool was used to identify federally listed species under USFWS jurisdiction that may be affected by the proposed project. In addition, a query of the USFWS Critical Habitat Portal was conducted to identify any designated critical habitat on or in the vicinity of the project site. The CNDDB was used to generate a list of processed and unprocessed occurrences of special-status plant and wildlife species and vegetation communities identified within the Paradise East, Paradise West, Hamlin Canyon, Cherokee, Richardson Springs, Chico, Campbell Mound, Cohasset, and Stirling City, California, US Geological Survey (USGS) 7.5-minute quadrangles (quads). The CNPS database was also queried to identify special-status plant species with the potential to occur in the aforementioned USGS quads. The raw data returned from the database queries is provided in Attachment A.

ENVIRONMENTAL SETTING

The project site is located at an average elevation of approximately 1,650 feet above mean sea level in the Town of Paradise. There are three vegetative communities on the project site, which are described below and shown in Figure 3.

DISTURBED BLACK OAK WOODLAND

The project site contains approximately 1.34 acres of disturbed black oak woodland habitat. This habitat corresponds to the Holland vegetation classification code 71120 for the black oak series. However, this habitat type is considered disturbed woodland due to the history of disturbance, proximity to development, and invasive species throughout the understory. Associated mature tree species occurring on-site include incense cedar (*Calocedrus decurrens*) and ponderosa pine (*Pinus ponderosa)*. The understory includes manzanita (*Arctostaphylos* sp.) and a variety of non-native species such as by Scotch broom (*Cytisus scoparius*), bromes (*Bromus* spp.), Himalayan blackberry (*Rubus armeniacus*), and other invasive species.

Black oak woodlands produce acorns used as forage by a variety of wildlife species, including acorn woodpecker (*Melanerpes formicivorus*), California scrub-jay (*Aphelocoma californica*), and black-tailed deer (*Odocoileus hemionus*). Trees containing cavities provide nesting habitat for birds such as the western bluebird (*Sialia mexicana*), tree swallow (*Tachycineta bicolor*), and northern flicker (*Colaptes auratus*) as well as potential roost sites for bats. Raptors, including the red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and great gray owl (*Strix nebulosa*), may also nest in these woodlands.

Some species that may typically occur in undisturbed oak woodlands, such as great gray owl, are not expected to occur on the project site because of the surrounding low-density development, lack of connection to open space and woodland, and non-native species within the understory. This disturbed vegetation community does, however, provide suitable nesting habitat for a variety of nesting birds and roosting habitat for bats.

DISTURBED HABITAT

The project site contains approximately 3.15 acres of disturbed habitat, which is surrounded by low-density development and roads. Disturbed habitat occurs in areas of frequent and repeated disturbance (e.g., vehicle activities and mowing), such as along roadsides, trails, and parking lots, and is found in close proximity to urban or developed areas. A large portion of the project site contains disturbed habitat. It occurs between the vacant houses and driveways and along the northern portion of the property. A majority of the project site is dominated by Scotch broom, bromes, periwinkle (*Vinca major*), Himalayan blackberry, and other invasive species. Mature native and introduced trees are scattered throughout the project site and include black oak (*Quercus kellogii*), manzanita, incense cedar, interior live oak (*Quercus wislizenii*), Ponderosa pine, black walnut (*Juglans hindsii*), and other species.

Wildlife species typically found in disturbed habitat include western fence lizard (*Sceloporus occidentalis*), black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Otospermophilus beecheyi*), western harvest mouse (*Reithrodontomys megalotis*), Botta's pocket gopher (*Thomomys bottae*), California vole (*Microtus californicus*), mourning dove (*Zenaida macroura*), house finch (*Haemorhous mexicanus*), and common raven (*Corvus corax*).

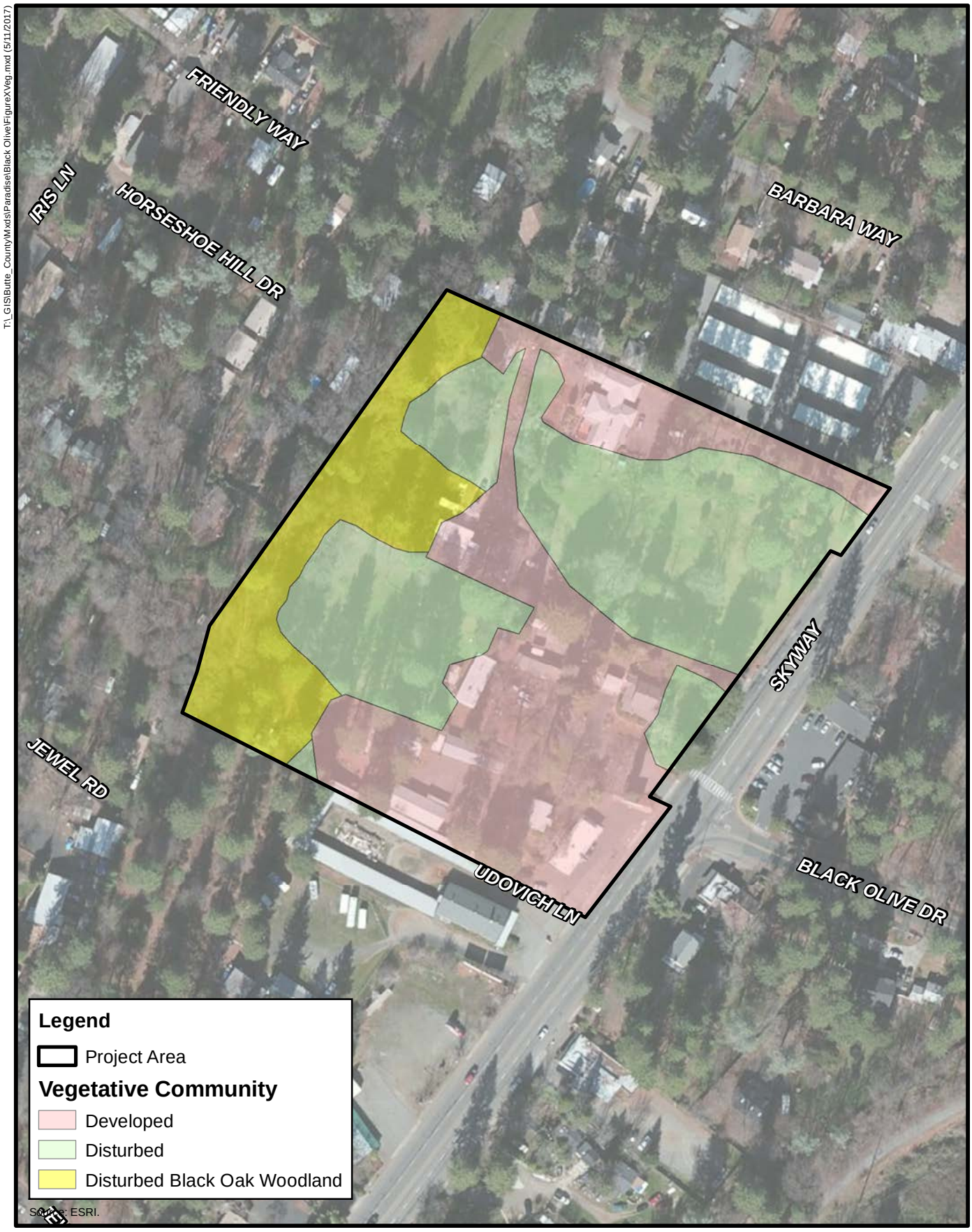


FIGURE 3

Vegetation Map

Michael Baker INTERNATIONAL

DEVELOPED

There are approximately 3.18 acres of developed habitat on the project site. Developed habitat includes all of the urban land uses such as paved roads, buildings, and concrete or gravel lots that generally preclude the reestablishment of vegetation. The developed portions of the project site include the vacant buildings, houses, trailers, sheds, driveways, and concrete pads.

These areas do not generally provide suitable habitat for many species; however, some species are suited to developed areas. Wildlife species commonly found in urbanized areas include mockingbird (*Mimus polyglottos*), house finch, rock dove (*Columbidae* spp.), and raccoon (*Procyon lotor*).

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact With Mitigation Incorporated.* Candidate, sensitive, or special-status species are commonly characterized as species that are at potential risk to their persistence in a given area or across their range. These species have been identified and assigned a status ranking by governmental agencies such as the CDFW and the USFWS, or nongovernmental organizations such as the CNPS. The degree to which a species is at risk of extinction is the determining factor in the assignment of a status ranking. Some common threats to a species' or population's persistence include habitat loss, degradation, and fragmentation, as well as human conflict and intrusion. For the purposes of this biological review, special-status species are defined by the following codes:

1) Listed, proposed, or candidates for listing under the federal Endangered Species Act (50 CFR Section 17.11 – listed; 61 Federal Register [FR] 7591, February 28, 1996, candidates)

2) Listed or proposed for listing under the California Endangered Species Act (FGC 1992 Section 2050 et seq.; 14 CCR Section 670.1 et seq.)

3) Designated as Species of Special Concern by the CDFW

4) Designated as Fully Protected by the CDFW (FGC Sections 3511, 4700, 5050, 5515)

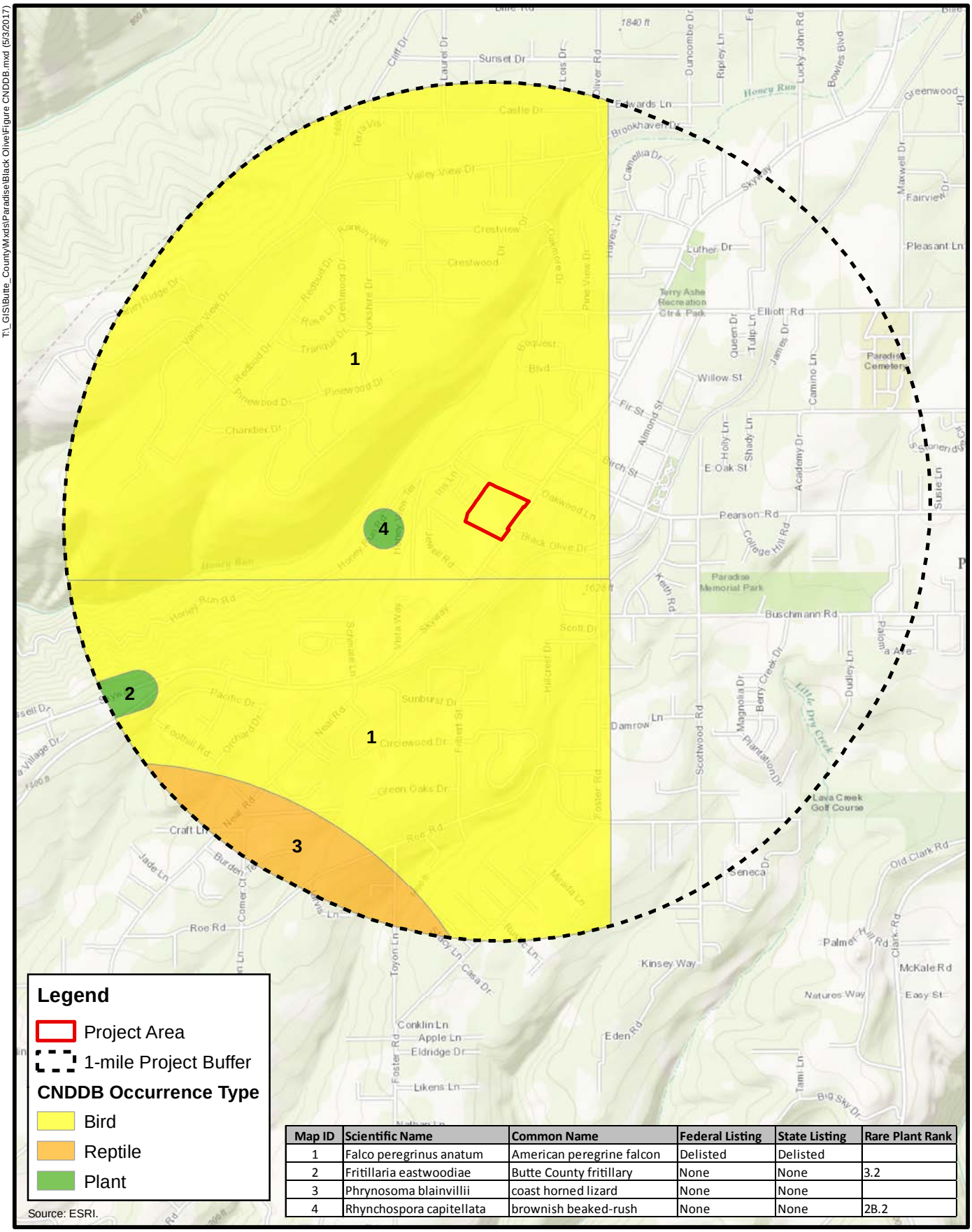
5) Species that meet the definition of rare or endangered under CEQA (14 CCR Section 15380) including CNPS List Rank 1B and 2

The query of the USFWS, CNPS, and CNDDB databases, combined with the site visit and survey, identified habitat for several special-status species with the potential to occur on the project site. Figure 4 shows the locations of CNDDB occurrences within 1 mile of the project site.

Special-Status Wildlife

Based on the results of the database searches and the reconnaissance-level site survey, several special-status wildlife species were found to have the potential to occur on the project site.

T:_GIS\Butte_County\Mxds\Paradise\Black Olive\Figure CNDDB.mxd (5/3/2017)



Map ID	Scientific Name	Common Name	Federal Listing	State Listing	Rare Plant Rank
1	Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	
2	Fritillaria eastwoodiae	Butte County fritillary	None	None	3.2
3	Phrynosoma blainvillii	coast horned lizard	None	None	
4	Rhynchospora capitellata	brownish beaked-rush	None	None	2B.2

0 1,000 2,000
FEET

FIGURE 4

Occurrences of Special-Status Species within One-Mile of the Project Area

Michael Baker INTERNATIONAL

Raptors and Migratory Birds

Various migratory and resident raptors and other birds have the potential to inhabit the project site and adjacent properties. Some species are afforded specific protection such as osprey (*Pandion haliaetus*), which is a CDFW Fully Protected Species. However, raptor and other bird species such as American kestrel, merlin (*Falco columbarius*), red-tailed hawk, Cooper's hawk (*Accipiter cooperii*), and sharp-shinned hawk (*Accipiter striatus*), species on the CDFW Watch List, are not protected under the ESA or the CESA. Nonetheless, the nests of all raptor species are protected under the MBTA and FGC Section 3503.5. The nests of nearly all avian species are protected under the MBTA, which makes it illegal to destroy active bird nests, including eggs or chicks.

The project site contains approximately 3.15 acres of disturbed habitat and 1.34 acres of disturbed black oak woodland that provide suitable foraging habitat for a variety of birds and raptors. In addition, the large oaks, incense cedars, ponderosa pines, and other trees on and adjacent to the project site have the potential to provide suitable nesting habitat for raptors and other birds.

Construction activities involving tree removal, demolition, grading, and vegetation clearing may cause direct mortality or damage to nests. In addition, construction activities near active nests may result in nest abandonment, which would be a potentially significant impact. Mitigation measures **MM 2.4.1** through **MM 2.4.3** would require preconstruction surveys for nesting birds, buffers for active nests, and seasonal restrictions on the clearing of vegetation with identified nests. If nesting birds are found during preconstruction surveys, they would be avoided and/or protected in accordance with applicable laws and regulations. This would reduce impacts to a less than significant level.

Mitigation Measures

MM 2.4.1 If clearing and/or construction activities would occur during the bird breeding season (typically January through July for raptors and February 15 through August 15 for other birds), preconstruction surveys to identify active nests shall be conducted within 3 days of construction initiation, particularly vegetation clearing and ground-disturbing activities. Surveys must be performed by a qualified biologist for the purposes of determining presence/absence of active nest sites within the proposed impact area, including construction access routes and a 500-foot buffer (if feasible). If no active nests are found, no further mitigation is required. Surveys shall be repeated if relevant construction activities are delayed or postponed.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Prior to site clearing and/or grading; provide results to Town*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Confirm survey completed*

MM 2.4.2 If an active nest is located during preconstruction surveys, construction activities shall be restricted as necessary to avoid disturbance of the nest until it is deemed inactive by a qualified biologist. Restrictions shall include

establishment of exclusion zones (no ingress of personnel or equipment) at a minimum radius of 300 feet around an active raptor nest and 100 feet around other active bird nest(s). Activities permitted within exclusion zones and the size may be adjusted through consultation with the CDFW.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Prior to and during tree removal and/or grading*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *During construction*

MM 2.4.3 Vegetation containing active nests that must be removed as part of the project shall be removed during the non-breeding season (August 16 through December 31), but only provided that the nest(s) are confirmed no longer active.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *During grading; provide documentation to Town date(s) when nests removed*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *During construction*

Burrowing Owl

The nearest burrowing owl (*Athene cunicularia*) occurrence was reported over 10 years ago and is over 8 miles from the project site. In addition, the project site contains high grasses (burrowing owls prefer short vegetation) and no evidence of ground squirrel or small mammal burrows (i.e., home of primary prey species, and preferred starting point for burrowing owl burrows). Therefore, burrowing owl is not expected to occur on the project site.

Special-Status Bats

The database queries identified three special-status bat species in the project vicinity—western mastiff bat (*Eumops perotis californicus*), pallid bat (*Antrozous pallidus*), and western red bat (*Lasiurus blossevillii*)—which are all CDFW Species of Special Concern. Habitat for bat species on the project site consists of foraging habitat, night-roosting cover, maternity roost sites, and winter hibernacula. These bat species may forage in a variety of habitats. In general, the CDFW is most concerned about the loss of maternity roosting sites. Suitable roosting sites for these species include caves, rock crevices, cliffs, buildings, tree bark, and snags. The mature trees and vacant buildings on the project site may provide suitable roosting habitat for the special-status bat species discussed above, and therefore these species have the potential to occur on the project site.

Construction activities involving tree removal, demolition, grading, and vegetation clearing may cause direct mortality or damage to roosting bats, which would be a potentially significant impact. Mitigation measures **MM 2.4.4** through **MM 2.4.7** require

preconstruction surveys for roosting bats, avoidance of roosts, or flushing bats from the site in coordination with the CDFW. If roosts or bats are found, they would be avoided and/or protected in accordance with applicable laws and regulations. This would reduce impacts to a less than significant level.

Mitigation Measures

MM 2.4.4 Construction-related activities shall occur only during daylight hours.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *During construction*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing; *During construction*

MM 2.4.5 Prior to the removal of any trees or buildings, a bat survey shall be performed by a qualified biologist between March 1 and July 31. If bat roosts are identified, the Town shall require that the bats be safely flushed from the sites where roosting habitat is planned to be removed prior to roosting season (typically May to August) and prior to the onset of construction activities. If maternity roosts are identified during the maternity roosting season (typically May to September), they must remain undisturbed until a qualified biologist has determined the young bats are no longer roosting. If roosting is found to occur on-site, replacement roost habitat (e.g., bat boxes) shall be provided to offset roosting sites removed. If no bat roosts are detected, no further action is required if the trees are removed or the vacant building are demolished prior to the next breeding season. If removal/demolition is delayed, an additional survey shall be conducted 30 days prior to removal/demolition to ensure that a new colony has not established itself.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Prior to demolition of structures and/or prior to tree removal; provide results to Town*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Confirm survey completed*

MM 2.4.6 If a female or maternity colony of bats are found in trees on the project site, and the project can be constructed without the elimination or disturbance of the roosting colony (e.g., if the colony roosts in a large tree not planned for removal), a qualified biologist shall determine what buffer zones will be employed to ensure the continued success of the colony. Such buffer zones may include a construction-free barrier of 200 feet from the roost and/or the timing of the construction activities outside of the maternity roosting season (after July 31 and before March 1).

Mitigation Responsibility: *Project applicant*

Timing/Implementation: *Prior to and during tree removal*

Enforcement/Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *During construction*

MM 2.4.7 If an active nursery roost is documented on-site and demolition and/or tree removal cannot be performed outside of the maternity roosting season, bats shall be excluded from the site after July 31 and before March 1 to prevent the formation of maternity colonies. Nonbreeding bats shall be safely evicted, under the direction of a bat specialist in coordination with the CDFW.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Prior to demolition and/or tree removal*

Enforcement/Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *During construction*

SPECIAL-STATUS PLANTS

While the project site contains black oak woodland, mature trees, and non-native grassland, these habitat types are surrounded by development and are dominated by invasive species in the understory. The project site also shows signs of trash dumping and other disturbance to the soil. Therefore, special-status plants are not anticipated to occur on the project site.

b) *No Impact.* Sensitive habitats include (a) areas of special concern to resource agencies; (b) areas protected under CEQA; (c) areas designated as sensitive natural communities by the CDFW; (d) areas outlined in FGC Section 1600; (e) areas regulated under Clean Water Act Section 404; and (f) areas protected under local regulations and policies. The project site does not contain any sensitive habitats or protected communities. No impact would occur.

c) *No Impact.* The project site is in an urban environment with buildings and disturbed habitat. There are no wetlands or other waters of the United States/waters of the State on the project site. No impact would occur.

d) *Less Than Significant Impact.* A review of the CDFW Biogeographic Information and Observation System (BIOS) was performed to determine if the project site is located in an Essential Connectivity Area. The project site is within an Essential Connectivity Area that is an approximately 10-mile-wide, north-to-south corridor from the Ishi Wilderness in the Lassen National Forest to Lake Oroville (CDFW 2017b). While the project site does contain some small areas of open space and trees, it is not adjacent to open space or contiguous woodland or forest areas. The closest open space area is located roughly one-quarter mile to the west along Honey Run Creek. However, residences, commercial properties, and roads surround the project site. In addition, the site does not provide nursery sites for wildlife, water features, or large forested areas that would be conducive to functioning as a corridor for migratory wildlife. No streams or creeks that might provide habitat for fish are

located on the project site. Therefore, the proposed project would not impede migratory wildlife, and impacts would be less than significant.

e) *Less Than Significant Impact.* Chapter 8.12 of the Town of Paradise Municipal Code regulates tree removals through the issuance of permits and permissions for qualifying trees. The proposed project would remove 180 of the 185 trees with a diameter at breast height (dbh) greater than 10 inches on-site. Municipal Code Section 8.12.120 requires one-to-one (1:1) tree replacement on-site unless the Town's Planning Director grants an exception. The project applicant has proposed to replant approximately 140 trees on-site, and the remaining 40 trees would require off-site mitigation. The applicant would comply with the Municipal Code and obtain all necessary permits and approvals related to tree removal. Therefore, the project would comply with the Municipal Code and the project would not conflict with any other applicable ordinances or local policies related to biological resources. Impacts would be less than significant.

f) *No Impact.* No adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan has been adopted that includes the project site. There would be no impact.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.5 CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

OVERVIEW

The setting and impact analysis in this subsection is based on a records search conducted at the North Central Information Center (NCIC), map review, historical society consultation, cultural resources evaluations for inclusion in the California Register of Historical Resources (California Register), and field survey of the project site.

SETTING

Concepts and Terminology for Identification of Cultural Resources

Cultural resources include historical resources and archaeological resources (as defined in Public Resources Code Section 15064.5). Cultural resources are any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. Generally, a resource is considered by the lead agency to be historically significant if the resource meets the criteria for listing in the California Register (California Code of Regulations Title 14(3) Section 15064.5(a)(3)).

CULTURAL RESOURCES IDENTIFICATION EFFORTS

Records Search

At that request of Michael Baker International, Northeast Information Center (NEIC) staff conducted a records search for the project site. The records search (#D17-74) was conducted on May 8, 2017, with a quarter-mile search radius. The NEIC, of the California Historical Resources Information System, California State University, Chico, an affiliate of the California Office of Historic Preservation (OHP), is the official state repository of cultural resource records and reports for Butte County. As part of the records search, the following federal and state inventories were reviewed:

- California Inventory of Historic Resources.
- California Points of Historical Interest.
- California Historical Landmarks.
- Directory of Properties in the Historic Property Data File. The directory includes the listings of the National Register, National Historic Landmarks, California Register, California Historical Landmarks, and California Points of Historical Interest in Butte County (OHP 2017).

Results

No cultural resources or cultural resources studies were identified on the project site as part of the records search.

Map Research

Michael Baker International staff conducted a map search of the project site to determine the presence of cultural resources. The following maps were reviewed:

- Township 22 North Range 3 East Mount Diablo Meridian Plat map (BLM 1867)
- Official Map of the County of Butte, California (Britton & Rey 1877)
- Official Map of the County of Butte, California (Britton & Rey 1886)
- Property Map Paradise Irrigation District, Butte County, California (PID 1922)
- Aerial Single Frame Photo ID: AR1EJ0000010118 (USGS 1947)

- Paradise, Calif. 1:62,500 topographic quadrangle (USGS 1953)
- Aerial Single Frame Photo ID: AR1VCGO00060110 (USGS 1969)
- Aerial Single Frame Photo ID: 1VDGI00010206 (USGS 1973)

Results

The results of the map search indicate that the project site was undeveloped until the early twentieth century when the site consisted of residential/agricultural properties with small orchards and native oak trees. The project site remained residential/agricultural until circa 1973 when it no longer appears to maintain orchards (BLM 1867; Britton & Rey 1877, 1886; PID 1922; USGS 1947, 1953, 1969, 1973).

Historical Society Consultation

On April 24, 2017, Michael Baker International sent a letter describing the project with maps depicting the project site to the Butte County Historical Society. The letter requested any information or concerns about cultural resources in the area. No response to the consultation attempt has been received to date.

Field Survey

Michael Baker International staff conducted an archaeological and built environment field survey of the project site on April 26, 2017, and May 22, 2017. The surveys were conducted to identify archaeological deposits and built environment features within the project site.

Archaeological

When possible, east–west transects were applied with 10-meter spacing; however, numerous structures, fences, and thick brush often disrupted the transect survey method. An intuitive survey was used to work around blocked transects. Surface visibility was poor due to high and thick grass, bushes, leaf litter, and asphalt. Surface visibility ranged from 0 to 15 percent. Overall survey coverage was approximately 70 percent.

5795 Skyway (APN 052-182-092)

Much of APN 052-182-092 is covered in asphalt. Two abandoned vehicles were located at the far west end of the parcel. A historic refuse debris scatter is located in the northwest corner of the parcel and slightly spreads into the adjacent parcel (APN 052-211-037). No additional archaeological artifacts, features, materials, or residues were observed.

5825 Skyway (APN 052-211-037)

The historic refuse debris from APN 052-182-092 stretches into the far western portion of this parcel. No additional archaeological artifacts, features, materials, or residues were observed.

5833 Skyway (APNs 052-211-021 and 052-211-036)

A large historic concrete pad is located west of a residential complex. No archaeological artifacts, features, materials, or residues were observed.

5887 Skyway (APN 052-211-007)

The east portion of the property is largely undeveloped and is covered by thick grasses, bushes, and other flora. No archaeological artifacts, features, materials, or residues were observed.

Built Environment

5795 Skyway (APN 052-182-092)

The property at 5795 Skyway consists of nine buildings including a commercial building (Building 1), residence (Building 2), three industrial buildings (Buildings 3–5), a mobile home (Building 6), and three sheds (Buildings 7–9), as well as a historic refuse debris scatter (Feature 1). The buildings date from 1935 to 1970.

5825 Skyway (APN 052-211-037)

The property at 5825 Skyway consists of a residence (Building 1), garage (Building 2), storage building (Building 3), mobile home (Building 4), and shed (Building 5). The buildings date from 1921 to 1980.

5833 Skyway (APNs 052-211-021 and 052-211-036)

The property at 5833 Skyway consists of one single-family, Ranch-style residence dating to 1960.

5887 Skyway (APN 052-211-007)

The property at 5887 Skyway consists of a residence (Building 1), a garage (Building 2), and two sheds (Buildings 3 and 4). The buildings date from 1957 to 1975.

EVALUATIONS

Four built environment cultural resources were evaluated for inclusion in the California Register and recommended not eligible. The full evaluations are included in Attachment B.

Resource Name	APN	Appears California Register Eligible?	Historical Resource for the Purposes of CEQA?
5795 Skyway	052-182-092	No	No
5825 Skyway	052-211-037	No	No
5833 Skyway	052-211-021 and 052-211-036	No	No
5887 Skyway	052-211-007	No	No

SUMMARY OF FINDINGS

Historical Resources

Four built environment properties were evaluated and recommended not eligible for inclusion in the California Register. No historical resources are located within the project site. Therefore, the project will not directly materially alter historical resources. The project will have no impact to historical resources.

Archaeological Resources

One archaeological resource associated with 5795 Skyway was identified and evaluated as not eligible for inclusion in the California Register and is therefore not a historical resource for CEQA purposes. However, in the event that additional archaeological or paleontological resources are observed during project construction-related activities, the below mitigation measures are required to reduce impacts to a less than significant level.

DISCUSSION

a) *No Impact*. There are no historical resources on the project site that would be directly or indirectly impacted by the project. Therefore, no impact would occur.

b–d) *Less Than Significant Impact With Mitigation Incorporated*. No archaeological or paleontological resources or human remains are known to exist on the project site. However, the project includes ground-disturbing activities that could result in the unanticipated or accidental discovery of archaeological deposits, paleontological resources, or human remains. Implementation of mitigation measure **MM 2.5.1** would ensure that provisions are in place to protect paleontological and prehistoric or historical archaeological deposits encountered during construction. The mitigation measure requires impacts on such resources to be avoided or further investigation to be conducted to offset the loss of scientifically consequential information that would occur if avoidance is not possible.

Implementation of mitigation measure **MM 2.5.2** would ensure that human remains encountered during project activities would be treated in a manner consistent with state law. This would occur through coordination with descendant communities to ensure that the traditional and cultural values of said communities are incorporated in the decision-making process concerning the disposition of human remains that cannot be avoided.

Implementation of mitigation measures **MM 2.5.1** and **MM 2.5.2** would ensure that provisions are in place to reduce impacts on currently undiscovered archaeological and paleontological resources and human remains to a less than significant level.

Mitigation Measures

MM 2.5.1 Treatment of previously unidentified archaeological and paleontological deposits. Construction personnel involved in excavation and grading activities shall be informed of the possibility of discovering archaeological or paleontological resources at any location and the protocol to be followed if resources are found. The Town shall ensure the grading plan notes include specific reference to the potential discovery of such resources. If prehistoric or historical archaeological deposits are discovered during construction, the project applicant and/or contractor shall stop all work within 25 feet of the discovery and an archaeologist shall assess the situation, consult with agencies as appropriate, and make recommendations regarding the treatment of the discovery. The project applicant and/or contractor shall avoid impacts to archaeological deposits to the extent feasible, but if such impacts cannot be avoided, the deposits shall be evaluated for their California Register eligibility. If the deposit is not eligible for the California Register, no further protection of the finds is necessary. If the deposits are California Register eligible, they shall

be protected from project-related impacts, or such impacts shall be mitigated. Mitigation may consist of but is not necessarily limited to systematic recovery and analysis of archaeological deposits, recording the resource, preparation of a report of findings, and accessioning recovered archaeological materials at an appropriate curation facility. Public educational outreach may also be appropriate.

If potentially unique paleontological resources (fossils) are discovered during project construction, work shall be halted immediately within 25 feet of the discovery, the Town shall be notified, and a professional paleontologist shall be retained to determine the significance of the discovery. The paleontologist shall establish procedures for paleontological resource surveillance throughout project construction and for temporarily halting or redirecting work to permit sampling, identification, and evaluation of fossils. These procedures shall be implemented throughout project construction. Excavated finds shall be offered to a State-designated repository such as the Museum of Paleontology at the University of California, Berkeley or the California Academy of Sciences, or to California State University, Chico.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Include in grading notes and implemented prior to grading plan approval, pre-construction, and during ground-disturbing activities*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to approving grading plan and during construction*

MM 2.5.2 Treatment of previously unidentified human remains. The project applicant and/or contractor shall treat any human remains encountered during ground-disturbing activities in accordance with California Health and Safety Code Section 7050.5. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the Butte County coroner has determined the manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation or to his or her authorized representative. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel/construction workers shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American most likely descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Include in grading notes and implemented prior to grading plan approval, pre-construction, and during ground-disturbing activities*

Compliance Monitoring: *Town of Paradise Planning Division*

Verification Action/Timing: *Prior to approving grading plan and during construction*

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.6 GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to 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 or 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 Section 1803.5.3 of the 2016 California Building Code, creating substantial 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?	☐	☐	☒	☐

OVERVIEW

NorthStar Engineering conducted a soils investigation to identify on-site soils and a profile of each soil type. Soils encountered on the site generally consisted of clay loam and silty clay loam, with the amount of rock increasing near the site's eastern boundary adjacent to Skyway. No groundwater was encountered during in the soil borings; however, evidence of groundwater retention was observed (i.e., mottling, discoloration, moist to the touch). All of the soil profiles displayed increasing clay content with depth (NorthStar Engineering 2014).

Geosphere Consultants also conducted soil borings across the site and observed soils characteristic of weathered volcanic rock. Free groundwater was encountered at a depth of 27 feet in one boring near the center of the proposed Safeway store footprint. Groundwater was not encountered in any other borings, but discoloration and mottling were observed, indicating the soils are regularly wet.

According to US Department of Agriculture, Natural Resources Conservation Service (NRCS) data, the site soils are well drained but have a moderately high runoff potential and are moderately susceptible to water erosion. The soil composition of the project site allows for a very rare frequency of flooding and a moderate linear extensibility (shrink-swell) (NRCS 2017).

DISCUSSION OF IMPACTS

a.i) *No Impact*. The project site is not located within an Earthquake Fault Zone as mapped by the California Geological Survey (CGS 2015). The closest mapped active fault that could affect the site is the Cleveland Hill fault, located approximately 15–20 miles south of the site near Lake Oroville. Therefore, the potential for fault ground rupture at the site is considered very low. Although no active faults traverse the project site, the proposed project would be required to comply with the requirements of the California Building Standards Code (CBSC), which includes specific design measures intended to maximize structural stability in the event of an earthquake.

a.ii–iii) *Less Than Significant Impact With Mitigation Incorporated*. There are no active faults in or near Paradise (CGS 2010a). The Cleveland Hill fault, south of Lake Oroville, is the only identified active fault in Butte County, and has a maximum credible earthquake potential of approximately 6.5 to 6.7 (CGS 2010a, 2010b). An event of this magnitude would cause strong ground shaking at the project site. The site may also be affected by activity on other active and potentially active faults in the region. A limited soils investigation has been completed at the project site, but a comprehensive geotechnical study with recommendations to address seismic conditions at the site has not been submitted to the Town that demonstrates how the project will be designed to comply with the CBSC seismic design force standards for the Paradise area and to address potential ground failure hazards.

Compliance with these standards, as well as with the recommendations in the geotechnical study report prepared for the proposed project, will be necessary to ensure that the structures and associated improvements are designed and constructed to withstand expected seismic activity and associated potential hazards, including strong seismic ground shaking and seismic-induced ground failure (i.e., liquefaction, lateral spreading, landslide, subsidence, and collapse), thereby minimizing risk to the public and property. Implementation of mitigation measure **MM 2.6.1** would reduce this impact to a level that is less than significant by requiring all project plans to incorporate these standards and recommendations.

Mitigation Measures

MM 2.6.1 The project applicant shall prepare and submit a final, design-level geotechnical report to the Town of Paradise. The project's grading and building plans shall demonstrate that they incorporate all applicable recommendations of the design-level geotechnical study and comply with all applicable requirements of the latest adopted version of the California Building Standards Code. A licensed professional engineer shall prepare the plans, including those that pertain to seismic safety, soil engineering, cut/fill, structural foundations, pipeline excavation, and installation. All on-site soil engineer activities shall be conducted under the supervision of a licensed geotechnical engineer or certified engineering geologist.

Mitigation Responsibility:	*Project applicant*
Mitigation Action/Timing:	*Submit final geotechnical report; include recommendations in grading plan, site plan, and building design package*
Compliance Monitoring:	*Town of Paradise Public Works/Engineering Department*
Verification Action/Timing:	*Prior to approving final site plan and issuing grading and building permits*

a.iv,c) *Less Than Significant Impact With Mitigation Incorporated.* The project site is on a ridge underlain by weathered volcanic rock. The central portion of the site in the north–south direction is higher in elevation than the west and east sides, and the site slopes to the south. The proposed project would require substantial cut/fill as well as construction of a retaining wall along the west and north sides of the site. Fill activities during construction, particularly on the west side of the site, improperly compacted fill material, and retaining wall design have the potential to result in slope failure, which is a potentially significant impact. The geotechnical study required in mitigation measure **MM 2.6.1** would provide recommendations regarding the proposed cuts/fills and construction of the proposed retaining walls to ensure slope stability. Implementation of the recommendations in mitigation measure **MM 2.6.1,** as well as supervision by a qualified professional of all on-site soil engineering activities, would minimize the potential for landslides and/or slope failure, which would reduce the impact to less than significant.

b) *Less Than Significant Impact*. The project site is underlain by weathered volcanic bedrock and soils that exhibit moderate erosion hazard. Construction activities during project site development, such as grading, excavation, and soil hauling, would disturb soils and potentially expose them to wind and water erosion. The project applicant will be required to prepare a stormwater pollution prevention plan (SWPPP) to comply with the Regional Water Quality Control Board's (RWQCB) General Construction Storm Water Permit. The SWPPP will identify best management practices (BMPs) to be implemented on the project site to minimize soil erosion. Compliance with the General Construction Storm Water Permit would minimize soil erosion and loss of topsoil from project implementation and would reduce this impact to a level of less than significant.

c) *Less Than Significant Impact With Mitigation Incorporated.* See Issue a.iv), above.

d) *Less Than Significant Impact With Mitigation Incorporated*. Expansive or shrink-swell soils are soils that swell when subjected to moisture and shrink when dry. Expansive soils typically contain clay minerals that attract and absorb water, greatly increasing the volume of the soil. This increase in volume can cause damage to foundations, structures, and roadways. Occasional lenses of highly expansive clays are present on the site (Geosphere 2014). The presence of expansive soils that could affect the proposed project is a potentially significant impact. Implementation of the recommendations in the comprehensive geotechnical study in accordance with mitigation measure **MM 2.6.1** would reduce this impact to a less than significant level by ensuring that cut soils are well mixed and that the resulting fill would likely be moderately but not highly expansive. Compliance with the study's recommendations regarding building footing foundations and floor slabs would ensure the proposed development is designed and constructed to respond to soil expansion.

e) *Less Than Significant Impact*. The Town does not provide sewer services, and no conventional community sewer collection and treatment systems exist in Paradise. The project proposes an on-site wastewater secondary treatment system sized to treat 7,133 gallons per day of wastewater. NorthStar Engineering (2014) conducted a soils investigation of the project site and concluded that, based on the size of the proposed wastewater disposal area, the proposed design flow, and the soil profiles investigated, the site would be adequate to support the proposed treatment system. Town of Paradise staff also reviewed the proposed project and determined that the site has the capacity to support the proposed treatment system and design flow with the following conditions (Paradise 2016):

1. Wastewater dispersal shall be placed in native soils. There will be no more than 6 inches of native soil removal in those sites where wastewater dispersal fields are created. Three thousand one hundred forty-eight (3,148) linear feet of leach field is proposed which encompasses 200 percent of the design flow capacity.

2. Existing parcels shall be merged together or a covenant shall be created which ensures that easements shall be made for wastewater dispersal "if and when" the parcels come under separate ownership.

3. The mounding analysis provided demonstrates that there will be a minimum of 3.2 feet of separation between the bottom of the proposed 2.5-foot-deep dispersal trenches and the anticipated highest extent of groundwater mounding.

4. Advanced treatment shall be provided to the wastewater as well as fats, oils, and grease removal prior to advanced treatment.

Compliance with these conditions of approval would ensure that the proposed secondary wastewater treatment system is properly sized, installed, and operated and would not exceed the capacity of site soils. Impacts would be less than significant.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.7 GREENHOUSE GASES. Would the project:				
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 gases?	☒	☐	☐	☐

DISCUSSION OF IMPACTS

a, b) *Potentially Significant Impact*. Construction and operation of the proposed project would generate greenhouse gas (GHG) emissions that have the potential to have a significant impact on the environment or conflict with applicable plans. These impacts will be further evaluated in the Draft EIR.

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	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.8 HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
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 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 area or, where such a plan has not been adopted, within 2 miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☒	☐	☐	☐
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒	☐	☐

OVERVIEW

Several federal agencies regulate hazardous substances. These include the US Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and the US Department of Transportation (DOT). Applicable federal regulations and guidelines are contained primarily in Titles 10, 29, 40, and 49 of the Code of Federal Regulations (CFR). The primary state laws pertaining to hazardous materials and wastes that may be applicable to the proposed project, depending on the activity, include the Hazardous Waste Control Law, Hazardous Substances Information and Training Act, Air Toxics Hot Spots and Emissions Inventory Law, Underground Storage of Hazardous Substances Act, and Porter-Cologne Water Quality Control Act. At the state level, the California Environmental Protection Agency (CalEPA) is the "umbrella" agency under which a number of the state's environmental agencies operate. These subordinate agencies include the California Air Resources Board, the Department of Pesticide Regulation, the Department of Toxic Substances Control (DTSC), the California Department of Resources Recycling and Recovery (CalRecycle), the Office of Environmental Health Hazard Assessment, and the State Water Resources Control Board. Within CalEPA, the DTSC has primary regulatory responsibility for hazardous waste management. CalEPA has adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program is implemented at the local level by a local agency—the Certified Unified Program Agency (CUPA). Butte County Environmental Health is the CUPA for the county.

CEQA (Public Resources Code Section 21092.6) requires that the lead agency consult a list of hazardous waste and substances sites compiled by certain state agencies pursuant to Government Code Section 65962.5 to determine whether the project and any alternatives are located on a site that is included on the list. This list is referred to as the Cortese List, which is intended to be used as a planning document by state and local agencies and developers to comply with the CEQA requirements in providing information about the location of hazardous materials release sites.

The DTSC and the Regional Water Quality Control Board (RWQCB) are the two primary agencies for issues pertaining to sites where hazardous materials have resulted in environmental contamination (e.g., soil and groundwater). The Central Valley RWQCB is the regional authority for water quality. Local jurisdictions, such as Butte County, may also be involved in site remediation projects, such as leaking underground storage tanks. These agencies implement a regulatory

process to address the release of hazardous materials that could be harmful to public health and the environment.

Construction projects affecting 1 acre or more are required to comply with the National Pollutant Discharge Elimination System (NPDES) general construction permit to manage stormwater runoff. This permit requires a stormwater pollution prevention plan that identifies best management practices for the handling of fuels and oils, including measures to minimize the potential for spills and procedures for spill cleanup if it were to occur. These BMPs are intended to minimize the potential for accidental spills on construction sites by requiring the designation of safe, covered storage areas for such materials, as well as safe handling practices.

The project site is in an urbanized portion of the town that includes a mix of commercial and residential uses. It is partially developed with several residential and commercial structures and outbuildings on the site. All but one of these buildings is not occupied. The site has three short asphalt driveways from Skyway, which provide access to the various residential structures, an asphalt parking lot, and a gravel parking area. Surrounding uses are a mix of commercial and residential development.

Bureau Veritas North America prepared a Phase I Environmental Site Assessment (ESA) for the project site in July 2014. The Phase I ESA consisted of historical property use research, a regulatory agency records search, property owner interviews, and visual reconnaissance of the site to identify potential recognized environmental conditions (RECs) on the project site.

Paradise is located in a defined very high fire hazard severity zone pursuant to the California Government Code Section 51175 and California Health and Safety Code Section 13108.5. Because of this designation, prevention and preparedness are of utmost importance.

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact*.

Construction

Construction of the proposed project would involve the transport, use, and disposal of common hazardous materials such as fuels, oil, solvents, paints, and landscaping materials. These materials are routinely used in construction activities and would be regulated through compliance with applicable federal, state, and local laws as well as product labeling. These materials would be used only temporarily during construction activities. BMPs to control the potential for hazardous materials spills and equipment leaks would be required to be implemented in accordance with the SWPPP. As such, the handling of these materials on the project site would not create a significant hazard to the public or the environment.

Operation

Operation of the project would involve the transport, use, and disposal of various hazardous materials such as fuels, consumer products for retail sale (including pharmaceuticals), and maintenance items. Hazardous materials transportation and storage are required to comply with applicable regulations. The types and amounts of consumer products that could contain hazardous materials would be limited.

The fueling center portion of the project would include the installation of three underground gasoline storage tanks (USTs) and would receive routine deliveries of fuel transferred into the USTs for dispensing from the pumps. UST installation and operation are regulated by the State under Division 20, Chapter 6.7of the Health and Safety Code (starting with Section 25280) and the California Code of Regulations, Title 23 Water, Division 3, Chapter 16 (Underground Storage Tank Regulations). The project applicant would be required to obtain a Permit to Install Underground Hazardous Materials Storage Tank(s) from Butte County Environmental Health prior to beginning any work pertaining to the installation of the USTs. Tank installation would be required to adhere to Chapter 37 of the Butte County Code (Underground Hazardous Substance Storage Facilities), including requirements for continuous monitoring and inspection of the USTs. Compliance with these requirements would ensure that operation of the proposed gasoline storage tanks on the site would not create a significant hazard to the public or the environment. In addition, the project would be required to comply with Butte County Air Quality Management District Rules 220 through 227, which regulate gas pump operation, vapor recovery systems, delivery vessel operations, and petroleum storage facilities to minimize the emission of petroleum vapors into the atmosphere.

The proposed project would also include a natural gas–fueled emergency backup generator for use in the event of a power outage at the proposed Safeway store. Natural gas would be provided by the Pacific Gas and Electric Company (PG&E) in accordance with its standards and applicable federal regulations.

Compliance with existing regulations and programs would minimize potential risks to the public and the environment associated with the use, storage, and transport of hazardous materials associated with the proposed project to levels that would be less than significant.

b) *Less Than Significant Impact With Mitigation Incorporated.*

Potential Environmental Contamination from Past Uses

The Phase I ESA identified numerous recognized environmental conditions on the project site and in the immediate vicinity, which could inadvertently expose persons and/or the environment to hazardous materials during site development if not properly managed. The identified RECs are summarized below.

- Soil mounds of unknown origin were observed on the site which, according to property occupant interviews, may contain previously buried garbage and debris. Buried wastes may contain elevated concentrations of metals, petroleum products, and other hazardous materials.

- Portions of the project site have previously been used for various vehicle service operations and a welding operation, as well as for vehicle storage, indicating likely past storage and use of various hazardous and flammable materials including paints, solvents, oils, gasoline, antifreeze, lubricants, and fiberglass resin.

- The northwestern portion of the project site contained an orchard from at least 1947 to sometime before 1998, indicating the potential presence of residual agricultural chemicals (e.g., organochlorine pesticides and metal compounds) in site soils.

- A dry cleaner operation (Quality Cleaners) is located approximately 175 feet northeast and upgradient of the project site. This operation is identified as a small quantity generator of hazardous waste.

The presence of these RECs on and near the project site indicate the potential for the release of hazardous materials into the environment and worker exposure during site development. This impact would be potentially significant. The Phase I ESA concluded that a limited subsurface investigation of the identified RECs and significant data gaps should be performed. A limited subsurface investigation would determine if contamination of the soil or groundwater above applicable state standards is present on the site and would recommend any necessary remediation actions. Implementation of mitigation measure **MM 2.8.1** would reduce this impact to a level that is less than significant.

Mitigation Measures

MM 2.8.1 In accordance with the recommendations of the Phase I ESA prepared for the project site, the project applicant shall have a qualified environmental professional perform a limited subsurface investigation of all RECs and significant data gaps identified in the Phase I ESA. The limited subsurface investigation shall include, at a minimum, soil sampling and laboratory testing to determine the presence of contaminants, a determination of whether contaminant levels exceed any applicable public standards, and recommendations to address contaminants of concern. Should the limited subsurface investigation identify contamination or contamination be discovered during site development, a Risk Management Plan shall be prepared and implemented that (1) identifies the contaminants of concern and the potential risk each contaminant would pose to human health and the environment during construction and post-development and (2) describes measures to be taken to protect workers and the public from exposure to potential site hazards. Measures could include options such as physical site controls during construction, remediation, long-term monitoring, post-development maintenance or access limitations, or some combination thereof. Depending on the nature of contamination, if any, appropriate agencies shall be notified (e.g., Town of Paradise Fire Department). If needed, a Site Health and Safety Plan that meets Occupational Safety and Health Administration (OSHA) requirements shall be prepared and in place prior to commencement of work in any contaminated area.

Mitigation Responsibility:	*Project applicant*
Mitigation Action/Timing:	*Provide Phase II report to Town for review; implement remediation (if needed) prior to site disturbance; document remediation results and provide to Town and Butte County Environmental Health*
Compliance Monitoring:	*Town of Paradise Planning Division; Butte County Environmental Health*
Verification Action/Timing:	*Prior to issuing grading permit*

Wells and Septic Systems

The existing development on the project site currently utilizes seven septic systems. Additional septic systems associated with buildings that are no longer present on the site may be encountered during site development. In addition, a groundwater well is located in a storage shed that has been covered (not decommissioned), is no longer in use, and is not visible. Other wells are likely to be present elsewhere on the site. The presence of these facilities, particularly those that are not known or have been covered and are no longer visible, poses a public safety risk. Abandoned wells and septic systems also pose a risk of groundwater contamination.

Prior to destruction of the unused septic systems on the project site, the project applicant would be required to obtain an On-Site Wastewater Construction Permit and follow the County's septic tank destruction procedures. Compliance with these requirements would ensure that the unused septic systems are properly removed and there is no risk to the public or the environment. The project applicant would also be required to destroy all abandoned wells on the project site prior to development in accordance with Butte County Code Chapter 23B (the County's ordinance pertaining to water wells) including obtaining a well permit, complying with specific standards for sanitary seals, and submitting to a County inspection of the seal(s). Compliance with Butte County Code Chapter 23B would ensure that any abandoned wells encountered during site development would be sealed properly, minimizing risks to the public and the environment.

c) *No Impact*. There are no schools within one-quarter mile of the project site. There would be no impact.

d) *No Impact.* A search of the DTSC (2017) and State Water Resources Control Board (SWRCB) (2017) hazardous waste sites lists identified no open cases of hazardous waste violations on the project site. In addition, the Phase I ESA prepared for the project site (Bureau Veritas 2014) included a search of other applicable public records such as those compiled by the Paradise Fire Department and Butte County Environmental Health. This search also failed to identify any cases of hazardous waste violations on the project site. Therefore, the project site and the proposed project are not on a parcel included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. As a result, the project would not create a significant hazard to the public or to the environment. However, as noted above, there is the potential for contamination to be on-site as a result of past uses, which would be addressed through mitigation measure **MM 2.8.1**.

e) *No Impact*. The Paradise Skypark is located approximately 3 miles southeast of the proposed project site. The proposed project is not within the Land Use Compatibility Plan area or the approach or departure zones for the Paradise Skypark (Butte County Airport Land Use Commission 2000); therefore, project Implementation would not expose workers or people on site to safety hazards resulting from airport operations, and no impacts would result.

f) *No Impact*. See Issue e) above. The proposed project site is not located in the vicinity of a private airstrip and would not result in a safety hazard for people residing or working in the project area. Therefore, no impact would occur.

g) *Potentially Significant Impact*. Project construction activities could temporarily interfere with emergency access and/or temporary traffic lane closure(s) that could affect

emergency response or evacuation routes during construction. This is a potentially significant temporary and short-term impact that will be further evaluated in the Draft EIR.

h) *Less Than Significant Impact With Mitigation Incorporated*. The proposed project site is in an urbanized portion of Paradise and surrounded by residential and commercial development, which is served by the Town's Fire Department. As with all of Paradise, the site is in a very high fire hazard severity zone. The on-site trees and vegetation would be removed and replaced with perimeter and parking lot landscaping. The project is applicant required to comply with all Town of Paradise requirements including fire flows, on-site hydrants, and backflow assemblies. The Paradise Fire Department has reviewed the project and has identified specific design requirements that must be incorporated into the project (Paradise Fire Department 2016). The final design of the water system has not been submitted to the Town, so the ability of the project to meet required fire flows has not been verified. Given the site's location in a very high fire hazard severity zone, this impact is considered potentially significant. Implementation of mitigation measure **MM 2.8.2** would ensure the applicant demonstrates adequate fire flow, which would reduce the impact to less than significant.

Mitigation Measures

MM 2.8.2 Prior to issuance of a building permit, the project applicant shall submit documentation from the Paradise Irrigation District verifying that the project's water system is capable of meeting the minimum fire flows required by the Town of Paradise Fire Marshal. If the system is not capable of meeting the required fire flows, the project applicant shall submit documentation showing the approved water system improvement plans to upgrade the existing system and detailing the financial arrangements to fund the necessary improvements.

Mitigation Responsibility: *Project applicant*

Mitigation Action/Timing: *Submit documentation*

Compliance Monitoring: *Town of Paradise Fire Department*

Verification Action/Timing: *Prior to issuing grading and building permits*

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.9 HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐
e) 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?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of a failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

OVERVIEW

There are no natural water bodies on or adjacent to the site. The site drains in an easterly and westerly direction. The slope on the site varies from 2 to 15 percent. A ridge running along the center of the site separates two distinct drainage shed areas. Shed Area 1, located west of the ridge, drains to the west into neighboring residential properties and ultimately into the Honey Run Basin. The area east of the ridge is further divided into two smaller drainage shed areas, both of which drain to the east toward Skyway. Shed Area 2, consisting of the northeastern portion of the site, drains to an existing 15-inch-diameter storm drain that traverses across Skyway then down

Black Olive Drive. Shed Area 3, consisting of the southeastern portion of the site, drains to Skyway and flows down the gutter in a southwesterly direction and eventually drains into a Town drainage system just over 400 feet from the southern boundary of the project site.

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact*. There is potential for the proposed project to result in degradation of water quality during both the construction and operational phases. Polluted runoff from the project site during construction could include sediment from soil disturbances and oil and grease from construction equipment.

Construction

Proposed construction activities would disturb site soils, potentially resulting in soil erosion and sedimentation of downstream waterways. Additionally, construction activities would require the storage and use of hazardous materials and other urban pollutants such as gasoline (for both equipment operation and related to the installation of underground gasoline storage tanks at the proposed fueling center), diesel fuel, oils, solvents, and trash, which could enter drainages and degrade downstream water quality and/or violate applicable water quality standards or waste discharge requirements. However, because the project site is over 1 acre in size, it would be required to obtain coverage under the Central Valley Regional Water Quality Control Board Statewide General Construction Permit (CGP), which requires the preparation, approval, and implementation of a stormwater pollution prevention plan. The SWPPP would include best management practices to be implemented during and after project construction to minimize erosion and sedimentation of downstream watercourses. As required by Town of Paradise Municipal Code Section 8.56.100, BMPs to reduce pollutants in stormwater would also be incorporated into the project's land use entitlements and permits. As discussed under Issue a) in subsection 2.8, Hazards and Hazardous Materials, installation of the proposed underground gasoline storage tanks would be regulated at the state and local levels to protect the public and the environment, including stormwater runoff and downstream waterways.

Operation

Operation of the proposed project could also contribute pollutants, such as oil, grease, and debris, to stormwater drainage flowing over the proposed parking areas, driveways, and fueling center and entering downstream waterways. As described in greater detail below, a portion of the site would continue to drain overland to the west and into Honey Run Creek. This creek is not identified as an impaired water body by the SWRCB (2015). The remainder of the site would drain to the east into a public drainage system.

In addition to construction BMPs, the required SWPPP would include post-construction BMPs to treat stormwater prior to leaving the site or entering storm drains. All drainage would be routed through an isolator row to capture silts and debris. Runoff would then be filtered out of the isolator row and through rock media prior to leaving the site. The drainage area that includes the proposed fueling center would drain to a slot drain then to a sand/oil interceptor prior to flowing to the on-site detention/infiltration facility. As discussed under Issue a) in subsection 2.8, Hazards and Hazardous Materials, operation of the proposed underground gasoline tanks would be regulated at the state and local levels including requirements for continuous monitoring and inspections which would ensure that the tanks are properly maintained and operated and reducing risks to water quality.

Additionally, the proposed project would not violate any waste discharge requirements. Because of these standard procedures, the requirement to prepare a SWPPP, the stormwater protection requirements contained in the Town of Paradise Municipal Code, and state and local regulations pertaining to underground fuel storage tanks, project impacts on water quality would be less than significant.

b) *No Impact*. The project site is situated on a ridge of weathered volcanic bedrock. Underlying soils are silts and clays (Geosphere Consultants 2014). Because of the geologic conditions on the project site, the site is not a significant recharge source. Potable water in Paradise is provided by the Paradise Irrigation District, which uses surface water from Little Butte Creek as its primary source of water. Groundwater is present in fractured bedrock aquifers, but it is not a significant source of water (PID 2016). Therefore, the proposed project would not result in a depletion of groundwater supplies and would not interfere with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. There would be no impact.

c) *Less Than Significant Impact*. See Issue b) in subsection 2.6, Geology and Soils. Compliance with NPDES permit requirements would ensure that BMPs would be implemented during the construction and operation phases to effectively minimize excessive soil erosion and sedimentation. Once the project is constructed, runoff would flow over paved surfaces and the proposed drainage system would route all runoff through an isolator row to capture silts and debris and then through rock media before leaving the site. These measures would minimize erosion potential on the site.

d) *Less Than Significant Impact*. The project site is not adjacent to any streams, rivers, lakes, or major drainage channels. Therefore, the proposed project would not result in the alteration of the course of a natural waterway.

The proposed project would alter the existing drainage patterns of the site. To accommodate the proposed development, it would be necessary to mass grade the site, and a significant amount of fill material would be imported to allow for the proposed wastewater leach field. In addition, an increase in the amount of impervious surfaces (rooftops, parking areas, driveways) would occur, resulting in increased runoff volumes.

A preliminary drainage study was prepared for the proposed project (Robertson Erickson Civil Engineers and Surveyors 2016). According to the study, the project proposes to direct most site runoff easterly to Skyway. This would direct drainage away from neighboring residential properties and into existing storm drainage infrastructure along the roadway. The infrastructure was designed to serve Skyway Drainage Assessment District #1, of which the project site is a part, and there is adequate capacity in the system to accommodate anticipated flows. A 1.03-acre portion of the site in existing Shed Area 1 would continue to drain to the west. Because the shed area would be smaller, with a lower runoff factor, and would contain a significant amount of pervious landscaping, post-development runoff volumes from this area would be reduced and no impacts would occur. To manage the increase in runoff volumes across the remainder of the site, the project applicant proposes construction of an underground detention/infiltration basin and controlling outlet structure. Total calculated treatment volume required would be 14,477 cubic feet and the detention/infiltration storage volume available is 14,698 cubic feet. The basin would be installed with a control structure limiting flows to 2-year event conditions and maintaining existing peak flows downstream, consistent with Town of Paradise post-construction standards. Thus, with the proposed drainage improvements, no on-site or off-site flooding

would occur and runoff would not exceed the capacity of either the existing or the planned drainage systems.

e) *Less Than Significant Impact*. See discussion of Issues a) and c), above. Site runoff would not exceed the capacity of either the existing or proposed drainage systems. Compliance with NPDES permit requirements would ensure that BMPs would be implemented during both the construction and operation phases to effectively minimize excessive soil erosion and sedimentation and eliminate non-stormwater discharge off-site.

f) *Less Than Significant Impact*. The proposed project would not otherwise result in degradation of water quality. The proposed project has been designed to ensure compliance with applicable NPDES permit and Town stormwater runoff requirements, as described above, which would ensure that potential water quality impacts are less than significant.

g) *No Impact*. According to the applicable Federal Emergency Management Agency (FEMA) (2011) flood hazard map (FIRM 06007C0375E), the project site is not located in a flood hazard zone. The project does not propose the development of housing. Therefore, the proposed project will not have an impact related to flooding.

h) *No Impact*. See Issue g) above.

i) *No Impact*. The project site is not protected by levees from any flood hazard. The Paradise Irrigation District (PID) operates two dams, Paradise Dam and Magalia Dam, upstream from Paradise that impound approximately 11,500 acre-feet and 800 acre-feet of water, respectively. The project site is not within the inundation area for either dam (Butte County 2010: Figure 4.8-4). There would be no impact.

j) *No Impact*. No large bodies of water exist near the proposed project site. The project site is not located within a potential tsunami or seiche inundation area. The project site and vicinity are on a bedrock ridge, and there are no steep slopes in the vicinity, so mudflow would not affect the site. There would be no impact.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.10 LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

OVERVIEW

The project site is designated as Town Commercial (TC) in the Town of Paradise General Plan. This designation provides for a full range of locally and regionally oriented commercial uses, including retail, retail centers, wholesale, restaurants, service stations, professional and administrative offices, churches, and public uses. This classification is applied to existing moderate- to high-intensity commercial areas, to areas between existing commercial uses which are suitable for infill, and to areas located at the intersection of designated arterial and/or collector streets.

The site is zoned Community Commercial (CC). The CC zone is intended for land areas that are planned or are providing a full range of locally and regionally oriented commercial land uses, including retail, retail centers, restaurants, service stations, automobile sales and service, professional and administrative offices, etc.

The project site is in an urbanized portion of the town that includes a mix of commercial and residential uses. There are 19 residential and commercial structures and outbuildings on the site. All but one of these buildings is not occupied. The site has three short asphalt driveways from Skyway, which provide access to the various residential structures, an asphalt parking lot, and a gravel parking area. Surrounding uses include single-family homes to the west, commercial mini-storage units and single-family homes to the north, commercial uses and single-family homes to the east, across Skyway, and commercial uses and single-family homes to the south.

DISCUSSION OF IMPACTS

a) *No Impact*. The project site is an infill site with direct access from Skyway. All buildings and structures on the site would be removed to accommodate the proposed project. Development of the proposed project would not remove or impair access to existing adjoining commercial and residential land uses. The proposed project would therefore not physically divide an established community, and there would be no impact.

b) *No Impact*. The Paradise General Plan Land Use Element guides land development in the town. The element sets forth policies to encourage and manage thoughtful, well-planned development that adheres to long-term community and economic development strategies but also identifies strong goals and objectives to preserve environmental resources and retain the town's quality and rural charm.

The site currently has residential and commercial structures which would be removed for site development and the proposed uses. Project development would change the use of the site, but it would be consistent with historic uses of site and the land use designation and zoning in the General Plan. The site is designated as Town Commercial (T-C) and is zoned Community-Commercial (C-C), which provides for a full range of commercial uses, including retail, retail, restaurants, and service stations. These classifications are applied to existing moderate- to high-intensity commercial areas that are located at the intersections of designated arterial and/ or collector streets. The proposed project is defined as a 'large retail' project as it proposes the construction of 50,000 or more square feet. Larger retail and/or professional office located in centers with appropriate access, parking, landscaping and architectural design are encouraged in the Town's commercial districts.

The proposed project would not conflict with General Plan policies which encourage infill development in the Town's commercial areas, consistent with the existing neighborhood character and available infrastructure capacity. The proposed project is consistent with Policy LUP-31, which states that commercial development along Skyway should be

directed toward visitor services, and retail sales and infill strip development should be permitted along Skyway between Neal Road and Bille Road. It is also consistent with Policy LUP-34 because it is a large retail development that would be located along Skyway and would include two-driveway access and on-site parking that meets Town requirements, would be landscaped, and would have an architectural design consistent with Town guidelines.

The Safeway store would require a Conditional Use Permit (CUP). The proposed fueling center is consistent with the Town's zoning definition for a service station. Town approval of the fueling center would be required through the site plan review process and issuance of a subsequent site plan permit. The project includes a pad for a restaurant, which is a permitted use in the CC zone and requires no other approvals by the Town.

General Plan policies require attractive and appropriately located commercial development to protect planned land uses from incompatible uses on adjacent and nearby properties. The project is subject to the Town's Design Standards, which require architectural consistency in for all commercial development, including compatibility between new and old structures with surrounding land uses. Mandatory compliance with General Plan policies and Design Standards would ensure the project is visually compatible with existing and planned land uses in the area.

Therefore, the proposed project would not conflict with General Plan Land Use Element goals, objectives, or policies or with requirements included in the Zoning Code. There would be no impact.

c) *No Impact*. There is no adopted habitat conservation plan, natural community conservation plan, or other approved Town of Paradise, regional, or state habitat conservation plan that governs the project site and no impacts would result.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.11 MINERAL RESOURCES. Would the project:				
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?	☐	☐	☐	☒

OVERVIEW

There are no active mines within or near the project site and no known areas with mineral resources on the project site.

DISCUSSION OF IMPACTS

a, b) *No Impact*. No mineral resource recovery sites are located on or in the immediate vicinity of the project site. The proposed project would not result in the loss of availability of a known mineral resource or resource recovery site.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.12 NOISE. Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?	☒	☒	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

DISCUSSION OF IMPACTS

a–d) *Potentially Significant Impact*. Construction and operation of the proposed project would generate noise and groundborne vibration that have the potential to exceed Town standards or ambient noise levels on a temporary and/or permanent basis. Potential impacts will be further evaluated in the Draft EIR.

e) *No Impact*. The project site is located approximately 3 miles north of the Paradise Skypark and 12 miles east of the Chico Municipal Airport. A review of the Butte County Comprehensive Airport Land Use Compatibility Plan (Butte County Airport Land Use Commission 2000) shows the project site located outside of any noise impact zones for both the Paradise Skypark and the Chico Municipal Airport. There would be no impact.

f) *No Impact*. The project site is not in the vicinity of a private airstrip. Therefore, there would be no impact.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.13 POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

OVERVIEW

The project site is a partially developed site along Skyway in an area with existing commercial uses and some residential development. The site is zoned for commercial development. Skyway is the most heavily travelled roadway in Paradise and is the primary roadway through the commercial core. There are existing water lines and storm drainage facilities in the area. Wastewater in Paradise is managed through on-site septic systems. The existing Safeway store on Clark Road that would be vacated is also in an area developed with commercial uses.

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact*. The proposed project would provide some additional employment opportunities in Paradise, but this would not result in the need to construct new housing that could result in environmental impacts. The number of additional employees would not be so substantial as to create increased demand on secondary markets that would, in turn, increase growth pressure in the town. The proposed project would not require extension of infrastructure to an area not currently served and therefore would not eliminate any obstacle to growth in the town. The proposed project is in a commercial area and would be consistent with existing commercial zoning. No changes in land use intensity or types of uses are proposed that would foster further land use intensification in the project vicinity. Therefore, the proposed project would not result in growth-inducing effects that would result in significant indirect environmental impacts.

b, c) *Less Than Significant Impact*. The existing residential buildings on the site that would be demolished to accommodate the proposed project are not occupied. The proposed project would not displace housing or people that would result in the need for construction of replacement housing elsewhere. There would be no impact.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.14 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 following public services:				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☐	☒

DISCUSSION OF IMPACTS

a, b) *Less Than Significant Impact*. The proposed project would be developed on an infill site in an existing commercial and residential area where fire and police services are readily available. The closest Paradise Fire Department and Police Department stations are at 767 Birch Street, approximately one-half mile from the site. The Paradise Fire Department has reviewed the project and has identified specific design requirements that will be incorporated into the project. The proposed project would not require new or physically altered fire or police station facilities that could result in environmental impacts, and this impact would be less than significant.

c) *No Impact*. The proposed project is a commercial development that would not result in an increase in housing or population in the town that would require additional educational facilities. No increase in student enrollment is anticipated as part of this project. There would be no impact.

d) *No Impact*. The proposed project is commercial development that would not require the construction or expansion of recreational facilities and would not result in an increase in demand for parks and recreation facilities in the surrounding area. There would be no impact.

e) *No Impact*. The proposed project would not result in an increase in housing or population in the town; therefore, the project is not anticipated to have significant impacts on other public facilities. There would be no impact.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.15 RECREATION.				
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?	☐	☐	☐	☒

OVERVIEW

The Paradise Recreation and Park District (PRPD) provides outdoor and indoor opportunities by creating community and quality of life through people, park, and recreational facilities and programs. The department is made up of paid staff and volunteers.

DISCUSSION OF IMPACTS

a) *No Impact*. The proposed project is commercial development that would not increase the use of parks and recreational facilities. There would be no impact.

b) *No Impact*. The proposed project is commercial development that would not include a park or recreation component, nor would it require the construction of improvements or the expansion of existing facilities. There would be no impact.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.16 TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☒	☐	☐	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location which results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐
e) Result in inadequate emergency access?	☒	☐	☐	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

DISCUSSION OF IMPACTS

a, b) *Potentially Significant Impact*. The proposed project would result in new trips and a redistribution of vehicle trips that could affect intersection operations and queueing. This impact will be further evaluated in the Draft EIR.

c) *No Impact*. The project would not affect air traffic volumes. The project is located outside the airport land use influence area of the Paradise Skypark (Butte County Airport Land Use Commission 2000); therefore, it would not affect flight patterns or interfere with airport operations. There would be no impact.

d) *Potentially Significant Impact*. The project proposes two driveways on Skyway to provide access to the project site. Potential hazards involving conflicts between vehicles on Skyway and vehicles turning left out of either project driveway or from Black Olive Drive would be a potentially significant impact that will be further evaluated in the Draft EIR.

e) *Potentially Significant Impact*. Project construction activities could temporarily interfere with emergency access from the movement of heavy equipment, worker vehicle parking, materials delivery and storage, and/or temporary traffic lane closure. This is a potentially significant temporary and short-term impact that will be further evaluated in the Draft EIR.

f) *Less Than Significant Impact*. The proposed project would generate additional pedestrian and bicycle traffic, increasing demand for pedestrian and bicycle facilities. As required by Town standards and recommended by the Skyway Corridor Study (BCAG 2009), sidewalks along the project frontage and walking routes within the site would be constructed as part of the project. The project's completion of a continuous sidewalk on the west (project side)

of Skyway from Pearson Road to Black Olive Drive and the inclusion of bicycle parking would be consistent with the Skyway Corridor Study as well as with General Plan Circulation Element Policy CP-10 (safe paths for pedestrians and bicyclists) and corresponding implementation measure CI-6. The proposed project would not permanently interfere with any existing bus routes and would not remove or relocate any existing bus stops. The proposed project would add a bus turnout on Skyway adjacent to the project site, which would be considered a benefit of the project and would be consistent with Circulation Element implementation measure CI-9 (require transportation facilities such as bus stops to be incorporated into major new developments). Therefore, the proposed project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. This is a less than significant impact.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.17 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:				
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), or?	☐	☒	☐	☐
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.	☐	☒	☐	☐

OVERVIEW

Tribal cultural resources are defined in CEQA as a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American tribe, which may include non-unique archaeological resources previously subject to limited review under CEQA. Assembly Bill 52 (AB 52) requires the lead agency (in this case, the Town of Paradise) to begin consultation with any California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report if (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and (2) the California Native American tribe responds, in writing, within 30 days of receipt of the formal notification and requests the consultation (Public Resources Code Section 21080.3.1[b]).

The Town of Paradise sent letters to the following traditionally and culturally affiliated California Native American tribal representatives on April 25, 2017: Berry Creek Rancheria, Enterprise Rancheria, Greenville Rancheria, Mechoopda Tribe, and Mooretown Rancheria. No Native American tribes requested consultation with the Town within 30 days of the notice. No tribal cultural resources (as defined in Public Resources Code Section 21074) have been reported on the project site.

DISCUSSION

a, b) *Less Than Significant Impact With Mitigation Incorporated*. There are no historical resources on the project site and no known resources of significance that have been reported by a California Native American tribe. No archaeological resources or human remains are known to exist on the project site. However, the project includes ground-disturbing activities that could result in the unanticipated or accidental discovery of archaeological deposits or human remains. Implementation of mitigation measure **MM 2.5.1** would ensure that provisions are in place to protect paleontological and prehistoric or historical archaeological deposits encountered during construction. The mitigation measure requires impacts on such resources to be avoided or further investigation to be conducted to offset the loss of scientifically consequential information that would occur if avoidance is not possible. Implementation of mitigation measure **MM 2.5.2** would ensure that human remains encountered during project activities would be treated in a manner consistent with state law. This would occur through coordination with descendant communities to ensure that the traditional and cultural values of said communities are incorporated in the decision-making process concerning the disposition of human remains that cannot be avoided. These mitigation measures would reduce impacts to less than significant.

Mitigation Measures

Implement mitigation measures **MM 2.5.1** and **MM 2.5.2**.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.18 UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Result in a determination by the wastewater treatment provider that 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?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

OVERVIEW

WASTEWATER COLLECTION AND TREATMENT

The Town does not provide sewer services, and no conventional community sewer collection and treatment systems exist in Paradise. All residents and businesses rely on individual septic systems or private sewage treatment plants. Historically the Town has relied upon standard septic tank/leach field systems; however, in recent years, many more advanced systems have come into use to accommodate higher-density development, poor soil conditions, and/or higher waste strength. Wastewater in Paradise is regulated by the Central Valley RWQCB, which adopted resolution R5-2016-0089 in July 2012 approving the local agency management for the water quality control policy for siting, design, operation, and maintenance of on-site wastewater systems. The design and construction of all wastewater systems must comply with the Town of Paradise Onsite Wastewater Management Zone Manual for the Onsite Treatment of Wastewater (2016). The manual establishes the criteria for new development, including baseline values for wastewater design flow rates.

WATER SERVICES

Water service in the town is provided by the Paradise Irrigation District. PID operates a public water system (CA0410007). PID relies predominantly on surface water sourced from Little Butte Creek, a minor stream in the Sacramento Valley drainage that rises in the northwestern foothills of the Sierra Nevada and lies wholly within Butte County. PID has three water permits allowing diversion of water from Little Butte Creek: two storage rights and a direct-flow right.

Water storage is provided by two reservoirs impounded by the Paradise and Magalia dams located north of Paradise. The upstream reservoir, Paradise Lake, is the main storage facility with a storage capacity of approximately 11,500 acre-feet. Downstream of Paradise Dam, storage behind the Magalia Dam is presently restricted to approximately 800 acre-feet. PID has approximately 6,000 acre-feet of additional water rights that are not being used because of a lack of storage.

PID's firm yield is 7,300 acre-feet (AF) plus 350 acre-feet from a well (groundwater). PID projects a total demand for potable and raw water of 6,623 AF by 2020 and 7,817 AF by 2040. Commercial demand is estimated at 455 AF by 2020 and 537 AF by 2040.

PID had approximately 10,546 municipal connections in 2015 for which it supplied 3,903 acre-feet of water. In 2015, commercial demand accounted for 289 AF. Projected future commercial demand is estimated to increase from 455 AF in 2020 to 537 AF in 2040.

PID has identified potential supply from four projects identified for future storage, which will increase the district's supply by approximately 17,833 AF by 2025. PID (2016) has determined that there are no legal, environmental, or water quality factors affecting water supply through 2040 horizon of its 2015 Urban Water Management Plan.

STORM DRAINAGE

The Town of Paradise adopted the Post-Construction Standards Plan (PCSP) in 2014 to guide projects through design requirements, consistent with the Town's Phase II Municipal Storm Water Sewer System (MS4) Permit. The PCSP provides guidance to meet State Water Resources Control Board requirements for mitigating increases in stormwater runoff caused by new development and redevelopment. The site is in the Town's Skyway Drainage Assessment District #1.

The federal Clean Water Act (CWA) established regulations to manage stormwater discharges from new development and redevelopment projects. The CWA delegates authority to states to issue National Pollutant Discharge Elimination System (NPDES) permits for discharges of stormwater from construction, industrial, and municipal entities to waters of the United States. The Town of Paradise is a small municipality identified by the State of California; therefore, it is required to obtain permit coverage under the Phase II General NPDES Permit for Municipal Separate Storm Water Sewer Systems (MS4)–Order No. 2013-0001-DWQ. These Phase II MS4s (municipalities) are required to implement various stormwater management programs to incorporate post-construction stormwater control measures into their design, including Low Impact Development (LID) and hydromodification techniques. Under the PCSP, larger projects are required to implement source control measures to minimize the impact of stormwater pollutant–generating activities.

Larger projects are also required to implement one or more site design measures to "treat" stormwater, appropriately sized to meet specified hydraulic sizing criteria. In addition, larger projects are required to implement hydromodification management measures to slow and minimize the amount of runoff to achieve no net increase of the post-construction runoff flow rates compared to the preconstruction value for a 2-year, 24-hour storm event.

SOLID WASTE

Solid waste collection and disposal in Paradise is provided by Northern Recycling and Waste Services. All commercial, residential, and recyclable materials are collected and ultimately disposed of at the Neal Road Recycling and Waste Facility, which is managed by the Butte County Public Works Department.

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact*. All wastewater in Paradise is regulated by the Central Valley RWQCB under resolution R5-2016-0089 approving the local agency management for the water quality control policy for siting, design, operation, and maintenance of on-site wastewater systems. The design and construction of all wastewater systems must comply with the Town of Paradise Onsite Wastewater Management Zone Manual for the Onsite Treatment of Wastewater, which includes site evaluation, selection of appropriate systems,

dispersal trench requirements, and hydraulic loading rate analysis requirements for new developments.

Based on wastewater calculations prepared for the project by NorthStar Engineering (2016), the site has average percolation rates of 3.3 minutes per inch with a stabilized winter groundwater depth of greater than 8 feet. The Safeway store has an assumed design flow of 3,000 gallons per day (gpd) and a measured design flow of 2,207 gpd. The fuel center is estimated to generate approximately 500 gpd, the proposed shops (dry retail and single-serve restaurant) 2,184 gpd, and Pad A (retail and single-serve restaurant) 1,449 gpd, for a project total of 7,133 gallons per day. The Town of Paradise has determined the site has adequate capacity to support the dispersal of 7,133 gallons per day of secondary treated wastewater. The project proposes 3,148 linear feet of leach line, which is approximately 200 percent of capacity of anticipated wastewater flows from the project.

The Town of Paradise has determined the site has adequate capacity to support the dispersal of secondary treated wastewater from the proposed uses, with the following conditions of approval on the project, compliance with which must be demonstrated prior to building permit issuance (Paradise 2016).

1. Wastewater dispersal shall be placed in native soils. There will be no more than 6 inches of native soil removal in those sites where wastewater dispersal fields are created. Three thousand one hundred forty-eight (3,148) linear feet of leach field is proposed which encompasses 200 percent of the design flow capacity.

2. Existing parcels shall be merged together or a covenant shall be created which ensures that easements shall be made for wastewater dispersal "if and when" the parcels come under separate ownership.

3. The mounding analysis provided demonstrates that there will be a minimum of 3.2 feet of separation between the bottom of the proposed 2.5-foot-deep dispersal trenches and the anticipated highest extent of groundwater mounding.

4. Advanced treatment shall be provided to the wastewater as well as fats, oils, and grease removal prior to advanced treatment.

b) *Less Than Significant Impact*. The proposed project's water demand would be approximately 3.2 million gallons (10 AF) per year, based on actual 2016 demand for a similar Safeway project in Chico. The project's demand of approximately 10 AF per year would be approximately 2 percent of future demand, which is a minimal increase. The project would include water-conserving features in restrooms, as required by the California Green Building Standards Code (CalGreen), and the landscape plan for the site includes drought-tolerant plantings to minimize irrigation water demand. The project would tie into PID's existing water distribution system. A private water main on-site would be reconfigured to provide for looping of the water system where possible to serve future retail tenant demand. Each individual parcel would be metered independently, in accordance with PID requirements for service. The line serving the site would be extended and/or replaced as necessary to connect to existing lines in Skyway.

There are no public sewer systems in Paradise. The project would include the construction of an on-site wastewater/leach line system to serve the proposed uses. All new wastewater systems must comply with Central Valley RWQCB and Town of Paradise requirements.

According to the Paradise Department of Public Works, the site is adequate to support an on-site wastewater system to accommodate flows from the proposed uses.

No new or expanded water supply or service facilities are required to serve the project, and the impact would be less than significant.

c) *Less Than Significant Impact*. The project is a regulated project and subject to PCSP regulation as it would create and replace 5,000 square feet or more of impervious surfaces on the site. Regulated projects are required to provide a map or diagram dividing the development into discrete Drainage Management Areas (DMAs). Projects are required to identify potential sources of pollutants and include design features and appropriate best management practices and source controls. Regulated projects must also select appropriately sized site design measures, or facilities, identified in the Phase II MS4 Permit that infiltrate, evapotranspire, harvest and reuse, or biotreat stormwater runoff. Regulated projects are also required to prepare and submit an Operation and Maintenance Plan (O&M) to ensure control measures are maintained and operate effectively.

The proposed project would change the drainage characteristics of the site, partially due to mass grading and importing fill onto the site to accommodate the proposed development and construction of the wastewater leach field. The majority of the site's drainage will be easterly toward Skyway and away from residential areas to the west of the site. A preliminary drainage study for the project was prepared in 2016. To ensure the proposed infiltration basin is large enough to accommodate project runoff peaks, the 2-year, 10-year, and 100-year events were hypothetically routed through the basin. The drainage study determined there is 14,698 cubic feet available and the project would require 12,465 cubic feet.

The site is in Skyway Drainage Assessment District #1 where there is adequate storm drainage infrastructure to accommodate development of all properties in the assessment district. The development of the proposed project would increase the amount of impervious surfaces on the site; however, construction of an underground detention/infiltration basin controlling outlet structure will mitigate the increased runoff and provide a cleansing of stormwater prior to off-site discharge, and off-site/downstream peak flows would not increase as a result of the project. Therefore, storm drainage facility impacts are considered less than significant.

d) *Less Than Significant Impact*. As previously discussed, water service is provided by PID. According to the PID (2016) Urban Water Management Plan, there are no legal, environmental, or water quality factors affecting the district's water supply or distribution system through the plan horizon of 2040. PID has sufficient water supplies available to serve the project from existing entitlements, and no new facilities or entitlements are needed. Therefore, this impact is considered less than significant.

e) *Less Than Significant Impact*. See Issue a) above.

f, g) *Less Than Significant Impact*. Solid waste collection and disposal in Paradise is provided by Northern Recycling and Waste Services. All commercial, residential, and recyclable materials are collected and ultimately disposed of at the Neal Road Recycling and Waste Facility, which is managed by the Butte County Public Works Department. The County's Public Works Department determined the Neal Road facility has projected adequate capacity through 2033, and alternative disposal options to landfilling will be in place well in advance of the landfill's closure. CalRecycle (n.d.). The proposed project would not

substantially increase the amount of solid waste or recyclable materials in the town over existing conditions, as approximately 90 percent of the after-market packaging material at the proposed Safeway store would be recycled. The Neal Road facility has sufficient capacity to accommodate the project's solid waste, and less than significant impacts would result.

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
2.19 MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wild-life population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plants or animals, 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 that will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

DISCUSSION OF IMPACTS

a) *Less Than Significant Impact With Mitigation Incorporated*. As discussed in subsection 2.4, Biological Resources, construction of the proposed project may impact special-status bird and bat species. However, mitigation measures **MM 2.4.1** through **MM 2.4.7** would reduce these impacts to less than significant levels. Additionally, the proposed project has the potential to impact undiscovered cultural resources, as discussed in subsection 2.5, Cultural Resources. However, with implementation of mitigation measures **MM 2.5.1** and **MM 2.5.2**, these potential impacts would be reduced to a level that is considered less than significant.

b) *Potentially Significant Impact.* Vehicle trips generated by the proposed project would be a source of operational ozone precursor and GHG emissions that may be cumulatively considerable. These impacts will be evaluated in the Draft EIR.

c) *Potentially Significant Impact.* The proposed project would result in changes in the visual character of the site, which would be visible from adjoining residential properties on the

north and west, and would introduce new sources of nighttime lighting. This is a potentially significant impact that will be evaluated in the Draft EIR. The proposed project has the potential for the release of hazardous materials, but impacts would be reduced to less than significant through mitigation measures **MM 2.8.1** and **MM 2.8.2**. The proposed project may also be a source of noise during construction and operation, which may exceed thresholds. Noise impacts will be evaluated in the Draft EIR.

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ATTACHMENT A
SPECIES DATABASE SEARCH RESULTS

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Butte County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

[1] are managed by the Endangered Species Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

The following species are potentially affected by activities in this location:

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Tadpole Shrimp Lepidurus packardi There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Steelhead Oncorhynchus (=Salmo) mykiss There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/1007	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act[2].

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service

[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The migratory birds species listed below are species of particular conservation concern (e.g. Birds of Conservation Concern) that may be potentially affected by activities in this location. It is not a list of every bird species you may find in this location, nor a guarantee that all of the bird species on this list will be found on or near this location. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To view available data on other bird species that may occur in your project area, please visit the AKN Histogram Tools and Other Bird Data Resources. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

NAME	SEASON(S)
Bald Eagle *Haliaeetus leucocephalus* https://ecos.fws.gov/ecp/species/1626	Year-round
Black Rail *Laterallus jamaicensis* https://ecos.fws.gov/ecp/species/7717	Breeding

Burrowing Owl Athene cunicularia https://ecos.fws.gov/ecp/species/9737	Year-round
California Spotted Owl Strix occidentalis occidentalis https://ecos.fws.gov/ecp/species/7266	Year-round
Calliope Hummingbird Stellula calliope https://ecos.fws.gov/ecp/species/9526	Breeding
Fox Sparrow Passerella iliaca	Year-round
Green-tailed Towhee Pipilo chlorurus https://ecos.fws.gov/ecp/species/9444	Breeding
Lewis's Woodpecker Melanerpes lewis https://ecos.fws.gov/ecp/species/9408	Wintering
Loggerhead Shrike Lanius ludovicianus https://ecos.fws.gov/ecp/species/8833	Year-round
Long-billed Curlew Numenius americanus https://ecos.fws.gov/ecp/species/5511	Wintering
Nuttall's Woodpecker Picoides nuttallii https://ecos.fws.gov/ecp/species/9410	Year-round
Oak Titmouse Baeolophus inornatus https://ecos.fws.gov/ecp/species/9656	Year-round
Olive-sided Flycatcher Contopus cooperi https://ecos.fws.gov/ecp/species/3914	Breeding
Peregrine Falcon Falco peregrinus https://ecos.fws.gov/ecp/species/8831	Wintering

Rufous Hummingbird selasphorus rufus https://ecos.fws.gov/ecp/species/8002	Migrating
Rufous-crowned Sparrow Aimophila ruficeps https://ecos.fws.gov/ecp/species/9718	Year-round
Short-eared Owl Asio flammeus https://ecos.fws.gov/ecp/species/9295	Wintering
Snowy Plover Charadrius alexandrinus	Breeding
Swainson's Hawk Buteo swainsoni https://ecos.fws.gov/ecp/species/1098	Breeding
Western Grebe aechmophorus occidentalis https://ecos.fws.gov/ecp/species/6743	Wintering
Williamson's Sapsucker Sphyrapicus thyroideus https://ecos.fws.gov/ecp/species/8832	Year-round
Willow Flycatcher Empidonax traillii https://ecos.fws.gov/ecp/species/3482	Breeding
Yellow-billed Magpie Pica nuttalli https://ecos.fws.gov/ecp/species/9726	Year-round

What does IPaC use to generate the list of migratory bird species potentially occurring in my specified location?

Landbirds:

Migratory birds that are displayed on the IPaC species list are based on ranges in the latest edition of the National Geographic Guide, Birds of North America (6th Edition, 2011 by Jon L. Dunn, and Jonathan Alderfer). Although these ranges are coarse in nature, a number of U.S. Fish and Wildlife Service migratory bird biologists agree that these maps are some of the best range maps to date. These ranges were clipped to a specific Bird Conservation Region (BCR) or USFWS Region/Regions, if it was indicated in the 2008 list of Birds of Conservation Concern (BCC) that a species was a BCC species only in a particular Region/Regions. Additional modifications have been made to some

ranges based on more local or refined range information and/or information provided by U.S. Fish and Wildlife Service biologists with species expertise. All migratory birds that show in areas on land in IPaC are those that appear in the 2008 Birds of Conservation Concern report.

Atlantic Seabirds:

Ranges in IPaC for birds off the Atlantic coast are derived from species distribution models developed by the National Oceanic and Atmospheric Association (NOAA) National Centers for Coastal Ocean Science (NCCOS) using the best available seabird survey data for the offshore Atlantic Coastal region to date. NOAANCCOS assisted USFWS in developing seasonal species ranges from their models for specific use in IPaC. Some of these birds are not BCC species but were of interest for inclusion because they may occur in high abundance off the coast at different times throughout the year, which potentially makes them more susceptible to certain types of development and activities taking place in that area. For more refined details about the abundance and richness of bird species within your project area off the Atlantic Coast, see the Northeast Ocean Data Portal. The Portal also offers data and information about other types of taxa that may be helpful in your project review.

About the NOAANCCOS models: the models were developed as part of the NOAANCCOS project: Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf. The models resulting from this project are being used in a number of decision-support/mapping products in order to help guide decision-making on activities off the Atlantic Coast with the goal of reducing impacts to migratory birds. One such product is the Northeast Ocean Data Portal, which can be used to explore details about the relative occurrence and abundance of bird species in a particular area off the Atlantic Coast.

All migratory bird range maps within IPaC are continuously being updated as new and better information becomes available.

Can I get additional information about the levels of occurrence in my project area of specific birds or groups of birds listed in IPaC?

Landbirds:

The Avian Knowledge Network (AKN) provides a tool currently called the "Histogram Tool", which draws from the data within the AKN (latest,survey, point count, citizen science datasets) to create a view of relative abundance of species within a particular location over the course of the year. The results of the tool depict the frequency of detection of a species in survey events, averaged between multiple datasets within AKN in a particular week of the year. You may access the histogram tools through the Migratory Bird Programs AKN Histogram Tools webpage.

The tool is currently available for 4 regions (California, Northeast U.S., Southeast U.S. and Midwest), which encompasses the following 32 states: Alabama, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North, Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin.

In the near future, there are plans to expand this tool nationwide within the AKN, and allow the graphs produced to appear with the list of trust resources generated by IPaC, providing you with an additional level of detail about the level of occurrence of the species of particular concern potentially occurring in your project area throughout the course of the year.

Atlantic Seabirds:

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAANCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Facilities

Wildlife refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGES AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Cherokee (3912165) OR Hamlin Canyon (3912166) OR Paradise East (3912175) OR Paradise West (3912176) OR Richardson Springs (3912177) OR Stirling City (3912185) OR Cohasset (3912186) OR Chico (3912167) OR Campbell Mound (3912187))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
Allium jepsonii Jepson's onion	PMLIL022V0	None	None	G2	S2	1B.2
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Calystegia atriplicifolia ssp. buttensis Butte County morning-glory	PDCON04012	None	None	G5T3	S3	4.2
Campylopodiella stenocarpa flagella-like atractylocarpus	NBMUS84010	None	None	G5	S1?	2B.2
Cardamine pachystigma var. dissectifolia dissected-leaved toothwort	PDBRA0K1B1	None	None	G3G5T2Q	S2	1B.2
Carex xerophila chaparral sedge	PMCYP03M60	None	None	G2	S2	1B.2
Castilleja rubicundula var. rubicundula pink creamsacs	PDSCR0D482	None	None	G5T2	S2	1B.2
Clarkia gracilis ssp. albicaulis white-stemmed clarkia	PDONA050J1	None	None	G5T2T3	S2S3	1B.2
Clarkia mildrediae ssp. mildrediae Mildred's clarkia	PDONA050Q2	None	None	G3T3	S3	1B.3
Clarkia mosquinii Mosquin's clarkia	PDONA050S0	None	None	G2	S2	1B.1
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S2	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eriogonum umbellatum var. ahartii Ahart's buckwheat	PDPGN086UY	None	None	G5T3	S3	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Euphorbia hooveri Hoover's spurge	PDEUP0D150	Threatened	None	G1	S1	1B.2
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Frangula purshiana ssp. ultramafica Caribou coffeeberry	PDRHA0H061	None	None	G4T2T3	S2S3	1B.2
Fritillaria eastwoodiae Butte County fritillary	PMLIL0V060	None	None	G3Q	S3	3.2
Fritillaria pluriflora adobe-lily	PMLIL0V0F0	None	None	G2G3	S2S3	1B.2
Great Valley Cottonwood Riparian Forest Great Valley Cottonwood Riparian Forest	CTT61410CA	None	None	G2	S2.1	
Great Valley Mixed Riparian Forest Great Valley Mixed Riparian Forest	CTT61420CA	None	None	G2	S2.2	
Great Valley Valley Oak Riparian Forest Great Valley Valley Oak Riparian Forest	CTT61430CA	None	None	G1	S1.1	
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Imperata brevifolia California satintail	PMPOA3D020	None	None	G4	S3	2B.1
Juncus leiospermus var. leiospermus Red Bluff dwarf rush	PMJUN011L2	None	None	G2T2	S2	1B.1
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Layia septentrionalis Colusa layia	PDAST5N0F0	None	None	G2	S2	1B.2
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
Limnanthes floccosa ssp. californica Butte County meadowfoam	PDLIM02042	Endangered	Endangered	G4T1	S1	1B.1
Limnanthes floccosa ssp. floccosa woolly meadowfoam	PDLIM02043	None	None	G4T4	S3	4.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Monardella venosa veiny monardella	PDLAM18082	None	None	G1	S1	1B.1
Myotis yumanensis Yuma myotis	AMACC01020	None	None	G5	S4	
Northern Basalt Flow Vernal Pool Northern Basalt Flow Vernal Pool	CTT44131CA	None	None	G3	S2.2	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Northern Volcanic Mud Flow Vernal Pool Northern Volcanic Mud Flow Vernal Pool	CTT44132CA	None	None	G1	S1.1	
Oncorhynchus mykiss irideus steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Oncorhynchus tshawytscha chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	G5	S1	
Packera eurycephala var. lewisrosei Lewis Rose's ragwort	PDAST8H182	None	None	G4T2	S2	1B.2
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Paronychia ahartii Ahart's paronychia	PDCAR0L0V0	None	None	G3	S3	1B.1
Penstemon personatus closed-throated beardtongue	PDSCR1L4Y0	None	None	G2	S2	1B.2
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Rana boylii foothill yellow-legged frog	AAABH01050	None	None	G3	S3	SSC
Rhynchospora californica California beaked-rush	PMCYP0N060	None	None	G1	S1	1B.1
Rhynchospora capitellata brownish beaked-rush	PMCYP0N080	None	None	G5	S1	2B.2
Rupertia hallii Hall's rupertia	PDFAB62010	None	None	G2G3	S2S3	1B.2
Sidalcea robusta Butte County checkerbloom	PDMAL110P0	None	None	G2	S2	1B.2
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Stuckenia filiformis ssp. alpina slender-leaved pondweed	PMPOT03091	None	None	G5T5	S3	2B.2
Tuctoria greenei Greene's tuctoria	PMPOA6N010	Endangered	Rare	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Vireo bellii pusillus	ABPBW01114	Endangered	Endangered	G5T2	S2	
least Bell's vireo						

Record Count: 61

Black Olive Village, Paradise, Butte County, CA
CNPS

Scientific Name	Common Name	CRPR		GRank	SRank	CESA	FESA	CA Endemic
Allium jepsonii	Jepson's onion	1B.2		G2	S2	None	None	T
Allium sanbornii var. sanbornii	Sanborn's onion		4.2	G3T4?	S4?	None	None	F
Arctostaphylos mewukka ssp. truei	True's manzanita		4.2	G4?T3	S3	None	None	T
Astragalus pauperculus	depauperate milk-vetch		4.3	G4	S4	None	None	T
Balsamorhiza macrolepis	big-scale balsamroot	1B.2		G2	S2	None	None	T
Brodiaea sierrae	Sierra foothills brodiaea		4.3	G3	S3	None	None	T
Bulbostylis capillaris	thread-leaved beakseed		4.2	G5	S3	None	None	F
Calycadenia oppositifolia	Butte County calycadenia		4.2	G3	S3	None	None	T
Calystegia atriplicifolia ssp. buttensis	Butte County morning-glory		4.2	G5T3	S3	None	None	T
Campylopodiella stenocarpa	flagella-like atractylocarpus	2B.2		G5	S1?	None	None	F
Cardamine pachystigma var. dissectifolia	dissected-leaved toothwort	1B.2		G3G5T2Q	S2	None	None	T
Carex xerophila	chaparral sedge	1B.2		G2	S2	None	None	T
Castilleja rubicundula var. rubicundula	pink creamsacs	1B.2		G5T2	S2	None	None	T
Clarkia gracilis ssp. albicaulis	white-stemmed clarkia	1B.2		G5T2T3	S2S3	None	None	T
Clarkia mildrediae ssp. lutescens	golden-anthered clarkia		4.2	G3T3	S3	None	None	T
Clarkia mildrediae ssp. mildrediae	Mildred's clarkia	1B.3		G3T3	S3	None	None	T
Clarkia mosquinii	Mosquin's clarkia	1B.1		G2	S2	None	None	T
Claytonia palustris	marsh claytonia		4.3	G4	S4	None	None	T
Claytonia parviflora ssp. grandiflora	streambank spring beauty		4.2	G5T3	S3	None	None	T
Cypripedium fasciculatum	clustered lady's-slipper		4.2	G4	S4	None	None	F
Erigeron petrophilus var. sierrensis	northern Sierra daisy		4.3	G4T4	S4	None	None	T
Eriogonum umbellatum var. ahartii	Ahart's buckwheat	1B.2		G5T3	S3	None	None	T
Erythranthe glaucescens	shield-bracted monkeyflower		4.3	G3	S3	None	None	T
Erythranthe inconspicua	small-flowered monkeyflower		4.3	G4	S4	None	None	T
Euphorbia hooveri	Hoover's spurge	1B.2		G1	S1	None	FT	T
Frangula purshiana ssp. ultramafica	Caribou coffeeberry	1B.2		G4T2T3	S2S3	None	None	T
Fritillaria eastwoodiae	Butte County fritillary		3.2	G3Q	S3	None	None	F
Fritillaria pluriflora	adobe-lily	1B.2		G2G3	S2S3	None	None	T
Githopsis pulchella ssp. serpentinicola	serpentine bluecup		4.3	G4T3	S3	None	None	T
Hesperevax caulescens	hogwallow starfish		4.2	G3	S3	None	None	T
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	1B.2		G5T3	S3	None	None	T
Imperata brevifolia	California satintail	2B.1		G4	S3	None	None	F
Juncus leiospermus var. leiospermus	Red Bluff dwarf rush	1B.1		G2T2	S2	None	None	T

Black Olive Village, Paradise, Butte County, CA

CNPS

Layia septentrionalis	Colusa layia	1B.2		G2	S2	None	None	T
Lilium humboldtii ssp. humboldtii	Humboldt lily		4.2	G4T3	S3	None	None	T
Limnanthes floccosa ssp. californica	Butte County meadowfoam	1B.1		G4T1	S1	CE	FE	T
Limnanthes floccosa ssp. floccosa	woolly meadowfoam		4.2	G4T4	S3	None	None	F
Monardella venosa	veiny monardella	1B.1		G1	S1	None	None	T
Navarretia heterandra	Tehama navarretia		4.3	G4	S4	None	None	F
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia		4.2	G4T3	S3	None	None	T
Orcuttia pilosa	hairy Orcutt grass	1B.1		G1	S1	CE	FE	T
Packera eurycephala var. lewisrosei	Lewis Rose's ragwort	1B.2		G4T2	S2	None	None	T
Paronychia ahartii	Ahart's paronychia	1B.1		G3	S3	None	None	T
Penstemon personatus	closed-throated beardtongue	1B.2		G2	S2	None	None	T
Polygonum bidwelliae	Bidwell's knotweed		4.3	G4	S4	None	None	T
Rhynchospora californica	California beaked-rush	1B.1		G1	S1	None	None	T
Rhynchospora capitellata	brownish beaked-rush	2B.2		G5	S1	None	None	F
Rupertia hallii	Hall's rupertia	1B.2		G2G3	S2S3	None	None	T
Sidalcea gigantea	giant checkerbloom		4.3	G3	S3	None	None	T
Sidalcea robusta	Butte County checkerbloom	1B.2		G2	S2	None	None	T
Streptanthus drepanoides	sickle-fruit jewelflower		4.3	G4	S4	None	None	T
Streptanthus longisiliquus	long-fruit jewelflower		4.3	G3	S3	None	None	T
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	2B.2		G5T5	S3	None	None	F
Tuctoria greenei	Greene's tuctoria	1B.1		G1	S1	CR	FE	T

ATTACHMENT B
CULTURAL RESOURCES
BUILT ENVIRONMENT
EVALUATION FORMS

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

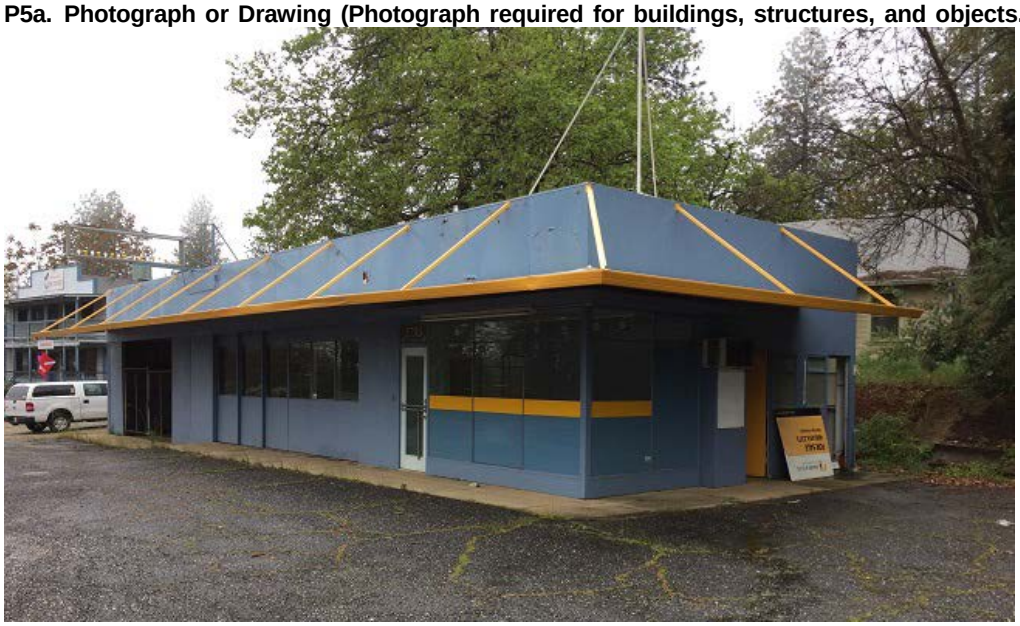
Map Reference #: 1
Page 1 **of** 11 ***Resource Name or #:** 5795 Skyway
P1. Other Identifier: N/A
***P2. Location:** ☒ **Unrestricted**
***a. County** Butte **and**
***b. USGS 7.5' Quad** *Paradise West, Calif.* **Date** 1980 **T** 22N; **R** 3E; SW ¼ **of** NW ¼ **of Sec** 22 M.D.B.M
c. Address 5795 Skyway City Paradise Zip 95969
d. UTM: Zone 10S, 617268 mE/ 4401077 mN
Se. Other Locational Data: APN 052-182-092

***P3a. Description:**
The property at 5795 Skyway consists of 9 buildings including a commercial building (Building 1), residence (Building 2), two industrial buildings (Buildings 3and 4), residence (Building 5), mobile home (Building 6), and three sheds (Buildings 7-9), as well as a historic refuse debris scatter (Feature 1).

Building 1 is a one-story, contemporary-style, commercial building displaying a concrete slab foundation, rectangular ground plan, and a wood frame. The walls are clad with a mix of wide wood board and plywood siding. The building maintains original sliding ribbon of six metal doors with single-paned glazing, as well as original metal sash storefront windows. A garage bay door, located at the southeast corner of the building, is missing and metal fencing blocks the bay. The roof is flat with a wide, overhanging, aluminum awning supported by metal bars. The south elevation displays a painted sign reading "Signs and Graphics." An empty metal sign frame with alternating yellow and white light bulbs is located at the roof line of the east façade. According to Butte County Assessor's Records, this building is an old car service station that moved to this location in 1967 and was used for used car sales and repair (Butte County Assessor 2017).

***P3b. Resource Attributes:** HP6. 1-3 Story Commercial Building, HP2. Single Family Property, AH4. Privies/ Dumps/ Trash Scatter
***P4. Resources Present:** ☒ Building ☒ Other: Trash Scatter

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo:
Photograph 1: View southwest of Building 1. Taken May 22, 2017.

P6. Date Constructed/Age and Source:
☒ Historic
1935-1970 (Butte County Assessor 2017)

***P7. Owner and Address:**
Udovich Family Living Trust
1 Patrick Ct.
Oroville Ca 95965

***P8. Recorded by:**
Margo Nayyar
Michael Baker International
2729 Prospect Park Drive, #220
Rancho Cordova, CA 95670

***P9. Date Recorded:**
May 22, 2017

***P10. Survey Type:** Intensive
***P11. Report Citation**:
Nayyar, Margo, and Nichole Jordan Davis. 2017. "Black Olive Village Project Town of Paradise, Butte County, California Cultural Resources Identification and Evaluation Study." Michael Baker International: Rancho Cordova, CA. Prepared for the Town of Paradise.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

BUILDING, STRUCTURE, AND OBJECT RECORD

Map Reference #: 1
***NRHP Status Code** 6Z
***Resource Name or #** 5795 Skyway

B1. Historic Name: N/A
B2. Common Name: N/A
B3. Original Use: Residential/Agricultural
B4. Present Use: Residential/commercial
***B5. Architectural Style:** Various
***B6. Construction History:** The property was developed between 1935 and circa 1970.
Building 1 was moved to the property in 1967. It displays no other known alterations.
Building 2 was constructed in 1935. Known alterations include replacement metal-sash and vinyl windows.
Building 3 was constructed by 1947 (USGS 1947). It displays no known alterations.
Building 4 was constructed circa 1960 and displays no known alterations.
Building 5 was constructed in 1956 and displays no known alterations.
Building 6, a mobile home dating to circa 1970, displays no known alterations.
Building 7, built circa 1970, displays no known alterations.
Building 8, built circa 1950, displays no known alterations.
Building 9, built at an unknown date, displays no known alterations.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** N/A **Original Location:** N/A

***B8. Related Features:** N/A

B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** Residential/commercial development **Area:** Paradise
Period of Significance 1935-1970 **Property Type** Residential/commercial **Applicable Criteria** N/A

The property at 5795 Skyway does not appear eligible for listing in the California Register of Historical Resources (California Register) under any criteria, either individually or as a contributor to a historic district.

Paradise began in 1860, when William Leonard built a sawmill within the present town limits. In 1865, Leonard established Clark Road to connect the sawmill to towns in the Sacramento Valley. It became the favored route between Oroville and other neighboring mining towns. The first school opened in 1861 and the area's first church opened in 1879. Paradise experienced little growth until the twentieth century (Colby 2006: 7-9).

Once the easily extracted gold deposits diminished at the end of the nineteenth century, the regional economy shifted to logging, ranching, and agriculture. Two significant additional enterprises included construction of the Centerville Powerhouse with associated electrical transmission line within Butte Creek Canyon, and the emergence of the Diamond Match Company. Diamond constructed an immense sawmill in Stirling City in 1904, and that same year constructed the Butte County Railroad along Magalia Ridge to connect the new sawmill to Diamond's match plant and headquarters in Chico. In 1907, Southern Pacific Railroad acquired the railroad, which passed through Paradise (Talbitzer 1987; Mansfield 1919:37).

B11. Additional Resource Attributes: N/A

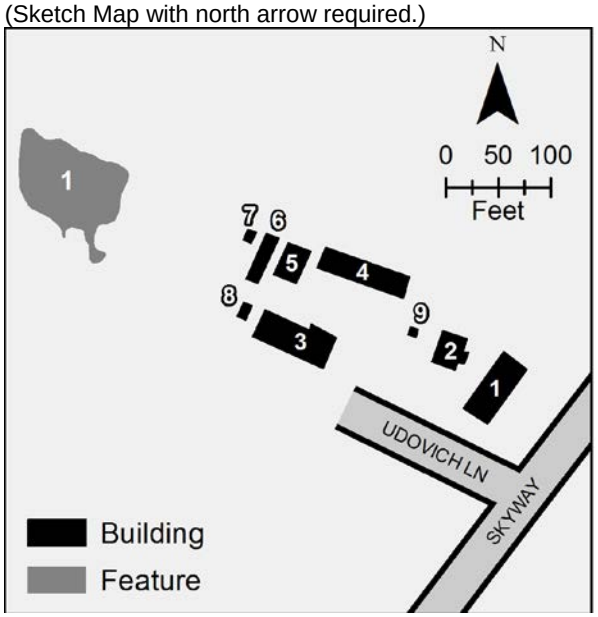
***B12. References:** See continuation sheet.
B13. Remarks: N/A

***B14. Evaluator:**
Margo Nayyar, Architectural Historian
Michael Baker International
2729 Prospect Park Drive, #220
Rancho Cordova, CA 95670

***Date of Evaluation:** May 25, 2017

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

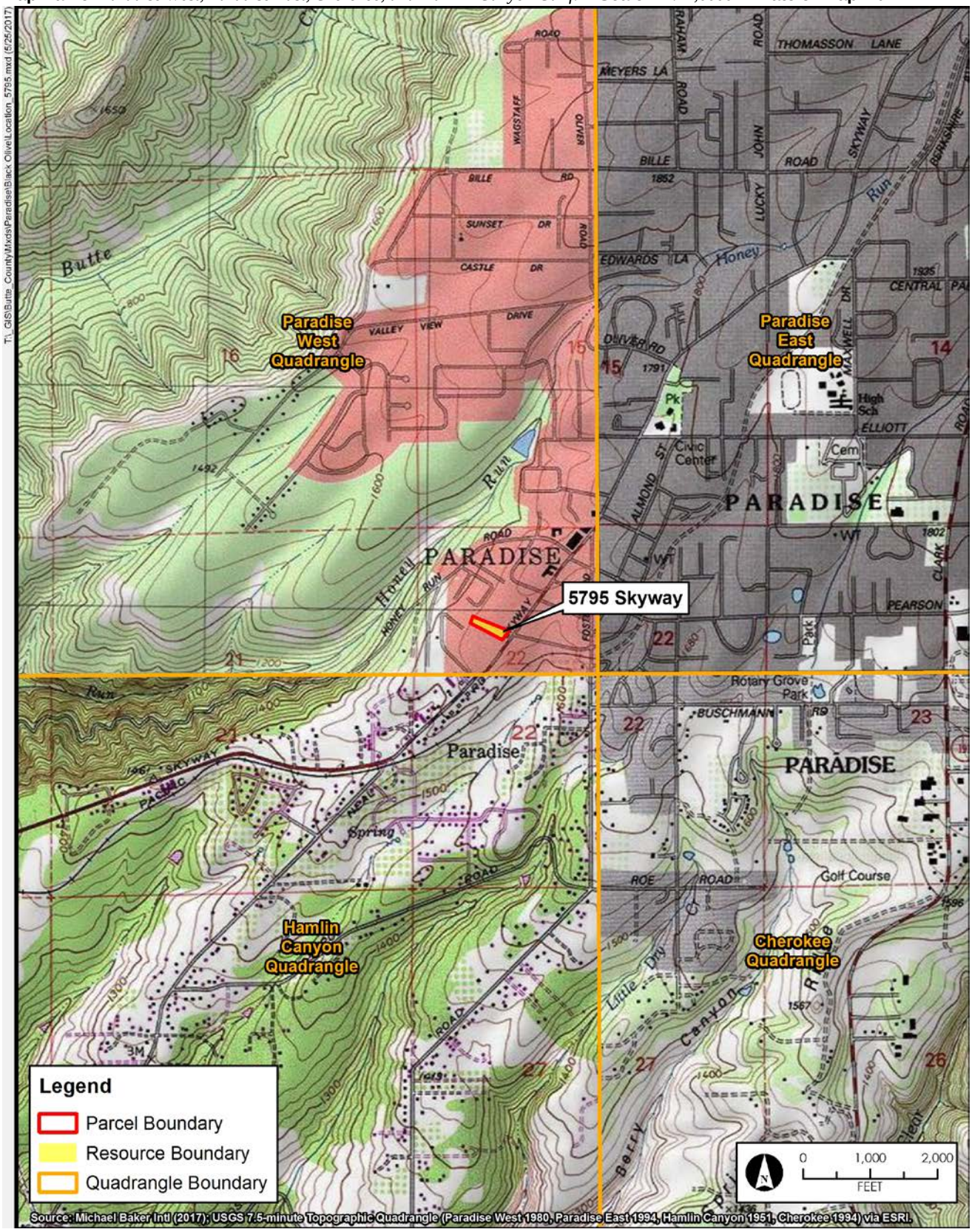
LOCATION MAP

Primary #
HRI#
Trinomial

Map Reference #: 1

***Resource Name or #** 5795 Skyway

***Map Name:** *Paradise West, Paradise East, Cherokee, and Hamlin Canyon Calif.* ***Scale:** 1:24,0000 ***Date of map:** 2017



***P3a. Description (continued):**

Building 2 is a single-family residence built in 1935. The folk-style residence displays a raised and vented concrete foundation, rectangular ground plan, and a wood frame. The walls are clad with double-beveled wood board siding. The residence maintains a mix of original double-hung, wood-frame windows, and replacement aluminum sliding and vinyl windows. Both doors appear to be original. The wood-framed door located on the east façade displays ten panels of glazing. The secondary door located on the west elevation displays one glazed panel and three wood panels. The moderately pitched, side-gabled roof is clad with composite shingles. A gabled pediment entry and concrete stairway lead to the façade entry door.

Building 3 is a shop building built by 1947 (USGS 1947). The building displays a concrete slab foundation, rectangular ground plan measuring 25 x 82 feet, and walls clad with stucco, T1-11 siding. The side-gabled roof is clad with composite shingles. The building displays two sliding, wood bay doors, and nine metal-sash windows. According to the Butte County Assessor Records, this building was used as a cabinet business and later a roofing repair business (Butte County Assessor 2017).

Building 4 is a garage building built circa 1960. It displays a concrete slab foundation, rectangular ground plan measuring 72 x 20 feet, and wood frame. Walls are clad with plywood. The moderately pitched and side-gabled roof is clad with composite shingles. Four metal garage bay doors are located along the south elevation.

Building 5 is a single-family residence built in 1956. Its minimal traditional-style residence displays a raised and vented concrete foundation, rectangular ground plan, and wood frame. Walls are clad with stucco. Windows include original wood-framed windows. Metal awnings cover each window. The entry includes the original wood and glazed door with a concrete stoop area. The moderately pitched and front-gabled roof is clad with composite shingles. The building served as a rental property since at least 1974 (Butte County Assessor's Records 2017).

Building 6, a mobile home dating to circa 1970, displays a rectangular ground plan, vinyl wall cladding, metal-framed doors, metal-sash and glass louvered windows, and a flat roof.

Building 7, a shed located west of Building 6, displays a wood frame, plywood siding, metal-sash window, and a shed roof clad with composite shingle. It was built circa 1970.

Building 8, a shed located adjacent to Building 3, displays a wood frame, asbestos shingle wall cladding, wood door, aluminum sliding window, and a side-gabled roof, clad in composite shingle. It was built circa 1950.

Building 9, a shed located west of Building 2, displays a wood frame, plywood wall cladding, double plywood door, and a front-gabled roof clad in wood shingle. It was built at an unknown date.

Feature 1 is a circa 1950-70s historic refuse debris consisting of sheet metal, galvanized pipe, vehicle parts, concrete blocks, a machine of unknown function, can lids, and two abandoned vehicles located at the far west end of the parcel. One vehicle includes a small bus dating to the late 1940s or early 1950s with signage on the side reading "Joy Bus" and "Church of Christ." These buses were used to transport children to Sunday school.

***B10. Significance (continued):**

The area's agricultural development expanded after the formation of the Paradise Irrigation District (PID) in 1916. PID formed to provide a reliable water source for the area's farmers, who had been irrigating crops with old mining ditches. The current Magalia Reservoir and its associated water conveyance system were completed in early 1918 (Colby 2006: 8).

With a reliable water source, apple orchards became a major agricultural product; Paradise became known as the apple center of California, a namesake for which it was chosen to host the Butte County Fair in 1938. At the time, there were approximately 50 apple orchards in the area which shipped produce throughout the western United States. Competing apple producers in Oregon and Washington took hold in the 1960s, and by the 1980s a majority of Paradise's apple orchards had been removed. One remaining area farm includes Noble Orchards, established in 1921. The 50-acre farm produces a variety of peaches and apples (Colby 2006:9-10).

The property at 5795 Skyway appears to have remained undeveloped until the early twentieth century, when in 1908-1909 it was subdivided as part of the Chico Heights subdivision. This was completed concurrently as platting of the downtown city streets, and two other subdivisions known as Oakdale Farms and Sierra Park. The subdividing was completed by Chico real estate developer Roland Dillard. A short real estate boom developed until it crashed in 1910 when buyers realized there was little employment opportunity outside of agriculture (Britton, Rey & Co. 1877, 1886; Paradise Irrigation District 1922; Colby 2006:8-9).

***B10. Significance (continued):**

The property at 5795 Skyway was first developed in 1935 with a single-family residence. The property likely maintained an agricultural operation. A small orchard appears in a 1947 photograph of the property (USGS 1947). No remnants of an orchard remain. Buildings were added through the years, altering the property's residential/agricultural use to residential and commercial use. Buildings 1 and 3-9 were added between 1947 and 1970. The residential buildings were used as rentals, and the shop buildings were leased as commercial properties since at least the early 1970s.

Architectural styles on the property include contemporary (Building 1), folk (Building 2), and minimal traditional (Building 5). None of the buildings display outstanding features of the styles.

The first known owners of the property include Roland F. and Varda E. Udovich. However, they do not appear to have ever lived at the property and instead rented out all the buildings. Research failed to identify additional information regarding the Udovich family (Butte County Assessor 2017; Ancestry.com 2017).

California Register Evaluation
Criterion 1 – The property at 5795 Skyway is residential/commercial property in Paradise. Research did not indicate the property is associated with an event that has made a significant contribution to the broad patterns of local or state history. The property originally maintained a residence and agricultural operation and through the years has altered to residential and commercial use. This is not a significant theme identified in the area's history. As such, the property does not appear eligible under California Register Criterion 1.

Criterion 2 – Research provided no evidence indicating that the property is associated with individuals who have made significant contributions to local or state history. As such, the property does not appear to be associated with any historically important individuals and does not appear eligible under California Register Criterion 2.

Criterion 3 – The property includes a contemporary-style commercial building, folk-style residence, and minimal traditional-style residence. None of the buildings display outstanding character-defining features of the styles and are minor examples of the styles. Additional buildings on the property lack an architectural style. As such, the buildings on the property do not embody a distinctive type, period, or method of construction; do not represent the work of a master architect or designer; and are not a superior example of an architectural style. Therefore, the building does not appear eligible under California Register Criterion 3.

Criterion 4 – The property is not likely to yield valuable information which will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to subjects such as residential or commercial buildings. Therefore, the property does not appear eligible for listing under California Register Criterion 4.

Lastly, the property lacks integrity of design, materials, workmanship, feeling, setting, and location due to the addition of multiple buildings throughout the years, thereby changing the historic use from residence/agricultural to residential/commercial.

In conclusion, the property at 5795 Skyway does not appear eligible for listing in the California Register under Criterion 1, 2, 3, or 4 either individually or as a contributor to a historic district due to a lack of association with a historic context and integrity. Additionally, the property was evaluated in accordance with Section 15064.5(a)(2)–(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Resources Code, and it does not appear to be a historical resource for the purposes of CEQA.

***B12. References (continued):**

Ancestry.com. 2017. Search for Roland F. and Varda E. Udovich. Electronic database, www.ancestry.com, accessed multiple.

Britton, Rey & Co. 1877. Official Map of the County of Butte, California. Electronic document, https://www.loc.gov/resource/g4363b.la000014/, accessed multiple.

_____. 1886. Official Map of the County of Butte, California. Electronic document, https://www.loc.gov/item/2012590106/, accessed multiple.

Butte County Assessor. 2017. Building record files for APN 052-182-092. Accessed on May 22, 2017.

Colby, Robert. 2006. *Images of America: Paradise*. Arcadia Publishing: Charleston, South Carolina.

Mansfield, George C. 1919. *Butte: The Story of a California County*. Oroville Register Print. Electronic resource, https://archive.org/details/buttestoryofcali00mans, accessed multiple.

Paradise Irrigation District. 1922. "Property Map Paradise Irrigation District, Butte County, California." Scale 1:12,000. Electronic document, http://archives.csuchico.edu/cdm/singleitem/collection/coll19/id/547/rec/5, accessed multiple.

Talbitzer, Bill. 1987. *Butte County: An Illustrated History*. Windsor Publications, Inc.: Northridge, Calif.

USGS (United States Geological Survey). 1947. *Aerial Single Frame Photo ID: AR1EJ0000010118*. Electronic database, www.earthexplorer.com, accessed multiple.

P5a. Photographs (continued):

Photograph 2. View southwest of Building 2.

Photograph 3. View southeast of Buildings 3 and 8.

Photograph 4. View northwest of Building 3.

Photograph 5. View northwest of Building 5.

Photograph 6. View north of Buildings 6 and 7.

Photograph 7. View northeast of Building 9.

Photograph 8. View northwest of Feature 1 including two abandoned vehicles.


Photograph 9. View northwest of Feature 1.

Photograph 10 (left). View of Feature 1.
Photograph 11 (right). View of Feature 1.

Photograph 12. View of Feature 1.

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

Map Reference #: 2
Page 1 **of** 9 ***Resource Name or #:** 5825 Skyway
P1. Other Identifier: N/A
***P2. Location:** ☒ **Unrestricted**
***a. County** Butte **and**
***b. USGS 7.5' Quad** *Paradise West, Calif.* **Date** 1980 **T** 22N; **R** 3E; SW ¼ **of** NW ¼ **of Sec** 22 M.D.B.M
c. Address 5825 Skyway City Paradise Zip 95969
d. UTM: Zone 10S, 617286 mE/ 4401128 mN
Se. Other Locational Data: APN 052-211-037

***P3a. Description:**
The property at 5825 Skyway consists of a residence (Building 1), garage (Building 2), storage building (Building 3), mobile home (Building 4), and shed (Building 5).

Building 1 is a two-story single-family residence. The residence displays a rectangular ground plan, raised and vented concrete and stone foundation, and a wood frame. The walls are clad with replacement beveled wood board siding and original wood shingles in the gable ends. The residence maintains a mix of original wood sash windows and replacement vinyl windows, as well as three replacement entry doors. The moderately pitched gabled and hipped roof is clad with composite shingle. In 1979, the residence was converted for commercial use as a drapery showroom. At this time it appears the building underwent renovations including a room addition off the south elevation, and a covered entry was enclosed using glass blocks on the west elevation. Additional alterations include the slate veneer dating to circa 2000 and the brick veneer dating to circa 1979. The building has been severely altered from its original design due to replacement wall cladding, vinyl windows, a room addition off the south elevation, replacement brick and slate veneer, and conversion to commercial use (Butte County Assessor 2017).

***P3b. Resource Attributes:** HP2. Single Family Property, HP4. Ancillary Building
***P4. Resources Present:** ☒ Building

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo:
Photograph 1: View southwest of Building 1. Taken May 22, 2017.

P6. Date Constructed/Age and Source:
☒ Historic
1921 (Butte County Assessor 2017)

***P7. Owner and Address:**
Safeway Inc.
11555 Dublin Canyon Rd.
Pleasanton, CA 94588

***P8. Recorded by:**
Margo Nayyar
Michael Baker International
2729 Prospect Park Drive, #220
Rancho Cordova, CA 95670

***P9. Date Recorded:**
May 22, 2017

***P10. Survey Type:** Intensive

***P11. Report Citation**:
Nayyar, Margo, and Nichole Jordan Davis. 2017. "Black Olive Village Project Town of Paradise, Butte County, California Cultural Resources Identification and Evaluation Study." Michael Baker International: Rancho Cordova, CA. Prepared for the Town of Paradise.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

BUILDING, STRUCTURE, AND OBJECT RECORD

Map Reference #: 2
***NRHP Status Code** 6Z
***Resource Name or #** 5825 Skyway

B1. Historic Name: N/A
B2. Common Name: N/A
B3. Original Use: Residential/Agricultural
B4. Present Use: Vacant
***B5. Architectural Style:** Craftsman
***B6. Construction History:**
Building 1 was built in 1921 and displays the following alterations: replacement beveled wood board siding dating to circa 1979; replacement vinyl windows dating to circa 2000; replacement entry doors dating to circa 1979 and 2000; conversion from a residence to commercial use in 1979; room addition off the south elevation in circa 1979; covered entry was enclosed using glass blocks on the west elevation circa 1979; slate veneer dating to circa 2000, and the brick veneer dating to circa 1979.

Building 2 was built circa 1921. It displays replacement corrugated metal wall and roof cladding.
Building 3 was built circa 1921. It displays replacement corrugated metal roof cladding.
Building 4 is a mobile home dating to circa 1980. It displays no known alterations.
Building 5, a shed, was built at an unknown date and displays no known alterations.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** N/A **Original Location:** N/A

***B8. Related Features:** N/A

B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance: Theme** Agricultural Development **Area:** Paradise
Period of Significance 1921 **Property Type** Residential **Applicable Criteria** N/A

The property at 5825 Skyway does not appear eligible for listing in the California Register of Historical Resources (California Register) under any criteria, either individually or as a contributor to a historic district.

Paradise began in 1860, when William Leonard built a sawmill within the present town limits. In 1865, Leonard established Clark Road to connect the sawmill to towns in the Sacramento Valley. It became the favored route between Oroville and other neighboring mining towns. The first school opened in 1861 and the area's first church opened in 1879. Paradise experienced little growth until the twentieth century (Colby 2006: 7-9).

Once the easily extracted gold deposits diminished at the end of the nineteenth century, the regional economy shifted to logging, ranching, and agriculture. Two significant additional enterprises included construction of the Centerville Powerhouse with associated electrical transmission line within Butte Creek Canyon, and the emergence of the Diamond Match Company. Diamond constructed an immense sawmill in Stirling City in 1904, and that same year constructed the Butte County Railroad along Magalia Ridge to connect the new sawmill to Diamond's match plant and headquarters in Chico. In 1907, Southern Pacific Railroad acquired the railroad, which passed through Paradise (Talbitzer 1987; Mansfield 1919:37).

B11. Additional Resource Attributes: N/A

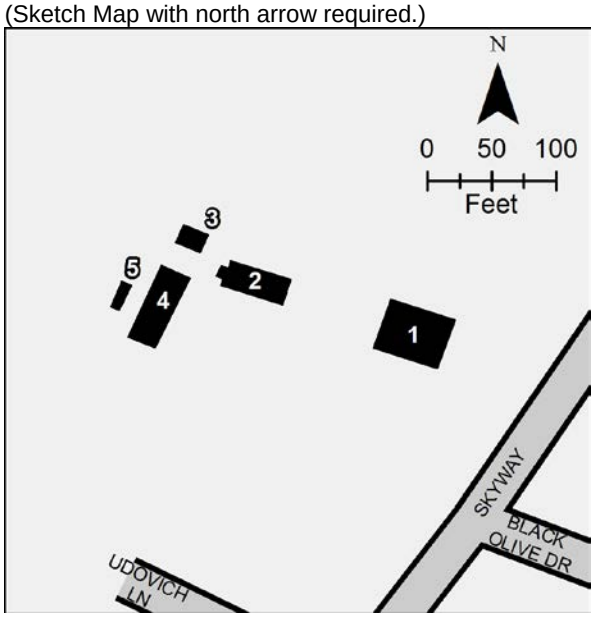
***B12. References:** See continuation sheet.
B13. Remarks: N/A

***B14. Evaluator:**
Margo Nayyar, Architectural Historian
Michael Baker International
2729 Prospect Park Drive, #220
Rancho Cordova, CA 95670

***Date of Evaluation:** May 24, 2017

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

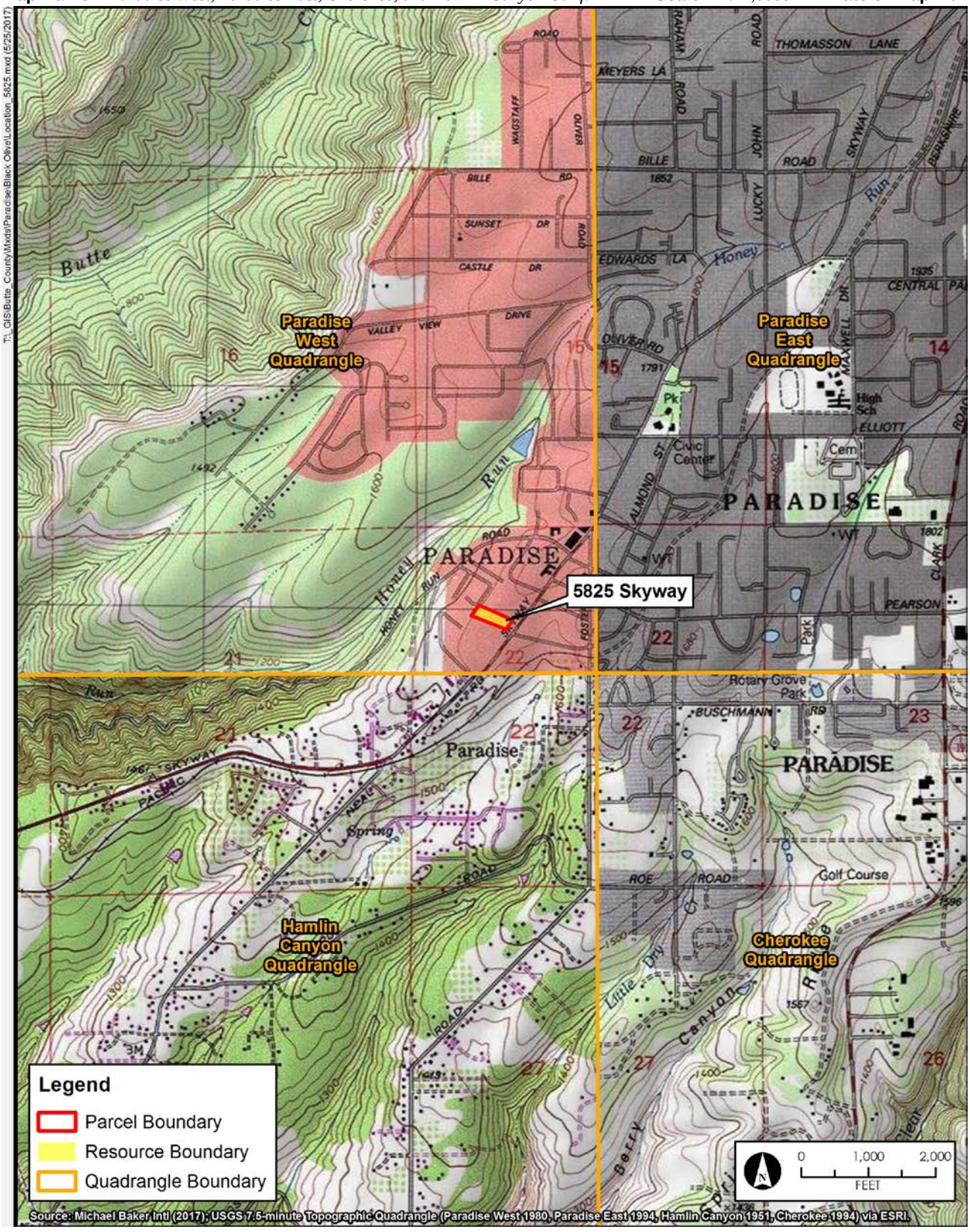
LOCATION MAP

Primary #
HRI#
Trinomial

Map Reference #: 2

***Resource Name or #** 5825 Skyway

***Map Name:** *Paradise West, Paradise East, Cherokee, and Hamlin Canyon Calif.* ***Scale:** 1:24,0000 ***Date of map:** 2017



***P3a. Description (continued):**

Building 2 is a garage building displaying a rectangular ground plan, concrete slab foundation, wood frame, corrugated metal wall cladding, and a side-gabled roof clad with corrugated metal. Two sliding garage bay doors on the north elevation are wrapped in sheet metal. The building was built circa 1921.

Building 3 is a storage building displaying a rectangular ground plan, concrete slab foundation, wood frame, double-beveled wood board siding, and a side-gabled roof clad in corrugated metal. A portion of the building has collapsed. The building dates to circa 1921.

Building 4 is a mobile home. It displays a concrete block foundation, wood frame, vinyl siding, metal-sash windows, and a low-pitched gabled roof. It dates to circa 1980.

Building 5 is a small shed located west of Building 4. It displays a wood frame, wood board siding, and a shed roof clad with corrugated metal.

***B10. Significance (continued):**
The area's agricultural development expanded after the formation of the Paradise Irrigation District (PID) in 1916. PID formed to provide a reliable water source for the area's farmers, who had been irrigating crops with old mining ditches. The current Magalia Reservoir and its associated water conveyance system were completed in early 1918 (Colby 2006:8).

With a reliable water source, apple orchards became a major agricultural product; Paradise became known as the apple center of California, a namesake for which it was chosen to host the Butte County Fair in 1938. At the time, there were approximately 50 apple orchards in the area which shipped produce throughout the western United States. Competing apple producers in Oregon and Washington took hold in the 1960s, and by the 1980s a majority of Paradise's apple orchards had been removed. One remaining area farm includes Noble Orchards, established in 1921. The 50-acre farm produces a variety of peaches and apples (Colby 2006:9-10).

The property at 5825 Skyway appears to have remained undeveloped until the early twentieth century, when in 1908-1909 it was subdivided as part of the Chico Heights subdivision. This was completed concurrently as platting of the downtown city streets, and two other subdivisions known as Oakdale Farms and Sierra Park. The subdividing was completed by Chico real estate developer, Roland Dillard. A short real estate boom developed until it crashed in 1910 when buyers realized there was little employment opportunity outside of agriculture (Britton, Rey & Co. 1877, 1886; Paradise Irrigation District 1922; Colby 2006:8-9).

The property at 5825 Skyway was first developed in 1921 and likely maintained an agricultural operation. A small orchard appears in a 1947 photograph of the property (USGS 1947). A handful of apple trees remain on the property. By 1973, the property no longer appears to maintain an orchard, and by 1979 was converted to commercial use as a drapery show room (USGS 1973; Butte County Assessor 2017).

Architecturally, Building 1 displays craftsman-style characteristics but maintains multiple alterations from the original design as identified in section B6. Construction History on page 2.

The first known owners of the property include Frank P. (born circa 1893) and Phyllis E. Guerra (1908-1995) by circa 1940 (Ancestry.com 2017e). In 1930, Frank lived in Redwood City, San Mateo County with his parents. He worked as a pharmacist (Ancestry.com 2017a). By 1932, he and Phyllis had married and lived in Paradise where Frank remained employed as a pharmacist. Phyllis identified herself as a housewife (Ancestry.com 2017c). By 1940, Frank was unable to work and was listed as a Disabled American Veteran. They were noted as living on Neal Road. Neal Road was once a portion of the current Skyway, and likely the Guerras lived at the subject property (Ancestry.com 2017b). In 1960, they are first officially listed at 5825 Skyway (Ancestry.com 2017d). They sold the property in 1979 (Butte County Assessor 2017). Research failed to identify further information regarding the Guerra family.

***B10. Significance (continued):**

California Register Evaluation
Criterion 1 – The property at 5825 Skyway is a residential/commercial property in Paradise. Research did not indicate the property is associated with an event that has made a significant contribution to the broad patterns of local or state history. The property originally maintained a residence and agricultural operation; however, the property is no longer associated with its original apple orchard or use as an agricultural property, a theme which has been identified as significant in Paradise history. As such, the property does not appear eligible under California Register Criterion 1.

Criterion 2 – Research provided no evidence indicating that the property is associated with individuals who have made significant contributions to local or state history. As such, the property does not appear to be associated with any historically important individuals and does not appear eligible under California Register Criterion 2.

Criterion 3 – The 1921 craftsman-style residence maintains severe alterations to its original design. As such, the building does not embody a distinctive type, period, or method of construction; does not represent the work of a master architect or designer; and is not a superior example of an architectural style. Therefore, the building does not appear eligible under California Register Criterion 3.

Criterion 4 – The property is not likely to yield valuable information which will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to subjects such as farming or residential buildings. Therefore, the property does not appear eligible for listing under California Register Criterion 4.

Lastly, the property lacks integrity of design, materials, workmanship, and feeling due to severe alterations to Building 1. The property mains integrity of setting and location because the property is located at its original built location in a residential/commercial area of Paradise; however, the property lacks association with a historic context.

In conclusion, the property at 5825 Skyway does not appear eligible for listing in the California Register under Criterion 1, 2, 3, or 4 either individually or as a contributor to a historic district due to a lack of integrity and association with a historic context. Additionally, the property was evaluated in accordance with Section 15064.5(a)(2)–(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Resources Code, and it does not appear to be a historical resource for the purposes of CEQA.

B12. References (continued):

Ancestry.com. 2017a. *1930 United States Federal Census*. Provo, UT, USA: Ancestry.com Operations, Inc., 2012. Electronic database, https://www.ancestry.com/interactive/6224/4532364_00243?pid=92966676&backurl=http://search.ancestry.com/cgi-bin/sse.dll?indiv%3D1%26db%3D1930usfedcen%26h%3D92966676%26tid%3D%26pid%3D%26usePUB%3Dtrue%26_phsrc%3DpvW3%26_phstart%3DsuccessSource%26usePUBJs%3Dtrue%26rhSource%3D2442&treeid=&personid=&hintid=&usePUB=true&_phsrc=pvW3&_phstart=successSource&usePUBJs=true, accessed multiple.

____. 2017b. *1940 United States Federal Census*. Provo, UT, USA: Ancestry.com Operations, Inc., 2012. Electronic database, https://www.ancestry.com/interactive/2442/m-t0627-00193-00238?pid=69402437&backurl=http://search.ancestry.com/cgi-bin/sse.dll?_phsrc%3DpvW1%26_phstart%3DsuccessSource%26usePUBJs%3Dtrue%26gss%3Dangs-g%26new%3D1%26rank%3D1%26msT%3D1%26gsfn%3DF.%2520P.%26gsfn_x%3D0%26gsln%3DGuerra%26gsln_x%3D0%26msypn__ftp%3DParadise,%2520Butte,%2520California,%2520USA%26msypn%3D67788%26msypn_PInfo%3D8-%257C0%257C1652393%257C0%257C2%257C0%257C7%257C0%257C431%257C67788%257C0%257C0%257C%26cp%3D0%26catbucket%3Drstp%26MSAV%3D1%26MSV%3D0%26uidh%3D1gb%26pcat%3DROOT_CATEGORY%26h%3D69402437%26dbid%3D2442%26indiv%3D1%26ml_rpos%3D5&treeid=&personid=&hintid=&usePUB=true&_phsrc=pvW1&_phstart=successSource&usePUBJs=true, accessed multiple.

____. 2017c. *Butte County, California Voter Registrations 1932-1938*. Ancestry.com Operations, Inc., 2012. Electronic database, https://www.ancestry.com/interactive/61066/buttecounty_3-0631b?pid=20355975&backurl=http://search.ancestry.com/cgi-bin/sse.dll?_phsrc%3DpvW10%26_phstart%3DsuccessSource%26usePUBJs%3Dtrue%26gss%3Dangs-g%26new%3D1%26rank%3D1%26msT%3D1%26gsfn%3DPhyllis%2520E.%26gsfn_x%3D0%26gsln%3DGuerra%26gsln_x%3D0%26msypn__ftp%3DParadise,%2520Butte,%2520California,%2520USA%26msypn%3D67788%26msypn_PInfo%3D8-%257C0%257C1652393%257C0%257C2%257C0%257C7%257C0%257C431%257C67788%257C0%257C0%257C%26cp%3D0%26catbucket%3Drstp%26MSAV%3D1%26MSV%3D0%26uidh%3D1gb%26pcat%3DROOT_CATEGORY%26h%3D20355975%26dbid%3D61066%26indiv%3D1%26ml_rpos%3D6&treeid=&personid=&hintid=&usePUB=true&_phsrc=pvW10&_phstart=successSource&usePUBJs=true, accessed multiple.

____. 2017d. Chico City Directory, 1960. Ancestry.com Operations, Inc., 2012. Electronic database, http://search.ancestry.com/cgi-bin/sse.dll?_phsrc=pvW6&_phstart=successSource&usePUBJs=true&gss=angs-g&new=1&rank=1&msT=1&gsfn=Phyllis%20E.&gsfn_x=0&gsln=Guerra&gsln_x=0&msypn__ftp=Paradise,%20Butte,%20California,%20USA&msypn=67788&msypn_PInfo=8-%7C0%7C1652393%7C0%7C2%7C0%7C7%7C0%7C431%7C67788%7C0%7C0%7C&cp=0&catbucket=rstp&MSAV=1&MSV=0&uidh=1gb&pcat=ROOT_CATEGORY&h=1170670787&dbid=2469&indiv=1&ml_rpos=4, accessed multiple.

____. 2017e. *U.S. Social Security Death Index, 1935-2014*. Provo, UT, USA: Ancestry.com Operations Inc, 2011. Electronic database, http://search.ancestry.com/cgi-bin/sse.dll?_phsrc=pvW11&_phstart=successSource&usePUBJs=true&gss=angs-c&new=1&rank=1&msT=1&gsfn=Phyllis%20E.&gsfn_x=0&gsln=Guerra&gsln_x=0&msypn__ftp=Paradise,%20Butte,%20California,%20USA&msypn=67788&msypn_PInfo=8-%7C0%7C1652393%7C0%7C2%7C0%7C7%7C0%7C431%7C67788%7C0%7C0%7C&cp=0&catbucket=rstp&MSAV=1&MSV=0&uidh=1gb&pcat=34&h=24277536&recoff=10%2011%2012&dbid=3693&indiv=1&ml_rpos=1, accessed multiple.

Britton, Rey & Co. 1877. "Official Map of the County of Butte, California." Electronic document, https://www.loc.gov/resource/g4363b.la000014/, accessed multiple.

_____. 1886. Official Map of the County of Butte, California. Electronic document, https://www.loc.gov/item/2012590106/, accessed multiple.

Butte County Assessor. 2017. Building record files for APN 052-211-037. Accessed on May 22, 2017.

Colby, Robert. 2006. *Images of America: Paradise*. Arcadia Publishing: Charleston, South Carolina.

Mansfield, George C. 1919. *Butte: The Story of a California County*. Oroville Register Print. Electronic resource, https://archive.org/details/buttestoryofcali00mans, accessed multiple.

Paradise Irrigation District. 1922. "Property Map Paradise Irrigation District, Butte County, California." Scale 1:12,000. Electronic document, http://archives.csuchico.edu/cdm/singleitem/collection/coll19/id/547/rec/5, accessed multiple.

***B12. References (continued):**

Talbitzer, Bill. 1987. *Butte County: An Illustrated History*. Windsor Publications, Inc.: Northridge, Calif.

USGS (United States Geological Survey). 1947. *Aerial Single Frame Photo ID: AR1EJ0000010118*. Electronic database, www.earthexplorer.com, accessed multiple.

_____. 1973. *Aerial Single Frame Photo ID: 1VDGI00010206*. Electronic database, www.earthexplorer.com, accessed multiple.

P5a. Photographs (continued):

Photograph 2. View east of Building 1.

Photograph 3. View northwest of Building 2.

Photograph 4. View northwest of Building 3.

Photograph 5. View northeast of Buildings 4 and 5.

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

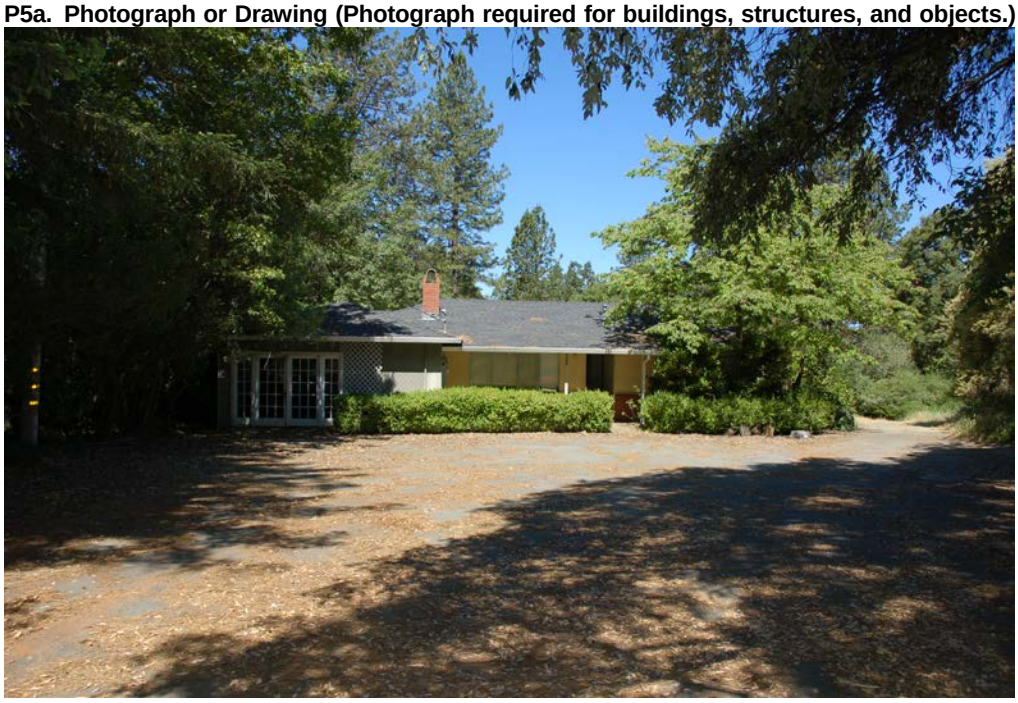
Map Reference #: 3
Page 1 **of** 7 ***Resource Name or #:** 5833 Skyway
P1. Other Identifier: N/A
***P2. Location:** ☒ **Unrestricted**
***a. County** Butte **and**
***b. USGS 7.5' Quad** *Paradise West, Calif.* **Date** 1980 **T** 22N; **R** 3E; SW ¼ **of** NW ¼ **of Sec** 22 M.D.B.M
c. Address 5833 Skyway City Paradise Zip 95969
d. UTM: Zone 10S, 617237 mE/ 4401178 mN
Se. Other Locational Data: APN 052-211-021 and 052-211-036

***P3a. Description:**

The property at 5833 Skyway consists of a one single-family residence. The one-story building has an irregular ground plan, concrete foundation, and a wood frame. The walls are clad with a mix of stucco, T1-11, and brick veneer. The residence maintains the original metal-sash casement windows and sliding doors. One replacement wood frame with French door is located on the east façade where the original garage door was once located. The garage was converted to a room circa 1985. The moderately pitched cross-hipped roof is clad with composite shingle. In 1985, a large room addition was added off the west elevation. It was built as a showroom and office for carpet and tile sales (Butte County Assessor 2017).

***P3b. Resource Attributes:** HP2. Single Family Property, AH2. Foundations/ Structure Pads
***P4. Resources Present:** ☒ Building

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: Photograph 1: View west of east elevation of Building 1. Taken May 22, 2017.

P6. Date Constructed/Age and Source:
☒ Historic
1960 (Butte County Assessor 2017)

***P7. Owner and Address:**
Safeway Inc.
11555 Dublin Canyon Rd.
Pleasanton, CA 94588

***P8. Recorded by:**
Margo Nayyar
Michael Baker International
2729 Prospect Park Drive, #220
Rancho Cordova, CA 95670

***P9. Date Recorded:**
May 22, 2017

***P10. Survey Type:** Intensive

***P11. Report Citation**:
Nayyar, Margo, and Nichole Jordan Davis. 2017. "Black Olive Village Project Town of Paradise, Butte County, California Cultural Resources Identification and Evaluation Study." Michael Baker International: Rancho Cordova, CA. Prepared for the Town of Paradise.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

BUILDING, STRUCTURE, AND OBJECT RECORD

Map Reference #: 3
***NRHP Status Code** 6Z
***Resource Name or #** 5833 Skyway

B1. Historic Name: N/A
B2. Common Name: N/A
B3. Original Use: Residential/Agricultural
B4. Present Use: Vacant
***B5. Architectural Style:** Ranch
***B6. Construction History:**
According to Butte County Assessor (2017), the residence was built in 1960 and displays the following alterations:

1. Garage conversion circa 1985
2. Large room addition in 1985

The property also included a commercial building constructed in 1972. It was demolished circa 2016 (GoogleEarth 2017).

The property once included two houses and a garage constructed in 1920. All three buildings were demolished in 1996 (Butte County Assessor 2017).

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** N/A **Original Location:** N/A

***B8. Related Features:** N/A

B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance:** **Theme** Agricultural Development **Area:** Paradise
Period of Significance 1960 **Property Type** Residential **Applicable Criteria** N/A

The property at 5833 Skyway does not appear eligible for listing in the California Register of Historical Resources (California Register) under any criteria, either individually or as a contributor to a historic district.

Paradise began in 1860, when William Leonard built a sawmill within the present town limits. In 1865, Leonard established Clark Road to connect the sawmill to towns in the Sacramento Valley. It became the favored route between Oroville and other neighboring mining towns. The first school opened in 1861 and the area's first church opened in 1879. Paradise experienced little growth until the twentieth century (Colby 2006:7-9).

Once the easily extracted gold deposits diminished at the end of the nineteenth century, the regional economy shifted to logging, ranching, and agriculture. Two significant additional enterprises included construction of the Centerville Powerhouse with associated electrical transmission line within Butte Creek Canyon, and the emergence of the Diamond Match Company. Diamond constructed an immense sawmill in Stirling City in 1904, and that same year constructed the Butte County Railroad along Magalia Ridge to connect the new sawmill to Diamond's match plant and headquarters in Chico. In 1907, Southern Pacific Railroad acquired the railroad, which passed through Paradise (Talbitzer 1987; Mansfield 1919:37).

B11. Additional Resource Attributes: N/A

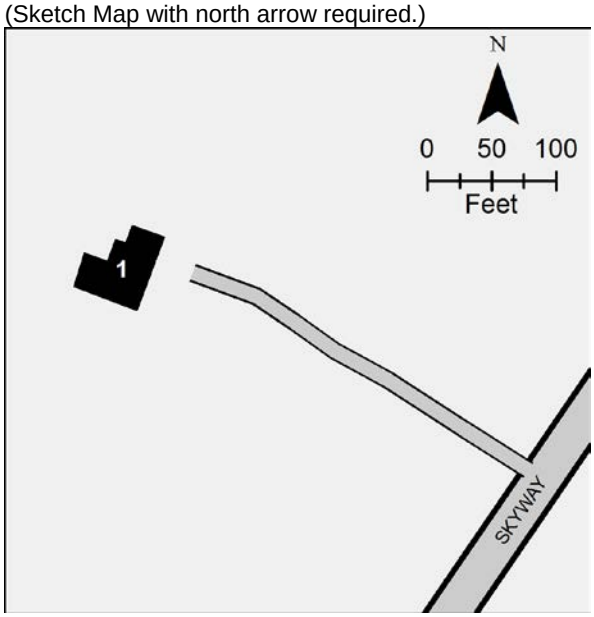
***B12. References:** See continuation sheet.
B13. Remarks: N/A

***B14. Evaluator:**
Margo Nayyar, Architectural Historian
Michael Baker International
2729 Prospect Park Drive, #220
Rancho Cordova, CA 95670

***Date of Evaluation:** May 24, 2017

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

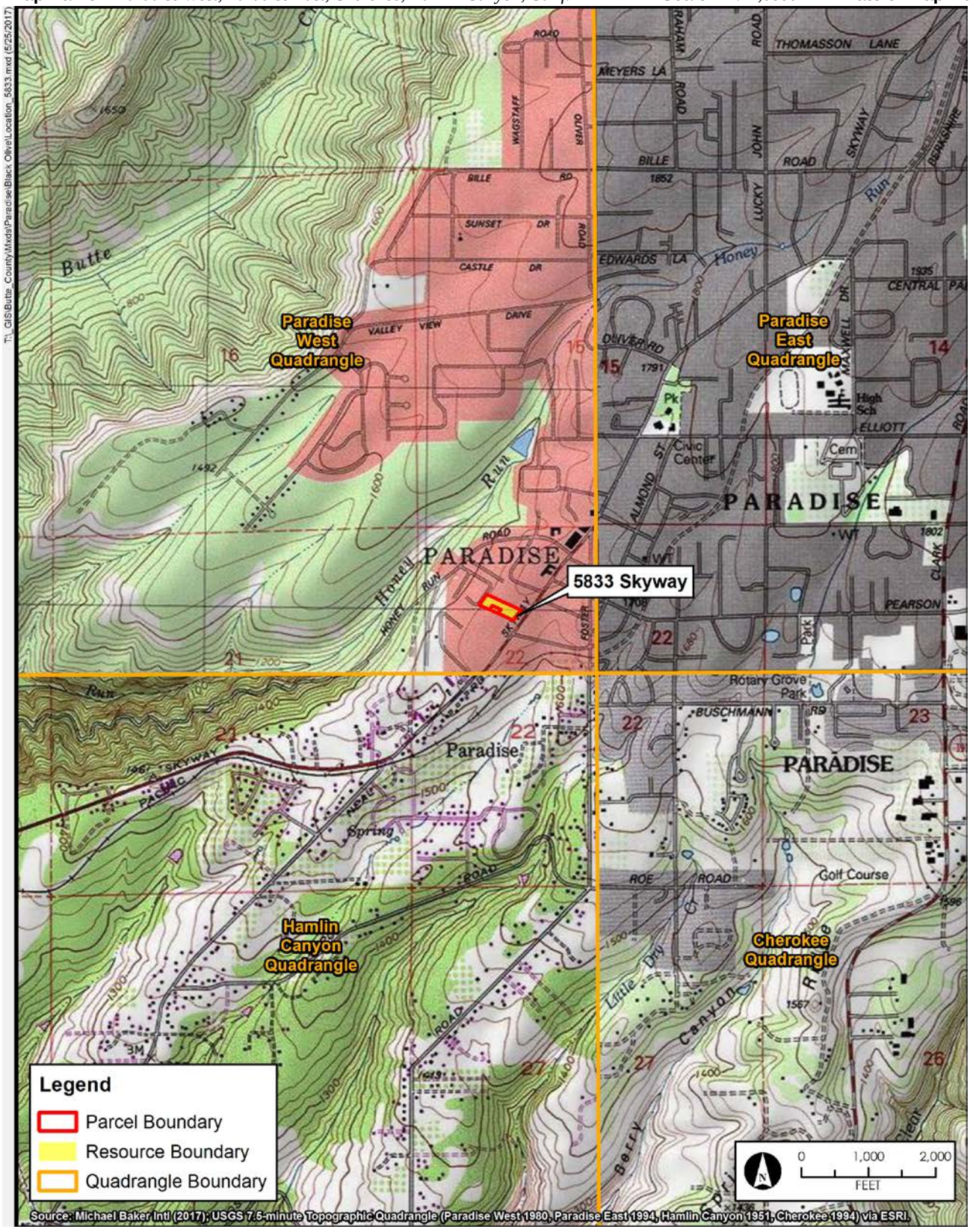
LOCATION MAP

Primary #
HRI#
Trinomial

Map Reference #: 3

***Resource Name or #** 5833 Skyway

***Map Name:** *Paradise West, Paradise East, Cherokee, Hamlin Canyon, Calif.* ***Scale:** 1:24,0000 ***Date of map:** 2017



***B10. Significance (continued):**
The area's agricultural development expanded after the formation of the Paradise Irrigation District (PID) in 1916. PID formed to provide a reliable water source for the area's farmers, who had been irrigating crops with old mining ditches. The current Magalia Reservoir and its associated water conveyance system were completed in early 1918 (Colby 2006:8).

With a reliable water source, apple orchards became a major agricultural product; Paradise became known as the apple center of California, a namesake for which it was chosen to host the Butte County Fair in 1938. At the time, there were approximately 50 apple orchards in the area which shipped produce throughout the western United States. Competing apple producers in Oregon and Washington took hold in the 1960s, and by the 1980s a majority of Paradise's apple orchards had been removed. One remaining area farm includes Noble Orchards, established in 1921. The 50-acre farm produces a variety of peaches and apples (Colby 2006:9-10).

The property at 5833 Skyway appears to have remained undeveloped until the early twentieth century, when in 1908-1909 it was subdivided as part of the Chico Heights subdivision. This was completed concurrently as platting of the downtown city streets, and two other subdivisions known as Oakdale Farms and Sierra Park. The subdividing was completed by Chico real estate developer, Roland Dillard. A short real estate boom developed until it crashed in 1910 when buyers realized there was little employment opportunity outside of agriculture (Britton, Rey & Co. 1877, 1886; Paradise Irrigation District 1922; Colby 2006:8-9).

The property at 5833 Skyway was first developed in 1920 for residential and agricultural use. The property likely maintained a small apple orchard which appears in a 1947 photograph of the property (USGS 1947). A handful of apple trees remain on the property today. The original 1920 residence and garage were demolished in 1996. In 1960, a new residence was constructed, and the property shifted to both residential and commercial use, when Richard and Sybil Mautz purchased the property to begin their family business, Dick's Floor Covering. In 1972, a commercial building for Dick's Floor Covering was constructed. In 1985, a showroom addition was added to the residence (Butte County Assessor 2017). According to the company website, Dick's Floor Covering has been a family-owned company since 1964 (Dicksfloorcovering.com 2017). The Mautz family sold the company to employee Blain White circa 2009. Dick's Floor Covering is now located at 5701 Skyway, approximately 700 feet south of 5833 Skyway. Research provided no additional information regarding the business (Paradise Post 2017).

Architecturally, the ranch-style residence displays typical architectural detail of the style including a low-profile, cross-hipped roof, metal-sash windows, and prominent garage. However, the residence does display two major alterations, the garage conversion and showroom addition.

The first known owners of the property include Richard L. (1926-2015) and Sybil A. Mautz (1929-2002) (Ancestry.com 2017a, 2017b). They moved from Los Angeles to Paradise in 1963 and in 1964 established Dick's Floor Covering at the property. They sold the business circa 2009 after almost 45 years (Paradise Post 2017). Research identified no additional information regarding the Mautz family.

***B10. Significance (continued):**

California Register Evaluation
Criterion 1 – The property at 5833 Skyway is a residential/commercial property in Paradise. Research did not indicate the property is associated with an event that has made a significant contribution to the broad patterns of local or state history. The property originally maintained an agricultural operation; however, the property is no longer associated with its original apple orchard or use as an agricultural property, a theme which has been identified as significant in Paradise history. Research failed to indicate that Dick's Floor Covering is an important business in area history. As such, the property does not appear eligible under California Register Criterion 1.

Criterion 2 – Research provided no evidence indicating that the property is associated with individuals who have made significant contributions to local or state history. Research regarding the Mautz family did not indicate the family made significant contributions to area history. As such, the property does not appear to be associated with any historically important individuals and does not appear eligible under California Register Criterion 2.

Criterion 3 – The 1960 ranch-style residence maintains many character-defining features of its style; however, the garage conversion and showroom addition are severe alterations to its original design. As such, the building does not embody a distinctive type, period, or method of construction; does not represent the work of a master architect or designer; and is not a superior example of an architectural style. Therefore, the building does not appear eligible under California Register Criterion 3.

Criterion 4 – The property is not likely to yield valuable information which will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to subjects such as apple farming or residential buildings. Therefore, the property does not appear eligible for listing under California Register Criterion 4.

Lastly, the property lacks integrity of design, materials, workmanship, and feeling due to severe alterations to the residence and demolition of the commercial buildings. The property maintains integrity of setting and location because the property is located at its original built location in a residential/commercial area of Paradise; however, the property lacks association with a historic context.

In conclusion, the property at 5833 Skyway does not appear eligible for listing in the California Register under Criterion 1, 2, 3, or 4 either individually or as a contributor to a historic district due to a lack of integrity and association with a historic context. Additionally, the property was evaluated in accordance with Section 15064.5(a)(2)–(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Resources Code, and it does not appear to be a historical resource for the purposes of CEQA.

***B12. References (continued):**

Ancestry.com. 2017a. *U.S. Find A Grave Index, 1600s-Current*. Provo, UT, USA: Ancestry.com Operations, Inc., 2012. Electronic database, http://search.ancestry.com/cgi-bin/sse.dll?_phsrc=pvW23&_phstart=successSource&usePUBJs=true&gss=angs-g&new=1&rank=1&msT=1&gsfn=Richard%20L.&gsfn_x=0&gsln=Mautz&gsln_x=0&msypn__ftp=Paradise,%20Butte,%20California,%20USA&msypn=67788&msypn_PInfo=8-%7C0%7C1652393%7C0%7C2%7C0%7C7%7C0%7C431%7C67788%7C0%7C0%7C&cp=0&catbucket=rstp&MSAV=1&MSV=0&uidh=1gb&pcat=ROOT_CATEGORY&h=121537050&dbid=60525&indiv=1&ml_rpos=17, accessed multiple.

____. 2017b. *U.S. Find A Grave Index, 1600s-Current*. Provo, UT, USA: Ancestry.com Operations, Inc., 2012. Electronic database, http://search.ancestry.com/cgi-bin/sse.dll?_phsrc=pvW44&_phstart=successSource&usePUBJs=true&gss=angs-g&new=1&rank=1&msT=1&gsfn=Sybil%20A.&gsfn_x=0&gsln=Mautz&gsln_x=0&msypn__ftp=Paradise,%20Butte,%20California,%20USA&msypn=67788&msypn_PInfo=8-%7C0%7C1652393%7C0%7C2%7C0%7C7%7C0%7C431%7C67788%7C0%7C0%7C&cp=0&catbucket=rstp&MSAV=1&MSV=0&uidh=1gb&pcat=ROOT_CATEGORY&h=127101401&dbid=60525&indiv=1&ml_rpos=17, accessed multiple.

Britton, Rey & Co, publisher. 1877. Official Map of the County of Butte, California. Electronic document, https://www.loc.gov/resource/g4363b.la000014/, accessed multiple.

_____. 1886. Official Map of the County of Butte, California. Electronic document, https://www.loc.gov/item/2012590106/, accessed multiple.

Butte County Assessor. 2017. Building record files for APNs 052-211-021 and -036. Assessed May 22, 2017.

Colby, Robert. 2006. *Images of America: Paradise*. Arcadia Publishing: Charleston, South Carolina.

Dicksfloorcovering.com. 2017. Homepage. Electronic resource, www.dicksfloorcovering.com, accessed multiple.

GoogleEarth. 2017. Historic and contemporary views of APNs 052-211-021 and -036. Assessed multiple.

Mansfield, George C. 1919. *Butte: The Story of a California County*. Oroville Register Print. Electronic resource, https://archive.org/details/buttestoryofcali00mans, accessed multiple.

Paradise Irrigation District. 1922. "Property Map Paradise Irrigation District, Butte County, California." Scale 1:12,000. Electronic document, http://archives.csuchico.edu/cdm/singleitem/collection/coll19/id/547/rec/5, accessed multiple.

Paradise Post. 2007. "Richard L. Mautz Obituary." Electronic resource, http://www.legacy.com/obituaries/paradisepost/obituary.aspx?pid=174849291, accessed multiple.

Talbitzer, Bill. 1987. *Butte County: An Illustrated History*. Windsor Publications, Inc.: Northridge, Calif.

USGS (United States Geological Survey). 1947. *Aerial Single Frame Photo ID: AR1EJ0000010118*. Electronic database, www.earthexplorer.com, accessed multiple.

P5a. Photographs (continued):

Photograph 2. View southeast of residence depicting showroom addition.

Photograph 3. View south of concrete pad where the 1972 commercial building was once located.

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

Map Reference #: 4
Page 1 **of** 8 ***Resource Name or #:** 5887 Skyway
P1. Other Identifier: N/A
***P2. Location:** ☒ **Unrestricted**
***a. County** Butte **and**
***b. USGS 7.5' Quad** *Paradise West, Calif.* **Date** 1980 **T** 22N; **R** 3E; SW ¼ **of** NW ¼ **of Sec** 22 M.D.B.M
c. Address 5887 Skyway City Paradise Zip 95969
d. UTM: Zone 10S, 617271 mE/ 4401232 mN
Se. Other Locational Data: APN 052-211-007

***P3a. Description:**
The property at 5887 Skyway consists of a residence (Building 1), garage (Building 2), and two sheds (Buildings 3 and 4).

Building 1 is a one-story, single-family, ranch-style residence. The residence has an irregular ground plan, a raised and vented concrete foundation, and a wood frame. The walls are clad with of stucco. The original brick veneer was replaced with a stone veneer circa 2000. The residence maintains the original metal-sash casement windows and sliding doors. The moderately pitched, cross-hipped roof is clad with composite shingle. The residence is attached to the garage via breezeway. The garage displays an automatic metal door. An unpermitted room addition was added off the west elevation of the garage circa 1975 (Butte County Assessor 2017).

Building 2 is a detached garage built circa 1975. It displays a rectangular ground plan, concrete brick foundation, T1-11 wall cladding, metal-sash and vinyl windows, wood doors, and a side-gabled roof clad with composite shingles. A single room is located adjacent to the garage, and a covered work area is located off the west elevation.

***P3b. Resource Attributes:** HP2. Single Family Property, HP4. Ancillary Building
***P4. Resources Present:** ☒ Building

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo:
Photograph 1: View southwest of Building 1. Taken May 22, 2017.

P6. Date Constructed/Age and Source:
☒ Historic
1957 (Butte County Assessor 2017)

***P7. Owner and Address:**
Safeway Inc.
11555 Dublin Canyon Rd.
Pleasanton, CA 94588

***P8. Recorded by:**
Margo Nayyar
Michael Baker International
2729 Prospect Park Drive, #220
Rancho Cordova, CA 95670

***P9. Date Recorded:**
May 22, 2017

***P10. Survey Type:** Intensive

***P11. Report Citation:**
Nayyar, Margo, and Nichole Jordan Davis. 2017. "Black Olive Village Project Town of Paradise, Butte County, California Cultural Resources Identification and Evaluation Study." Michael Baker International: Rancho Cordova, CA. Prepared for the Town of Paradise.

***Attachments:** ☒Location Map ☒Continuation Sheet ☒Building, Structure, and Object Record

BUILDING, STRUCTURE, AND OBJECT RECORD

Map Reference #: 4
***NRHP Status Code** 6Z
***Resource Name or #** 5887 Skyway

B1. Historic Name: N/A
B2. Common Name: N/A
B3. Original Use: Residential
B4. Present Use: Vacant
***B5. Architectural Style:** Ranch
***B6. Construction History:**

Building 1 was built in 1957 and displays a circa 1975 room addition, and replacement stone wall cladding dating to circa 2000.
Building 2 was built circa 1975. It displays no known alterations.
Buildings 3 and 4 were built at unknown dates and display no known alterations.

***B7. Moved?** ☒**No** ☐**Yes** ☐**Unknown** **Date:** N/A **Original Location:** N/A

***B8. Related Features:** N/A

B9a. Architect: Unknown b. Builder: Unknown
***B10. Significance:** **Theme** Residential Development **Area:** Paradise
Period of Significance 1957 **Property Type** Residential **Applicable Criteria** N/A

The property at 5887 Skyway does not appear eligible for listing in the California Register of Historical Resources (California Register) under any criteria, either individually or as a contributor to a historic district.

Paradise began in 1860, when William Leonard built a sawmill within the present town limits. In 1865, Leonard established Clark Road to connect the sawmill to towns in the Sacramento Valley. It became the favored route between Oroville and other neighboring mining towns. The first school opened in 1861 and the area's first church opened in 1879. Paradise experienced little growth until the twentieth century (Colby 2006:7-9).

Once the easily extracted gold deposits diminished at the end of the nineteenth century, the regional economy shifted to logging, ranching, and agriculture. Two significant additional enterprises included construction of the Centerville Powerhouse with associated electrical transmission line within Butte Creek Canyon, and the emergence of the Diamond Match Company. Diamond constructed an immense sawmill in Stirling City in 1904, and that same year constructed the Butte County Railroad along Magalia Ridge to connect the new sawmill to Diamond's match plant and headquarters in Chico. In 1907, Southern Pacific Railroad acquired the railroad, which passed through Paradise (Talbitzer 1987; Mansfield 1919:37).

B11. Additional Resource Attributes: N/A

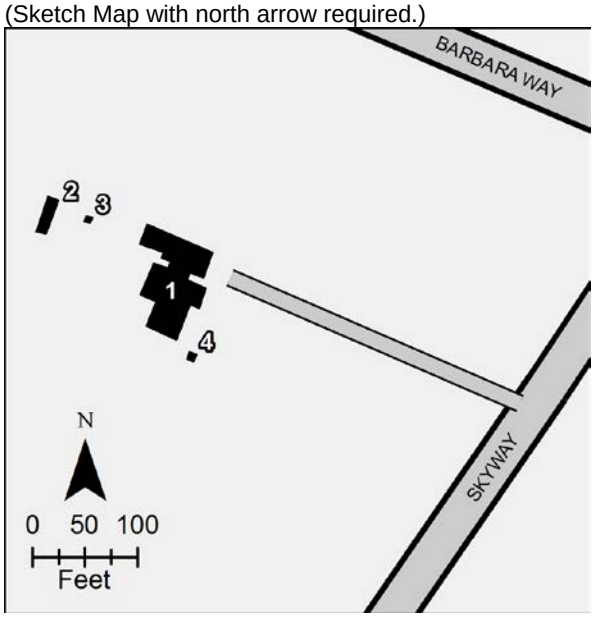
***B12. References:** See continuation sheet.
B13. Remarks: N/A

***B14. Evaluator:**
Margo Nayyar, Architectural Historian
Michael Baker International
2729 Prospect Park Drive, #220
Rancho Cordova, CA 95670

***Date of Evaluation:** May 25, 2017

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

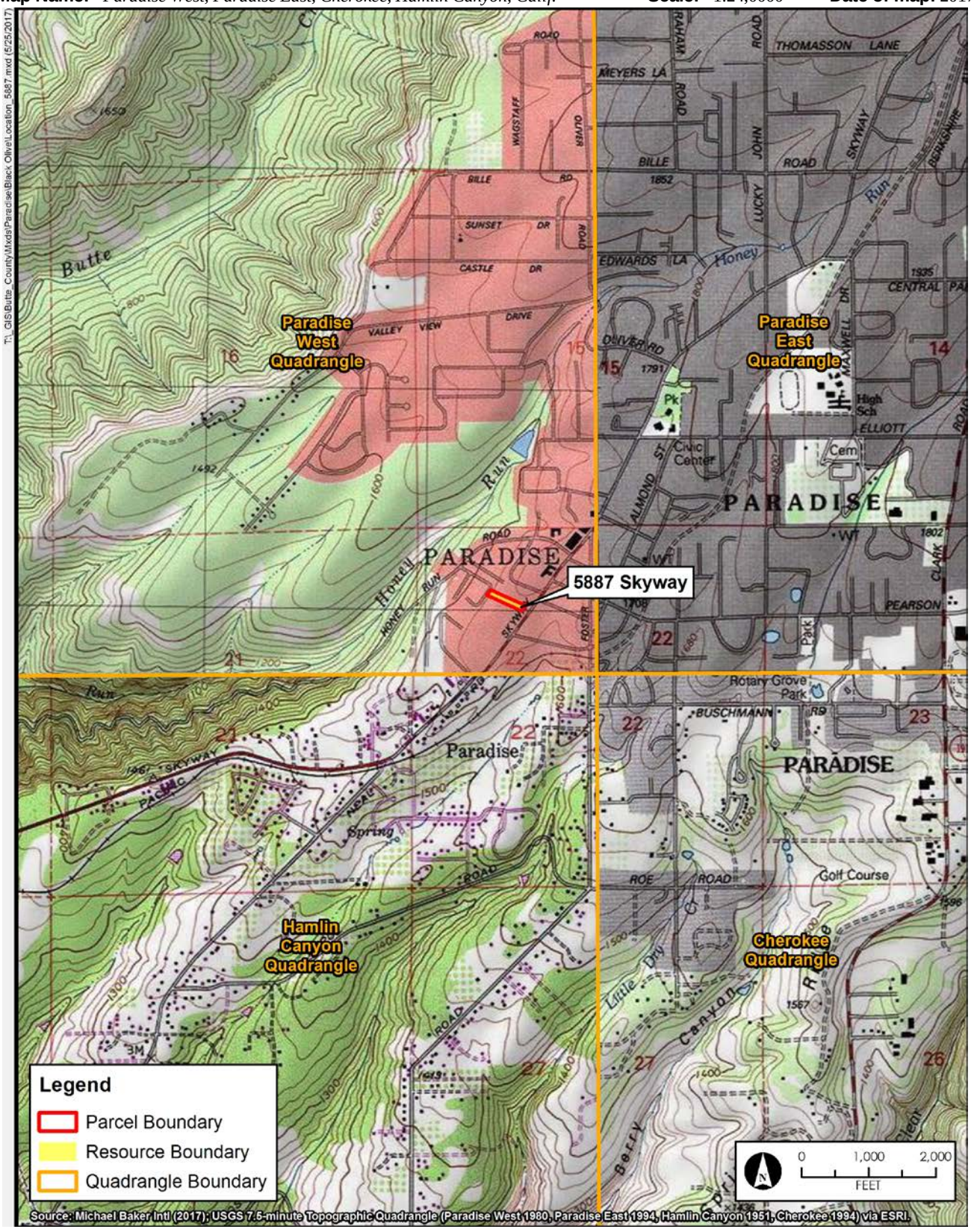
LOCATION MAP

Primary #
HRI#
Trinomial

Map Reference #: 4

***Resource Name or #** 5887 Skyway

***Map Name:** *Paradise West, Paradise East, Cherokee, Hamlin Canyon, Calif.* ***Scale:** 1:24,0000 ***Date of map:** 2017



***P3a. Description (continued):**

Building 3 is a small shed with plywood siding and corrugated metal roof cladding.

Building 4 is a small shed with plywood siding and a composite shingle roof cladding.

***B10. Significance (continued):**
The area's agricultural development expanded after the formation of the Paradise Irrigation District (PID) in 1916. PID formed to provide a reliable water source for the area's farmers, who had been irrigating crops with old mining ditches. The current Magalia Reservoir and its associated water conveyance system were completed in early 1918 (Colby 2006:8).

With a reliable water source, apple orchards became a major agricultural product; Paradise became known as the apple center of California, a namesake for which it was chosen to host the Butte County Fair in 1938. At the time, there were approximately 50 apple orchards in the area which shipped produce throughout the western United States. Competing apple producers in Oregon and Washington took hold in the 1960s, and by the 1980s a majority of Paradise's apple orchards had been removed. One remaining area farm includes Noble Orchards, established in 1921. The 50-acre farm produces a variety of peaches and apples (Colby 2006:9-10).

The property at 5887 Skyway appears to have remained undeveloped until the early twentieth century, when in 1908-1909 it was subdivided as part of the Chico Heights subdivision. This was completed concurrently as platting of the downtown city streets, and two other subdivisions known as Oakdale Farms and Sierra Park. The subdividing was completed by Chico real estate developer, Roland Dillard. A short real estate boom developed until it crashed in 1910 when buyers realized there was little employment opportunity outside of agriculture (Britton, Rey & Co. 1877, 1886; Paradise Irrigation District 1922; Colby 2006:8-9).

The property at 5887 Skyway was first developed in 1957 as a residence. Architecturally, the ranch-style residence displays typical features of the style including a low, horizontal profile and elongated windows; however, the building is a minor example of the style.

The first known owner of the property is Daisy E. Burrows (1889-1980) after the residence was first constructed. Daisy was born in Wheatland as Daisy E. Coons. She married Clinton A. Burrows, a physician, at an unknown date. She identified as a housewife. They lived in the Glendale, Los Angeles County area from at least 1932-1946. Clinton taught at Loma Linda University for 33 years and held a private practice. He retired in Paradise in 1946 (Pacific Union Recorder 1966:7). They are first listed at 5887 Skyway in 1962 (Ancestry.com 2017a, 2017b). Research failed to indicate additional information regarding the Burrows family.

In 1971, the property was sold to Leslie B. (1899-1982) and Stella (1891-1979) Dulley. Leslie was born in Sao Pablo, Brazil, and immigrated to Los Angeles with his mother and three brothers as a child. He attended Hollywood High School as well as Harvard Military Academy. After graduation from Princeton he spent many years living in San Francisco working as an accountant. He served in the army during WWII. After his discharge, he and his wife Stella moved to Paradise where he worked for Pacific Gas and Electric (Princeton Alumni Weekly 1983:41; Ancestry.com 2017c, 2017d).

***B10. Significance (continued):**

California Register Evaluation
Criterion 1 – The property at 5887 Skyway is a residential property in Paradise. Research did not indicate the property is associated with an event that has made a significant contribution to the broad patterns of history. As such, the property does not appear eligible under California Register Criterion 1.

Criterion 2 – Research provided no evidence indicating that the property is associated with individuals who have made significant contributions to local, state, or national history. As such, the property does not appear to be associated with any historically important individuals and does not appear eligible under California Register Criterion 2.

Criterion 3 – The 1957 ranch-style residence is a minor example of its style. As such, the building does not embody a distinctive type, period, or method of construction; does not represent the work of a master architect or designer; and is not a superior example of an architectural style. Therefore, the building does not appear eligible under California Register Criterion 3.

Criterion 4 – The property is not likely to yield valuable information which will contribute to our understanding of human history because the property is not and never was the principal source of important information pertaining to subjects such as residential mid-twentieth-century buildings. Therefore, the property does not appear eligible for listing under California Register Criterion 4.

Lastly, the property maintains integrity of design, materials, workmanship, feeling, setting, and location. The residence appears mostly as it did when it was originally constructed in 1957; however, the property lacks association with a historic context.

In conclusion, the property at 5887 Skyway does not appear eligible for listing in the California Register under Criterion 1, 2, 3, or 4 either individually or as a contributor to a historic district due to a lack of association with a historic context. Additionally, the property was evaluated in accordance with Section 15064.5(a)(2)–(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Resources Code, and it does not appear to be a historical resource for the purposes of CEQA.

***B12. References (continued):**

Ancestry.com. 2017a. Search for Daisy E. Burrows. Electronic database, http://search.ancestry.com/cgi-bin/sse.dll?gl=allgs&gss=sfs28_ms_r_f-2_s&new=1&rank=1&gsfn=Daisy%20E.&gsfn_x=0&gsln=Burrows&gsln_x=0&msypn__ftp=Paradise%2C%20Butte%2C%20California%2C%20USA&msypn=67788&msypn_PInfo=8-%7C0%7C1652393%7C0%7C2%7C0%7C7%7C0%7C431%7C67788%7C0%7C0%7C&cp=0&catbucket=rstp&MSAV=1&MSV=0&uidh=1gb, accessed multiple.

____. 2017b. Search for Clinton A. Burrows. Electronic database, http://search.ancestry.com/cgi-bin/sse.dll?gl=allgs&gss=sfs28_ms_r_f-2_s&new=1&rank=1&gsfn=Clinton%20A&gsfn_x=0&gsln=Burrows&gsln_x=0&msypn__ftp=Paradise%2C%20Butte%2C%20California%2C%20USA&msypn=67788&msypn_PInfo=8-%7C0%7C1652393%7C0%7C2%7C0%7C7%7C0%7C431%7C67788%7C0%7C0%7C&cp=0&catbucket=rstp&MSAV=1&MSV=0&uidh=1gb, accessed multiple.

____.2017c. Search for Leslie B. Dulley. Electronic database, http://search.ancestry.com/cgi-bin/sse.dll?_phsrc=pvW74&_phstart=successSource&usePUBJs=true&gl=ROOT_CATEGORY&gss=angs-c&new=1&rank=1&gsfn=Leslie%20B&gsfn_x=0&gsln=Dulley&gsln_x=0&msypn__ftp=Paradise,%20Butte,%20California,%20USA&msypn=67788&msypn_PInfo=8-%7C0%7C1652393%7C0%7C2%7C0%7C7%7C0%7C431%7C67788%7C0%7C0%7C&cp=0&catbucket=rstp&MSAV=1&MSV=0&uidh=1gb, accessed multiple.

***B12. References (continued):**

____.2017d. Search for Stella Dulley. Electronic database, http://search.ancestry.com/cgi-bin/sse.dll?gl=allgs&gss=sfs28_ms_f-2_s&new=1&rank=1&msT=1&gsfn=Stella&gsfn_x=0&gsln=Dulley&gsln_x=0&msypn__ftp=Paradise%2C%20Butte%2C%20California%2C%20USA&msypn=67788&msypn_PInfo=8-%7C0%7C1652393%7C0%7C2%7C0%7C7%7C0%7C431%7C67788%7C0%7C0%7C&cp=0&catbucket=rstp&MSAV=1&MSV=0&uidh=1gb, accessed multiple.

Butte County Assessor. 2017. Building record files for APN 052-211-007.

Britton, Rey & Co. 1877. Official Map of the County of Butte, California. Electronic document, https://www.loc.gov/resource/g4363b.la000014/, accessed multiple.

_____. 1886. Official Map of the County of Butte, California. Electronic document, https://www.loc.gov/item/2012590106/, accessed multiple.

Colby, Robert. 2006. *Images of America: Paradise*. Arcadia Publishing: Charleston, South Carolina.

Mansfield, George C. 1919. *Butte: The Story of a California County*. Oroville Register Print. Electronic resource, https://archive.org/details/buttestoryofcali00mans, accessed multiple.

Pacific Union Recorder. 1966. "Obituaries." V. 66, no. 23. Electronic document, http://documents.adventistarchives.org/Periodicals/PUR/PUR19661219-V66-23.pdf, accessed multiple.

Paradise Irrigation District. 1922. "Property Map Paradise Irrigation District, Butte County, California." Scale 1:12,000. Electronic document, http://archives.csuchico.edu/cdm/singleitem/collection/coll19/id/547/rec/5, accessed multiple.

Princeton Alumni Weekly. 1983. "Memorials." V. 83, no. 15. Electronic document, https://books.google.com/books?id=2BZbAAAAYAAJ&pg=RA8-PA41&lpg=RA8-PA41&dq=%22Leslie+Beitler+Dulley%22+paradise&source=bl&ots=nOPJyakumW&sig=9yrAp3hu4S2klaxpCL4aQAQ-Ul0&hl=en&sa=X&ved=0ahUKEwj-zofbz4vUAhWB5yYKHeSVBRwQ6AEIJjAC#v=onepage&q=%22Leslie%20Beitler%20Dulley%22%20paradise&f=false, accessed multiple.

Talbitzer, Bill. 1987. *Butte County: An Illustrated History*. Windsor Publications, Inc.: Northridge, Calif.

P5a. Photographs (continued):

Photograph 2. View northeast of Building 1.

Photograph 3. View northwest of Building 2.

Photograph 4. View northeast of Building 2.

Photograph 5 (left). View north of Building 3.
Photograph 6 (right). View south of Building 4.

APPENDIX C – AIR QUALITY AND GREENHOUSE GAS EMISSIONS SUPPORTING INFORMATION

Black Olive Village

Butte County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	96.57	1000sqft	3.85	96,573.00	0
Parking Lot	90.15	1000sqft	2.07	90,149.00	0
High Turnover (Sit Down Restaurant)	4.20	1000sqft	0.10	4,200.00	0
Gasoline/Service Station	9.00	Pump	0.18	7,750.00	0
Strip Mall	7.80	1000sqft	0.18	7,800.00	0
Supermarket	54.47	1000sqft	1.25	54,471.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acerage and square feet from project proposed site plan and preliminary landscape plan.

Demolition -

Grading - Material Imported from preliminary project grading plan.

Vehicle Trips - Trip rates and distances per project TIS.

Land Use Change -

Construction Off-road Equipment Mitigation - Fugitive dust mitigation per BCAQMD Rule 205.
Tier 3 Enginers per MM 4.2-1

Energy Mitigation - HE Lighting per applicant project description.
Exceed Title 24 per MM 4.2-4.

Water Mitigation - Low flow bathroom fixtures per applicant project description.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblGrading	MaterialImported	0.00	21,200.00
tblLandUse	BuildingSpaceSquareFeet	96,570.00	96,573.00
tblLandUse	BuildingSpaceSquareFeet	90,150.00	90,149.00
tblLandUse	BuildingSpaceSquareFeet	1,270.57	7,750.00
tblLandUse	BuildingSpaceSquareFeet	54,470.00	54,471.00
tblLandUse	LandUseSquareFeet	96,570.00	96,573.00
tblLandUse	LandUseSquareFeet	90,150.00	90,149.00
tblLandUse	LandUseSquareFeet	1,270.57	7,750.00
tblLandUse	LandUseSquareFeet	54,470.00	54,471.00
tblLandUse	LotAcreage	2.22	3.85
tblLandUse	LotAcreage	0.03	0.18
tblProjectCharacteristics	OperationalYear	2018	2019
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57

tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	ST_TR	168.56	47.44
tblVehicleTrips	ST_TR	158.37	59.52
tblVehicleTrips	ST_TR	42.04	23.46
tblVehicleTrips	ST_TR	177.59	78.98
tblVehicleTrips	SU_TR	168.56	47.44
tblVehicleTrips	SU_TR	131.84	59.52
tblVehicleTrips	SU_TR	20.43	23.46
tblVehicleTrips	SU_TR	166.44	78.98
tblVehicleTrips	WD_TR	168.56	47.44
tblVehicleTrips	WD_TR	127.15	59.52
tblVehicleTrips	WD_TR	44.32	23.46
tblVehicleTrips	WD_TR	102.24	78.98

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					
2018	4.7173	73.3662	27.1992	0.1428	18.2379	2.5785	20.8164	9.9762	2.3722	12.3484	0.0000	14,833.6134	14,833.6134	1.7935	0.0000	14,878.4514
2019	92.9200	28.7315	25.4604	0.0549	1.4018	1.3618	2.7636	0.3813	1.2813	1.6625	0.0000	5,454.3913	5,454.3913	0.8428	0.0000	5,475.4614
Maximum	**92.9200**	**73.3662**	**27.1992**	**0.1428**	**18.2379**	**2.5785**	**20.8164**	**9.9762**	**2.3722**	**12.3484**	**0.0000**	**14,833.6134**	**14,833.6134**	**1.7935**	**0.0000**	**14,878.4514**

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					
2018	2.2346	57.5334	27.8547	0.1428	8.2925	1.0045	9.2402	4.5121	0.9988	5.4597	0.0000	14,833.6134	14,833.6134	1.7935	0.0000	14,878.4514
2019	92.9200	21.8126	26.4807	0.0549	1.3326	0.9729	2.3055	0.3643	0.9695	1.3338	0.0000	5,454.3913	5,454.3913	0.8428	0.0000	5,475.4614
Maximum	**92.9200**	**57.5334**	**27.8547**	**0.1428**	**8.2925**	**1.0045**	**9.2402**	**4.5121**	**0.9988**	**5.4597**	**0.0000**	**14,833.6134**	**14,833.6134**	**1.7935**	**0.0000**	**14,878.4514**

	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	**2.54**	**22.28**	**-3.18**	**0.00**	**50.99**	**49.82**	**51.04**	**52.92**	**46.12**	**51.51**	**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	2.1639	2.5000e-004	0.0270	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0574	0.0574	1.6000e-004		0.0613
Energy	0.0799	0.7265	0.6103	4.3600e-003		0.0552	0.0552		0.0552	0.0552		871.8345	871.8345	0.0167	0.0160	877.0153
Mobile	15.0386	65.0022	70.7181	0.1550	5.9542	0.2151	6.1693	1.5987	0.2036	1.8023		15,831.3905	15,831.3905	3.0518		15,907.6847
Total	**17.2824**	**65.7290**	**71.3554**	**0.1594**	**5.9542**	**0.2704**	**6.2246**	**1.5987**	**0.2589**	**1.8576**		**16,703.2823**	**16,703.2823**	**3.0686**	**0.0160**	**16,784.7613**

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	2.1639	2.5000e-004	0.0270	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0574	0.0574	1.6000e-004		0.0613
Energy	0.0731	0.6642	0.5579	3.9800e-003		0.0505	0.0505		0.0505	0.0505		796.9971	796.9971	0.0153	0.0146	801.7333
Mobile	15.0386	65.0022	70.7181	0.1550	5.9542	0.2151	6.1693	1.5987	0.2036	1.8023		15,831.3905	15,831.3905	3.0518		15,907.6847
Total	**17.2756**	**65.6667**	**71.3031**	**0.1590**	**5.9542**	**0.2657**	**6.2199**	**1.5987**	**0.2541**	**1.8529**		**16,628.4450**	**16,628.4450**	**3.0672**	**0.0146**	**16,709.4792**

	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	**0.04**	**0.09**	**0.07**	**0.24**	**0.00**	**1.75**	**0.08**	**0.00**	**1.83**	**0.26**	**0.00**	**0.45**	**0.45**	**0.05**	**8.57**	**0.45**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2018	3/28/2018	5	20	
2	Site Preparation	Site Preparation	3/29/2018	4/11/2018	5	10	
3	Grading	Grading	4/12/2018	5/9/2018	5	20	
4	Building Construction	Building Construction	5/10/2018	3/27/2019	5	230	
5	Paving	Paving	3/28/2019	4/24/2019	5	20	
6	Architectural Coating	Architectural Coating	4/25/2019	5/22/2019	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 5.92

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 111,332; Non-Residential Outdoor: 37,111; Striped Parking Area: 11,203 (Architectural Coating – sqft)

OffRoad Equipment

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

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
Demolition	6	15.00	0.00	133.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,650.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	103.00	43.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	21.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

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					1.4361	0.0000	1.4361	0.2174	0.0000	0.2174			0.0000			0.0000
Off-Road	3.7190	38.3225	22.3040	0.0388		1.9386	1.9386		1.8048	1.8048		3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**3.7190**	**38.3225**	**22.3040**	**0.0388**	**1.4361**	**1.9386**	**3.3746**	**0.2174**	**1.8048**	**2.0223**		**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

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	0.0664	2.1380	0.2869	5.6000e-003	0.1165	0.0124	0.1289	0.0320	0.0119	0.0438		586.3449	586.3449	0.0428		587.4153
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	0.1288	0.0942	1.1470	1.6400e-003	0.1431	1.2900e-003	0.1443	0.0379	1.1900e-003	0.0391		162.7808	162.7808	0.0102		163.0353
Total	**0.1951**	**2.2322**	**1.4339**	**7.2400e-003**	**0.2595**	**0.0137**	**0.2733**	**0.0699**	**0.0131**	**0.0830**		**749.1256**	**749.1256**	**0.0530**		**750.4506**

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					0.6462	0.0000	0.6462	0.0979	0.0000	0.0979			0.0000			0.0000
Off-Road	1.3188	19.3704	24.5393	0.0388		0.9295	0.9295		0.9295	0.9295	0.0000	3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**1.3188**	**19.3704**	**24.5393**	**0.0388**	**0.6462**	**0.9295**	**1.5757**	**0.0979**	**0.9295**	**1.0273**	**0.0000**	**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

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	0.0664	2.1380	0.2869	5.6000e-003	0.1112	0.0124	0.1237	0.0307	0.0119	0.0425		586.3449	586.3449	0.0428		587.4153
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	0.1288	0.0942	1.1470	1.6400e-003	0.1356	1.2900e-003	0.1369	0.0361	1.1900e-003	0.0373		162.7808	162.7808	0.0102		163.0353
Total	**0.1951**	**2.2322**	**1.4339**	**7.2400e-003**	**0.2468**	**0.0137**	**0.2605**	**0.0668**	**0.0131**	**0.0798**		**749.1256**	**749.1256**	**0.0530**		**750.4506**

3.3 Site Preparation - 2018

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.5627	48.1988	22.4763	0.0380		2.5769	2.5769		2.3708	2.3708		3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**4.5627**	**48.1988**	**22.4763**	**0.0380**	**18.0663**	**2.5769**	**20.6432**	**9.9307**	**2.3708**	**12.3014**		**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

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	0.1545	0.1131	1.3764	1.9700e-003	0.1717	1.5500e-003	0.1732	0.0455	1.4300e-003	0.0470		195.3369	195.3369	0.0122		195.6424
Total	**0.1545**	**0.1131**	**1.3764**	**1.9700e-003**	**0.1717**	**1.5500e-003**	**0.1732**	**0.0455**	**1.4300e-003**	**0.0470**		**195.3369**	**195.3369**	**0.0122**		**195.6424**

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					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.9312	19.0656	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**0.9312**	**19.0656**	**22.9600**	**0.0380**	**8.1298**	**0.9462**	**9.0760**	**4.4688**	**0.9462**	**5.4150**	**0.0000**	**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

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	0.1545	0.1131	1.3764	1.9700e-003	0.1627	1.5500e-003	0.1643	0.0433	1.4300e-003	0.0448		195.3369	195.3369	0.0122		195.6424
Total	**0.1545**	**0.1131**	**1.3764**	**1.9700e-003**	**0.1627**	**1.5500e-003**	**0.1643**	**0.0433**	**1.4300e-003**	**0.0448**		**195.3369**	**195.3369**	**0.0122**		**195.6424**

3.4 Grading - 2018

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					6.6722	0.0000	6.6722	3.3856	0.0000	3.3856			0.0000			0.0000
Off-Road	2.7733	30.6725	16.5770	0.0297		1.5513	1.5513		1.4272	1.4272		2,988.0216	2,988.0216	0.9302		3,011.2769
Total	**2.7733**	**30.6725**	**16.5770**	**0.0297**	**6.6722**	**1.5513**	**8.2235**	**3.3856**	**1.4272**	**4.8128**		**2,988.0216**	**2,988.0216**	**0.9302**		**3,011.2769**

3.4 Grading - 2018

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	1.3221	42.5995	5.7166	0.1115	2.3211	0.2477	2.5688	0.6366	0.2369	0.8735		11,682.8110	11,682.8110	0.8531		11,704.1392
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	0.1288	0.0942	1.1470	1.6400e-003	0.1431	1.2900e-003	0.1443	0.0379	1.1900e-003	0.0391		162.7808	162.7808	0.0102		163.0353
Total	**1.4508**	**42.6937**	**6.8636**	**0.1131**	**2.4642**	**0.2489**	**2.7131**	**0.6745**	**0.2381**	**0.9126**		**11,845.5918**	**11,845.5918**	**0.8633**		**11,867.1745**

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					3.0025	0.0000	3.0025	1.5235	0.0000	1.5235			0.0000			0.0000
Off-Road	0.7263	14.8397	18.9906	0.0297		0.7555	0.7555		0.7555	0.7555	0.0000	2,988.0216	2,988.0216	0.9302		3,011.2769
Total	**0.7263**	**14.8397**	**18.9906**	**0.0297**	**3.0025**	**0.7555**	**3.7580**	**1.5235**	**0.7555**	**2.2791**	**0.0000**	**2,988.0216**	**2,988.0216**	**0.9302**		**3,011.2769**

3.4 Grading - 2018

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	1.3221	42.5995	5.7166	0.1115	2.2160	0.2477	2.4637	0.6108	0.2369	0.8477		11,682.8110	11,682.8110	0.8531		11,704.1392
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	0.1288	0.0942	1.1470	1.6400e-003	0.1356	1.2900e-003	0.1369	0.0361	1.1900e-003	0.0373		162.7808	162.7808	0.0102		163.0353
Total	**1.4508**	**42.6937**	**6.8636**	**0.1131**	**2.3516**	**0.2489**	**2.6005**	**0.6469**	**0.2381**	**0.8850**		**11,845.5918**	**11,845.5918**	**0.8633**		**11,867.1745**

3.5 Building Construction - 2018

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	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**		**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

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	0.3406	7.5803	1.7427	0.0171	0.4195	0.0792	0.4987	0.1207	0.0758	0.1965		1,787.6558	1,787.6558	0.1519		1,791.4536
Worker	0.8843	0.6470	7.8760	0.0113	0.9823	8.8400e-003	0.9911	0.2605	8.1800e-003	0.2687		1,117.7612	1,117.7612	0.0699		1,119.5091
Total	**1.2249**	**8.2273**	**9.6187**	**0.0284**	**1.4018**	**0.0880**	**1.4898**	**0.3813**	**0.0840**	**0.4652**		**2,905.4170**	**2,905.4170**	**0.2218**		**2,910.9627**

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	1.0098	14.2177	18.2359	0.0269		0.9149	0.9149		0.9149	0.9149	0.0000	2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**1.0098**	**14.2177**	**18.2359**	**0.0269**		**0.9149**	**0.9149**		**0.9149**	**0.9149**	**0.0000**	**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

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	0.3406	7.5803	1.7427	0.0171	0.4016	0.0792	0.4808	0.1163	0.0758	0.1921		1,787.6558	1,787.6558	0.1519		1,791.4536
Worker	0.8843	0.6470	7.8760	0.0113	0.9311	8.8400e-003	0.9399	0.2480	8.1800e-003	0.2561		1,117.7612	1,117.7612	0.0699		1,119.5091
Total	**1.2249**	**8.2273**	**9.6187**	**0.0284**	**1.3326**	**0.0880**	**1.4207**	**0.3643**	**0.0840**	**0.4482**		**2,905.4170**	**2,905.4170**	**0.2218**		**2,910.9627**

3.5 Building Construction - 2019

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

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	0.2895	7.0915	1.4767	0.0170	0.4195	0.0637	0.4832	0.1207	0.0610	0.1817		1,776.1190	1,776.1190	0.1501		1,779.8722
Worker	0.7780	0.5611	6.8199	0.0110	0.9823	8.2300e-003	0.9905	0.2605	7.6000e-003	0.2681		1,086.6922	1,086.6922	0.0613		1,088.2257
Total	**1.0675**	**7.6527**	**8.2966**	**0.0279**	**1.4018**	**0.0719**	**1.4737**	**0.3813**	**0.0686**	**0.4498**		**2,862.8112**	**2,862.8112**	**0.2115**		**2,868.0979**

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	0.9532	14.1600	18.1841	0.0269		0.9010	0.9010		0.9010	0.9010	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**0.9532**	**14.1600**	**18.1841**	**0.0269**		**0.9010**	**0.9010**		**0.9010**	**0.9010**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

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	0.2895	7.0915	1.4767	0.0170	0.4016	0.0637	0.4653	0.1163	0.0610	0.1773		1,776.1190	1,776.1190	0.1501		1,779.8722
Worker	0.7780	0.5611	6.8199	0.0110	0.9311	8.2300e-003	0.9393	0.2480	7.6000e-003	0.2556		1,086.6922	1,086.6922	0.0613		1,088.2257
Total	**1.0675**	**7.6527**	**8.2966**	**0.0279**	**1.3326**	**0.0719**	**1.4045**	**0.3643**	**0.0686**	**0.4328**		**2,862.8112**	**2,862.8112**	**0.2115**		**2,868.0979**

3.6 Paving - 2019

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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.7755					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.2300**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**		**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.6 Paving - 2019

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	0.1133	0.0817	0.9932	1.6000e-003	0.1431	1.2000e-003	0.1443	0.0379	1.1100e-003	0.0391		158.2562	158.2562	8.9300e-003		158.4795
Total	**0.1133**	**0.0817**	**0.9932**	**1.6000e-003**	**0.1431**	**1.2000e-003**	**0.1443**	**0.0379**	**1.1100e-003**	**0.0391**		**158.2562**	**158.2562**	**8.9300e-003**		**158.4795**

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	0.5609	11.2952	17.2957	0.0228		0.6093	0.6093		0.6093	0.6093	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.7755					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3365**	**11.2952**	**17.2957**	**0.0228**		**0.6093**	**0.6093**		**0.6093**	**0.6093**	**0.0000**	**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.6 Paving - 2019

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	0.1133	0.0817	0.9932	1.6000e-003	0.1356	1.2000e-003	0.1368	0.0361	1.1100e-003	0.0372		158.2562	158.2562	8.9300e-003		158.4795
Total	**0.1133**	**0.0817**	**0.9932**	**1.6000e-003**	**0.1356**	**1.2000e-003**	**0.1368**	**0.0361**	**1.1100e-003**	**0.0372**		**158.2562**	**158.2562**	**8.9300e-003**		**158.4795**

3.7 Architectural Coating - 2019

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	92.4949					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**92.7613**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.7 Architectural Coating - 2019

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	0.1586	0.1144	1.3905	2.2300e-003	0.2003	1.6800e-003	0.2020	0.0531	1.5500e-003	0.0547		221.5586	221.5586	0.0125		221.8713
Total	**0.1586**	**0.1144**	**1.3905**	**2.2300e-003**	**0.2003**	**1.6800e-003**	**0.2020**	**0.0531**	**1.5500e-003**	**0.0547**		**221.5586**	**221.5586**	**0.0125**		**221.8713**

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	92.4949					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**92.7613**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.7 Architectural Coating - 2019

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	0.1586	0.1144	1.3905	2.2300e-003	0.1898	1.6800e-003	0.1915	0.0506	1.5500e-003	0.0521		221.5586	221.5586	0.0125		221.8713
Total	**0.1586**	**0.1144**	**1.3905**	**2.2300e-003**	**0.1898**	**1.6800e-003**	**0.1915**	**0.0506**	**1.5500e-003**	**0.0521**		**221.5586**	**221.5586**	**0.0125**		**221.8713**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	15.0386	65.0022	70.7181	0.1550	5.9542	0.2151	6.1693	1.5987	0.2036	1.8023		15,831.3905	15,831.3905	3.0518		15,907.6847
Unmitigated	15.0386	65.0022	70.7181	0.1550	5.9542	0.2151	6.1693	1.5987	0.2036	1.8023		15,831.3905	15,831.3905	3.0518		15,907.6847

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Gasoline/Service Station	426.96	426.96	426.96	124,296	124,296
High Turnover (Sit Down Restaurant)	249.98	249.98	249.98	140,349	140,349
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	182.99	182.99	182.99	131,783	131,783
Supermarket	4,302.04	4,302.04	4302.04	2,376,396	2,376,396
Total	5,161.97	5,161.97	5,161.97	2,772,825	2,772,825

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
Gasoline/Service Station	3.57	3.57	3.57	2.00	79.00	19.00	14	27	59
High Turnover (Sit Down	3.57	3.57	3.57	8.50	72.50	19.00	37	20	43
Other Asphalt Surfaces	10.52	10.52	10.52	0.00	0.00	0.00	0	0	0
Parking Lot	10.52	10.52	10.52	0.00	0.00	0.00	0	0	0
Strip Mall	3.57	3.57	3.57	16.60	64.40	19.00	45	40	15
Supermarket	3.57	3.57	3.57	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Parking Lot	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
High Turnover (Sit Down Restaurant)	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Gasoline/Service Station	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Strip Mall	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Supermarket	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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	0.0731	0.6642	0.5579	3.9800e-003		0.0505	0.0505		0.0505	0.0505		796.9971	796.9971	0.0153	0.0146	801.7333
NaturalGas Unmitigated	0.0799	0.7265	0.6103	4.3600e-003		0.0552	0.0552		0.0552	0.0552		871.8345	871.8345	0.0167	0.0160	877.0153

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					
Gasoline/Service Station	444.829	4.8000e-003	0.0436	0.0366	2.6000e-004		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003		52.3328	52.3328	1.0000e-003	9.6000e-004	52.6438
High Turnover (Sit Down Restaurant)	2423.34	0.0261	0.2376	0.1996	1.4300e-003		0.0181	0.0181		0.0181	0.0181		285.0991	285.0991	5.4600e-003	5.2300e-003	286.7933
Other Asphalt Surfaces	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
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
Strip Mall	229.512	2.4800e-003	0.0225	0.0189	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003		27.0015	27.0015	5.2000e-004	5.0000e-004	27.1619
Supermarket	4312.91	0.0465	0.4228	0.3552	2.5400e-003		0.0321	0.0321		0.0321	0.0321		507.4011	507.4011	9.7300e-003	9.3000e-003	510.4163
Total		**0.0799**	**0.7265**	**0.6103**	**4.3700e-003**		**0.0552**	**0.0552**		**0.0552**	**0.0552**		**871.8345**	**871.8345**	**0.0167**	**0.0160**	**877.0153**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Gasoline/Service Station	0.37217	4.0100e-003	0.0365	0.0307	2.2000e-004		2.7700e-003	2.7700e-003		2.7700e-003	2.7700e-003		43.7847	43.7847	8.4000e-004	8.0000e-004	44.0449
High Turnover (Sit Down Restaurant)	2.34072	0.0252	0.2295	0.1928	1.3800e-003		0.0174	0.0174		0.0174	0.0174		275.3792	275.3792	5.2800e-003	5.0500e-003	277.0157
Other Asphalt Surfaces	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
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
Strip Mall	0.1925	2.0800e-003	0.0189	0.0159	1.1000e-004		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		22.6470	22.6470	4.3000e-004	4.2000e-004	22.7816
Supermarket	3.86908	0.0417	0.3793	0.3186	2.2800e-003		0.0288	0.0288		0.0288	0.0288		455.1862	455.1862	8.7200e-003	8.3500e-003	457.8911
Total		**0.0731**	**0.6642**	**0.5579**	**3.9900e-003**		**0.0505**	**0.0505**		**0.0505**	**0.0505**		**796.9971**	**796.9971**	**0.0153**	**0.0146**	**801.7333**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	2.1639	2.5000e-004	0.0270	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0574	0.0574	1.6000e-004		0.0613
Unmitigated	2.1639	2.5000e-004	0.0270	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0574	0.0574	1.6000e-004		0.0613

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	0.5068					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6545					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.5600e-003	2.5000e-004	0.0270	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0574	0.0574	1.6000e-004		0.0613
Total	**2.1639**	**2.5000e-004**	**0.0270**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**0.0574**	**0.0574**	**1.6000e-004**		**0.0613**

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	0.5068					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6545					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.5600e-003	2.5000e-004	0.0270	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0574	0.0574	1.6000e-004		0.0613
Total	**2.1639**	**2.5000e-004**	**0.0270**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**0.0574**	**0.0574**	**1.6000e-004**		**0.0613**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

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

Black Olive Village

Butte County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	96.57	1000sqft	3.85	96,573.00	0
Parking Lot	90.15	1000sqft	2.07	90,149.00	0
High Turnover (Sit Down Restaurant)	4.20	1000sqft	0.10	4,200.00	0
Gasoline/Service Station	9.00	Pump	0.18	7,750.00	0
Strip Mall	7.80	1000sqft	0.18	7,800.00	0
Supermarket	54.47	1000sqft	1.25	54,471.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acerage and square feet from project proposed site plan and preliminary landscape plan.

Demolition -

Grading - Material Imported from preliminary project grading plan.

Vehicle Trips - Trip rates and distances per project TIS.

Land Use Change -

Construction Off-road Equipment Mitigation - Fugitive dust mitigation per BCAQMD Rule 205.
Tier 3 Enginers per MM 4.2-1

Energy Mitigation - HE Lighting per applicant project description.
Exceed Title 24 per MM 4.2-4.

Water Mitigation - Low flow bathroom fixtures per applicant project description.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblGrading	MaterialImported	0.00	21,200.00
tblLandUse	BuildingSpaceSquareFeet	96,570.00	96,573.00
tblLandUse	BuildingSpaceSquareFeet	90,150.00	90,149.00
tblLandUse	BuildingSpaceSquareFeet	1,270.57	7,750.00
tblLandUse	BuildingSpaceSquareFeet	54,470.00	54,471.00
tblLandUse	LandUseSquareFeet	96,570.00	96,573.00
tblLandUse	LandUseSquareFeet	90,150.00	90,149.00
tblLandUse	LandUseSquareFeet	1,270.57	7,750.00
tblLandUse	LandUseSquareFeet	54,470.00	54,471.00
tblLandUse	LotAcreage	2.22	3.85
tblLandUse	LotAcreage	0.03	0.18
tblProjectCharacteristics	OperationalYear	2018	2019
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57

tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	ST_TR	168.56	47.44
tblVehicleTrips	ST_TR	158.37	59.52
tblVehicleTrips	ST_TR	42.04	23.46
tblVehicleTrips	ST_TR	177.59	78.98
tblVehicleTrips	SU_TR	168.56	47.44
tblVehicleTrips	SU_TR	131.84	59.52
tblVehicleTrips	SU_TR	20.43	23.46
tblVehicleTrips	SU_TR	166.44	78.98
tblVehicleTrips	WD_TR	168.56	47.44
tblVehicleTrips	WD_TR	127.15	59.52
tblVehicleTrips	WD_TR	44.32	23.46
tblVehicleTrips	WD_TR	102.24	78.98

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					
2018	4.7046	74.9938	26.3192	0.1401	18.2379	2.5785	20.8164	9.9762	2.3722	12.3484	0.0000	14,547.5816	14,547.5816	1.8988	0.0000	14,595.0502
2019	92.9060	29.1003	24.6438	0.0530	1.4018	1.3628	2.7646	0.3813	1.2823	1.6635	0.0000	5,270.5347	5,270.5347	0.8534	0.0000	5,291.8699
Maximum	**92.9060**	**74.9938**	**26.3192**	**0.1401**	**18.2379**	**2.5785**	**20.8164**	**9.9762**	**2.3722**	**12.3484**	**0.0000**	**14,547.5816**	**14,547.5816**	**1.8988**	**0.0000**	**14,595.0502**

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					
2018	2.2129	59.1611	26.9747	0.1401	8.2925	1.0102	9.2402	4.5121	0.9999	5.4597	0.0000	14,547.5816	14,547.5816	1.8988	0.0000	14,595.0502
2019	92.9060	22.1815	25.6642	0.0530	1.3326	0.9740	2.3066	0.3643	0.9705	1.3348	0.0000	5,270.5347	5,270.5347	0.8534	0.0000	5,291.8699
Maximum	**92.9060**	**59.1611**	**26.9747**	**0.1401**	**8.2925**	**1.0102**	**9.2402**	**4.5121**	**0.9999**	**5.4597**	**0.0000**	**14,547.5816**	**14,547.5816**	**1.8988**	**0.0000**	**14,595.0502**

	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	**2.55**	**21.86**	**-3.29**	**0.00**	**50.99**	**49.66**	**51.03**	**52.92**	**46.08**	**51.51**	**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	2.1639	2.5000e-004	0.0270	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0574	0.0574	1.6000e-004		0.0613
Energy	0.0799	0.7265	0.6103	4.3600e-003		0.0552	0.0552		0.0552	0.0552		871.8345	871.8345	0.0167	0.0160	877.0153
Mobile	10.6875	65.1845	83.5335	0.1402	5.9542	0.2314	6.1857	1.5987	0.2192	1.8179		14,289.9466	14,289.9466	3.4340		14,375.7958
Total	**12.9312**	**65.9113**	**84.1708**	**0.1446**	**5.9542**	**0.2868**	**6.2410**	**1.5987**	**0.2745**	**1.8733**		**15,161.8385**	**15,161.8385**	**3.4508**	**0.0160**	**15,252.8724**

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	2.1639	2.5000e-004	0.0270	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0574	0.0574	1.6000e-004		0.0613
Energy	0.0731	0.6642	0.5579	3.9800e-003		0.0505	0.0505		0.0505	0.0505		796.9971	796.9971	0.0153	0.0146	801.7333
Mobile	10.6875	65.1845	83.5335	0.1402	5.9542	0.2314	6.1857	1.5987	0.2192	1.8179		14,289.9466	14,289.9466	3.4340		14,375.7958
Total	**12.9244**	**65.8490**	**84.1185**	**0.1442**	**5.9542**	**0.2820**	**6.2362**	**1.5987**	**0.2698**	**1.8685**		**15,087.0011**	**15,087.0011**	**3.4494**	**0.0146**	**15,177.5904**

	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	**0.05**	**0.09**	**0.06**	**0.26**	**0.00**	**1.65**	**0.08**	**0.00**	**1.73**	**0.25**	**0.00**	**0.49**	**0.49**	**0.04**	**8.57**	**0.49**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2018	3/28/2018	5	20	
2	Site Preparation	Site Preparation	3/29/2018	4/11/2018	5	10	
3	Grading	Grading	4/12/2018	5/9/2018	5	20	
4	Building Construction	Building Construction	5/10/2018	3/27/2019	5	230	
5	Paving	Paving	3/28/2019	4/24/2019	5	20	
6	Architectural Coating	Architectural Coating	4/25/2019	5/22/2019	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 5.92

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 111,332; Non-Residential Outdoor: 37,111; Striped Parking Area: 11,203 (Architectural Coating – sqft)

OffRoad Equipment

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

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
Demolition	6	15.00	0.00	133.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,650.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	103.00	43.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	21.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

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					1.4361	0.0000	1.4361	0.2174	0.0000	0.2174			0.0000			0.0000
Off-Road	3.7190	38.3225	22.3040	0.0388		1.9386	1.9386		1.8048	1.8048		3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**3.7190**	**38.3225**	**22.3040**	**0.0388**	**1.4361**	**1.9386**	**3.3746**	**0.2174**	**1.8048**	**2.0223**		**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

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	0.0687	2.2186	0.3287	5.4700e-003	0.1165	0.0127	0.1292	0.0320	0.0122	0.0441		573.0325	573.0325	0.0482		574.2365
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	0.1182	0.1168	0.9852	1.4300e-003	0.1431	1.2900e-003	0.1443	0.0379	1.1900e-003	0.0391		141.9958	141.9958	8.9600e-003		142.2197
Total	**0.1869**	**2.3354**	**1.3138**	**6.9000e-003**	**0.2595**	**0.0140**	**0.2736**	**0.0699**	**0.0134**	**0.0832**		**715.0282**	**715.0282**	**0.0571**		**716.4562**

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					0.6462	0.0000	0.6462	0.0979	0.0000	0.0979			0.0000			0.0000
Off-Road	1.3188	19.3704	24.5393	0.0388		0.9295	0.9295		0.9295	0.9295	0.0000	3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**1.3188**	**19.3704**	**24.5393**	**0.0388**	**0.6462**	**0.9295**	**1.5757**	**0.0979**	**0.9295**	**1.0273**	**0.0000**	**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

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	0.0687	2.2186	0.3287	5.4700e-003	0.1112	0.0127	0.1239	0.0307	0.0122	0.0428		573.0325	573.0325	0.0482		574.2365
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	0.1182	0.1168	0.9852	1.4300e-003	0.1356	1.2900e-003	0.1369	0.0361	1.1900e-003	0.0373		141.9958	141.9958	8.9600e-003		142.2197
Total	**0.1869**	**2.3354**	**1.3138**	**6.9000e-003**	**0.2468**	**0.0140**	**0.2608**	**0.0668**	**0.0134**	**0.0801**		**715.0282**	**715.0282**	**0.0571**		**716.4562**

3.3 Site Preparation - 2018

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.5627	48.1988	22.4763	0.0380		2.5769	2.5769		2.3708	2.3708		3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**4.5627**	**48.1988**	**22.4763**	**0.0380**	**18.0663**	**2.5769**	**20.6432**	**9.9307**	**2.3708**	**12.3014**		**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

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	0.1419	0.1402	1.1822	1.7200e-003	0.1717	1.5500e-003	0.1732	0.0455	1.4300e-003	0.0470		170.3949	170.3949	0.0108		170.6637
Total	**0.1419**	**0.1402**	**1.1822**	**1.7200e-003**	**0.1717**	**1.5500e-003**	**0.1732**	**0.0455**	**1.4300e-003**	**0.0470**		**170.3949**	**170.3949**	**0.0108**		**170.6637**

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					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.9312	19.0656	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**0.9312**	**19.0656**	**22.9600**	**0.0380**	**8.1298**	**0.9462**	**9.0760**	**4.4688**	**0.9462**	**5.4150**	**0.0000**	**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

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	0.1419	0.1402	1.1822	1.7200e-003	0.1627	1.5500e-003	0.1643	0.0433	1.4300e-003	0.0448		170.3949	170.3949	0.0108		170.6637
Total	**0.1419**	**0.1402**	**1.1822**	**1.7200e-003**	**0.1627**	**1.5500e-003**	**0.1643**	**0.0433**	**1.4300e-003**	**0.0448**		**170.3949**	**170.3949**	**0.0108**		**170.6637**

3.4 Grading - 2018

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					6.6722	0.0000	6.6722	3.3856	0.0000	3.3856			0.0000			0.0000
Off-Road	2.7733	30.6725	16.5770	0.0297		1.5513	1.5513		1.4272	1.4272		2,988.0216	2,988.0216	0.9302		3,011.2769
Total	**2.7733**	**30.6725**	**16.5770**	**0.0297**	**6.6722**	**1.5513**	**8.2235**	**3.3856**	**1.4272**	**4.8128**		**2,988.0216**	**2,988.0216**	**0.9302**		**3,011.2769**

3.4 Grading - 2018

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	1.3684	44.2045	6.5490	0.1090	2.3211	0.2534	2.5745	0.6366	0.2424	0.8790		11,417.5642	11,417.5642	0.9596		11,441.5536
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	0.1182	0.1168	0.9852	1.4300e-003	0.1431	1.2900e-003	0.1443	0.0379	1.1900e-003	0.0391		141.9958	141.9958	8.9600e-003		142.2197
Total	**1.4866**	**44.3213**	**7.5342**	**0.1104**	**2.4642**	**0.2547**	**2.7188**	**0.6745**	**0.2436**	**0.9181**		**11,559.5600**	**11,559.5600**	**0.9685**		**11,583.7733**

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					3.0025	0.0000	3.0025	1.5235	0.0000	1.5235			0.0000			0.0000
Off-Road	0.7263	14.8397	18.9906	0.0297		0.7555	0.7555		0.7555	0.7555	0.0000	2,988.0216	2,988.0216	0.9302		3,011.2769
Total	**0.7263**	**14.8397**	**18.9906**	**0.0297**	**3.0025**	**0.7555**	**3.7580**	**1.5235**	**0.7555**	**2.2791**	**0.0000**	**2,988.0216**	**2,988.0216**	**0.9302**		**3,011.2769**

3.4 Grading - 2018

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	1.3684	44.2045	6.5490	0.1090	2.2160	0.2534	2.4694	0.6108	0.2424	0.8532		11,417.5642	11,417.5642	0.9596		11,441.5536
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	0.1182	0.1168	0.9852	1.4300e-003	0.1356	1.2900e-003	0.1369	0.0361	1.1900e-003	0.0373		141.9958	141.9958	8.9600e-003		142.2197
Total	**1.4866**	**44.3213**	**7.5342**	**0.1104**	**2.3516**	**0.2547**	**2.6063**	**0.6469**	**0.2436**	**0.8905**		**11,559.5600**	**11,559.5600**	**0.9685**		**11,583.7733**

3.5 Building Construction - 2018

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	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**		**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

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	0.3526	7.8502	1.9741	0.0167	0.4195	0.0803	0.4998	0.1207	0.0769	0.1976		1,743.4120	1,743.4120	0.1699		1,747.6584
Worker	0.8118	0.8023	6.7647	9.8500e-003	0.9823	8.8400e-003	0.9911	0.2605	8.1800e-003	0.2687		975.0376	975.0376	0.0615		976.5754
Total	**1.1644**	**8.6525**	**8.7388**	**0.0265**	**1.4018**	**0.0892**	**1.4910**	**0.3813**	**0.0850**	**0.4663**		**2,718.4497**	**2,718.4497**	**0.2314**		**2,724.2338**

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	1.0098	14.2177	18.2359	0.0269		0.9149	0.9149		0.9149	0.9149	0.0000	2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**1.0098**	**14.2177**	**18.2359**	**0.0269**		**0.9149**	**0.9149**		**0.9149**	**0.9149**	**0.0000**	**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

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	0.3526	7.8502	1.9741	0.0167	0.4016	0.0803	0.4819	0.1163	0.0769	0.1932		1,743.4120	1,743.4120	0.1699		1,747.6584
Worker	0.8118	0.8023	6.7647	9.8500e-003	0.9311	8.8400e-003	0.9399	0.2480	8.1800e-003	0.2561		975.0376	975.0376	0.0615		976.5754
Total	**1.1644**	**8.6525**	**8.7388**	**0.0265**	**1.3326**	**0.0892**	**1.4218**	**0.3643**	**0.0850**	**0.4493**		**2,718.4497**	**2,718.4497**	**0.2314**		**2,724.2338**

3.5 Building Construction - 2019

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

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	0.2999	7.3263	1.6884	0.0166	0.4195	0.0647	0.4842	0.1207	0.0619	0.1827		1,731.4555	1,731.4555	0.1686		1,735.6707
Worker	0.7094	0.6952	5.7917	9.5500e-003	0.9823	8.2300e-003	0.9905	0.2605	7.6000e-003	0.2681		947.4990	947.4990	0.0535		948.8357
Total	**1.0093**	**8.0215**	**7.4801**	**0.0261**	**1.4018**	**0.0730**	**1.4747**	**0.3813**	**0.0695**	**0.4508**		**2,678.9545**	**2,678.9545**	**0.2221**		**2,684.5064**

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	0.9532	14.1600	18.1841	0.0269		0.9010	0.9010		0.9010	0.9010	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**0.9532**	**14.1600**	**18.1841**	**0.0269**		**0.9010**	**0.9010**		**0.9010**	**0.9010**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

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	0.2999	7.3263	1.6884	0.0166	0.4016	0.0647	0.4663	0.1163	0.0619	0.1783		1,731.4555	1,731.4555	0.1686		1,735.6707
Worker	0.7094	0.6952	5.7917	9.5500e-003	0.9311	8.2300e-003	0.9393	0.2480	7.6000e-003	0.2556		947.4990	947.4990	0.0535		948.8357
Total	**1.0093**	**8.0215**	**7.4801**	**0.0261**	**1.3326**	**0.0730**	**1.4056**	**0.3643**	**0.0695**	**0.4338**		**2,678.9545**	**2,678.9545**	**0.2221**		**2,684.5064**

3.6 Paving - 2019

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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.7755					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.2300**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**		**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.6 Paving - 2019

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	0.1033	0.1012	0.8435	1.3900e-003	0.1431	1.2000e-003	0.1443	0.0379	1.1100e-003	0.0391		137.9853	137.9853	7.7900e-003		138.1800
Total	**0.1033**	**0.1012**	**0.8435**	**1.3900e-003**	**0.1431**	**1.2000e-003**	**0.1443**	**0.0379**	**1.1100e-003**	**0.0391**		**137.9853**	**137.9853**	**7.7900e-003**		**138.1800**

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	0.5609	11.2952	17.2957	0.0228		0.6093	0.6093		0.6093	0.6093	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.7755					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3365**	**11.2952**	**17.2957**	**0.0228**		**0.6093**	**0.6093**		**0.6093**	**0.6093**	**0.0000**	**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.6 Paving - 2019

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	0.1033	0.1012	0.8435	1.3900e-003	0.1356	1.2000e-003	0.1368	0.0361	1.1100e-003	0.0372		137.9853	137.9853	7.7900e-003		138.1800
Total	**0.1033**	**0.1012**	**0.8435**	**1.3900e-003**	**0.1356**	**1.2000e-003**	**0.1368**	**0.0361**	**1.1100e-003**	**0.0372**		**137.9853**	**137.9853**	**7.7900e-003**		**138.1800**

3.7 Architectural Coating - 2019

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	92.4949					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**92.7613**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.7 Architectural Coating - 2019

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	0.1446	0.1417	1.1808	1.9500e-003	0.2003	1.6800e-003	0.2020	0.0531	1.5500e-003	0.0547		193.1794	193.1794	0.0109		193.4519
Total	**0.1446**	**0.1417**	**1.1808**	**1.9500e-003**	**0.2003**	**1.6800e-003**	**0.2020**	**0.0531**	**1.5500e-003**	**0.0547**		**193.1794**	**193.1794**	**0.0109**		**193.4519**

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	92.4949					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**92.7613**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.7 Architectural Coating - 2019

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	0.1446	0.1417	1.1808	1.9500e-003	0.1898	1.6800e-003	0.1915	0.0506	1.5500e-003	0.0521		193.1794	193.1794	0.0109		193.4519
Total	**0.1446**	**0.1417**	**1.1808**	**1.9500e-003**	**0.1898**	**1.6800e-003**	**0.1915**	**0.0506**	**1.5500e-003**	**0.0521**		**193.1794**	**193.1794**	**0.0109**		**193.4519**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	10.6875	65.1845	83.5335	0.1402	5.9542	0.2314	6.1857	1.5987	0.2192	1.8179		14,289.9466	14,289.9466	3.4340		14,375.7958
Unmitigated	10.6875	65.1845	83.5335	0.1402	5.9542	0.2314	6.1857	1.5987	0.2192	1.8179		14,289.9466	14,289.9466	3.4340		14,375.7958

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Gasoline/Service Station	426.96	426.96	426.96	124,296	124,296
High Turnover (Sit Down Restaurant)	249.98	249.98	249.98	140,349	140,349
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	182.99	182.99	182.99	131,783	131,783
Supermarket	4,302.04	4,302.04	4302.04	2,376,396	2,376,396
Total	5,161.97	5,161.97	5,161.97	2,772,825	2,772,825

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
Gasoline/Service Station	3.57	3.57	3.57	2.00	79.00	19.00	14	27	59
High Turnover (Sit Down	3.57	3.57	3.57	8.50	72.50	19.00	37	20	43
Other Asphalt Surfaces	10.52	10.52	10.52	0.00	0.00	0.00	0	0	0
Parking Lot	10.52	10.52	10.52	0.00	0.00	0.00	0	0	0
Strip Mall	3.57	3.57	3.57	16.60	64.40	19.00	45	40	15
Supermarket	3.57	3.57	3.57	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Parking Lot	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
High Turnover (Sit Down Restaurant)	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Gasoline/Service Station	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Strip Mall	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Supermarket	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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	0.0731	0.6642	0.5579	3.9800e-003		0.0505	0.0505		0.0505	0.0505		796.9971	796.9971	0.0153	0.0146	801.7333
NaturalGas Unmitigated	0.0799	0.7265	0.6103	4.3600e-003		0.0552	0.0552		0.0552	0.0552		871.8345	871.8345	0.0167	0.0160	877.0153

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					
Gasoline/Service Station	444.829	4.8000e-003	0.0436	0.0366	2.6000e-004		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003		52.3328	52.3328	1.0000e-003	9.6000e-004	52.6438
High Turnover (Sit Down Restaurant)	2423.34	0.0261	0.2376	0.1996	1.4300e-003		0.0181	0.0181		0.0181	0.0181		285.0991	285.0991	5.4600e-003	5.2300e-003	286.7933
Other Asphalt Surfaces	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
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
Strip Mall	229.512	2.4800e-003	0.0225	0.0189	1.4000e-004		1.7100e-003	1.7100e-003		1.7100e-003	1.7100e-003		27.0015	27.0015	5.2000e-004	5.0000e-004	27.1619
Supermarket	4312.91	0.0465	0.4228	0.3552	2.5400e-003		0.0321	0.0321		0.0321	0.0321		507.4011	507.4011	9.7300e-003	9.3000e-003	510.4163
Total		**0.0799**	**0.7265**	**0.6103**	**4.3700e-003**		**0.0552**	**0.0552**		**0.0552**	**0.0552**		**871.8345**	**871.8345**	**0.0167**	**0.0160**	**877.0153**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Gasoline/Service Station	0.37217	4.0100e-003	0.0365	0.0307	2.2000e-004		2.7700e-003	2.7700e-003		2.7700e-003	2.7700e-003		43.7847	43.7847	8.4000e-004	8.0000e-004	44.0449
High Turnover (Sit Down Restaurant)	2.34072	0.0252	0.2295	0.1928	1.3800e-003		0.0174	0.0174		0.0174	0.0174		275.3792	275.3792	5.2800e-003	5.0500e-003	277.0157
Other Asphalt Surfaces	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
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
Strip Mall	0.1925	2.0800e-003	0.0189	0.0159	1.1000e-004		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		22.6470	22.6470	4.3000e-004	4.2000e-004	22.7816
Supermarket	3.86908	0.0417	0.3793	0.3186	2.2800e-003		0.0288	0.0288		0.0288	0.0288		455.1862	455.1862	8.7200e-003	8.3500e-003	457.8911
Total		**0.0731**	**0.6642**	**0.5579**	**3.9900e-003**		**0.0505**	**0.0505**		**0.0505**	**0.0505**		**796.9971**	**796.9971**	**0.0153**	**0.0146**	**801.7333**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	2.1639	2.5000e-004	0.0270	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0574	0.0574	1.6000e-004		0.0613
Unmitigated	2.1639	2.5000e-004	0.0270	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0574	0.0574	1.6000e-004		0.0613

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	0.5068					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6545					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.5600e-003	2.5000e-004	0.0270	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0574	0.0574	1.6000e-004		0.0613
Total	**2.1639**	**2.5000e-004**	**0.0270**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**0.0574**	**0.0574**	**1.6000e-004**		**0.0613**

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	0.5068					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.6545					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.5600e-003	2.5000e-004	0.0270	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0574	0.0574	1.6000e-004		0.0613
Total	**2.1639**	**2.5000e-004**	**0.0270**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**0.0574**	**0.0574**	**1.6000e-004**		**0.0613**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

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

Black Olive Village

Butte County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	96.57	1000sqft	3.85	96,573.00	0
Parking Lot	90.15	1000sqft	2.07	90,149.00	0
High Turnover (Sit Down Restaurant)	4.20	1000sqft	0.10	4,200.00	0
Gasoline/Service Station	9.00	Pump	0.18	7,750.00	0
Strip Mall	7.80	1000sqft	0.18	7,800.00	0
Supermarket	54.47	1000sqft	1.25	54,471.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acerage and square feet from project proposed site plan and preliminary landscape plan.

Demolition -

Grading - Material Imported from preliminary project grading plan.

Vehicle Trips - Trip rates and distances per project TIS.

Land Use Change -

Construction Off-road Equipment Mitigation - Fugitive dust mitigation per BCAQMD Rule 205.
Tier 3 Enginers per MM 4.2-1

Energy Mitigation - HE Lighting per applicant project description.
Exceed Title 24 per MM 4.2-4.

Water Mitigation - Low flow bathroom fixtures per applicant project description.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblGrading	MaterialImported	0.00	21,200.00
tblLandUse	BuildingSpaceSquareFeet	96,570.00	96,573.00
tblLandUse	BuildingSpaceSquareFeet	90,150.00	90,149.00
tblLandUse	BuildingSpaceSquareFeet	1,270.57	7,750.00
tblLandUse	BuildingSpaceSquareFeet	54,470.00	54,471.00
tblLandUse	LandUseSquareFeet	96,570.00	96,573.00
tblLandUse	LandUseSquareFeet	90,150.00	90,149.00
tblLandUse	LandUseSquareFeet	1,270.57	7,750.00
tblLandUse	LandUseSquareFeet	54,470.00	54,471.00
tblLandUse	LotAcreage	2.22	3.85
tblLandUse	LotAcreage	0.03	0.18
tblProjectCharacteristics	OperationalYear	2018	2019
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57

tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	ST_TR	168.56	47.44
tblVehicleTrips	ST_TR	158.37	59.52
tblVehicleTrips	ST_TR	42.04	23.46
tblVehicleTrips	ST_TR	177.59	78.98
tblVehicleTrips	SU_TR	168.56	47.44
tblVehicleTrips	SU_TR	131.84	59.52
tblVehicleTrips	SU_TR	20.43	23.46
tblVehicleTrips	SU_TR	166.44	78.98
tblVehicleTrips	WD_TR	168.56	47.44
tblVehicleTrips	WD_TR	127.15	59.52
tblVehicleTrips	WD_TR	44.32	23.46
tblVehicleTrips	WD_TR	102.24	78.98

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					
2018	0.4228	4.0757	2.7813	6.6100e-003	0.3115	0.1839	0.4954	0.1240	0.1722	0.2962	0.0000	604.6041	604.6041	0.0981	0.0000	607.0560
2019	1.0552	1.0716	0.9440	1.9500e-003	0.0450	0.0518	0.0968	0.0123	0.0486	0.0609	0.0000	175.9664	175.9664	0.0306	0.0000	176.7308
Maximum	**1.0552**	**4.0757**	**2.7813**	**6.6100e-003**	**0.3115**	**0.1839**	**0.4954**	**0.1240**	**0.1722**	**0.2962**	**0.0000**	**604.6041**	**604.6041**	**0.0981**	**0.0000**	**607.0560**

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					
2018	0.2199	2.8117	2.8853	6.6100e-003	0.2105	0.1085	0.3190	0.0752	0.1081	0.1832	0.0000	604.6038	604.6038	0.0981	0.0000	607.0557
2019	1.0027	0.8176	1.0019	1.9500e-003	0.0428	0.0376	0.0804	0.0117	0.0375	0.0492	0.0000	175.9663	175.9663	0.0306	0.0000	176.7307
Maximum	**1.0027**	**2.8117**	**2.8853**	**6.6100e-003**	**0.2105**	**0.1085**	**0.3190**	**0.0752**	**0.1081**	**0.1832**	**0.0000**	**604.6038**	**604.6038**	**0.0981**	**0.0000**	**607.0557**

	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	**17.28**	**29.49**	**-4.35**	**0.00**	**28.96**	**38.00**	**32.56**	**36.22**	**34.11**	**34.91**	**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	3-1-2018	5-31-2018	1.7658	1.1245
2	6-1-2018	8-31-2018	1.1671	0.8109
3	9-1-2018	11-30-2018	1.1624	0.8100
4	12-1-2018	2-28-2019	1.0815	0.7860
5	3-1-2019	5-31-2019	1.4385	1.3098
		Highest	1.7658	1.3098

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	0.3947	2.0000e-005	2.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.6800e-003	4.6800e-003	1.0000e-005	0.0000	5.0000e-003
Energy	0.0146	0.1326	0.1114	8.0000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	771.2493	771.2493	0.0311	8.5100e-003	774.5634
Mobile	2.0710	11.8716	13.2708	0.0266	1.0391	0.0404	1.0794	0.2800	0.0382	0.3182	0.0000	2,461.0793	2,461.0793	0.5276	0.0000	2,474.2685
Waste						0.0000	0.0000		0.0000	0.0000	75.1533	0.0000	75.1533	4.4414	0.0000	186.1892
Water						0.0000	0.0000		0.0000	0.0000	2.7559	14.4032	17.1590	0.2837	6.8200e-003	26.2834
Total	**2.4802**	**12.0042**	**13.3846**	**0.0274**	**1.0391**	**0.0504**	**1.0895**	**0.2800**	**0.0483**	**0.3283**	**77.9092**	**3,246.7364**	**3,324.6456**	**5.2838**	**0.0153**	**3,461.3096**

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	0.3947	2.0000e-005	2.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.6800e-003	4.6800e-003	1.0000e-005	0.0000	5.0000e-003
Energy	0.0133	0.1212	0.1018	7.3000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	662.7933	662.7933	0.0265	7.3900e-003	665.6574
Mobile	2.0710	11.8716	13.2708	0.0266	1.0391	0.0404	1.0794	0.2800	0.0382	0.3182	0.0000	2,461.0793	2,461.0793	0.5276	0.0000	2,474.2685
Waste						0.0000	0.0000		0.0000	0.0000	75.1533	0.0000	75.1533	4.4414	0.0000	186.1892
Water						0.0000	0.0000		0.0000	0.0000	2.4152	12.7131	15.1283	0.2486	5.9800e-003	23.1253
Total	**2.4790**	**11.9928**	**13.3750**	**0.0273**	**1.0391**	**0.0496**	**1.0887**	**0.2800**	**0.0474**	**0.3275**	**77.5686**	**3,136.5903**	**3,214.1589**	**5.2442**	**0.0134**	**3,349.2454**

	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	**0.05**	**0.09**	**0.07**	**0.26**	**0.00**	**1.72**	**0.08**	**0.00**	**1.80**	**0.26**	**0.44**	**3.39**	**3.32**	**0.75**	**12.79**	**3.24**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2018	3/28/2018	5	20	
2	Site Preparation	Site Preparation	3/29/2018	4/11/2018	5	10	
3	Grading	Grading	4/12/2018	5/9/2018	5	20	
4	Building Construction	Building Construction	5/10/2018	3/27/2019	5	230	
5	Paving	Paving	3/28/2019	4/24/2019	5	20	
6	Architectural Coating	Architectural Coating	4/25/2019	5/22/2019	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 5.92

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 111,332; Non-Residential Outdoor: 37,111; Striped Parking Area: 11,203 (Architectural Coating – sqft)

OffRoad Equipment

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

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
Demolition	6	15.00	0.00	133.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,650.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	103.00	43.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	21.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

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					0.0144	0.0000	0.0144	2.1700e-003	0.0000	2.1700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0372	0.3832	0.2230	3.9000e-004		0.0194	0.0194		0.0181	0.0181	0.0000	35.1241	35.1241	9.6800e-003	0.0000	35.3660
Total	**0.0372**	**0.3832**	**0.2230**	**3.9000e-004**	**0.0144**	**0.0194**	**0.0338**	**2.1700e-003**	**0.0181**	**0.0202**	**0.0000**	**35.1241**	**35.1241**	**9.6800e-003**	**0.0000**	**35.3660**

3.2 Demolition - 2018

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	6.7000e-004	0.0221	3.0400e-003	6.0000e-005	1.1200e-003	1.3000e-004	1.2500e-003	3.1000e-004	1.2000e-004	4.3000e-004	0.0000	5.2685	5.2685	4.1000e-004	0.0000	5.2787
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	1.1100e-003	1.0400e-003	9.7200e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.8000e-004	0.0000	1.3307	1.3307	8.0000e-005	0.0000	1.3328
Total	**1.7800e-003**	**0.0231**	**0.0128**	**7.0000e-005**	**2.4900e-003**	**1.4000e-004**	**2.6300e-003**	**6.7000e-004**	**1.3000e-004**	**8.1000e-004**	**0.0000**	**6.5993**	**6.5993**	**4.9000e-004**	**0.0000**	**6.6115**

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					6.4600e-003	0.0000	6.4600e-003	9.8000e-004	0.0000	9.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.1937	0.2454	3.9000e-004		9.2900e-003	9.2900e-003		9.2900e-003	9.2900e-003	0.0000	35.1240	35.1240	9.6800e-003	0.0000	35.3660
Total	**0.0132**	**0.1937**	**0.2454**	**3.9000e-004**	**6.4600e-003**	**9.2900e-003**	**0.0158**	**9.8000e-004**	**9.2900e-003**	**0.0103**	**0.0000**	**35.1240**	**35.1240**	**9.6800e-003**	**0.0000**	**35.3660**

3.2 Demolition - 2018

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	6.7000e-004	0.0221	3.0400e-003	6.0000e-005	1.0700e-003	1.3000e-004	1.2000e-003	3.0000e-004	1.2000e-004	4.2000e-004	0.0000	5.2685	5.2685	4.1000e-004	0.0000	5.2787
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	1.1100e-003	1.0400e-003	9.7200e-003	1.0000e-005	1.3000e-003	1.0000e-005	1.3100e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.3307	1.3307	8.0000e-005	0.0000	1.3328
Total	**1.7800e-003**	**0.0231**	**0.0128**	**7.0000e-005**	**2.3700e-003**	**1.4000e-004**	**2.5100e-003**	**6.5000e-004**	**1.3000e-004**	**7.8000e-004**	**0.0000**	**6.5993**	**6.5993**	**4.9000e-004**	**0.0000**	**6.6115**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0228	0.2410	0.1124	1.9000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	17.3800	17.3800	5.4100e-003	0.0000	17.5152
Total	**0.0228**	**0.2410**	**0.1124**	**1.9000e-004**	**0.0903**	**0.0129**	**0.1032**	**0.0497**	**0.0119**	**0.0615**	**0.0000**	**17.3800**	**17.3800**	**5.4100e-003**	**0.0000**	**17.5152**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	6.2000e-004	5.8300e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.7984	0.7984	5.0000e-005	0.0000	0.7997
Total	**6.7000e-004**	**6.2000e-004**	**5.8300e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.7984**	**0.7984**	**5.0000e-005**	**0.0000**	**0.7997**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0953	0.1148	1.9000e-004		4.7300e-003	4.7300e-003		4.7300e-003	4.7300e-003	0.0000	17.3799	17.3799	5.4100e-003	0.0000	17.5152
Total	**4.6600e-003**	**0.0953**	**0.1148**	**1.9000e-004**	**0.0407**	**4.7300e-003**	**0.0454**	**0.0223**	**4.7300e-003**	**0.0271**	**0.0000**	**17.3799**	**17.3799**	**5.4100e-003**	**0.0000**	**17.5152**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	6.2000e-004	5.8300e-003	1.0000e-005	7.8000e-004	1.0000e-005	7.9000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7984	0.7984	5.0000e-005	0.0000	0.7997
Total	**6.7000e-004**	**6.2000e-004**	**5.8300e-003**	**1.0000e-005**	**7.8000e-004**	**1.0000e-005**	**7.9000e-004**	**2.1000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7984**	**0.7984**	**5.0000e-005**	**0.0000**	**0.7997**

3.4 Grading - 2018

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					0.0667	0.0000	0.0667	0.0339	0.0000	0.0339	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0277	0.3067	0.1658	3.0000e-004		0.0155	0.0155		0.0143	0.0143	0.0000	27.1069	27.1069	8.4400e-003	0.0000	27.3178
Total	**0.0277**	**0.3067**	**0.1658**	**3.0000e-004**	**0.0667**	**0.0155**	**0.0822**	**0.0339**	**0.0143**	**0.0481**	**0.0000**	**27.1069**	**27.1069**	**8.4400e-003**	**0.0000**	**27.3178**

3.4 Grading - 2018

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	0.0134	0.4395	0.0606	1.1000e-003	0.0224	2.5000e-003	0.0249	6.1600e-003	2.3900e-003	8.5500e-003	0.0000	104.9740	104.9740	8.1400e-003	0.0000	105.1776
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	1.1100e-003	1.0400e-003	9.7200e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.8000e-004	0.0000	1.3307	1.3307	8.0000e-005	0.0000	1.3328
Total	**0.0145**	**0.4406**	**0.0703**	**1.1100e-003**	**0.0237**	**2.5100e-003**	**0.0262**	**6.5200e-003**	**2.4000e-003**	**8.9300e-003**	**0.0000**	**106.3048**	**106.3048**	**8.2200e-003**	**0.0000**	**106.5104**

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					0.0300	0.0000	0.0300	0.0152	0.0000	0.0152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2600e-003	0.1484	0.1899	3.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003	0.0000	27.1068	27.1068	8.4400e-003	0.0000	27.3178
Total	**7.2600e-003**	**0.1484**	**0.1899**	**3.0000e-004**	**0.0300**	**7.5600e-003**	**0.0376**	**0.0152**	**7.5600e-003**	**0.0228**	**0.0000**	**27.1068**	**27.1068**	**8.4400e-003**	**0.0000**	**27.3178**

3.4 Grading - 2018

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	0.0134	0.4395	0.0606	1.1000e-003	0.0214	2.5000e-003	0.0239	5.9100e-003	2.3900e-003	8.3000e-003	0.0000	104.9740	104.9740	8.1400e-003	0.0000	105.1776
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	1.1100e-003	1.0400e-003	9.7200e-003	1.0000e-005	1.3000e-003	1.0000e-005	1.3100e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.3307	1.3307	8.0000e-005	0.0000	1.3328
Total	**0.0145**	**0.4406**	**0.0703**	**1.1100e-003**	**0.0227**	**2.5100e-003**	**0.0252**	**6.2600e-003**	**2.4000e-003**	**8.6600e-003**	**0.0000**	**106.3048**	**106.3048**	**8.2200e-003**	**0.0000**	**106.5104**

3.5 Building Construction - 2018

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	0.2251	1.9648	1.4768	2.2600e-003		0.1260	0.1260		0.1184	0.1184	0.0000	199.7245	199.7245	0.0489	0.0000	200.9478
Total	**0.2251**	**1.9648**	**1.4768**	**2.2600e-003**		**0.1260**	**0.1260**		**0.1184**	**0.1184**	**0.0000**	**199.7245**	**199.7245**	**0.0489**	**0.0000**	**200.9478**

3.5 Building Construction - 2018

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	0.0288	0.6558	0.1536	1.4200e-003	0.0340	6.6900e-003	0.0407	9.8400e-003	6.4000e-003	0.0163	0.0000	134.8092	134.8092	0.0121	0.0000	135.1128
Worker	0.0642	0.0599	0.5608	8.5000e-004	0.0790	7.4000e-004	0.0798	0.0210	6.9000e-004	0.0217	0.0000	76.7571	76.7571	4.7100e-003	0.0000	76.8748
Total	**0.0930**	**0.7157**	**0.7145**	**2.2700e-003**	**0.1130**	**7.4300e-003**	**0.1205**	**0.0309**	**7.0900e-003**	**0.0380**	**0.0000**	**211.5663**	**211.5663**	**0.0169**	**0.0000**	**211.9876**

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	0.0848	1.1943	1.5318	2.2600e-003		0.0769	0.0769		0.0769	0.0769	0.0000	199.7242	199.7242	0.0489	0.0000	200.9475
Total	**0.0848**	**1.1943**	**1.5318**	**2.2600e-003**		**0.0769**	**0.0769**		**0.0769**	**0.0769**	**0.0000**	**199.7242**	**199.7242**	**0.0489**	**0.0000**	**200.9475**

3.5 Building Construction - 2018

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	0.0288	0.6558	0.1536	1.4200e-003	0.0326	6.6900e-003	0.0393	9.4900e-003	6.4000e-003	0.0159	0.0000	134.8092	134.8092	0.0121	0.0000	135.1128
Worker	0.0642	0.0599	0.5608	8.5000e-004	0.0749	7.4000e-004	0.0757	0.0200	6.9000e-004	0.0207	0.0000	76.7571	76.7571	4.7100e-003	0.0000	76.8748
Total	**0.0930**	**0.7157**	**0.7145**	**2.2700e-003**	**0.1075**	**7.4300e-003**	**0.1150**	**0.0295**	**7.0900e-003**	**0.0366**	**0.0000**	**211.5663**	**211.5663**	**0.0169**	**0.0000**	**211.9876**

3.5 Building Construction - 2019

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	0.0732	0.6534	0.5321	8.3000e-004		0.0400	0.0400		0.0376	0.0376	0.0000	72.8823	72.8823	0.0178	0.0000	73.3262
Total	**0.0732**	**0.6534**	**0.5321**	**8.3000e-004**		**0.0400**	**0.0400**		**0.0376**	**0.0376**	**0.0000**	**72.8823**	**72.8823**	**0.0178**	**0.0000**	**73.3262**

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0600e-003	0.2260	0.0484	5.2000e-004	0.0126	1.9900e-003	0.0145	3.6300e-003	1.9000e-003	5.5300e-003	0.0000	49.4216	49.4216	4.4400e-003	0.0000	49.5326
Worker	0.0207	0.0191	0.1783	3.1000e-004	0.0292	2.6000e-004	0.0294	7.7600e-003	2.4000e-004	8.0000e-003	0.0000	27.5301	27.5301	1.5200e-003	0.0000	27.5681
Total	**0.0298**	**0.2452**	**0.2268**	**8.3000e-004**	**0.0417**	**2.2500e-003**	**0.0440**	**0.0114**	**2.1400e-003**	**0.0135**	**0.0000**	**76.9518**	**76.9518**	**5.9600e-003**	**0.0000**	**77.1007**

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	0.0296	0.4390	0.5637	8.3000e-004		0.0279	0.0279		0.0279	0.0279	0.0000	72.8822	72.8822	0.0178	0.0000	73.3261
Total	**0.0296**	**0.4390**	**0.5637**	**8.3000e-004**		**0.0279**	**0.0279**		**0.0279**	**0.0279**	**0.0000**	**72.8822**	**72.8822**	**0.0178**	**0.0000**	**73.3261**

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0600e-003	0.2260	0.0484	5.2000e-004	0.0120	1.9900e-003	0.0140	3.5000e-003	1.9000e-003	5.4000e-003	0.0000	49.4216	49.4216	4.4400e-003	0.0000	49.5326
Worker	0.0207	0.0191	0.1783	3.1000e-004	0.0277	2.6000e-004	0.0279	7.3900e-003	2.4000e-004	7.6200e-003	0.0000	27.5301	27.5301	1.5200e-003	0.0000	27.5681
Total	**0.0298**	**0.2452**	**0.2268**	**8.3000e-004**	**0.0397**	**2.2500e-003**	**0.0419**	**0.0109**	**2.1400e-003**	**0.0130**	**0.0000**	**76.9518**	**76.9518**	**5.9600e-003**	**0.0000**	**77.1007**

3.6 Paving - 2019

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	0.0145	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	7.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0223**	**0.1524**	**0.1467**	**2.3000e-004**		**8.2500e-003**	**8.2500e-003**		**7.5900e-003**	**7.5900e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

3.6 Paving - 2019

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	9.7000e-004	9.0000e-004	8.3800e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.8000e-004	0.0000	1.2933	1.2933	7.0000e-005	0.0000	1.2951
Total	**9.7000e-004**	**9.0000e-004**	**8.3800e-003**	**1.0000e-005**	**1.3700e-003**	**1.0000e-005**	**1.3800e-003**	**3.6000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.2933**	**1.2933**	**7.0000e-005**	**0.0000**	**1.2951**

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	5.6100e-003	0.1130	0.1730	2.3000e-004		6.0900e-003	6.0900e-003		6.0900e-003	6.0900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	7.7600e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0134**	**0.1130**	**0.1730**	**2.3000e-004**		**6.0900e-003**	**6.0900e-003**		**6.0900e-003**	**6.0900e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

3.6 Paving - 2019

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	9.7000e-004	9.0000e-004	8.3800e-003	1.0000e-005	1.3000e-003	1.0000e-005	1.3100e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.2933	1.2933	7.0000e-005	0.0000	1.2951
Total	**9.7000e-004**	**9.0000e-004**	**8.3800e-003**	**1.0000e-005**	**1.3000e-003**	**1.0000e-005**	**1.3100e-003**	**3.5000e-004**	**1.0000e-005**	**3.6000e-004**	**0.0000**	**1.2933**	**1.2933**	**7.0000e-005**	**0.0000**	**1.2951**

3.7 Architectural Coating - 2019

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	0.9250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0184	0.0184	3.0000e-005		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	2.5533	2.5533	2.2000e-004	0.0000	2.5587
Total	**0.9276**	**0.0184**	**0.0184**	**3.0000e-005**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**2.5533**	**2.5533**	**2.2000e-004**	**0.0000**	**2.5587**

3.7 Architectural Coating - 2019

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	1.2600e-003	0.0117	2.0000e-005	1.9200e-003	2.0000e-005	1.9300e-003	5.1000e-004	2.0000e-005	5.3000e-004	0.0000	1.8106	1.8106	1.0000e-004	0.0000	1.8131
Total	**1.3600e-003**	**1.2600e-003**	**0.0117**	**2.0000e-005**	**1.9200e-003**	**2.0000e-005**	**1.9300e-003**	**5.1000e-004**	**2.0000e-005**	**5.3000e-004**	**0.0000**	**1.8106**	**1.8106**	**1.0000e-004**	**0.0000**	**1.8131**

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	0.9250					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0184	0.0184	3.0000e-005		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	2.5533	2.5533	2.2000e-004	0.0000	2.5586
Total	**0.9276**	**0.0184**	**0.0184**	**3.0000e-005**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**2.5533**	**2.5533**	**2.2000e-004**	**0.0000**	**2.5586**

3.7 Architectural Coating - 2019

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	1.2600e-003	0.0117	2.0000e-005	1.8200e-003	2.0000e-005	1.8400e-003	4.9000e-004	2.0000e-005	5.0000e-004	0.0000	1.8106	1.8106	1.0000e-004	0.0000	1.8131
Total	**1.3600e-003**	**1.2600e-003**	**0.0117**	**2.0000e-005**	**1.8200e-003**	**2.0000e-005**	**1.8400e-003**	**4.9000e-004**	**2.0000e-005**	**5.0000e-004**	**0.0000**	**1.8106**	**1.8106**	**1.0000e-004**	**0.0000**	**1.8131**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	2.0710	11.8716	13.2708	0.0266	1.0391	0.0404	1.0794	0.2800	0.0382	0.3182	0.0000	2,461.0793	2,461.0793	0.5276	0.0000	2,474.2685
Unmitigated	2.0710	11.8716	13.2708	0.0266	1.0391	0.0404	1.0794	0.2800	0.0382	0.3182	0.0000	2,461.0793	2,461.0793	0.5276	0.0000	2,474.2685

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Gasoline/Service Station	426.96	426.96	426.96	124,296	124,296
High Turnover (Sit Down Restaurant)	249.98	249.98	249.98	140,349	140,349
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	182.99	182.99	182.99	131,783	131,783
Supermarket	4,302.04	4,302.04	4302.04	2,376,396	2,376,396
Total	5,161.97	5,161.97	5,161.97	2,772,825	2,772,825

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
Gasoline/Service Station	3.57	3.57	3.57	2.00	79.00	19.00	14	27	59
High Turnover (Sit Down	3.57	3.57	3.57	8.50	72.50	19.00	37	20	43
Other Asphalt Surfaces	10.52	10.52	10.52	0.00	0.00	0.00	0	0	0
Parking Lot	10.52	10.52	10.52	0.00	0.00	0.00	0	0	0
Strip Mall	3.57	3.57	3.57	16.60	64.40	19.00	45	40	15
Supermarket	3.57	3.57	3.57	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Parking Lot	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
High Turnover (Sit Down Restaurant)	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Gasoline/Service Station	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Strip Mall	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Supermarket	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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	530.8415	530.8415	0.0240	4.9700e-003	532.9215
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	626.9073	626.9073	0.0284	5.8600e-003	629.3637
NaturalGas Mitigated	0.0133	0.1212	0.1018	7.3000e-004		9.2100e-003	9.2100e-003		9.2100e-003	9.2100e-003	0.0000	131.9518	131.9518	2.5300e-003	2.4200e-003	132.7359
NaturalGas Unmitigated	0.0146	0.1326	0.1114	8.0000e-004		0.0101	0.0101		0.0101	0.0101	0.0000	144.3420	144.3420	2.7700e-003	2.6500e-003	145.1997

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					
Gasoline/Service Station	162363	8.8000e-004	7.9600e-003	6.6900e-003	5.0000e-005		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004	0.0000	8.6643	8.6643	1.7000e-004	1.6000e-004	8.7158
High Turnover (Sit Down Restaurant)	884520	4.7700e-003	0.0434	0.0364	2.6000e-004		3.3000e-003	3.3000e-003		3.3000e-003	3.3000e-003	0.0000	47.2014	47.2014	9.0000e-004	8.7000e-004	47.4819
Other Asphalt Surfaces	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
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
Strip Mall	83772	4.5000e-004	4.1100e-003	3.4500e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4704	4.4704	9.0000e-005	8.0000e-005	4.4970
Supermarket	1.57421e+006	8.4900e-003	0.0772	0.0648	4.6000e-004		5.8600e-003	5.8600e-003		5.8600e-003	5.8600e-003	0.0000	84.0059	84.0059	1.6100e-003	1.5400e-003	84.5052
Total		**0.0146**	**0.1326**	**0.1114**	**7.9000e-004**		**0.0101**	**0.0101**		**0.0101**	**0.0101**	**0.0000**	**144.3420**	**144.3420**	**2.7700e-003**	**2.6500e-003**	**145.1997**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Gasoline/Service Station	135842	7.3000e-004	6.6600e-003	5.5900e-003	4.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004	0.0000	7.2491	7.2491	1.4000e-004	1.3000e-004	7.2921
High Turnover (Sit Down Restaurant)	854364	4.6100e-003	0.0419	0.0352	2.5000e-004		3.1800e-003	3.1800e-003		3.1800e-003	3.1800e-003	0.0000	45.5921	45.5921	8.7000e-004	8.4000e-004	45.8631
Other Asphalt Surfaces	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
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
Strip Mall	70262.4	3.8000e-004	3.4400e-003	2.8900e-003	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	3.7495	3.7495	7.0000e-005	7.0000e-005	3.7718
Supermarket	1.41222e+006	7.6100e-003	0.0692	0.0582	4.2000e-004		5.2600e-003	5.2600e-003		5.2600e-003	5.2600e-003	0.0000	75.3612	75.3612	1.4400e-003	1.3800e-003	75.8090
Total		**0.0133**	**0.1212**	**0.1018**	**7.3000e-004**		**9.2100e-003**	**9.2100e-003**		**9.2100e-003**	**9.2100e-003**	**0.0000**	**131.9518**	**131.9518**	**2.5200e-003**	**2.4200e-003**	**132.7359**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Gasoline/Service Station	69672.5	20.2685	9.2000e-004	1.9000e-004	20.3480
High Turnover (Sit Down Restaurant)	123690	35.9828	1.6300e-003	3.4000e-004	36.1238
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	79331.1	23.0783	1.0400e-003	2.2000e-004	23.1688
Strip Mall	65130	18.9471	8.6000e-004	1.8000e-004	19.0213
Supermarket	1.81715e+006	528.6305	0.0239	4.9500e-003	530.7019
Total		**626.9073**	**0.0284**	**5.8800e-003**	**629.3637**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Gasoline/Service Station	55291.6	16.0850	7.3000e-004	1.5000e-004	16.1480
High Turnover (Sit Down Restaurant)	104081	30.2784	1.3700e-003	2.8000e-004	30.3970
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	38078.9	11.0776	5.0000e-004	1.0000e-004	11.1210
Strip Mall	46182.2	13.4349	6.1000e-004	1.3000e-004	13.4876
Supermarket	1.58112e+006	459.9656	0.0208	4.3000e-003	461.7679
Total		**530.8415**	**0.0240**	**4.9600e-003**	**532.9215**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.3947	2.0000e-005	2.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.6800e-003	4.6800e-003	1.0000e-005	0.0000	5.0000e-003
Unmitigated	0.3947	2.0000e-005	2.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.6800e-003	4.6800e-003	1.0000e-005	0.0000	5.0000e-003

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	0.0925					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3019					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.3000e-004	2.0000e-005	2.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.6800e-003	4.6800e-003	1.0000e-005	0.0000	5.0000e-003
Total	**0.3947**	**2.0000e-005**	**2.4300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.6800e-003**	**4.6800e-003**	**1.0000e-005**	**0.0000**	**5.0000e-003**

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	0.0925					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3019					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.3000e-004	2.0000e-005	2.4300e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.6800e-003	4.6800e-003	1.0000e-005	0.0000	5.0000e-003
Total	**0.3947**	**2.0000e-005**	**2.4300e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.6800e-003**	**4.6800e-003**	**1.0000e-005**	**0.0000**	**5.0000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.1283	0.2486	5.9800e-003	23.1253
Unmitigated	17.1590	0.2837	6.8200e-003	26.2834

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Gasoline/Service Station	0.119537 / 0.0732646	0.3007	3.9100e-003	9.0000e-005	0.4265
High Turnover (Sit Down Restaurant)	1.27484 / 0.0813729	2.4941	0.0416	1.0000e-003	3.8331
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.577766 / 0.354114	1.4533	0.0189	4.6000e-004	2.0614
Supermarket	6.71442 / 0.207662	12.9109	0.2193	5.2700e-003	19.9624
Total		**17.1590**	**0.2837**	**6.8200e-003**	**26.2834**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Gasoline/Service Station	0.104762 / 0.0732646	0.2727	3.4200e-003	8.0000e-005	0.3830
High Turnover (Sit Down Restaurant)	1.11727 / 0.0813729	2.1960	0.0365	8.8000e-004	3.3696
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.506354 / 0.354114	1.3183	0.0166	4.0000e-004	1.8514
Supermarket	5.88452 / 0.207662	11.3413	0.1922	4.6200e-003	17.5213
Total		**15.1283**	**0.2486**	**5.9800e-003**	**23.1253**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	75.1533	4.4414	0.0000	186.1892
Unmitigated	75.1533	4.4414	0.0000	186.1892

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Gasoline/Service Station	4.85	0.9845	0.0582	0.0000	2.4391
High Turnover (Sit Down Restaurant)	49.98	10.1455	0.5996	0.0000	25.1350
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	8.19	1.6625	0.0983	0.0000	4.1188
Supermarket	307.21	62.3609	3.6854	0.0000	154.4964
Total		**75.1534**	**4.4414**	**0.0000**	**186.1892**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Gasoline/Service Station	4.85	0.9845	0.0582	0.0000	2.4391
High Turnover (Sit Down Restaurant)	49.98	10.1455	0.5996	0.0000	25.1350
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	8.19	1.6625	0.0983	0.0000	4.1188
Supermarket	307.21	62.3609	3.6854	0.0000	154.4964
Total		**75.1534**	**4.4414**	**0.0000**	**186.1892**

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

Black Olive Village

Butte County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	96.57	1000sqft	4.13	96,573.00	0
Parking Lot	90.15	1000sqft	2.07	90,149.00	0
Strip Mall	7.80	1000sqft	0.18	7,800.00	0
Supermarket	54.47	1000sqft	1.25	54,471.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Alternative 1: No gas station or restaurant

Demolition -

Grading - Material Imported from preliminary project grading plan.

Vehicle Trips - Trip rates and distances per project TIS.

Land Use Change -

Construction Off-road Equipment Mitigation - Fugitive dust mitigation per BCAQMD Rule 205.
Tier 3 Enginers per MM 4.2-1

Energy Mitigation - HE Lighting per applicant project description.
Exceed Title 24 per MM 4.2-4.

Water Mitigation - Low flow bathroom fixtures per applicant project description.

Construction Phase -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	PhaseEndDate	1/23/2019	5/22/2019
tblConstructionPhase	PhaseEndDate	11/28/2018	3/27/2019
tblConstructionPhase	PhaseEndDate	11/29/2017	3/28/2018
tblConstructionPhase	PhaseEndDate	1/10/2018	5/9/2018
tblConstructionPhase	PhaseEndDate	12/26/2018	4/24/2019
tblConstructionPhase	PhaseEndDate	12/13/2017	4/11/2018
tblConstructionPhase	PhaseStartDate	12/27/2018	4/25/2019
tblConstructionPhase	PhaseStartDate	1/11/2018	5/10/2018
tblConstructionPhase	PhaseStartDate	11/2/2017	3/1/2018
tblConstructionPhase	PhaseStartDate	12/14/2017	4/12/2018
tblConstructionPhase	PhaseStartDate	11/29/2018	3/28/2019
tblConstructionPhase	PhaseStartDate	11/30/2017	3/29/2018
tblGrading	MaterialImported	0.00	21,200.00
tblLandUse	LandUseSquareFeet	96,570.00	96,573.00
tblLandUse	LandUseSquareFeet	90,150.00	90,149.00
tblLandUse	LandUseSquareFeet	54,470.00	54,471.00
tblLandUse	LotAcreage	2.22	4.13
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57

tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	ST_TR	42.04	25.00
tblVehicleTrips	ST_TR	177.59	83.80
tblVehicleTrips	SU_TR	20.43	25.00
tblVehicleTrips	SU_TR	166.44	83.80
tblVehicleTrips	WD_TR	44.32	25.00
tblVehicleTrips	WD_TR	102.24	83.80

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					
2018	4.7173	73.3662	26.7358	0.1428	18.2379	2.5785	20.8164	9.9762	2.3722	12.3484	0.0000	14,833.6134	14,833.6134	1.7935	0.0000	14,878.4514
2019	79.0654	28.3744	25.0606	0.0535	1.3346	1.3584	2.6930	0.3630	1.2781	1.6411	0.0000	5,319.0291	5,319.0291	0.8328	0.0000	5,339.8502
Maximum	**79.0654**	**73.3662**	**26.7358**	**0.1428**	**18.2379**	**2.5785**	**20.8164**	**9.9762**	**2.3722**	**12.3484**	**0.0000**	**14,833.6134**	**14,833.6134**	**1.7935**	**0.0000**	**14,878.4514**

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					
2018	2.1772	57.5334	27.3913	0.1428	8.2925	1.0045	9.2402	4.5121	0.9949	5.4597	0.0000	14,833.6134	14,833.6134	1.7935	0.0000	14,878.4514
2019	79.0654	21.4556	26.0809	0.0535	1.2687	0.9696	2.2383	0.3468	0.9663	1.3132	0.0000	5,319.0291	5,319.0291	0.8328	0.0000	5,339.8502
Maximum	**79.0654**	**57.5334**	**27.3913**	**0.1428**	**8.2925**	**1.0045**	**9.2402**	**4.5121**	**0.9949**	**5.4597**	**0.0000**	**14,833.6134**	**14,833.6134**	**1.7935**	**0.0000**	**14,878.4514**

	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	**3.03**	**22.36**	**-3.24**	**0.00**	**51.15**	**49.86**	**51.17**	**53.00**	**46.27**	**51.59**	**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	1.8321	2.4000e-004	0.0257	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.5000e-004		0.0582
Energy	0.0489	0.4442	0.3732	2.6700e-003		0.0338	0.0338		0.0338	0.0338		533.0730	533.0730	0.0102	9.7700e-003	536.2408
Mobile	13.9203	60.3993	66.4744	0.1463	5.7159	0.2033	5.9193	1.5347	0.1925	1.7272		14,932.3517	14,932.3517	2.8288		15,003.0703
Total	**15.8013**	**60.8438**	**66.8732**	**0.1489**	**5.7159**	**0.2372**	**5.9531**	**1.5347**	**0.2263**	**1.7610**		**15,465.4791**	**15,465.4791**	**2.8391**	**9.7700e-003**	**15,539.3693**

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	1.8321	2.4000e-004	0.0257	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.5000e-004		0.0582
Energy	0.0437	0.3973	0.3337	2.3800e-003		0.0302	0.0302		0.0302	0.0302		476.7696	476.7696	9.1400e-003	8.7400e-003	479.6028
Mobile	13.9203	60.3993	66.4744	0.1463	5.7159	0.2033	5.9193	1.5347	0.1925	1.7272		14,932.3517	14,932.3517	2.8288		15,003.0703
Total	**15.7961**	**60.7969**	**66.8338**	**0.1486**	**5.7159**	**0.2336**	**5.9496**	**1.5347**	**0.2228**	**1.7575**		**15,409.1757**	**15,409.1757**	**2.8380**	**8.7400e-003**	**15,482.7313**

	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	**0.03**	**0.08**	**0.06**	**0.19**	**0.00**	**1.50**	**0.06**	**0.00**	**1.57**	**0.20**	**0.00**	**0.36**	**0.36**	**0.04**	**10.54**	**0.36**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2018	3/28/2018	5	20	
2	Site Preparation	Site Preparation	3/29/2018	4/11/2018	5	10	
3	Grading	Grading	4/12/2018	5/9/2018	5	20	
4	Building Construction	Building Construction	5/10/2018	3/27/2019	5	230	
5	Paving	Paving	3/28/2019	4/24/2019	5	20	
6	Architectural Coating	Architectural Coating	4/25/2019	5/22/2019	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 6.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 93,407; Non-Residential Outdoor: 31,136; Striped Parking Area: 11,203 (Architectural Coating – sqft)

OffRoad Equipment

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

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
Demolition	6	15.00	0.00	133.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,650.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	98.00	41.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

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					1.4361	0.0000	1.4361	0.2174	0.0000	0.2174			0.0000			0.0000
Off-Road	3.7190	38.3225	22.3040	0.0388		1.9386	1.9386		1.8048	1.8048		3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**3.7190**	**38.3225**	**22.3040**	**0.0388**	**1.4361**	**1.9386**	**3.3746**	**0.2174**	**1.8048**	**2.0223**		**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

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	0.0664	2.1380	0.2869	5.6000e-003	0.1165	0.0124	0.1289	0.0320	0.0119	0.0438		586.3449	586.3449	0.0428		587.4153
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	0.1288	0.0942	1.1470	1.6400e-003	0.1431	1.2900e-003	0.1443	0.0379	1.1900e-003	0.0391		162.7808	162.7808	0.0102		163.0353
Total	**0.1951**	**2.2322**	**1.4339**	**7.2400e-003**	**0.2595**	**0.0137**	**0.2733**	**0.0699**	**0.0131**	**0.0830**		**749.1256**	**749.1256**	**0.0530**		**750.4506**

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					0.6462	0.0000	0.6462	0.0979	0.0000	0.0979			0.0000			0.0000
Off-Road	1.3188	19.3704	24.5393	0.0388		0.9295	0.9295		0.9295	0.9295	0.0000	3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**1.3188**	**19.3704**	**24.5393**	**0.0388**	**0.6462**	**0.9295**	**1.5757**	**0.0979**	**0.9295**	**1.0273**	**0.0000**	**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

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	0.0664	2.1380	0.2869	5.6000e-003	0.1112	0.0124	0.1237	0.0307	0.0119	0.0425		586.3449	586.3449	0.0428		587.4153
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	0.1288	0.0942	1.1470	1.6400e-003	0.1356	1.2900e-003	0.1369	0.0361	1.1900e-003	0.0373		162.7808	162.7808	0.0102		163.0353
Total	**0.1951**	**2.2322**	**1.4339**	**7.2400e-003**	**0.2468**	**0.0137**	**0.2605**	**0.0668**	**0.0131**	**0.0798**		**749.1256**	**749.1256**	**0.0530**		**750.4506**

3.3 Site Preparation - 2018

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.5627	48.1988	22.4763	0.0380		2.5769	2.5769		2.3708	2.3708		3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**4.5627**	**48.1988**	**22.4763**	**0.0380**	**18.0663**	**2.5769**	**20.6432**	**9.9307**	**2.3708**	**12.3014**		**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

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	0.1545	0.1131	1.3764	1.9700e-003	0.1717	1.5500e-003	0.1732	0.0455	1.4300e-003	0.0470		195.3369	195.3369	0.0122		195.6424
Total	**0.1545**	**0.1131**	**1.3764**	**1.9700e-003**	**0.1717**	**1.5500e-003**	**0.1732**	**0.0455**	**1.4300e-003**	**0.0470**		**195.3369**	**195.3369**	**0.0122**		**195.6424**

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					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.9312	19.0656	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**0.9312**	**19.0656**	**22.9600**	**0.0380**	**8.1298**	**0.9462**	**9.0760**	**4.4688**	**0.9462**	**5.4150**	**0.0000**	**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

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	0.1545	0.1131	1.3764	1.9700e-003	0.1627	1.5500e-003	0.1643	0.0433	1.4300e-003	0.0448		195.3369	195.3369	0.0122		195.6424
Total	**0.1545**	**0.1131**	**1.3764**	**1.9700e-003**	**0.1627**	**1.5500e-003**	**0.1643**	**0.0433**	**1.4300e-003**	**0.0448**		**195.3369**	**195.3369**	**0.0122**		**195.6424**

3.4 Grading - 2018

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					6.6722	0.0000	6.6722	3.3856	0.0000	3.3856			0.0000			0.0000
Off-Road	2.7733	30.6725	16.5770	0.0297		1.5513	1.5513		1.4272	1.4272		2,988.0216	2,988.0216	0.9302		3,011.2769
Total	**2.7733**	**30.6725**	**16.5770**	**0.0297**	**6.6722**	**1.5513**	**8.2235**	**3.3856**	**1.4272**	**4.8128**		**2,988.0216**	**2,988.0216**	**0.9302**		**3,011.2769**

3.4 Grading - 2018

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	1.3221	42.5995	5.7166	0.1115	2.3211	0.2477	2.5688	0.6366	0.2369	0.8735		11,682.8110	11,682.8110	0.8531		11,704.1392
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	0.1288	0.0942	1.1470	1.6400e-003	0.1431	1.2900e-003	0.1443	0.0379	1.1900e-003	0.0391		162.7808	162.7808	0.0102		163.0353
Total	**1.4508**	**42.6937**	**6.8636**	**0.1131**	**2.4642**	**0.2489**	**2.7131**	**0.6745**	**0.2381**	**0.9126**		**11,845.5918**	**11,845.5918**	**0.8633**		**11,867.1745**

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					3.0025	0.0000	3.0025	1.5235	0.0000	1.5235			0.0000			0.0000
Off-Road	0.7263	14.8397	18.9906	0.0297		0.7555	0.7555		0.7555	0.7555	0.0000	2,988.0216	2,988.0216	0.9302		3,011.2769
Total	**0.7263**	**14.8397**	**18.9906**	**0.0297**	**3.0025**	**0.7555**	**3.7580**	**1.5235**	**0.7555**	**2.2791**	**0.0000**	**2,988.0216**	**2,988.0216**	**0.9302**		**3,011.2769**

3.4 Grading - 2018

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	1.3221	42.5995	5.7166	0.1115	2.2160	0.2477	2.4637	0.6108	0.2369	0.8477		11,682.8110	11,682.8110	0.8531		11,704.1392
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	0.1288	0.0942	1.1470	1.6400e-003	0.1356	1.2900e-003	0.1369	0.0361	1.1900e-003	0.0373		162.7808	162.7808	0.0102		163.0353
Total	**1.4508**	**42.6937**	**6.8636**	**0.1131**	**2.3516**	**0.2489**	**2.6005**	**0.6469**	**0.2381**	**0.8850**		**11,845.5918**	**11,845.5918**	**0.8633**		**11,867.1745**

3.5 Building Construction - 2018

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	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**		**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

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	0.3247	7.2278	1.6616	0.0163	0.4000	0.0755	0.4755	0.1151	0.0723	0.1874		1,704.5090	1,704.5090	0.1449		1,708.1302
Worker	0.8414	0.6156	7.4937	0.0107	0.9346	8.4100e-003	0.9430	0.2479	7.7800e-003	0.2557		1,063.5010	1,063.5010	0.0665		1,065.1640
Total	**1.1661**	**7.8433**	**9.1554**	**0.0270**	**1.3346**	**0.0839**	**1.4185**	**0.3630**	**0.0800**	**0.4430**		**2,768.0100**	**2,768.0100**	**0.2114**		**2,773.2942**

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	1.0098	14.2177	18.2359	0.0269		0.9149	0.9149		0.9149	0.9149	0.0000	2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**1.0098**	**14.2177**	**18.2359**	**0.0269**		**0.9149**	**0.9149**		**0.9149**	**0.9149**	**0.0000**	**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

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	0.3247	7.2278	1.6616	0.0163	0.3829	0.0755	0.4584	0.1109	0.0723	0.1832		1,704.5090	1,704.5090	0.1449		1,708.1302
Worker	0.8414	0.6156	7.4937	0.0107	0.8859	8.4100e-003	0.8943	0.2359	7.7800e-003	0.2437		1,063.5010	1,063.5010	0.0665		1,065.1640
Total	**1.1661**	**7.8433**	**9.1554**	**0.0270**	**1.2687**	**0.0839**	**1.3527**	**0.3468**	**0.0800**	**0.4269**		**2,768.0100**	**2,768.0100**	**0.2114**		**2,773.2942**

3.5 Building Construction - 2019

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

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	0.2760	6.7617	1.4080	0.0162	0.4000	0.0608	0.4607	0.1151	0.0581	0.1732		1,693.5088	1,693.5088	0.1432		1,697.0874
Worker	0.7403	0.5339	6.4888	0.0104	0.9346	7.8300e-003	0.9424	0.2479	7.2300e-003	0.2551		1,033.9402	1,033.9402	0.0584		1,035.3992
Total	**1.0163**	**7.2956**	**7.8968**	**0.0266**	**1.3346**	**0.0686**	**1.4032**	**0.3630**	**0.0654**	**0.4284**		**2,727.4489**	**2,727.4489**	**0.2015**		**2,732.4867**

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	0.9532	14.1600	18.1841	0.0269		0.9010	0.9010		0.9010	0.9010	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**0.9532**	**14.1600**	**18.1841**	**0.0269**		**0.9010**	**0.9010**		**0.9010**	**0.9010**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

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	0.2760	6.7617	1.4080	0.0162	0.3829	0.0608	0.4436	0.1109	0.0581	0.1690		1,693.5088	1,693.5088	0.1432		1,697.0874
Worker	0.7403	0.5339	6.4888	0.0104	0.8859	7.8300e-003	0.8937	0.2359	7.2300e-003	0.2431		1,033.9402	1,033.9402	0.0584		1,035.3992
Total	**1.0163**	**7.2956**	**7.8968**	**0.0266**	**1.2687**	**0.0686**	**1.3373**	**0.3468**	**0.0654**	**0.4122**		**2,727.4489**	**2,727.4489**	**0.2015**		**2,732.4867**

3.6 Paving - 2019

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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.8122					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.2666**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**		**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.6 Paving - 2019

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	0.1133	0.0817	0.9932	1.6000e-003	0.1431	1.2000e-003	0.1443	0.0379	1.1100e-003	0.0391		158.2562	158.2562	8.9300e-003		158.4795
Total	**0.1133**	**0.0817**	**0.9932**	**1.6000e-003**	**0.1431**	**1.2000e-003**	**0.1443**	**0.0379**	**1.1100e-003**	**0.0391**		**158.2562**	**158.2562**	**8.9300e-003**		**158.4795**

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	0.5609	11.2952	17.2957	0.0228		0.6093	0.6093		0.6093	0.6093	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.8122					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3731**	**11.2952**	**17.2957**	**0.0228**		**0.6093**	**0.6093**		**0.6093**	**0.6093**	**0.0000**	**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.6 Paving - 2019

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	0.1133	0.0817	0.9932	1.6000e-003	0.1356	1.2000e-003	0.1368	0.0361	1.1100e-003	0.0372		158.2562	158.2562	8.9300e-003		158.4795
Total	**0.1133**	**0.0817**	**0.9932**	**1.6000e-003**	**0.1356**	**1.2000e-003**	**0.1368**	**0.0361**	**1.1100e-003**	**0.0372**		**158.2562**	**158.2562**	**8.9300e-003**		**158.4795**

3.7 Architectural Coating - 2019

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	78.6478					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**78.9143**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.7 Architectural Coating - 2019

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	0.1511	0.1090	1.3242	2.1300e-003	0.1907	1.6000e-003	0.1923	0.0506	1.4800e-003	0.0521		211.0082	211.0082	0.0119		211.3060
Total	**0.1511**	**0.1090**	**1.3242**	**2.1300e-003**	**0.1907**	**1.6000e-003**	**0.1923**	**0.0506**	**1.4800e-003**	**0.0521**		**211.0082**	**211.0082**	**0.0119**		**211.3060**

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	78.6478					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**78.9143**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.7 Architectural Coating - 2019

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	0.1511	0.1090	1.3242	2.1300e-003	0.1808	1.6000e-003	0.1824	0.0482	1.4800e-003	0.0496		211.0082	211.0082	0.0119		211.3060
Total	**0.1511**	**0.1090**	**1.3242**	**2.1300e-003**	**0.1808**	**1.6000e-003**	**0.1824**	**0.0482**	**1.4800e-003**	**0.0496**		**211.0082**	**211.0082**	**0.0119**		**211.3060**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	13.9203	60.3993	66.4744	0.1463	5.7159	0.2033	5.9193	1.5347	0.1925	1.7272		14,932.3517	14,932.3517	2.8288		15,003.0703
Unmitigated	13.9203	60.3993	66.4744	0.1463	5.7159	0.2033	5.9193	1.5347	0.1925	1.7272		14,932.3517	14,932.3517	2.8288		15,003.0703

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	195.00	195.00	195.00	140,434	140,434
Supermarket	4,564.59	4,564.59	4564.59	2,521,423	2,521,423
Total	4,759.59	4,759.59	4,759.59	2,661,857	2,661,857

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
Other Asphalt Surfaces	3.57	3.57	3.57	0.00	0.00	0.00	0	0	0
Parking Lot	3.57	3.57	3.57	0.00	0.00	0.00	0	0	0
Strip Mall	3.57	3.57	3.57	16.60	64.40	19.00	45	40	15
Supermarket	3.57	3.57	3.57	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Parking Lot	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Strip Mall	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Supermarket	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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	0.0437	0.3973	0.3337	2.3800e-003		0.0302	0.0302		0.0302	0.0302		476.7696	476.7696	9.1400e-003	8.7400e-003	479.6028
NaturalGas Unmitigated	0.0489	0.4442	0.3732	2.6700e-003		0.0338	0.0338		0.0338	0.0338		533.0730	533.0730	0.0102	9.7700e-003	536.2408

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					
Other Asphalt Surfaces	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
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
Strip Mall	228.658	2.4700e-003	0.0224	0.0188	1.3000e-004		1.7000e-003	1.7000e-003		1.7000e-003	1.7000e-003		26.9009	26.9009	5.2000e-004	4.9000e-004	27.0607
Supermarket	4302.46	0.0464	0.4218	0.3543	2.5300e-003		0.0321	0.0321		0.0321	0.0321		506.1721	506.1721	9.7000e-003	9.2800e-003	509.1800
Total		**0.0489**	**0.4442**	**0.3732**	**2.6600e-003**		**0.0338**	**0.0338**		**0.0338**	**0.0338**		**533.0730**	**533.0730**	**0.0102**	**9.7700e-003**	**536.2408**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	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
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
Strip Mall	0.191816	2.0700e-003	0.0188	0.0158	1.1000e-004		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		22.5666	22.5666	4.3000e-004	4.1000e-004	22.7007
Supermarket	3.86073	0.0416	0.3785	0.3179	2.2700e-003		0.0288	0.0288		0.0288	0.0288		454.2030	454.2030	8.7100e-003	8.3300e-003	456.9021
Total		**0.0437**	**0.3973**	**0.3337**	**2.3800e-003**		**0.0302**	**0.0302**		**0.0302**	**0.0302**		**476.7696**	**476.7696**	**9.1400e-003**	**8.7400e-003**	**479.6028**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	1.8321	2.4000e-004	0.0257	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.5000e-004		0.0582
Unmitigated	1.8321	2.4000e-004	0.0257	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.5000e-004		0.0582

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	0.4310					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3987					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.4300e-003	2.4000e-004	0.0257	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.5000e-004		0.0582
Total	**1.8321**	**2.4000e-004**	**0.0257**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0545**	**0.0545**	**1.5000e-004**		**0.0582**

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	0.4310					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3987					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.4300e-003	2.4000e-004	0.0257	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.5000e-004		0.0582
Total	**1.8321**	**2.4000e-004**	**0.0257**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0545**	**0.0545**	**1.5000e-004**		**0.0582**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

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

Black Olive Village

Butte County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	96.57	1000sqft	4.13	96,573.00	0
Parking Lot	90.15	1000sqft	2.07	90,149.00	0
Strip Mall	7.80	1000sqft	0.18	7,800.00	0
Supermarket	54.47	1000sqft	1.25	54,471.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Alternative 1: No gas station or restaurant

Demolition -

Grading - Material Imported from preliminary project grading plan.

Vehicle Trips - Trip rates and distances per project TIS.

Land Use Change -

Construction Off-road Equipment Mitigation - Fugitive dust mitigation per BCAQMD Rule 205.
Tier 3 Enginers per MM 4.2-1

Energy Mitigation - HE Lighting per applicant project description.
Exceed Title 24 per MM 4.2-4.

Water Mitigation - Low flow bathroom fixtures per applicant project description.

Construction Phase -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	PhaseEndDate	1/23/2019	5/22/2019
tblConstructionPhase	PhaseEndDate	11/28/2018	3/27/2019
tblConstructionPhase	PhaseEndDate	11/29/2017	3/28/2018
tblConstructionPhase	PhaseEndDate	1/10/2018	5/9/2018
tblConstructionPhase	PhaseEndDate	12/26/2018	4/24/2019
tblConstructionPhase	PhaseEndDate	12/13/2017	4/11/2018
tblConstructionPhase	PhaseStartDate	12/27/2018	4/25/2019
tblConstructionPhase	PhaseStartDate	1/11/2018	5/10/2018
tblConstructionPhase	PhaseStartDate	11/2/2017	3/1/2018
tblConstructionPhase	PhaseStartDate	12/14/2017	4/12/2018
tblConstructionPhase	PhaseStartDate	11/29/2018	3/28/2019
tblConstructionPhase	PhaseStartDate	11/30/2017	3/29/2018
tblGrading	MaterialImported	0.00	21,200.00
tblLandUse	LandUseSquareFeet	96,570.00	96,573.00
tblLandUse	LandUseSquareFeet	90,150.00	90,149.00
tblLandUse	LandUseSquareFeet	54,470.00	54,471.00
tblLandUse	LotAcreage	2.22	4.13
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57

tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	ST_TR	42.04	25.00
tblVehicleTrips	ST_TR	177.59	83.80
tblVehicleTrips	SU_TR	20.43	25.00
tblVehicleTrips	SU_TR	166.44	83.80
tblVehicleTrips	WD_TR	44.32	25.00
tblVehicleTrips	WD_TR	102.24	83.80

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					
2018	4.7046	74.9938	25.8990	0.1401	18.2379	2.5785	20.8164	9.9762	2.3722	12.3484	0.0000	14,547.5816	14,547.5816	1.8988	0.0000	14,595.0502
2019	79.0520	28.7258	24.2842	0.0518	1.3346	1.3594	2.6940	0.3630	1.2790	1.6420	0.0000	5,144.0068	5,144.0068	0.8430	0.0000	5,165.0810
Maximum	**79.0520**	**74.9938**	**25.8990**	**0.1401**	**18.2379**	**2.5785**	**20.8164**	**9.9762**	**2.3722**	**12.3484**	**0.0000**	**14,547.5816**	**14,547.5816**	**1.8988**	**0.0000**	**14,595.0502**

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					
2018	2.2129	59.1611	26.5545	0.1401	8.2925	1.0102	9.2402	4.5121	0.9992	5.4597	0.0000	14,547.5816	14,547.5816	1.8988	0.0000	14,595.0502
2019	79.0520	21.8070	25.3045	0.0518	1.2687	0.9706	2.2393	0.3468	0.9673	1.3141	0.0000	5,144.0068	5,144.0068	0.8430	0.0000	5,165.0810
Maximum	**79.0520**	**59.1611**	**26.5545**	**0.1401**	**8.2925**	**1.0102**	**9.2402**	**4.5121**	**0.9992**	**5.4597**	**0.0000**	**14,547.5816**	**14,547.5816**	**1.8988**	**0.0000**	**14,595.0502**

	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	**2.97**	**21.94**	**-3.34**	**0.00**	**51.15**	**49.70**	**51.17**	**53.00**	**46.14**	**51.58**	**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	1.8321	2.4000e-004	0.0257	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.5000e-004		0.0582
Energy	0.0489	0.4442	0.3732	2.6700e-003		0.0338	0.0338		0.0338	0.0338		533.0730	533.0730	0.0102	9.7700e-003	536.2408
Mobile	9.9053	60.6233	78.0488	0.1323	5.7159	0.2184	5.9344	1.5347	0.2069	1.7416		13,483.1906	13,483.1906	3.1795		13,562.6780
Total	**11.7863**	**61.0677**	**78.4477**	**0.1350**	**5.7159**	**0.2523**	**5.9682**	**1.5347**	**0.2408**	**1.7755**		**14,016.3181**	**14,016.3181**	**3.1899**	**9.7700e-003**	**14,098.9770**

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	1.8321	2.4000e-004	0.0257	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.5000e-004		0.0582
Energy	0.0437	0.3973	0.3337	2.3800e-003		0.0302	0.0302		0.0302	0.0302		476.7696	476.7696	9.1400e-003	8.7400e-003	479.6028
Mobile	9.9053	60.6233	78.0488	0.1323	5.7159	0.2184	5.9344	1.5347	0.2069	1.7416		13,483.1906	13,483.1906	3.1795		13,562.6780
Total	**11.7812**	**61.0208**	**78.4083**	**0.1347**	**5.7159**	**0.2487**	**5.9646**	**1.5347**	**0.2372**	**1.7719**		**13,960.0146**	**13,960.0146**	**3.1888**	**8.7400e-003**	**14,042.3390**

	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	**0.04**	**0.08**	**0.05**	**0.21**	**0.00**	**1.41**	**0.06**	**0.00**	**1.48**	**0.20**	**0.00**	**0.40**	**0.40**	**0.03**	**10.54**	**0.40**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2018	3/28/2018	5	20	
2	Site Preparation	Site Preparation	3/29/2018	4/11/2018	5	10	
3	Grading	Grading	4/12/2018	5/9/2018	5	20	
4	Building Construction	Building Construction	5/10/2018	3/27/2019	5	230	
5	Paving	Paving	3/28/2019	4/24/2019	5	20	
6	Architectural Coating	Architectural Coating	4/25/2019	5/22/2019	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 6.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 93,407; Non-Residential Outdoor: 31,136; Striped Parking Area: 11,203 (Architectural Coating – sqft)

OffRoad Equipment

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

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
Demolition	6	15.00	0.00	133.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,650.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	98.00	41.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

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					1.4361	0.0000	1.4361	0.2174	0.0000	0.2174			0.0000			0.0000
Off-Road	3.7190	38.3225	22.3040	0.0388		1.9386	1.9386		1.8048	1.8048		3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**3.7190**	**38.3225**	**22.3040**	**0.0388**	**1.4361**	**1.9386**	**3.3746**	**0.2174**	**1.8048**	**2.0223**		**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

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	0.0687	2.2186	0.3287	5.4700e-003	0.1165	0.0127	0.1292	0.0320	0.0122	0.0441		573.0325	573.0325	0.0482		574.2365
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	0.1182	0.1168	0.9852	1.4300e-003	0.1431	1.2900e-003	0.1443	0.0379	1.1900e-003	0.0391		141.9958	141.9958	8.9600e-003		142.2197
Total	**0.1869**	**2.3354**	**1.3138**	**6.9000e-003**	**0.2595**	**0.0140**	**0.2736**	**0.0699**	**0.0134**	**0.0832**		**715.0282**	**715.0282**	**0.0571**		**716.4562**

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					0.6462	0.0000	0.6462	0.0979	0.0000	0.0979			0.0000			0.0000
Off-Road	1.3188	19.3704	24.5393	0.0388		0.9295	0.9295		0.9295	0.9295	0.0000	3,871.7665	3,871.7665	1.0667		3,898.4344
Total	**1.3188**	**19.3704**	**24.5393**	**0.0388**	**0.6462**	**0.9295**	**1.5757**	**0.0979**	**0.9295**	**1.0273**	**0.0000**	**3,871.7665**	**3,871.7665**	**1.0667**		**3,898.4344**

3.2 Demolition - 2018

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	0.0687	2.2186	0.3287	5.4700e-003	0.1112	0.0127	0.1239	0.0307	0.0122	0.0428		573.0325	573.0325	0.0482		574.2365
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	0.1182	0.1168	0.9852	1.4300e-003	0.1356	1.2900e-003	0.1369	0.0361	1.1900e-003	0.0373		141.9958	141.9958	8.9600e-003		142.2197
Total	**0.1869**	**2.3354**	**1.3138**	**6.9000e-003**	**0.2468**	**0.0140**	**0.2608**	**0.0668**	**0.0134**	**0.0801**		**715.0282**	**715.0282**	**0.0571**		**716.4562**

3.3 Site Preparation - 2018

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					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.5627	48.1988	22.4763	0.0380		2.5769	2.5769		2.3708	2.3708		3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**4.5627**	**48.1988**	**22.4763**	**0.0380**	**18.0663**	**2.5769**	**20.6432**	**9.9307**	**2.3708**	**12.3014**		**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

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	0.1419	0.1402	1.1822	1.7200e-003	0.1717	1.5500e-003	0.1732	0.0455	1.4300e-003	0.0470		170.3949	170.3949	0.0108		170.6637
Total	**0.1419**	**0.1402**	**1.1822**	**1.7200e-003**	**0.1717**	**1.5500e-003**	**0.1732**	**0.0455**	**1.4300e-003**	**0.0470**		**170.3949**	**170.3949**	**0.0108**		**170.6637**

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					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.9312	19.0656	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,831.6239	3,831.6239	1.1928		3,861.4448
Total	**0.9312**	**19.0656**	**22.9600**	**0.0380**	**8.1298**	**0.9462**	**9.0760**	**4.4688**	**0.9462**	**5.4150**	**0.0000**	**3,831.6239**	**3,831.6239**	**1.1928**		**3,861.4448**

3.3 Site Preparation - 2018

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	0.1419	0.1402	1.1822	1.7200e-003	0.1627	1.5500e-003	0.1643	0.0433	1.4300e-003	0.0448		170.3949	170.3949	0.0108		170.6637
Total	**0.1419**	**0.1402**	**1.1822**	**1.7200e-003**	**0.1627**	**1.5500e-003**	**0.1643**	**0.0433**	**1.4300e-003**	**0.0448**		**170.3949**	**170.3949**	**0.0108**		**170.6637**

3.4 Grading - 2018

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					6.6722	0.0000	6.6722	3.3856	0.0000	3.3856			0.0000			0.0000
Off-Road	2.7733	30.6725	16.5770	0.0297		1.5513	1.5513		1.4272	1.4272		2,988.0216	2,988.0216	0.9302		3,011.2769
Total	**2.7733**	**30.6725**	**16.5770**	**0.0297**	**6.6722**	**1.5513**	**8.2235**	**3.3856**	**1.4272**	**4.8128**		**2,988.0216**	**2,988.0216**	**0.9302**		**3,011.2769**

3.4 Grading - 2018

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	1.3684	44.2045	6.5490	0.1090	2.3211	0.2534	2.5745	0.6366	0.2424	0.8790		11,417.5642	11,417.5642	0.9596		11,441.5536
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	0.1182	0.1168	0.9852	1.4300e-003	0.1431	1.2900e-003	0.1443	0.0379	1.1900e-003	0.0391		141.9958	141.9958	8.9600e-003		142.2197
Total	**1.4866**	**44.3213**	**7.5342**	**0.1104**	**2.4642**	**0.2547**	**2.7188**	**0.6745**	**0.2436**	**0.9181**		**11,559.5600**	**11,559.5600**	**0.9685**		**11,583.7733**

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					3.0025	0.0000	3.0025	1.5235	0.0000	1.5235			0.0000			0.0000
Off-Road	0.7263	14.8397	18.9906	0.0297		0.7555	0.7555		0.7555	0.7555	0.0000	2,988.0216	2,988.0216	0.9302		3,011.2769
Total	**0.7263**	**14.8397**	**18.9906**	**0.0297**	**3.0025**	**0.7555**	**3.7580**	**1.5235**	**0.7555**	**2.2791**	**0.0000**	**2,988.0216**	**2,988.0216**	**0.9302**		**3,011.2769**

3.4 Grading - 2018

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	1.3684	44.2045	6.5490	0.1090	2.2160	0.2534	2.4694	0.6108	0.2424	0.8532		11,417.5642	11,417.5642	0.9596		11,441.5536
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	0.1182	0.1168	0.9852	1.4300e-003	0.1356	1.2900e-003	0.1369	0.0361	1.1900e-003	0.0373		141.9958	141.9958	8.9600e-003		142.2197
Total	**1.4866**	**44.3213**	**7.5342**	**0.1104**	**2.3516**	**0.2547**	**2.6063**	**0.6469**	**0.2436**	**0.8905**		**11,559.5600**	**11,559.5600**	**0.9685**		**11,583.7733**

3.5 Building Construction - 2018

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	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**		**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

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	0.3362	7.4851	1.8822	0.0159	0.4000	0.0766	0.4766	0.1151	0.0733	0.1884		1,662.3231	1,662.3231	0.1620		1,666.3720
Worker	0.7724	0.7633	6.4363	9.3700e-003	0.9346	8.4100e-003	0.9430	0.2479	7.7800e-003	0.2557		927.7057	927.7057	0.0585		929.1688
Total	**1.1086**	**8.2484**	**8.3185**	**0.0253**	**1.3346**	**0.0850**	**1.4196**	**0.3630**	**0.0811**	**0.4441**		**2,590.0288**	**2,590.0288**	**0.2205**		**2,595.5408**

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	1.0098	14.2177	18.2359	0.0269		0.9149	0.9149		0.9149	0.9149	0.0000	2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**1.0098**	**14.2177**	**18.2359**	**0.0269**		**0.9149**	**0.9149**		**0.9149**	**0.9149**	**0.0000**	**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

3.5 Building Construction - 2018

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	0.3362	7.4851	1.8822	0.0159	0.3829	0.0766	0.4595	0.1109	0.0733	0.1842		1,662.3231	1,662.3231	0.1620		1,666.3720
Worker	0.7724	0.7633	6.4363	9.3700e-003	0.8859	8.4100e-003	0.8943	0.2359	7.7800e-003	0.2437		927.7057	927.7057	0.0585		929.1688
Total	**1.1086**	**8.2484**	**8.3185**	**0.0253**	**1.2687**	**0.0850**	**1.3537**	**0.3468**	**0.0811**	**0.4279**		**2,590.0288**	**2,590.0288**	**0.2205**		**2,595.5408**

3.5 Building Construction - 2019

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	2.3612	21.0788	17.1638	0.0269		1.2899	1.2899		1.2127	1.2127		2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**2.3612**	**21.0788**	**17.1638**	**0.0269**		**1.2899**	**1.2899**		**1.2127**	**1.2127**		**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

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	0.2859	6.9856	1.6099	0.0158	0.4000	0.0617	0.4617	0.1151	0.0591	0.1742		1,650.9227	1,650.9227	0.1608		1,654.9418
Worker	0.6750	0.6615	5.5105	9.0900e-003	0.9346	7.8300e-003	0.9424	0.2479	7.2300e-003	0.2551		901.5039	901.5039	0.0509		902.7757
Total	**0.9609**	**7.6470**	**7.1204**	**0.0249**	**1.3346**	**0.0696**	**1.4041**	**0.3630**	**0.0663**	**0.4293**		**2,552.4266**	**2,552.4266**	**0.2116**		**2,557.7175**

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	0.9532	14.1600	18.1841	0.0269		0.9010	0.9010		0.9010	0.9010	0.0000	2,591.5802	2,591.5802	0.6313		2,607.3635
Total	**0.9532**	**14.1600**	**18.1841**	**0.0269**		**0.9010**	**0.9010**		**0.9010**	**0.9010**	**0.0000**	**2,591.5802**	**2,591.5802**	**0.6313**		**2,607.3635**

3.5 Building Construction - 2019

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	0.2859	6.9856	1.6099	0.0158	0.3829	0.0617	0.4446	0.1109	0.0591	0.1700		1,650.9227	1,650.9227	0.1608		1,654.9418
Worker	0.6750	0.6615	5.5105	9.0900e-003	0.8859	7.8300e-003	0.8937	0.2359	7.2300e-003	0.2431		901.5039	901.5039	0.0509		902.7757
Total	**0.9609**	**7.6470**	**7.1204**	**0.0249**	**1.2687**	**0.0696**	**1.3383**	**0.3468**	**0.0663**	**0.4131**		**2,552.4266**	**2,552.4266**	**0.2116**		**2,557.7175**

3.6 Paving - 2019

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	1.4544	15.2441	14.6648	0.0228		0.8246	0.8246		0.7586	0.7586		2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.8122					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.2666**	**15.2441**	**14.6648**	**0.0228**		**0.8246**	**0.8246**		**0.7586**	**0.7586**		**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.6 Paving - 2019

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	0.1033	0.1012	0.8435	1.3900e-003	0.1431	1.2000e-003	0.1443	0.0379	1.1100e-003	0.0391		137.9853	137.9853	7.7900e-003		138.1800
Total	**0.1033**	**0.1012**	**0.8435**	**1.3900e-003**	**0.1431**	**1.2000e-003**	**0.1443**	**0.0379**	**1.1100e-003**	**0.0391**		**137.9853**	**137.9853**	**7.7900e-003**		**138.1800**

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	0.5609	11.2952	17.2957	0.0228		0.6093	0.6093		0.6093	0.6093	0.0000	2,257.0025	2,257.0025	0.7141		2,274.8548
Paving	0.8122					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3731**	**11.2952**	**17.2957**	**0.0228**		**0.6093**	**0.6093**		**0.6093**	**0.6093**	**0.0000**	**2,257.0025**	**2,257.0025**	**0.7141**		**2,274.8548**

3.6 Paving - 2019

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	0.1033	0.1012	0.8435	1.3900e-003	0.1356	1.2000e-003	0.1368	0.0361	1.1100e-003	0.0372		137.9853	137.9853	7.7900e-003		138.1800
Total	**0.1033**	**0.1012**	**0.8435**	**1.3900e-003**	**0.1356**	**1.2000e-003**	**0.1368**	**0.0361**	**1.1100e-003**	**0.0372**		**137.9853**	**137.9853**	**7.7900e-003**		**138.1800**

3.7 Architectural Coating - 2019

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	78.6478					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288		281.4481	281.4481	0.0238		282.0423
Total	**78.9143**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**		**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.7 Architectural Coating - 2019

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	0.1378	0.1350	1.1246	1.8600e-003	0.1907	1.6000e-003	0.1923	0.0506	1.4800e-003	0.0521		183.9804	183.9804	0.0104		184.2399
Total	**0.1378**	**0.1350**	**1.1246**	**1.8600e-003**	**0.1907**	**1.6000e-003**	**0.1923**	**0.0506**	**1.4800e-003**	**0.0521**		**183.9804**	**183.9804**	**0.0104**		**184.2399**

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	78.6478					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2664	1.8354	1.8413	2.9700e-003		0.1288	0.1288		0.1288	0.1288	0.0000	281.4481	281.4481	0.0238		282.0423
Total	**78.9143**	**1.8354**	**1.8413**	**2.9700e-003**		**0.1288**	**0.1288**		**0.1288**	**0.1288**	**0.0000**	**281.4481**	**281.4481**	**0.0238**		**282.0423**

3.7 Architectural Coating - 2019

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	0.1378	0.1350	1.1246	1.8600e-003	0.1808	1.6000e-003	0.1824	0.0482	1.4800e-003	0.0496		183.9804	183.9804	0.0104		184.2399
Total	**0.1378**	**0.1350**	**1.1246**	**1.8600e-003**	**0.1808**	**1.6000e-003**	**0.1824**	**0.0482**	**1.4800e-003**	**0.0496**		**183.9804**	**183.9804**	**0.0104**		**184.2399**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	9.9053	60.6233	78.0488	0.1323	5.7159	0.2184	5.9344	1.5347	0.2069	1.7416		13,483.1906	13,483.1906	3.1795		13,562.6780
Unmitigated	9.9053	60.6233	78.0488	0.1323	5.7159	0.2184	5.9344	1.5347	0.2069	1.7416		13,483.1906	13,483.1906	3.1795		13,562.6780

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	195.00	195.00	195.00	140,434	140,434
Supermarket	4,564.59	4,564.59	4564.59	2,521,423	2,521,423
Total	4,759.59	4,759.59	4,759.59	2,661,857	2,661,857

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
Other Asphalt Surfaces	3.57	3.57	3.57	0.00	0.00	0.00	0	0	0
Parking Lot	3.57	3.57	3.57	0.00	0.00	0.00	0	0	0
Strip Mall	3.57	3.57	3.57	16.60	64.40	19.00	45	40	15
Supermarket	3.57	3.57	3.57	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Parking Lot	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Strip Mall	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Supermarket	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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	0.0437	0.3973	0.3337	2.3800e-003		0.0302	0.0302		0.0302	0.0302		476.7696	476.7696	9.1400e-003	8.7400e-003	479.6028
NaturalGas Unmitigated	0.0489	0.4442	0.3732	2.6700e-003		0.0338	0.0338		0.0338	0.0338		533.0730	533.0730	0.0102	9.7700e-003	536.2408

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					
Other Asphalt Surfaces	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
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
Strip Mall	228.658	2.4700e-003	0.0224	0.0188	1.3000e-004		1.7000e-003	1.7000e-003		1.7000e-003	1.7000e-003		26.9009	26.9009	5.2000e-004	4.9000e-004	27.0607
Supermarket	4302.46	0.0464	0.4218	0.3543	2.5300e-003		0.0321	0.0321		0.0321	0.0321		506.1721	506.1721	9.7000e-003	9.2800e-003	509.1800
Total		**0.0489**	**0.4442**	**0.3732**	**2.6600e-003**		**0.0338**	**0.0338**		**0.0338**	**0.0338**		**533.0730**	**533.0730**	**0.0102**	**9.7700e-003**	**536.2408**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	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
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
Strip Mall	0.191816	2.0700e-003	0.0188	0.0158	1.1000e-004		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		22.5666	22.5666	4.3000e-004	4.1000e-004	22.7007
Supermarket	3.86073	0.0416	0.3785	0.3179	2.2700e-003		0.0288	0.0288		0.0288	0.0288		454.2030	454.2030	8.7100e-003	8.3300e-003	456.9021
Total		**0.0437**	**0.3973**	**0.3337**	**2.3800e-003**		**0.0302**	**0.0302**		**0.0302**	**0.0302**		**476.7696**	**476.7696**	**9.1400e-003**	**8.7400e-003**	**479.6028**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	1.8321	2.4000e-004	0.0257	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.5000e-004		0.0582
Unmitigated	1.8321	2.4000e-004	0.0257	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.5000e-004		0.0582

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	0.4310					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3987					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.4300e-003	2.4000e-004	0.0257	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.5000e-004		0.0582
Total	**1.8321**	**2.4000e-004**	**0.0257**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0545**	**0.0545**	**1.5000e-004**		**0.0582**

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	0.4310					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3987					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.4300e-003	2.4000e-004	0.0257	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005		0.0545	0.0545	1.5000e-004		0.0582
Total	**1.8321**	**2.4000e-004**	**0.0257**	**0.0000**		**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**		**0.0545**	**0.0545**	**1.5000e-004**		**0.0582**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

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

Black Olive Village
Butte County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	96.57	1000sqft	4.13	96,573.00	0
Parking Lot	90.15	1000sqft	2.07	90,149.00	0
Strip Mall	7.80	1000sqft	0.18	7,800.00	0
Supermarket	54.47	1000sqft	1.25	54,471.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	71
Climate Zone	3			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Alternative 1: No gas station or restaurant

Demolition -

Grading - Material Imported from preliminary project grading plan.

Vehicle Trips - Trip rates and distances per project TIS.

Land Use Change -

Construction Off-road Equipment Mitigation - Fugitive dust mitigation per BCAQMD Rule 205.
Tier 3 Enginers per MM 4.2-1

Energy Mitigation - HE Lighting per applicant project description.
Exceed Title 24 per MM 4.2-4.

Water Mitigation - Low flow bathroom fixtures per applicant project description.

Construction Phase -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	6
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	PhaseEndDate	1/23/2019	5/22/2019
tblConstructionPhase	PhaseEndDate	11/28/2018	3/27/2019
tblConstructionPhase	PhaseEndDate	11/29/2017	3/28/2018
tblConstructionPhase	PhaseEndDate	1/10/2018	5/9/2018
tblConstructionPhase	PhaseEndDate	12/26/2018	4/24/2019
tblConstructionPhase	PhaseEndDate	12/13/2017	4/11/2018
tblConstructionPhase	PhaseStartDate	12/27/2018	4/25/2019
tblConstructionPhase	PhaseStartDate	1/11/2018	5/10/2018
tblConstructionPhase	PhaseStartDate	11/2/2017	3/1/2018
tblConstructionPhase	PhaseStartDate	12/14/2017	4/12/2018
tblConstructionPhase	PhaseStartDate	11/29/2018	3/28/2019
tblConstructionPhase	PhaseStartDate	11/30/2017	3/29/2018
tblGrading	MaterialImported	0.00	21,200.00
tblLandUse	LandUseSquareFeet	96,570.00	96,573.00
tblLandUse	LandUseSquareFeet	90,150.00	90,149.00
tblLandUse	LandUseSquareFeet	54,470.00	54,471.00
tblLandUse	LotAcreage	2.22	4.13
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57

tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CC_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CNW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	CW_TL	10.52	3.57
tblVehicleTrips	ST_TR	42.04	25.00
tblVehicleTrips	ST_TR	177.59	83.80
tblVehicleTrips	SU_TR	20.43	25.00
tblVehicleTrips	SU_TR	166.44	83.80
tblVehicleTrips	WD_TR	44.32	25.00
tblVehicleTrips	WD_TR	102.24	83.80

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					
2018	0.4183	4.0423	2.7469	6.5000e-003	0.3061	0.1835	0.4896	0.1225	0.1719	0.2944	0.0000	594.6079	594.6079	0.0973	0.0000	597.0399
2019	0.9156	1.0601	0.9325	1.9100e-003	0.0429	0.0517	0.0946	0.0117	0.0485	0.0602	0.0000	172.2451	172.2451	0.0303	0.0000	173.0024
Maximum	**0.9156**	**4.0423**	**2.7469**	**6.5000e-003**	**0.3061**	**0.1835**	**0.4896**	**0.1225**	**0.1719**	**0.2944**	**0.0000**	**594.6079**	**594.6079**	**0.0973**	**0.0000**	**597.0399**

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					
2018	0.2155	2.7783	2.8509	6.5000e-003	0.2053	0.1082	0.3135	0.0738	0.1077	0.1815	0.0000	594.6075	594.6075	0.0973	0.0000	597.0396
2019	0.8631	0.8061	0.9905	1.9100e-003	0.0408	0.0375	0.0783	0.0112	0.0374	0.0486	0.0000	172.2450	172.2450	0.0303	0.0000	173.0023
Maximum	**0.8631**	**2.7783**	**2.8509**	**6.5000e-003**	**0.2053**	**0.1082**	**0.3135**	**0.0738**	**0.1077**	**0.1815**	**0.0000**	**594.6075**	**594.6075**	**0.0973**	**0.0000**	**597.0396**

	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	**19.15**	**29.75**	**-4.40**	**0.00**	**29.48**	**38.07**	**32.94**	**36.69**	**34.17**	**35.13**	**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)
2	2-2-2018	5-1-2018	1.2650	0.7600
3	5-2-2018	8-1-2018	1.2741	0.8977
4	8-2-2018	11-1-2018	1.1566	0.8003
5	11-2-2018	2-1-2019	1.1254	0.7979
6	2-2-2019	5-1-2019	0.9977	0.7887
7	5-2-2019	8-1-2019	0.6076	0.6076
		Highest	1.2741	0.8977

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	0.3341	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7500e-003
Energy	8.9200e-003	0.0811	0.0681	4.9000e-004		6.1600e-003	6.1600e-003		6.1600e-003	6.1600e-003	0.0000	638.8542	638.8542	0.0266	6.7700e-003	641.5361
Mobile	1.9188	11.0366	12.4273	0.0251	0.9975	0.0381	1.0356	0.2688	0.0361	0.3049	0.0000	2,320.9277	2,320.9277	0.4887	0.0000	2,333.1443
Waste						0.0000	0.0000		0.0000	0.0000	64.0234	0.0000	64.0234	3.7837	0.0000	158.6151
Water						0.0000	0.0000		0.0000	0.0000	2.3135	12.0508	14.3643	0.2382	5.7200e-003	22.0238
Total	**2.2618**	**11.1176**	**12.4977**	**0.0256**	**0.9975**	**0.0443**	**1.0418**	**0.2688**	**0.0423**	**0.3111**	**66.3368**	**2,971.8371**	**3,038.1739**	**4.5371**	**0.0125**	**3,155.3241**

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	0.3341	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7500e-003
Energy	7.9800e-003	0.0725	0.0609	4.4000e-004		5.5100e-003	5.5100e-003		5.5100e-003	5.5100e-003	0.0000	552.7488	552.7488	0.0229	5.8800e-003	555.0744
Mobile	1.9188	11.0366	12.4273	0.0251	0.9975	0.0381	1.0356	0.2688	0.0361	0.3049	0.0000	2,320.9277	2,320.9277	0.4887	0.0000	2,333.1443
Waste						0.0000	0.0000		0.0000	0.0000	64.0234	0.0000	64.0234	3.7837	0.0000	158.6151
Water						0.0000	0.0000		0.0000	0.0000	2.0275	10.6320	12.6595	0.2087	5.0200e-003	19.3727
Total	**2.2609**	**11.1091**	**12.4905**	**0.0255**	**0.9975**	**0.0436**	**1.0412**	**0.2688**	**0.0416**	**0.3104**	**66.0509**	**2,884.3129**	**2,950.3638**	**4.5040**	**0.0109**	**3,066.2113**

	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	**0.04**	**0.08**	**0.06**	**0.20**	**0.00**	**1.47**	**0.06**	**0.00**	**1.54**	**0.21**	**0.43**	**2.95**	**2.89**	**0.73**	**12.73**	**2.82**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	3/1/2018	3/28/2018	5	20	
2	Site Preparation	Site Preparation	3/29/2018	4/11/2018	5	10	
3	Grading	Grading	4/12/2018	5/9/2018	5	20	
4	Building Construction	Building Construction	5/10/2018	3/27/2019	5	230	
5	Paving	Paving	3/28/2019	4/24/2019	5	20	
6	Architectural Coating	Architectural Coating	4/25/2019	5/22/2019	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 6.2

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 93,407; Non-Residential Outdoor: 31,136; Striped Parking Area: 11,203 (Architectural Coating – sqft)

OffRoad Equipment

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

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
Demolition	6	15.00	0.00	133.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	2,650.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	98.00	41.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	12.54	10.52	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

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					0.0144	0.0000	0.0144	2.1700e-003	0.0000	2.1700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0372	0.3832	0.2230	3.9000e-004		0.0194	0.0194		0.0181	0.0181	0.0000	35.1241	35.1241	9.6800e-003	0.0000	35.3660
Total	**0.0372**	**0.3832**	**0.2230**	**3.9000e-004**	**0.0144**	**0.0194**	**0.0338**	**2.1700e-003**	**0.0181**	**0.0202**	**0.0000**	**35.1241**	**35.1241**	**9.6800e-003**	**0.0000**	**35.3660**

3.2 Demolition - 2018

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	6.7000e-004	0.0221	3.0400e-003	6.0000e-005	1.1200e-003	1.3000e-004	1.2500e-003	3.1000e-004	1.2000e-004	4.3000e-004	0.0000	5.2685	5.2685	4.1000e-004	0.0000	5.2787
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	1.1100e-003	1.0400e-003	9.7200e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.8000e-004	0.0000	1.3307	1.3307	8.0000e-005	0.0000	1.3328
Total	**1.7800e-003**	**0.0231**	**0.0128**	**7.0000e-005**	**2.4900e-003**	**1.4000e-004**	**2.6300e-003**	**6.7000e-004**	**1.3000e-004**	**8.1000e-004**	**0.0000**	**6.5993**	**6.5993**	**4.9000e-004**	**0.0000**	**6.6115**

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					6.4600e-003	0.0000	6.4600e-003	9.8000e-004	0.0000	9.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.1937	0.2454	3.9000e-004		9.2900e-003	9.2900e-003		9.2900e-003	9.2900e-003	0.0000	35.1240	35.1240	9.6800e-003	0.0000	35.3660
Total	**0.0132**	**0.1937**	**0.2454**	**3.9000e-004**	**6.4600e-003**	**9.2900e-003**	**0.0158**	**9.8000e-004**	**9.2900e-003**	**0.0103**	**0.0000**	**35.1240**	**35.1240**	**9.6800e-003**	**0.0000**	**35.3660**

3.2 Demolition - 2018

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	6.7000e-004	0.0221	3.0400e-003	6.0000e-005	1.0700e-003	1.3000e-004	1.2000e-003	3.0000e-004	1.2000e-004	4.2000e-004	0.0000	5.2685	5.2685	4.1000e-004	0.0000	5.2787
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	1.1100e-003	1.0400e-003	9.7200e-003	1.0000e-005	1.3000e-003	1.0000e-005	1.3100e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.3307	1.3307	8.0000e-005	0.0000	1.3328
Total	**1.7800e-003**	**0.0231**	**0.0128**	**7.0000e-005**	**2.3700e-003**	**1.4000e-004**	**2.5100e-003**	**6.5000e-004**	**1.3000e-004**	**7.8000e-004**	**0.0000**	**6.5993**	**6.5993**	**4.9000e-004**	**0.0000**	**6.6115**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0228	0.2410	0.1124	1.9000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	17.3800	17.3800	5.4100e-003	0.0000	17.5152
Total	**0.0228**	**0.2410**	**0.1124**	**1.9000e-004**	**0.0903**	**0.0129**	**0.1032**	**0.0497**	**0.0119**	**0.0615**	**0.0000**	**17.3800**	**17.3800**	**5.4100e-003**	**0.0000**	**17.5152**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	6.2000e-004	5.8300e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.7984	0.7984	5.0000e-005	0.0000	0.7997
Total	**6.7000e-004**	**6.2000e-004**	**5.8300e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.7984**	**0.7984**	**5.0000e-005**	**0.0000**	**0.7997**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0407	0.0000	0.0407	0.0223	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6600e-003	0.0953	0.1148	1.9000e-004		4.7300e-003	4.7300e-003		4.7300e-003	4.7300e-003	0.0000	17.3799	17.3799	5.4100e-003	0.0000	17.5152
Total	**4.6600e-003**	**0.0953**	**0.1148**	**1.9000e-004**	**0.0407**	**4.7300e-003**	**0.0454**	**0.0223**	**4.7300e-003**	**0.0271**	**0.0000**	**17.3799**	**17.3799**	**5.4100e-003**	**0.0000**	**17.5152**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	6.2000e-004	5.8300e-003	1.0000e-005	7.8000e-004	1.0000e-005	7.9000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7984	0.7984	5.0000e-005	0.0000	0.7997
Total	**6.7000e-004**	**6.2000e-004**	**5.8300e-003**	**1.0000e-005**	**7.8000e-004**	**1.0000e-005**	**7.9000e-004**	**2.1000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7984**	**0.7984**	**5.0000e-005**	**0.0000**	**0.7997**

3.4 Grading - 2018

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					0.0667	0.0000	0.0667	0.0339	0.0000	0.0339	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0277	0.3067	0.1658	3.0000e-004		0.0155	0.0155		0.0143	0.0143	0.0000	27.1069	27.1069	8.4400e-003	0.0000	27.3178
Total	**0.0277**	**0.3067**	**0.1658**	**3.0000e-004**	**0.0667**	**0.0155**	**0.0822**	**0.0339**	**0.0143**	**0.0481**	**0.0000**	**27.1069**	**27.1069**	**8.4400e-003**	**0.0000**	**27.3178**

3.4 Grading - 2018

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	0.0134	0.4395	0.0606	1.1000e-003	0.0224	2.5000e-003	0.0249	6.1600e-003	2.3900e-003	8.5500e-003	0.0000	104.9740	104.9740	8.1400e-003	0.0000	105.1776
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	1.1100e-003	1.0400e-003	9.7200e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.8000e-004	0.0000	1.3307	1.3307	8.0000e-005	0.0000	1.3328
Total	**0.0145**	**0.4406**	**0.0703**	**1.1100e-003**	**0.0237**	**2.5100e-003**	**0.0262**	**6.5200e-003**	**2.4000e-003**	**8.9300e-003**	**0.0000**	**106.3048**	**106.3048**	**8.2200e-003**	**0.0000**	**106.5104**

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					0.0300	0.0000	0.0300	0.0152	0.0000	0.0152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2600e-003	0.1484	0.1899	3.0000e-004		7.5600e-003	7.5600e-003		7.5600e-003	7.5600e-003	0.0000	27.1068	27.1068	8.4400e-003	0.0000	27.3178
Total	**7.2600e-003**	**0.1484**	**0.1899**	**3.0000e-004**	**0.0300**	**7.5600e-003**	**0.0376**	**0.0152**	**7.5600e-003**	**0.0228**	**0.0000**	**27.1068**	**27.1068**	**8.4400e-003**	**0.0000**	**27.3178**

3.4 Grading - 2018

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	0.0134	0.4395	0.0606	1.1000e-003	0.0214	2.5000e-003	0.0239	5.9100e-003	2.3900e-003	8.3000e-003	0.0000	104.9740	104.9740	8.1400e-003	0.0000	105.1776
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	1.1100e-003	1.0400e-003	9.7200e-003	1.0000e-005	1.3000e-003	1.0000e-005	1.3100e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.3307	1.3307	8.0000e-005	0.0000	1.3328
Total	**0.0145**	**0.4406**	**0.0703**	**1.1100e-003**	**0.0227**	**2.5100e-003**	**0.0252**	**6.2600e-003**	**2.4000e-003**	**8.6600e-003**	**0.0000**	**106.3048**	**106.3048**	**8.2200e-003**	**0.0000**	**106.5104**

3.5 Building Construction - 2018

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	0.2251	1.9648	1.4768	2.2600e-003		0.1260	0.1260		0.1184	0.1184	0.0000	199.7245	199.7245	0.0489	0.0000	200.9478
Total	**0.2251**	**1.9648**	**1.4768**	**2.2600e-003**		**0.1260**	**0.1260**		**0.1184**	**0.1184**	**0.0000**	**199.7245**	**199.7245**	**0.0489**	**0.0000**	**200.9478**

3.5 Building Construction - 2018

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	0.0275	0.6253	0.1465	1.3500e-003	0.0324	6.3800e-003	0.0388	9.3800e-003	6.1100e-003	0.0155	0.0000	128.5390	128.5390	0.0116	0.0000	128.8285
Worker	0.0611	0.0570	0.5336	8.1000e-004	0.0752	7.1000e-004	0.0759	0.0200	6.5000e-004	0.0207	0.0000	73.0310	73.0310	4.4800e-003	0.0000	73.1430
Total	**0.0886**	**0.6823**	**0.6801**	**2.1600e-003**	**0.1076**	**7.0900e-003**	**0.1147**	**0.0294**	**6.7600e-003**	**0.0362**	**0.0000**	**201.5700**	**201.5700**	**0.0161**	**0.0000**	**201.9715**

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	0.0848	1.1943	1.5318	2.2600e-003		0.0769	0.0769		0.0769	0.0769	0.0000	199.7242	199.7242	0.0489	0.0000	200.9475
Total	**0.0848**	**1.1943**	**1.5318**	**2.2600e-003**		**0.0769**	**0.0769**		**0.0769**	**0.0769**	**0.0000**	**199.7242**	**199.7242**	**0.0489**	**0.0000**	**200.9475**

3.5 Building Construction - 2018

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	0.0275	0.6253	0.1465	1.3500e-003	0.0311	6.3800e-003	0.0375	9.0500e-003	6.1100e-003	0.0152	0.0000	128.5390	128.5390	0.0116	0.0000	128.8285
Worker	0.0611	0.0570	0.5336	8.1000e-004	0.0713	7.1000e-004	0.0720	0.0191	6.5000e-004	0.0197	0.0000	73.0310	73.0310	4.4800e-003	0.0000	73.1430
Total	**0.0886**	**0.6823**	**0.6801**	**2.1600e-003**	**0.1024**	**7.0900e-003**	**0.1095**	**0.0281**	**6.7600e-003**	**0.0349**	**0.0000**	**201.5700**	**201.5700**	**0.0161**	**0.0000**	**201.9715**

3.5 Building Construction - 2019

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	0.0732	0.6534	0.5321	8.3000e-004		0.0400	0.0400		0.0376	0.0376	0.0000	72.8823	72.8823	0.0178	0.0000	73.3262
Total	**0.0732**	**0.6534**	**0.5321**	**8.3000e-004**		**0.0400**	**0.0400**		**0.0376**	**0.0376**	**0.0000**	**72.8823**	**72.8823**	**0.0178**	**0.0000**	**73.3262**

3.5 Building Construction - 2019

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	8.6400e-003	0.2155	0.0462	5.0000e-004	0.0120	1.9000e-003	0.0139	3.4600e-003	1.8100e-003	5.2800e-003	0.0000	47.1229	47.1229	4.2300e-003	0.0000	47.2288
Worker	0.0197	0.0182	0.1697	2.9000e-004	0.0278	2.4000e-004	0.0280	7.3800e-003	2.2000e-004	7.6100e-003	0.0000	26.1937	26.1937	1.4400e-003	0.0000	26.2298
Total	**0.0284**	**0.2337**	**0.2159**	**7.9000e-004**	**0.0397**	**2.1400e-003**	**0.0419**	**0.0108**	**2.0300e-003**	**0.0129**	**0.0000**	**73.3167**	**73.3167**	**5.6700e-003**	**0.0000**	**73.4586**

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	0.0296	0.4390	0.5637	8.3000e-004		0.0279	0.0279		0.0279	0.0279	0.0000	72.8822	72.8822	0.0178	0.0000	73.3261
Total	**0.0296**	**0.4390**	**0.5637**	**8.3000e-004**		**0.0279**	**0.0279**		**0.0279**	**0.0279**	**0.0000**	**72.8822**	**72.8822**	**0.0178**	**0.0000**	**73.3261**

3.5 Building Construction - 2019

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	8.6400e-003	0.2155	0.0462	5.0000e-004	0.0115	1.9000e-003	0.0134	3.3400e-003	1.8100e-003	5.1500e-003	0.0000	47.1229	47.1229	4.2300e-003	0.0000	47.2288
Worker	0.0197	0.0182	0.1697	2.9000e-004	0.0263	2.4000e-004	0.0266	7.0300e-003	2.2000e-004	7.2500e-003	0.0000	26.1937	26.1937	1.4400e-003	0.0000	26.2298
Total	**0.0284**	**0.2337**	**0.2159**	**7.9000e-004**	**0.0378**	**2.1400e-003**	**0.0399**	**0.0104**	**2.0300e-003**	**0.0124**	**0.0000**	**73.3167**	**73.3167**	**5.6700e-003**	**0.0000**	**73.4586**

3.6 Paving - 2019

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	0.0145	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	8.1200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0227**	**0.1524**	**0.1467**	**2.3000e-004**		**8.2500e-003**	**8.2500e-003**		**7.5900e-003**	**7.5900e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

3.6 Paving - 2019

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	9.7000e-004	9.0000e-004	8.3800e-003	1.0000e-005	1.3700e-003	1.0000e-005	1.3800e-003	3.6000e-004	1.0000e-005	3.8000e-004	0.0000	1.2933	1.2933	7.0000e-005	0.0000	1.2951
Total	**9.7000e-004**	**9.0000e-004**	**8.3800e-003**	**1.0000e-005**	**1.3700e-003**	**1.0000e-005**	**1.3800e-003**	**3.6000e-004**	**1.0000e-005**	**3.8000e-004**	**0.0000**	**1.2933**	**1.2933**	**7.0000e-005**	**0.0000**	**1.2951**

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	5.6100e-003	0.1130	0.1730	2.3000e-004		6.0900e-003	6.0900e-003		6.0900e-003	6.0900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	8.1200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0137**	**0.1130**	**0.1730**	**2.3000e-004**		**6.0900e-003**	**6.0900e-003**		**6.0900e-003**	**6.0900e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

3.6 Paving - 2019

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	9.7000e-004	9.0000e-004	8.3800e-003	1.0000e-005	1.3000e-003	1.0000e-005	1.3100e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.2933	1.2933	7.0000e-005	0.0000	1.2951
Total	**9.7000e-004**	**9.0000e-004**	**8.3800e-003**	**1.0000e-005**	**1.3000e-003**	**1.0000e-005**	**1.3100e-003**	**3.5000e-004**	**1.0000e-005**	**3.6000e-004**	**0.0000**	**1.2933**	**1.2933**	**7.0000e-005**	**0.0000**	**1.2951**

3.7 Architectural Coating - 2019

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	0.7865					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0184	0.0184	3.0000e-005		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	2.5533	2.5533	2.2000e-004	0.0000	2.5587
Total	**0.7891**	**0.0184**	**0.0184**	**3.0000e-005**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**2.5533**	**2.5533**	**2.2000e-004**	**0.0000**	**2.5587**

3.7 Architectural Coating - 2019

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	1.3000e-003	1.2000e-003	0.0112	2.0000e-005	1.8300e-003	2.0000e-005	1.8400e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.7244	1.7244	9.0000e-005	0.0000	1.7268
Total	**1.3000e-003**	**1.2000e-003**	**0.0112**	**2.0000e-005**	**1.8300e-003**	**2.0000e-005**	**1.8400e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.7244**	**1.7244**	**9.0000e-005**	**0.0000**	**1.7268**

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	0.7865					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0184	0.0184	3.0000e-005		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	2.5533	2.5533	2.2000e-004	0.0000	2.5586
Total	**0.7891**	**0.0184**	**0.0184**	**3.0000e-005**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**2.5533**	**2.5533**	**2.2000e-004**	**0.0000**	**2.5586**

3.7 Architectural Coating - 2019

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	1.3000e-003	1.2000e-003	0.0112	2.0000e-005	1.7300e-003	2.0000e-005	1.7500e-003	4.6000e-004	1.0000e-005	4.8000e-004	0.0000	1.7244	1.7244	9.0000e-005	0.0000	1.7268
Total	**1.3000e-003**	**1.2000e-003**	**0.0112**	**2.0000e-005**	**1.7300e-003**	**2.0000e-005**	**1.7500e-003**	**4.6000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.7244**	**1.7244**	**9.0000e-005**	**0.0000**	**1.7268**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.9188	11.0366	12.4273	0.0251	0.9975	0.0381	1.0356	0.2688	0.0361	0.3049	0.0000	2,320.9277	2,320.9277	0.4887	0.0000	2,333.1443
Unmitigated	1.9188	11.0366	12.4273	0.0251	0.9975	0.0381	1.0356	0.2688	0.0361	0.3049	0.0000	2,320.9277	2,320.9277	0.4887	0.0000	2,333.1443

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Strip Mall	195.00	195.00	195.00	140,434	140,434
Supermarket	4,564.59	4,564.59	4564.59	2,521,423	2,521,423
Total	4,759.59	4,759.59	4,759.59	2,661,857	2,661,857

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
Other Asphalt Surfaces	3.57	3.57	3.57	0.00	0.00	0.00	0	0	0
Parking Lot	3.57	3.57	3.57	0.00	0.00	0.00	0	0	0
Strip Mall	3.57	3.57	3.57	16.60	64.40	19.00	45	40	15
Supermarket	3.57	3.57	3.57	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Parking Lot	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Strip Mall	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651
Supermarket	0.488379	0.037237	0.184894	0.132358	0.042014	0.007577	0.018418	0.076572	0.001721	0.001591	0.006262	0.001327	0.001651

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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	473.8143	473.8143	0.0214	4.4300e-003	475.6708
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	550.5980	550.5980	0.0249	5.1500e-003	552.7554
NaturalGas Mitigated	7.9800e-003	0.0725	0.0609	4.4000e-004		5.5100e-003	5.5100e-003		5.5100e-003	5.5100e-003	0.0000	78.9346	78.9346	1.5100e-003	1.4500e-003	79.4036
NaturalGas Unmitigated	8.9200e-003	0.0811	0.0681	4.9000e-004		6.1600e-003	6.1600e-003		6.1600e-003	6.1600e-003	0.0000	88.2562	88.2562	1.6900e-003	1.6200e-003	88.7807

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					
Other Asphalt Surfaces	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
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
Strip Mall	83460	4.5000e-004	4.0900e-003	3.4400e-003	2.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	4.4537	4.4537	9.0000e-005	8.0000e-005	4.4802
Supermarket	1.5704e+006	8.4700e-003	0.0770	0.0647	4.6000e-004		5.8500e-003	5.8500e-003		5.8500e-003	5.8500e-003	0.0000	83.8025	83.8025	1.6100e-003	1.5400e-003	84.3005
Total		**8.9200e-003**	**0.0811**	**0.0681**	**4.8000e-004**		**6.1600e-003**	**6.1600e-003**		**6.1600e-003**	**6.1600e-003**	**0.0000**	**88.2562**	**88.2562**	**1.7000e-003**	**1.6200e-003**	**88.7807**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	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
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
Strip Mall	70012.8	3.8000e-004	3.4300e-003	2.8800e-003	2.0000e-005		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	3.7362	3.7362	7.0000e-005	7.0000e-005	3.7584
Supermarket	1.40916e+006	7.6000e-003	0.0691	0.0580	4.1000e-004		5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	75.1984	75.1984	1.4400e-003	1.3800e-003	75.6453
Total		**7.9800e-003**	**0.0725**	**0.0609**	**4.3000e-004**		**5.5100e-003**	**5.5100e-003**		**5.5100e-003**	**5.5100e-003**	**0.0000**	**78.9346**	**78.9346**	**1.5100e-003**	**1.4500e-003**	**79.4036**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	31552.1	9.1789	4.2000e-004	9.0000e-005	9.2149
Strip Mall	63570	18.4932	8.4000e-004	1.7000e-004	18.5657
Supermarket	1.79754e+006	522.9259	0.0237	4.8900e-003	524.9749
Total		**550.5980**	**0.0249**	**5.1500e-003**	**552.7554**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	15145	4.4059	2.0000e-004	4.0000e-005	4.4231
Strip Mall	45183.8	13.1445	5.9000e-004	1.2000e-004	13.1960
Supermarket	1.56839e+006	456.2639	0.0206	4.2700e-003	458.0517
Total		**473.8143**	**0.0214**	**4.4300e-003**	**475.6708**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	0.3341	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7500e-003
Unmitigated	0.3341	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7500e-003

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	0.0787					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2553					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7500e-003
Total	**0.3341**	**2.0000e-005**	**2.3100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.4500e-003**	**4.4500e-003**	**1.0000e-005**	**0.0000**	**4.7500e-003**

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	0.0787					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2553					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.2000e-004	2.0000e-005	2.3100e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	4.4500e-003	4.4500e-003	1.0000e-005	0.0000	4.7500e-003
Total	**0.3341**	**2.0000e-005**	**2.3100e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**4.4500e-003**	**4.4500e-003**	**1.0000e-005**	**0.0000**	**4.7500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Toilet

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	12.6595	0.2087	5.0200e-003	19.3727
Unmitigated	14.3643	0.2382	5.7200e-003	22.0238

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.577766 / 0.354114	1.4533	0.0189	4.6000e-004	2.0614
Supermarket	6.71442 / 0.207662	12.9109	0.2193	5.2700e-003	19.9624
Total		**14.3643**	**0.2382**	**5.7300e-003**	**22.0239**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Strip Mall	0.506354 / 0.354114	1.3183	0.0166	4.0000e-004	1.8514
Supermarket	5.88452 / 0.207662	11.3413	0.1922	4.6200e-003	17.5213
Total		**12.6595**	**0.2087**	**5.0200e-003**	**19.3727**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	64.0234	3.7837	0.0000	158.6151
Unmitigated	64.0234	3.7837	0.0000	158.6151

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	8.19	1.6625	0.0983	0.0000	4.1188
Supermarket	307.21	62.3609	3.6854	0.0000	154.4964
Total		**64.0234**	**3.7837**	**0.0000**	**158.6151**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Strip Mall	8.19	1.6625	0.0983	0.0000	4.1188
Supermarket	307.21	62.3609	3.6854	0.0000	154.4964
Total		**64.0234**	**3.7837**	**0.0000**	**158.6151**

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

Fueling Center Health Risk Assessment

INTRODUCTION

Michael Baker International prepared this Health Risk Assessment (HRA) to support a California Environmental Quality Act (CEQA) analysis regarding the potential impacts on the health of nearby potential sensitive receptors due to the emissions of toxic air contaminants (TACs) generated by the long-term operation of a retail fueling center at the proposed Black Olive Village project located on the west side of the intersection of Skyway and Black Olive Drive in Paradise, Butte County, California.

The proposed project would result in the creation of 67,473 square feet of retail uses on 7.63 acres consisting of a 54,471-square-foot Safeway-branded grocery store, a 9-pump fueling center (18 fueling positions) with illuminated canopy, a 1,002-square-foot fueling center kiosk, 7,800 square feet of additional retail adjoining the store, and a 4,200-square-foot pad for a high-turnover, sit-down restaurant. The primary potential stationary sources of TACs from the project include long-term emissions from the fueling center fuel deliveries and patron fueling operations.

This HRA is not intended to meet any potential HRA requirements resulting from siting and permitting a new stationary source of TACs. Prior to issuance of permits, the Butte County Air Quality Management District (BCAQMD) will be responsible for preparing any necessary evaluations in accordance with its rules and regulations.

SETTING

The 7.63-acre project site is in an urbanized portion of the town that includes a mix of commercial and residential uses (Figure 1). There are 19 residential and commercial structures and outbuildings on the site. All but one of these buildings is not occupied. The site has three short asphalt driveways from Skyway, which provide access to the various residential structures, an asphalt parking lot, and a gravel parking area.

Elevations on the site range from 1,640 feet above mean sea level (amsl) on the west, which is the lowest portion of the site, to 1,681 amsl on the north. The central portion of the site in the north–south direction is higher in elevation than the western and eastern boundaries, forming a low ridge, and the overall site slopes gently to the south. The western part of the site slopes toward Honey Run.

There are numerous trees throughout the site and along the project boundaries, ranging in diameter from a few inches to 30-40 inches. However, a large portion of the project site contains disturbed habitat, which occurs between the vacant residential structures and driveways and along the northern portion of the property. Much of the project site is dominated by invasive plant species.

The area surrounding the project site consists primarily of partially developed commercial property and low-density residential housing. A mix of coniferous and deciduous forest and chaparral is dispersed in patches in the vicinity, becoming denser farther from the town's commercial core in all directions. Skyway is the most heavily traveled roadway in Paradise and carries an average daily traffic volume of approximately 23,000 vehicles in the project vicinity (BCAG 2014).

RECEPTORS

The closest existing sensitive receptors to the project site are residential properties adjoining the project property line to the west, and residential homes located on commercial property adjoining the project property line to the north and south and across Skyway to the east. The closest residential structure to the proposed fueling center is a single-family home approximately 235 feet (72 meters) north of the fueling center location, but it is separated from the proposed

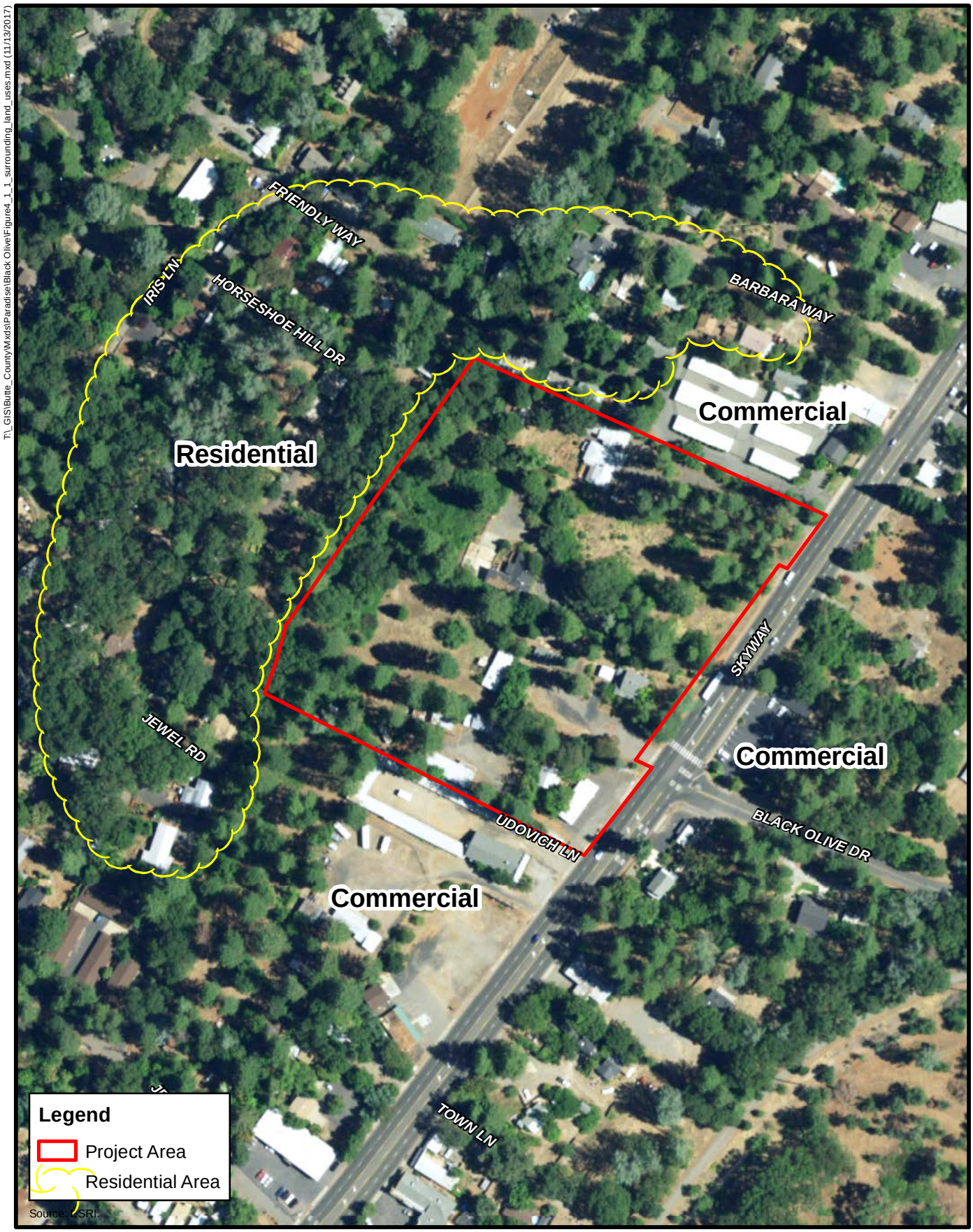


FIGURE 1
Surrounding Land Uses

Michael Baker INTERNATIONAL

fueling center site by a mini-storage business. This residence is part of a group of 11 residential homes to the north and northwest, ranging from 235 to 440 feet (72 to 134 meters) from the proposed fueling center.[1] Three residences across Skyway to the east are 320 to 395 feet (98 to 121 meters) from the proposed fueling center. The closest school is the CORE Butte Charter School approximately 2,000 feet (0.38 mile) to the east.

METHODOLOGY

To determine the potential impacts due to TAC emissions from the proposed project, this HRA was prepared following the guidance in the BCAQMD (2014) CEQA Air Quality Guidelines. The proposed project is considered a "Type A" project—the siting of new sources of TACs.

RETAIL FUELING CENTER EMISSIONS

The proposed project includes a 9-pump, 18-station retail fueling center located in the northeast portion of the project site. Activities at gasoline dispensing facilities can release TACs into the air, including the organic compounds benzene, toluene, and xylene. Benzene is a potent carcinogen and is one of the highest risk air pollutants regulated by the California Air Resources Board (CARB). Toluene and xylenes are not considered carcinogens, but they (along with benzene) can contribute to chronic health conditions.

Motor vehicles and motor vehicle–related activity account for over 90 percent of benzene emissions in California. A well-maintained vapor recovery system can decrease emissions of benzene by more than 90 percent compared with an uncontrolled facility. All new gas stations in California are required to implement Phase I (for the gasoline storage tank) and Phase II (for the refueling nozzles) vapor recovery systems. While gasoline dispensing facilities account for a small part of total benzene emissions, near-source exposures for large facilities (more than 3.6 million gallons per year throughput) can be significant (CARB 2005). As shown in the analysis below, the proposed fueling center would be considered a large facility. Projects proposing to construct and operate new retail gasoline dispensing facilities are required to obtain an authority to construct (ATC) and a permit to operate (PTO) from the BCAQMD.

Estimation of Gasoline Throughput

Air quality modeling of the health risks from gasoline dispensing facilities indicates that the impact from the facilities decreases rapidly as the distance from the facility increases. Statistics reported in the CARB's staff reports on Enhanced Vapor Recovery released in 2000 and 2002 indicate that almost 96 percent of the gasoline dispensing facilities had a throughput of less than 2.4 million gallons per year. The remaining 4 percent, or approximately 450 facilities, had throughputs exceeding 2.4 million gallons per year. For these stations, the average gasoline throughput was 3.6 million gallons per year. Some of the largest facilities have throughputs as high as 19 million gallons per year (CARB 2005).

The average annual emissions of TACs from a retail gas station are proportional to the volume of gasoline sold in a year. An estimate of future gasoline sales at the proposed fueling center was not available at the time of this analysis. Therefore, gasoline throughput was estimated using the fueling center trips estimated in the transportation impact study (TIS) prepared for the project (Traffic Works 2017). Per the TIS, the proposed fueling center would generate 1,517 fueling center

[1] The off-site property was originally a motel with individual units. Some of the units have been converted to residences.

vehicle entries per day. Assuming the same trips for 365 days per year and an average vehicle purchase of 12.5 gallons of gasoline, a reasonable, conservative estimated throughput would be approximately 7 million gallons per year.[2]

Screening

Per the BCAQMD (2014) CEQA Air Quality Guidelines, for Type A projects (new sources that may affect existing or reasonably foreseeable receptors), the source or sources of TACs should be identified. For evaluation of a new source's project-specific impact, the location of maximum risk and/or hazard to a receptor should be identified. The US Environmental Protection Agency (EPA) has developed modeling tools for stationary sources. AERSCREEN is the recommended screening model based on AERMOD. The model will produce estimates of "worst-case" 1-hour concentrations for a single source, without the need for hourly meteorological data. AERSCREEN is intended to produce concentration estimates that are equal to or greater than the estimates produced by AERMOD with a fully developed set of meteorological and terrain data.

AERSCREEN version 16216 was used to model emissions from the proposed retail fueling center following the method and assumptions outlined in the CAPCOA (1997) Gasoline Service Station Industrywide Risk Assessment Guidelines. The method breaks the emissions into four sources:

Loading – Loading emissions occur when a cargo tank truck unloads gasoline to the storage tanks at the gasoline station. Storage tank vapors are emitted from the vent pipe during the initial fuel transfer period. These emissions are significantly reduced when the vent pipe includes a pressure/vacuum valve.

Breathing – Gasoline vapors are emitted from the storage tank vent pipe due to temperature and pressure changes within the storage tank vapor space.

Refueling – During the refueling process, gasoline vapors are emitted at the vehicle/nozzle interface.

Spillage – Spillage emissions occur from spills during vehicle fueling.

The model assumes gasoline vapors are emitted continuously 24 hours per day, 365 days per year. Input data for nine scenarios are included, based on the location of the fuel storage tank(s) and the type of vapor recovery systems. The concentration of toxic substances in liquid gasoline and gasoline vapor is based on California reformulated fuel introduced in 1996. The reformulated fuel has a regulatory maximum of 1.0 percent benzene by weight in liquid. The concentration of TAC in reformulated gasoline is shown in **Table 1**.

[2] Gasoline purchase estimates from two other Safeway fueling center CEQA analyses, one in the City of San Jose (2013) and one in the City of Sacramento (2015), resulted in similar throughputs of 7 million gallons per day.

TABLE 1
TAC CONCENTRATIONS IN REFORMULATED GASOLINE

TAC	Weight % in Liquid	Weight % in Vapor
Benzene	1.0	0.3
Toluene	8.0	1.0 [a]
Xylene	2.4	1.0 [a]

Source: CAPCOA 1997

Notes: a. Weight % in Vapor for toluene and xylene for reformulated gasoline is not available. The weight % for pre-1996 gasoline was used.

HEALTH RISK

Using the concentrations indicated by modeling with AERSCREEN at the closest sensitive receptor, the health risk was modeled in accordance with the Office of Environmental Health Hazard Assessment (OEHHA) (2015) Air Toxics Program Guidance Manual for Preparation of Health Risk Assessments.

The CARB Hotspots Analysis and Reporting Program Version 2 (HARP 2) is an updated software suite used to assist with the programmatic requirements of the Air Toxics "Hot Spots" Program (Assembly Bill 2588). This version incorporates the information presented in the OEHHA (2015) Air Toxics Hotspots Program Guidance Manual for Preparation of Health Risk Assessments. HARP 2 separates the modules into three programs, which allow the users to access any of the modules independently of each other. The three programs are referred to as the Emissions Inventory Module (EIM), Air Dispersion Modeling and Risk Tool (ADMRT), and Risk Assessment Standalone Tool (RAST). The RAST program version 17023 was used for this analysis.

Health Risk Evaluation Thresholds

The BCAQMD (2014, Table ES-2) has not adopted CEQA thresholds of significance for TACs, but it does recommend projects with an incremental increase in cancer risk greater than ten in one million and/or an off-site ground-level concentration of noncarcinogenic TACs resulting in a Hazard Index greater than one be mitigated to below those levels. In addition, per the BCAQMD (2014:42) CEQA Air Quality Guidelines, the BCAQMD would not issue an authority to construct or permit to operate a new stationary source of TACs if it would result in:

- An incremental increase in cancer risk greater than ten in one million at any off-site receptor; and/or
- An off-site ground-level concentration of noncarcinogenic TACs generated from the project that would result in a Hazard Index greater than one.

RESULTS

AERSCREEN INPUTS

AERSCREEN was run for each of the four gasoline station emission sources for benzene, toluene, and xylene using the model assumptions and inputs outlined in the CAPCOA (1997) Gasoline Service Station Industrywide Risk Assessment Guidelines. The inputs are summarized in **Table 2**. Site-

specific assumptions. Inputs, and results are summarized below, with additional detail in Attachment A.

TABLE 2
BLACK OLIVE VILLAGE AERSCREEN INPUT DATA

TAC and Source	Gasoline Emission Rate (g/sec)	% by Weight	Total Emissions [e] (g/sec)	Total Stack Velocity [e] (m/sec)	Stack Height (m)	Stack Dia. (m)	Release Height (m)	Lateral D (m)	Vertical D (m)
Benzene									
Loading [a]	0.00605	0.30%	0.00012705	0.01239	3.66	0.0508	na	na	na
Breathing [b]	0.00144	0.30%	0.00003024	0.002954	3.66	0.0508	na	na	na
Refueling [c]	0.0107	0.30%	0.00022470	na	na	na	1	3.02	1.86
Spillage [d]	0.00605	1.00%	0.00042350	na	na	na	0	3.02	1.86
Toluene									
Loading [a]	0.00605	1.00%	0.00042350	0.01239	3.66	0.0508	na	na	na
Breathing [b]	0.00144	1.00%	0.00010080	0.002954	3.66	0.0508	na	na	na
Refueling [c]	0.0107	1.00%	0.00074900	na	na	na	1	3.02	1.86
Spillage [d]	0.00605	8.00%	0.00338800	na	na	na	0	3.02	1.86
Xylene									
Loading [a]	0.00605	1.00%	0.00042350	0.01239	3.66	0.0508	na	na	na
Breathing [b]	0.00144	1.00%	0.00010080	0.002954	3.66	0.0508	na	na	na
Refueling [c]	0.0107	1.00%	0.00074900	na	na	na	1	3.02	1.86
Spillage [d]	0.00605	2.40%	0.00101640	na	na	na	0	3.02	1.86

Other Input			
Scenario	6A	Flagpole Height	1.2 meters
Stack Temperature	Ambient	Source Elevation	508 meters
Surface Dispersion	Rural	Minimum Temperature	271 K
Distance to Ambient Air	Default	Maximum Temperature	316 K
Include Building Downwash	No	Minimum Wind Speed	Default
Include Terrain Height	No	Anemometer Height	Default
AERMET Surface Profile	Urban	AERMET Climate Profile	Average

Source: CAPCOA 1997; Climate Data:
https://www.arb.ca.gov/toxics/harp/aerscreen_met/ssd_aerscreen_met_data_sacramento_valley.pdf

Notes:

a. Loading is a point source, % weight in vapor.

b. Breathing is a point source, % weight in vapor.

c. Refueling is a volume source, % weight in vapor.

d. Spillage is a volume source, % weight in liquid.

e. Total Emissions and Stack Velocities are based on 7 million gallons per year.

Scenario – 6A, Underground Tank, Phase I and Phase II vapor recovery, no pressure vent valve. It is not known if the proposed gas tanks will have vent valves; therefore, the worst-case scenario is assumed.

Surface Dispersion – Rural. Following the methodology in the AERSCREEN user's guide, the population within 3 kilometers (km) of the project site was estimated to be less than 21,000. Therefore, the surface dispersion was set to rural.

Use Building Downwash – Not used. Per the CAPCOA (1997) Gasoline Service Station Industrywide Risk Assessment Guidelines, building downwash resulted in negligible change in the results.

Use Terrain Data – Not used. The terrain between the proposed fueling center and the closest sensitive receptors will be close to flat after grading.

AERMET Dominant Surface Profile – Urban. Although some of the terrain within 3 km of the project site contains conifer or mixed forest, after construction of the proposed project, the area between the fueling center and the closest receptors is best represented by the urban profile.

Discreet Receptor – 72 meters. AERSCREEN outputs pollutant concentrations at 25-meter intervals. The concentration at up to 10 discrete distances corresponding to known receptors can be included. The closest receptor measured from the center of the proposed fueling center to the edge of the residential building is 72 meters.

TAC CONCENTRATIONS

The concentration for each TAC at 72 meters (235 feet, the closest sensitive receptor is shown in **Table 3**. The maximum 1-hour concentration is calculated by AERSCREEN. The average annual concentration is calculated by multiplying the maximum 1-hour contraction by a factor of 0.08 (CAPCOA 1997: Appendix G).

CANCER RISK

The total concentrations for each TAC was input to the HARP 2 RAST program (see Attachment A). A pathway of inhalation only and a 30-year risk scenario was selected. The resulting incremental increase in cancer risk in one million is shown in **Table 4** for the closest sensitive receptor.

As shown in **Table 4**, the predicted incremental increase in cancer risk is 8.9 in one million for the closest sensitive receptor to the proposed fueling center. This probability is below the BCAQMD-recommended threshold of 10 in one million. No further model refinements or mitigation is needed.

CHRONIC HEALTH RISK

Using the total concentrations for each pollutant, the chronic health risk Hazard Index (HI) was calculated using the HARP 2 RAST Program. **Table 5** shows the health risk index for each targeted organ or body system.

As shown in **Table 5**, the Hazard Index is below the BCAQMD-recommended threshold of 1.0 at the closest sensitive receptor. No mitigation is required.

TABLE 3
TAC CONCENTRATION AT 72 METERS

TAC and Operation	Max 1-hour Concentration ($\mu g/m^3$)	Average Annual Concentration ($\mu g/m^3$)
Benzene		
Loading	0.1578	0.0126
Breathing	0.0376	0.0030
Refueling	0.3733	0.0299
Spillage	0.8475	0.0678
Total	**1.4162**	**0.1133**
Toluene		
Loading	0.5258	0.0421
Breathing	0.1252	0.0100
Refueling	1.2440	0.0995
Spillage	6.7800	0.5424
Total	**8.6750**	**0.6940**
Xylene		
Loading	0.5258	0.0421
Breathing	0.1252	0.0100
Refueling	1.2440	0.0995
Spillage	6.7800	0.5424
Total	**8.6750**	**0.6940**

Source: AERSCREEN v16216; CAPCOA 1997

TABLE 4
HARP 2 RAST RESULTS – CANCER RISK INCREASE

Pollutant I.D.	Pollutant Name	Concentration ($\mu g/m^3$)	Excess Cancer Risk Probability
71432	Benzene	0.1133	8.9
108883	Toluene	0.6940	0
1330207	Xylene	0.3142	0
		BCAQMD-Recommended Threshold	10
		Exceeds Threshold?	**No**

*Source: RAST Run – *HARP – HRACalc v17023 9/18/2017 9:35:47 AM – Cancer Risk*

Notes: Path = Inhalation only; 30-year exposure scenario. Risks shown are at 72 meters from the source.

TABLE 5
HARP 2 RAST RESULTS – CHRONIC HEALTH RISK

Pollutant I.D.	Pollutant Name	Concentration ($\mu g/m^3$)	Central Nervous System	Reproductive System & Developmental	Respiratory System	Eyes	Hematological System
71432	Benzene	0.1133	0	0	0	0	0.0378
108883	Toluene	0.6940	0.0023	0.0023	0.0023	0	0
1330207	Xylene	0.3142	0.0004	0	0.0004	0.0004	0
Total Hazard Index (HI)			**0.0027**	**0.0023**	**0.0027**	**0.0004**	**0.0378**
BCAQMD-Recommended Threshold			1.0	1.0	1.0	1.0	1.0
Exceeds Threshold?			**No**	**No**	**No**	**No**	**No**

*Source: RAST Run – *HARP – HRACalc v17023 9/18/2017 9:35:47 AM – Chronic Risk.*

Notes: Path = Inhalation only; Target organs or systems with 0 HI not shown. HIs shown are at 72 meters from the source.

REFERENCES

BCAG (Butte County Association of Governments). 2014. 2013/14 – Traffic Counts.

BCAQMD (Butte County Air Quality Management District). 2014. *CEQA Air Quality Handbook.*

CAPCOA (California Air Pollution Control Officers Association). 1997. *Gasoline Service Station Industrywide Risk Assessment Guidelines.*

———. 2009. *Health Risk Assessments for Proposed Land Use Projects.*

CARB (California Air Resources Board). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.*

OEHHA (Office of Environmental Health Hazard Assessment). *2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.*

Sacramento, City of. 2015. *Curtis Park Village Fuel Island Project, Addendum to Environmental Impact Report*.

San Jose, City of. 2013. *Addendum to the Hitachi Campus and Transit Village Final EIR, Cottle Safeway Fuel Station*.

Traffic Works. 2017. *Transportation Impact Study for Black Olive Village*.

Attachment A: Model Assumptions and Output

Black Olive Village AERSCREEN Input Data

Component Emission Rates													
TAC and Source	Gasoline Emission Rate (g/sec)	% Weight in Vapor	Emission per million gal. (g/sec)	Throughput (million gal.)	Total Emissions (g/sec)	Source Type	Stack Velocity/ million gal. (m/sec)	Total Stack Velocity (m/sec)	Stack Height (m)	Stack Diameter (m)	Release Height (m)	Lateral D (m)	Vertical D (m)
Benzene													
Loading	0.00605	0.30%	0.000018150	7	**0.00012705**	**Point**	0.00177	**0.01239**	**3.66**	**0.0508**			
Breathing	0.00144	0.30%	0.000004320	7	**0.00003024**	**Point**	0.000422	**0.002954**	**3.66**	**0.0508**			
Refueling	0.0107	0.30%	0.000032100	7	**0.00022470**	**Volume**					**1**	**3.02**	**1.86**
Spillage	0.00605	1.00%	0.000060500	7	**0.00042350**	**Volume**					**0**	**3.02**	**1.86**
Toluene													
Loading	0.00605	1.00%	0.000060500	7	**0.00042350**	**Point**	0.00177	**0.01239**	**3.66**	**0.0508**			
Breathing	0.00144	1.00%	0.000014400	7	**0.00010080**	**Point**	0.000422	**0.002954**	**3.66**	**0.0508**			
Refueling	0.0107	1.00%	0.000107000	7	**0.00074900**	**Volume**					**1**	**3.02**	**1.86**
Spillage	0.00605	8.00%	0.000484000	7	**0.00338800**	**Volume**					**0**	**3.02**	**1.86**
Xylene													
Loading	0.00605	1.00%	0.000060500	7	**0.00042350**	**Point**	0.00177	**0.01239**	**3.66**	**0.0508**			
Breathing	0.00144	1.00%	0.000014400	7	**0.00010080**	**Point**	0.000422	**0.002954**	**3.66**	**0.0508**			
Refueling	0.0107	1.00%	0.000107000	7	**0.00074900**	**Volume**					**1**	**3.02**	**1.86**
Spillage	0.00605	2.40%	0.000145200	7	**0.00101640**	**Volume**					**0**	**3.02**	**1.86**

Scenario	6A - Phase I and Phase II, no vent valve
Unit	Metric
Stack Temperature	Ambient
Surface Dispersion	Rural
Distance to Ambient Air	Default
Building Downwash	No
Include Terrain Height	No
Max Distance to Probe	500 meters
Include Discreet Receptors	Yes
Flagpole Height	1.2 meters
Source Elevation	508 meters
Minimum Temp.	271 K
Maximum Temp.	316 K
Minimum wind Speed	Default
Anemometer Height	Default
AERMET Dominant Surface Profile	Urban
AERMET Dominant Climate Profile	Average
Adjust Surface	No

Black Olive Village Gas Station
AERSCREEN Results

	Max 1h hr Concentration ($\mu g/m^3$)	Average Annual Concentration ($\mu g/m^3$)
Benzene		
Loading	0.1578	0.0126
Breathing	0.0376	0.0030
Refueling	0.3733	0.0299
Spillage	0.8475	0.0678
Total	**1.4162**	**0.1133**
Toluene		
Loading	0.5258	0.0421
Breathing	0.1252	0.0100
Refueling	1.2440	0.0995
Spillage	6.7800	0.5424
Total	**8.6750**	**0.6940**
Xylene		
Loading	0.5258	0.0421
Breathing	0.1252	0.0100
Refueling	1.2440	0.0995
Spillage	2.0330	0.1626
Total	**3.9280**	**0.3142**

Black Olive Village Gas Station TAC HRA
HARP 2 RAST Results- Cancer Risk Increase

Pollutant I.D.	Pollutant Name	Concentration ($\mu g/m^3$)	Risk Increase	Risk Increase in a Million
71432	Benzene	0.1133	0.0000089	8.911
108883	Toluene	0.694	0	0
1330207	Xylenes	0.3142	0	0

Notes:
*1. RAST Run - *HARP - HRACalc v17023 9/18/2017 9:35:47 AM - Cancer Risk.*
2. Path - Inhalation Only.
3. Exposure - 30 Year.

Black Olive Village Gas Station TAC HRA
HARP 2 RAST Results- Chronic Health Risk

			Hazard Index				
Pollutant I.D.	Pollutant Name	Concentration ($\mu g/m^3$)	Central Nervous System	Reproductive System & Developmental	Respiratory System	Eyes	Hematological System
71432	Benzene	0.1133	0	0	0	0	0.0378
108883	Toluene	0.694	0.0023	0.0023	0.0023	0	0
1330207	Xylenes	0.3142	0.0004	0	0.0004	0.0004	0
	Total Hazard Index		**0.0028**	**0.0023**	**0.0028**	**0.0004**	**0.0378**

Notes:
*1. RAST Run - *HARP - HRACalc v17023 9/18/2017 9:35:47 AM - Chronic Risk.*
2. Path - Inhalation Only.

Appendix D – Noise Modeling Results and Supporting Information

Existing Conditions

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 1A Existing Conditions
Project Name: Black Olive Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Traffic Works 2017
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Skyway												
Elliott to Pearson	2	15	16,119	35	0.5	1.8%	0.1%	60.0	-	46	100	215
Pearson to project	4	15	19,116	35	0.5	1.8%	0.1%	60.9	-	53	114	246
Project to Black Olive	4	15	19,116	35	0.5	1.8%	0.1%	60.9	-	53	114	246
Black Olive to Schmale	4	15	22,113	35	0.5	1.8%	0.1%	61.5	-	58	126	271
Pearson Road												
Skyway to Black Olive	4	0	6,912	35	0.5	1.8%	0.1%	56.3	-	-	57	123
Black Olive												
Skyway to Foster	2	0	4,158	25	0.5	1.8%	0.1%	50.5	-	-	-	50

Existing Plus Project Conditions

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 1B Existing Plus Project Conditions
Project Name: Black Olive Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Traffic Works 2017
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition / Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Skyway												
Elliott to Pearson	2	15	17,820	35	0.5	1.8%	0.1%	60.4	-	49	106	229
Pearson to project	4	15	23,922	35	0.5	1.8%	0.1%	61.8	-	62	133	286
Project to Black Olive	4	15	21,249	35	0.5	1.8%	0.1%	61.3	-	57	123	264
Black Olive to Schmale	4	15	21,285	35	0.5	1.8%	0.1%	61.3	-	57	123	265
Pearson Road												
Skyway to Black Olive	4	0	7,344	35	0.5	1.8%	0.1%	56.6	-	-	59	128
Black Olive												
Skyway to Foster	2	0	5,085	25	0.5	1.8%	0.1%	51.4	-	-	-	57

Cumulative No Project Conditions

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 2A Cumulative Conitions
Project Name: Black Olive Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Traffic Works 2017
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Skyway												
Elliott to Pearson	2	15	19,017	35	0.5	1.8%	0.1%	60.7	-	52	111	240
Pearson to project	4	15	23,148	35	0.5	1.8%	0.1%	61.7	-	60	130	280
Project to Black Olive	4	15	23,148	35	0.5	1.8%	0.1%	61.7	-	60	130	280
Black Olive to Schmale	4	15	27,441	35	0.5	1.8%	0.1%	62.4	-	68	146	314
Pearson Road												
Skyway to Black Olive	4	0	8,532	35	0.5	1.8%	0.1%	57.3	-	-	66	141
Black Olive												
Skyway to Foster	2	0	4,914	25	0.5	1.8%	0.1%	51.2	-	-	-	56

Cumulative Plus Project Conditions

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 2B Cumulative Plus Project Conditions
Project Name: Black Olive Project

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: Traffic Works 2017
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL
Skyway												
Elliott to Pearson	2	15	19,008	35	0.5	1.8%	0.1%	60.7	-	52	111	240
Pearson to project	4	15	25,281	35	0.5	1.8%	0.1%	62.1	-	64	138	297
Project to Black Olive	4	15	25,317	35	0.5	1.8%	0.1%	62.1	-	64	138	297
Black Olive to Schmale	4	15	27,585	35	0.5	1.8%	0.1%	62.5	-	68	146	315
Pearson Road												
Skyway to Black Olive	4	0	8,964	35	0.5	1.8%	0.1%	57.5	-	-	68	146
Black Olive												
Skyway to Foster	2	0	5,841	25	0.5	1.8%	0.1%	52.0	-	-	-	63

Noise Barrier Analysis

INTRODUCTION

The proposed Black Olive Village project would result in the creation of 67,473 square feet of retail uses on 7.63 acres consisting of a 54,471-square-foot Safeway-branded grocery store, a 9-pump fueling center (18 fueling positions) with illuminated canopy, a 1,002-square-foot fueling center kiosk, 7,800 square feet of additional retail adjoining the store, and a 4,200-square-foot pad for a high-turnover, sit-down restaurant. Off-site frontage improvements to Skyway to accommodate the proposed project would include a primary driveway entrance aligned opposite to Black Olive Drive and a secondary access driveway (northern driveway) for the fueling center.

Delivery truck access to the project is proposed via the northern driveway. Delivery trucks accessing the site would enter the site via the northern driveway, proceed to the two loading docks via a one-way route at the rear of the Safeway store, and exit via the primary driveway at Black Olive Drive. Smaller delivery trucks would use either driveway to access the site. The Safeway store loading docks would be approximately 4.5 feet below grade. Delivery trucks would use recessed bay doors with sealed gaskets to reduce noise from off-loading trailers. Local deliveries would be through an at-grade roll-up door and a Mondoor (a type of "floating" door). Although deliveries would be based on sales, it is anticipated there would be two or three large Safeway delivery trucks per day, an average of 10 to 15 and up to 20 smaller trucks for Safeway deliveries, and approximately 1.5 fuel deliveries per day for the fueling center.

Michael Baker International has prepared this technical memorandum, which presents an analysis of estimated noise levels associated with truck movements on the project site and identifies recommendations for noise barriers to reduce noise at off-site noise-sensitive receptors.

SETTING

NOISE-SENSITIVE RECEPTORS

Noise-sensitive land uses are those that may be subject to stress and/or interference from excessive noise. Noise-sensitive land uses include schools, hospitals, and institutional uses such as churches and museums. Typically, residential uses are also considered noise-sensitive receptors. Industrial and commercial land uses are generally not considered sensitive to noise. Noise-sensitive receptors in the project area include single-family homes adjacent to the project site. The closest noise-sensitive receptors are residential units approximately 15 feet to the northwest of the project site on commercial-zoned property adjoining the project site to the north.[1] Residential properties on Horseshoe Hill Drive also adjoin the project site to the west, but the homes are farther away.

TOWN OF PARADISE NOISE STANDARDS

The Town of Paradise General Plan specifies the noise level standards for non-transportation sources shown in **Table 1.**

[1] The off-site property was originally a motel with individual units. Some of the units have been converted to residences.

TABLE 1
TOWN OF PARADISE NON-TRANSPORTATION NOISE STANDARDS

Noise Level Performance Standards for New Projects Affected by or Including Non-Transportation Sources		
Noise Level Descriptor	Daytime (7:00 am to 10:00 pm)	Nighttime (10:00 pm to 7:00 am)
Hourly L_{eq} (dB)	50	45
Maximum Level (dB)	70	65
Each of the noise levels specified above shall be lowered by 5 dBA for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).		

Source: Paradise 1994, Table 6.4.1

PARKING LOT NOISE

The project would include a large, at-grade parking lot. Noise sources in the proposed parking area may include noise events from vehicle movement, engine starting and stopping, doors slamming, car alarms and horns, shopping carts, and conversations.

The large parcel on the north side of the project site contains a mini-storage facility. However, there is also a residence west of the mini-storage buildings, approximately 420 feet from Skyway. This residence is the closest noise-sensitive use to the proposed parking lot. The proposed parking lot encompasses nearly half of the project site and is centered on the eastern portion of the site. It is assumed that the majority of parking lot noise would emanate from the centers of main circulation within the parking lot.

The closest main circulation to the residence on the parcel to the north comprises 30 parking stalls located between the fueling center and the north end of the Safeway store. These 30 parking stalls are centered approximately 150 feet from the nearest residence. Assuming each stall will fill and empty once per hour during the peak hours, yielding 60 car arrival and departure events, an average parking lot arrival or departure would generate a sound exposure level (SEL) of 71 dB at 50 feet.

The L_{eq} for 1 hour is calculated as follows:

$$L_{eq} = SEL + 10 \text{ Log } (60) - 35.6$$

where 36.5 is the log of the number of seconds in an hour and 60 is the number of events.

At peak hour, with an SEL of 71 dB, the L_{eq} would be 53.1 dB at 50 feet.

Noise from stationary sources near the ground propagate outward in a hemispherical pattern. The noise diminishes (attenuates) with distance. On hard surfaces, the attenuation (dL) can be calculated by the inverse square law (this is the rule of 6 dB loss per doubling of distance):

$$dL = 20 \log(\frac{r_2}{r_1})$$

where r_2 is the distance from the source and r_1 is the distance from the source to the reference measurement.

The peak-hour L_{eq} at the nearest residential use (150 feet) would be 43.6 dB. This noise level is less than the Town of Paradise's daytime limit of L_{eq} 50 dB or nighttime limit of L_{eq} 45 dB.

Seven proposed parking stalls near the northern property line would be centered about 40 feet from the nearest residence. It is assumed that these stalls would be less frequently used and would

fill and empty once every 4 hours. The L_{eq} would be 40.8 dB at 50 feet and 42.7 dB at the nearest noise-sensitive land use. These noise levels are less than the Town's daytime limit of L_{eq} 50 dB or nighttime limit of L_{eq} 45 dB.

LOADING DOCK AND TRUCK CIRCULATION NOISE

Diffraction is the bending of sound waves around the edge of an object. The amount of diffraction is dependent on the frequency of the sound. Low frequency sounds diffract around objects more than high frequency sounds. The Fresnel number is a dimensionless number used in the calculation of diffraction. The Fresnel number (N) is:

$$N = \frac{2f\delta}{c}$$

where f is the frequency in hertz (Hz) of the sound, c is the speed of sound, and δ is the difference in path length. The difference in path lengths (δ) is:

$$\delta = (a + b) - d$$

Figure 1 shows the path lengths.

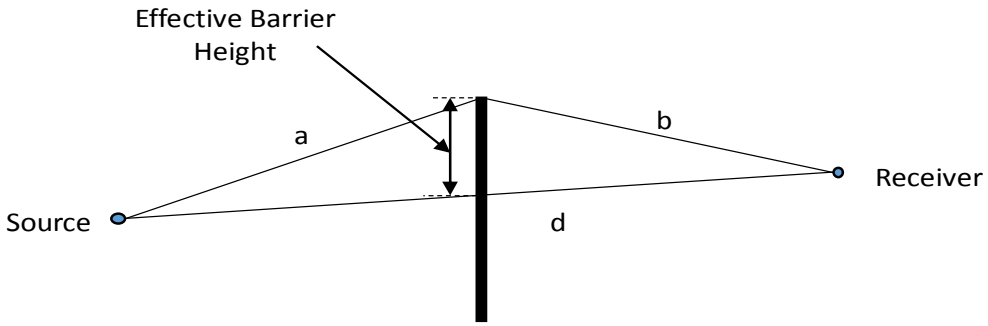


Figure 1: Noise Path Lengths

If the distance from the line of sight path to either lateral end of the barrier is at least five times the effective barrier height (see **Figure 1**), the barrier insertion loss (ΔL) can be calculated by the Kurze-Anderson formula (University of Sheffield 2017) for values of N greater than zero:

$$\Delta L = 5 + 20\ log\frac{\sqrt{2\pi N}}{\tanh(\sqrt{2\pi N})}$$

Even if the barrier does not completely block the line of sight between the source and the receiver, the barrier can still have some attenuating effect. If the line of sight just touches the top of the barrier (N = 0), the ΔL can be up to 4.8 dB. For values of N greater than -0.1, the ΔL can be calculated by the Maekawa formula (above zero, the Kurze-Anderson formula is preferred):

$$\Delta L = 10\log(3 + 20\ N)$$

BARRIER ANALYSIS

ENVIRONMENTAL NOISE BARRIER FUNDAMENTALS

An environmental noise barrier is any object between a noise source and a receiver that attenuates the noise detected by the receiver. Sound from the source can be transmitted to the receiver by diffraction around the barrier, transmission through the barrier, reflection off other objects in the environment, or by atmospheric effects. The difference between the sound level at the receiver with the barrier and without the barrier is the barrier insertion loss (ΔL). Transmission of sound through a solid barrier with no gaps, made of typical structural wall materials (masonry, concrete, wood), will be several orders of magnitude smaller than diffracted sound and can be considered negligible. Outside of areas with nearby large, solid objects such as buildings or cliffs, diffraction can be considered the primary source of noise transmission past a barrier.

LOADING DOCK OPERATIONS

The delivery truck loading dock operations at the proposed Black Olive Village project would be predominantly associated with the Safeway store and would be a stationary noise source.[2] To estimate anticipated noise levels for loading dock operations at the Black Olive Village project, reference noise levels were taken from a study in 2009 that measured the noise levels at a Safeway store with a similar loading bay configuration and delivery operations as the proposed project. A 1-hour sample measurement included three semi-trailer truck arrivals, unloading activities, four semi-trailer truck departures, and four small truck deliveries. The measured 1-hour L_{eq} was 60 dBA and the L_{max} was 80 dBA (associated with backup alarms) at 50 feet (Shasta County 2009). The backup alarms would be the loudest noise source.

Figure 2 shows the locations of loading dock noise sources assumed in the analysis relative to the closest residential receptors. Source location S1 is a truck at the western loading dock with the center of noise assumed to be 6 feet above the ground.[3]

Source location S2 is 20 feet from the south end of the truck-reversing area with the center of noise assumed to be 6 feet above the ground. Receiver location R1 is 5 feet off the ground at the closest residential property line from source location S1.

As shown in **Figure 3**, receiver location R1 is adjacent to a proposed 16-foot retaining wall. Because areas farther from the wall would be less shielded from noise, a second receiver location R2, 50 feet back from the property line, 5 feet off the ground, was also analyzed. Receiver location R3 is 5 feet off the ground at the closest residential property line to source location S2.

---

[2] In noise analysis, there are two kinds of noises sources—stationary and mobile. Stationary sources are analyzed as point sources where the noise propagates outward in a spherical pattern, or, near the ground, in a hemispherical pattern. A mobile source is where multiple sources of noise travel along a path such as a road within a short time period. Noise from mobile sources propagates outward in a cylindrical pattern. Even though some of the noise sources in loading dock operations are moving, the speed is slow and there are not multiple sources traversing the same path in a short period of time. Therefore, the loading dock operational noise was analyzed as a stationary source.

[3] Trucks built since the mid-1970s are required to have mufflers, and exhaust noise is no longer the predominant noise source. Engine and wheel noise are typically louder, depending on speed and acceleration. Trucks at highway speed typically have centers of noise in the 2- to 4-foot-high range (relative to the roadway). Data for slow-moving trucks approaching a delivery bay are not available. Therefore, a noise center at 6 feet above the ground was used to provide a conservative analysis. Truck refrigeration units (TRUs) are mounted high on the truck, and they produce intermittent noise. Mitigation measure MM 4.2.3e identified in the Draft EIR to reduce air emissions requires electrical hookups at the loading dock so TRUs are not operated while the trailer is at the loading dock.

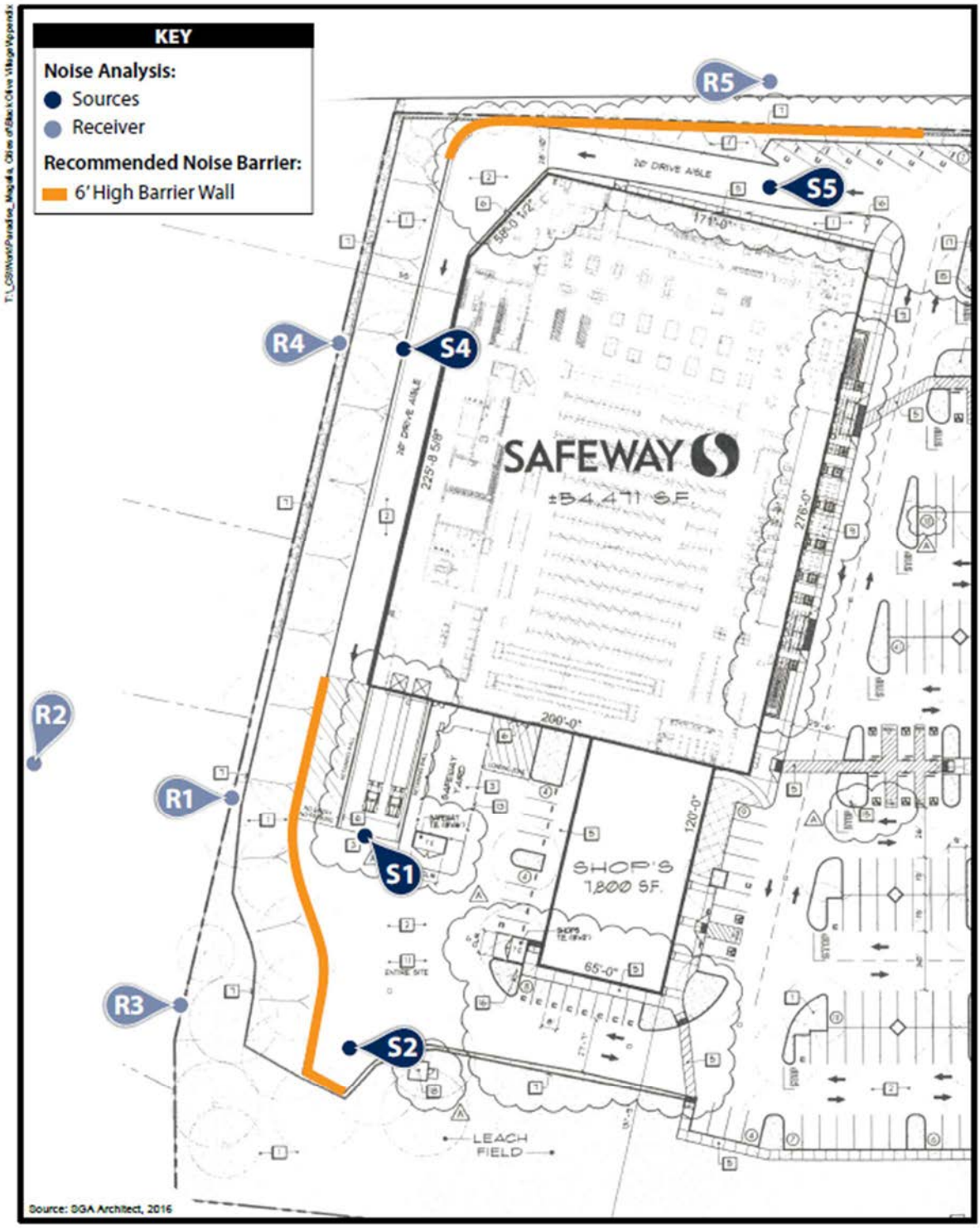


FIGURE 2
Recommended Noise Barrier Locations

Michael Baker INTERNATIONAL

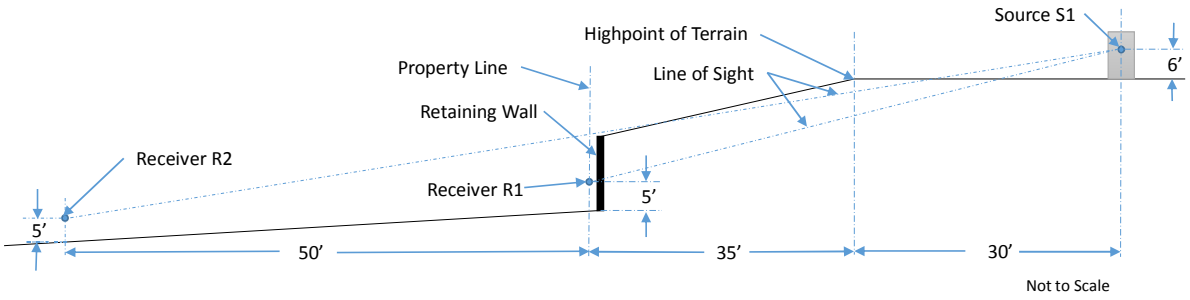


Figure 3: Noise Source S1 Cross Section

To determine barrier insertion loss, the noise without considering any barriers or terrain must be calculated first. **Table 2** shows the calculated L_{eq} and L_{max} without barriers or terrain at the closest noise-sensitive receptors (residential properties) that are adjacent to the project site on the west and the loading dock location. A frequency of 1,000 Hz was used in the calculation because it is the most common frequency used for truck backup alarms.

TABLE 2
LOADING DOCK NOISE LEVELS AT ADJOINING PROPERTIES CLOSEST TO LOADING DOCK WITHOUT INTERVENING TERRAIN OR BARRIERS

Location		Elevation (ft)		Line of sight Distance (ft)	Source Noise (dBA)		Receiver Noise (dBA)	
Source	Receiver	Source	Receiver		L_{eq}	L_{max}	L_{eq}	L_{max}
S1	R1	1,674	1,647	70.4	60	80	57.0	77.0
S1	R2	1,674	1,645	118.6	60	80	52.5	72.5
S2	R3	1,673	1,648	79.1	60	80	56.0	76.0

Notes: 1,000 Hz noise frequency used for all calculations. Detailed calculations in Attachment A.

The central portion of the site in the north–south direction is higher in elevation than the western and eastern boundaries, forming a low ridge, and the overall site slopes gently to the south. The western part of the site slopes toward Honey Run. In creating a level pad for the proposed Safeway and loading dock at Black Olive Village, the applicant would place fill material upslope of a retaining wall 8 to 16 feet high along the project site boundary on the west, which would create a 12-foot-high slope above the wall leading to the leveled surface, as shown in **Figure 3**. The intervening terrain between the existing residences and the proposed Safeway and its loading dock would act as a noise barrier for some of the noise from loading dock operations. **Figure 3** shows the terrain cross section at source S1.

Table 3 shows the calculated ΔL for the terrain and the resulting noise at the same receiver locations described above.

TABLE 3
LOADING DOCK NOISE LEVELS AT ADJOINING PROPERTIES CLOSEST TO LOADING DOCK WITH INTERVENING TERRAIN AND WITHOUT BARRIERS

Location		Elevation (ft)			Distance to Terrain High Point (ft)		ΔL (dBA)	Receiver Noise (dBA)	
Source	Receiver	Source	Receiver	Terrain	Source	Receiver		L_{eq}	L_{max}
S1	R1	1,674	1,647	1,668	30	35	15.6	41.3	61.3
S1	R2	1,674	1,645	1,668	30	85	6.5	**46.0**	**66.0**
S2	R3	1,673	1,648	1,667	15	60	2.4	**53.6**	**73.6**

Notes: 1,000 Hz noise frequency used for all calculations. Detailed calculations in Attachment A.

For non-transportation noise that may affect sensitive receptors, the Town of Paradise has a limit of 50 dBA L_{eq} and 70 dBA L_{max} from 7 a.m. to 10 p.m. and a limit of 45 dBA L_{eq} and 65 dBA L_{max} from 10 p.m. to 7 a.m. As shown in **Table 3**, loading dock noise levels at all three receiver locations would exceed the Town's nighttime standards, and the noise level at receivers R2 and R3 would exceed the daytime standards.

To mitigate the noise levels due to loading dock operations to below the Town standards, a 6-foot-high solid barrier wall would be required along the southern and western edges of the loading dock and truck-reversing areas as shown in **Figure 2**. The terrain cross section at source S2 is shown in **Figure 4**.

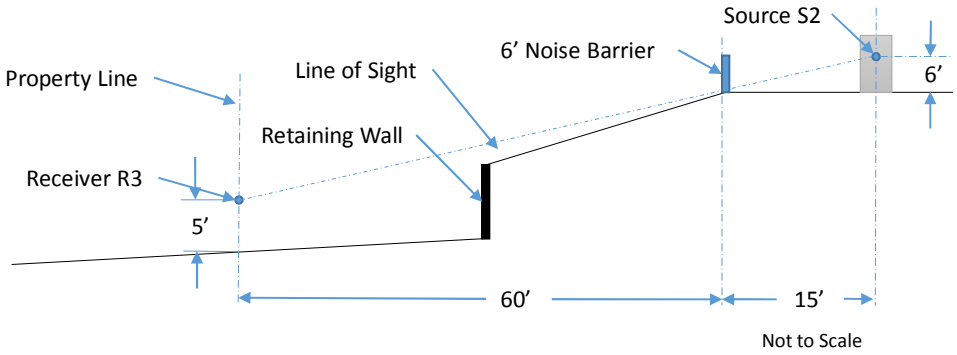


Figure 4: Noise Source S2 Cross Section

Table 4 shows the noise levels due to loading dock operations with a 6-foot-high barrier and intervening terrain included in the model. As shown in **Table 4**, with installation of a 6-foot-high solid barrier wall located along the south and west sides of the loading dock (see **Figure 2**), noise levels would be reduced at the three receiver locations to levels that would not exceed the Town's daytime or nighttime noise standards.

TABLE 4
LOADING DOCK NOISE LEVELS AT ADJOINING PROPERTIES CLOSEST TO LOADING DOCK WITH INTERVENING TERRAIN AND WITH 6-FOOT BARRIER

Location		Elevation (ft)			Distance to Barrier (ft)		L (dBA)	Receiver Noise (dBA)	
Source	Receiver	Source	Receiver	Barrier	Source	Receiver		L_{eq}	L_{max}
S1	R1	1,674	1,647	1,668	30	35	21.3	35.3	55.3
S1	R2	1,674	1,645	1,668	30	85	16.3	36.1	56.1
S2	R3	1,673	1,648	1,667	15	60	15.3	40.7	60.7

Notes: Detailed calculations in Attachment A.

TRUCK CIRCULATION

The circulation of delivery trucks behind the Safeway store at the proposed Black Olive Village project is modeled as a stationary noise source due to the low speed of the trucks and infrequent passage. To estimate anticipated noise levels for truck circulation at the Black Olive Village project, reference noise levels for low-speed truck pass-by events were obtained from a noise study for a large retail distribution center. The measurements indicated that the average maximum noise level for a heavy truck passing at 5 miles per hour (mph) was 64.6 dB L_{max} measured at 50 feet (City of Merced 2009: Chapter 4.10, Noise). The study did not provide a measured 1-hour L_{eq}. Without a measured sound exposure level (SEL) for a truck pass-by event, an hourly L_{eq} cannot be calculated. In an assumed worst-case hour with 2 semi-trucks and 8 smaller truck or vans arriving, the 10 pass-by events would be expected to produce an hourly L_{eq} calculated by:

$$L_{eq} = 64.6 + 10 * (\log 10) - 35.6$$

Where 64.6 dB is the SEL for a truck pass-by event, 10 is the number of trucks in the worst hour, and 35.6 is 10 times the logarithm of the number seconds, resulting in an hourly L_{eq} of 39 dB, 25.6 dB less than the L_{max} of a truck pass-by event.

Because the Town standards for L_{eq} are 20 dB less than the standards for L_{max}, it is assumed that if the Town of Paradise L_{max} standards for non-transportation noise are not exceeded, then the 1-hour L_{eq} standard will not be exceeded due to truck circulation. Therefore, only L_{max} is analyzed.

The noise from a truck pass-by event can emanate from multiple sources on the truck including exhaust noise from the exhaust stack, engine noise from the engine block, engine cooling fan noise from near the radiator, wheel and drivetrain noise, brake noise, and refrigeration noise from cooled trailers. To complete a barrier analysis for truck circulation, an effective frequency and center of noise height must be selected to model the truck noise. A study for the Washington State Department of Transportation (1976) measured the effective height and frequency of vehicle pass-by events for the purpose of modeling sound barriers. The study recommended an optimum frequency and height for modeling truck pass-by events of 650 Hz at 2.8 feet. The Washington study included trucks traveling at higher speeds. To account for the reduction of tire noise at low speeds, an effective noise height of 4 feet was used for the Black Olive Village modeling of truck circulation noise.

Large trucks delivering goods to the proposed Safeway store would reach the loading dock via a 20-foot-wide aisle along the north and west sides of the store and exit to the east into the parking lot. Noise-sensitive receptors consisting of residential buildings are located along the north and west project site property lines, adjacent to the truck circulation route. Noise from pass-by events

including reflected noise off the Safeway building was modeled at two locations. As shown in **Figure 2**, source S4 is a truck along the west side of the store at the center of the truck lane and receiver R4 is 5 feet off the ground at the closest property line. The terrain at S4 and R4 is similar to that shown in **Figure 3**. Source S5 is a truck along the north side of the store at the center of the truck land and receiver R5 is 5 feet off the ground at the closest property line, at the same grade as the store pad.

Table 5 shows the calculated L_{max} (including noise reflected off the store wall) due to truck circulation noise without barriers or terrain included at the closest noise-sensitive receptors (residential properties) that are adjacent to the truck circulation route on the north and west sides of the proposed Safeway store.

TABLE 5
TRUCK CIRCULATION NOISE LEVELS AT ADJOINING PROPERTIES CLOSEST TO CIRCULATION ROUTE WITHOUT INTERVENING TERRAIN AND WITHOUT BARRIER

Location		Elevation (ft)		Line of sight Distance (ft)	Reference Source Noise L_{max} at 50 ft (dBA)	Receiver Noise L_{max} Including Reflection (dBA)
Source	Receiver	Source	Receiver			
S4	R4	1,672	1,647	51.5	64.6	**66.24**
S5	R5	1,672	1,673	35.0	64.6	**68.38**

Notes: 650 Hz noise frequency at 4 feet above the ground used for all calculations. Truck speed assumed to be no more than 5 mph at all times. Detailed calculations in Attachment A.

Table 6 shows the calculated L_{max} (including noise reflected off the store wall) due to truck circulation noise with terrain included but no noise barrier.

TABLE 6
TRUCK CIRCULATION NOISE LEVELS AT ADJOINING PROPERTIES CLOSEST TO CIRCULATION ROUTE WITH INTERVENING TERRAIN AND WITHOUT BARRIER

Location		Elevation (ft)			Distance to Terrain High Point (ft)		L (dBA)	Receiver Noise L_{max} Including Reflection (dBA)
Source	Receiver	Source	Receiver	Terrain	Source	Receiver		
S4	R4	1,673	1,647	1,674	10	35	6.9	**57.1**
S5	R5	1,672	1,673	1,668	30	5	0	**68.38**

Notes: 650 Hz noise frequency at 4 feet above the ground used for all calculations. Truck speed assumed to be no more than 5 mph at all times. Detailed calculations in Attachment A.

As shown in **Table 6**, truck circulation noise levels at receiver location R5 would exceed the Town's nighttime standards shown **Table 1**.

To mitigate the noise levels due to truck circulation to below the Town's nighttime standards, a 6-foot-high solid barrier wall would be required along the north side of the Safeway store, as shown in **Figure 2**.

Table 7 shows the calculated L_{max} (including noise reflected off the store wall) due to truck circulation noise with the proposed barriers walls and terrain included in the model.

As shown in **Table 7**, with installation of a 6-foot-high solid barrier wall along the west side of the Safeway store (see **Figure 2**), noise levels would be reduced at the receiver locations to levels that would not exceed the Town of Paradise's standards, assuming trucks are limited to a maximum speed of 5 mph.

TABLE 7
TRUCK CIRCULATION NOISE LEVELS AT ADJOINING PROPERTIES CLOSEST TO CIRCULATION ROUTE WITH INTERVENING TERRAIN AND BARRIERS

Location		Elevation (ft)			Distance to Barrier (ft)		ΔL (dBA)	Receiver Noise L_{max} Including Reflection (dBA)
Source	Receiver	Source	Receiver	Barrier	Source	Receiver		
S4	R4	1,673	1,647	-	10	35	6.9	57.1
S5	R5	1,672	1,673	1,674	30	5	11.1	**60.86**

Notes: 650 Hz noise frequency at 4 feet above the ground used for all calculations. Truck speed assumed to be no more than 5 mph at all times. Detailed calculations in Attachment A.

REFERENCES

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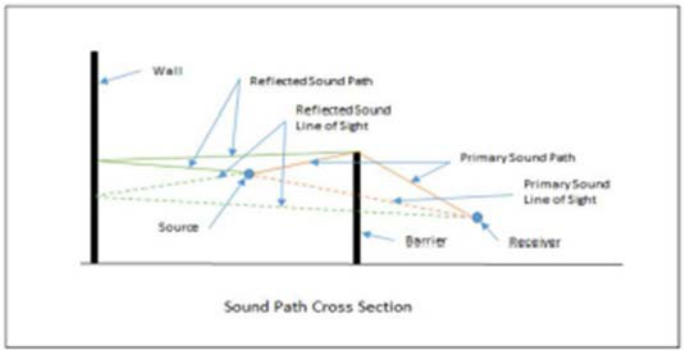
Attachment A: Barrier Insertion Loss Calculations

Black Olive Village Truck Circulation and Loading Dock Noise Analysis									
Location and Scenario	R1	R1 Barrier	R2	R2 Barrier	R3	R3 Barrier	R4	R5	R5 Barrier
Input									
Barrier Top Elevation (ft)	1668	1674	1668	1674	1668	1674	1668	1668	1674
Source Elevation (ft)	1672	1672	1672	1672	1672	1672	1672	1672	1672
Source to Barrier Horizontal Distance (ft)	30	30	30	30	15	15	10	30	30
Receiver Elevation (ft)	1647	1647	1647	1647	1648	1648	1647	1673	1673
Receiver to Barrier Horizontal Distance (ft)	35	35	85	85	35	35	35	5	5
Source to Reflection Wall Horizontal Distance (ft)							10	25	25
Frequency	1000	1000	1000	1000	1000	1000	650	650	650
Speed of Sound (ft/s)	1125	1125	1125	1125	1125	1125	1125	1125	1125
Reference Noise Level (dB)	80	80	80	80	80	80	64.6	64.6	64.6
Reference Noise Distance (ft)	50	50	50	50	50	50	50	50	50
Primary Sound Calculation									
Line of Sight Elevation at Barrier (ft)	1660.46	1660.46	1665.48	1665.48	1664.80	1664.80	1666.44	1672.86	1672.86
Effective Barrier Height (ft)	7.54	13.54	2.52	8.52	3.20	9.20	1.56	-4.86	1.14
Line of sight Distance (ft)	69.64	69.64	117.69	117.69	55.46	55.46	51.48	35.01	35.01
Source Path Distance (ft)	30.27	30.07	30.27	30.07	15.52	15.13	10.77	30.27	30.07
Receiver Path Distance (ft)	40.82	44.20	87.56	89.19	40.31	43.60	40.82	7.07	5.10
Sound Path Length (ft)	71.08	74.27	117.82	119.25	55.84	58.73	51.59	37.34	35.17
Path Difference (ft)	1.44	4.63	0.14	1.57	0.37	3.27	0.11	-2.32	0.15
Fresnel number N	2.56	8.23	0.24	2.78	0.66	5.82	0.13	-2.68	0.17
Kurze-Anderson Spherical Barrier Insertion Loss (dB)	17.07	22.14	8.28	17.43	11.50	20.63	6.94	0.00	7.55
Maekawa Spherical Barrier Insertion Loss (dB)	17.34	22.24	8.92	17.68	12.12	20.77	7.42	0.00	8.13
Predicted Barrier Insertion Loss (dB)	17.07	22.14	8.28	17.43	11.50	20.63	6.94	0.00	7.55
Reflected Sound Calculation									
Receiver to Wall Horizontal Distance (ft)							55	60	60
Reflected Line of Sight Elevation at Barrier (ft)							1660.46	1672.94	1672.94
Effective Barrier Height, Reflected Source (ft)							7.54	-4.94	1.06
Reflected Line of Sight Distance (ft)							69.64	85.01	85.01
Reflected Source to Barrier Path (ft)							30.27	80.10	80.02
Reflected Sound Path (ft)							71.08	87.17	85.12
Reflected Path Difference (ft)							1.44	-2.17	0.12
Fresnel number N							1.66	-2.50	0.14
Kurze-Anderson Spherical Barrier Insertion Loss (dB)							15.22	0.00	7.08
Maekawa Spherical Barrier Insertion Loss (dB)							15.60	0.00	7.58
Predicted Barrier Insertion Loss (dB)							15.22	0.00	7.08
Predicted Noise Level w/o Barrier									
Primary Noise at Receiver w/o Barrier (dB)	77.12	77.12	72.56	72.56	79.10	79.10	64.35	67.69	67.69
Reflected Noise at Receiver w/o Barrier (dB)							61.72	59.99	59.99
Total Noise at Receiver w/o Barrier (dB)							66.24	68.38	68.38
Predicted Noise Level with Barrier									
Primary Noise at Receiver with Barrier (dB)	59.87	54.43	64.27	55.02	67.54	57.97	57.39	67.69	60.10
Reflected Noise at Receiver with Barrier (dB)							46.32	59.99	52.90
Total Noise at Receiver with Barrier (dB)							57.71	68.38	60.86

Notes:
1. Kurze-Anderson formula used for N > 0
2. Maekawa formula used for -0.01 > N <= 0
3. Barrier Insertion Loss = 0 for N < -0.01
4. Wall assumed to have no sound absorbtion.
5. Ground surfaces assumed to be hard.
6. Model does not account for atmospheric effects.



Sound Path Cross Section

APPENDIX E – TRANSPORTATION IMPACT STUDY

TRANSPORTATION IMPACT STUDY

FOR

BLACK OLIVE VILLAGE

9/18/2017

PREPARED FOR:

TOWN OF PARADISE

PREPARED BY:

TRAFFIC WORKS, LLC
2240 St. George Lane, Suite 1, Chico, CA 95926
530.897.0199
www.Traffic-Works.com

YOUR QUESTIONS ANSWERED QUICKLY

Why did you perform this study?

This transportation impact study evaluates the potential project impacts on traffic flow, circulation, bicycle, pedestrian, and public transit travel associated with build-out of the Black Olive Village development. This study of transportation impacts was undertaken to determine the level of potential impacts that should be anticipated and what improvements or mitigations may be appropriate to reduce any potential impacts to a less-than-significant level.

What does the project consist of?

The proposed project consists of a 54,470 square foot Safeway grocery store, a Safeway gasoline station with 18 fueling positions with small convenience market, a 4,200 square foot restaurant, and 7,800 square feet of commercial/retail space. The project is located on Skyway opposite Black Olive Drive.

How much traffic will the project generate?

The project is estimated to generate approximately 5,162 net new daily trips, 242 net new AM peak hour trips, and 376 net new PM peak hour trips.

Are there any significant transportation impacts?

Under future 2040 conditions, adding the project traffic (2040 Cumulative Plus Project scenario) will result in the Skyway/Black Olive Drive and the Skyway/Elliott Road intersections operating at worse than Level of Service (LOS) "D" conditions during the PM peak hour, even with optimized signal timings. Based on Town of Paradise General Plan goals and policies, traffic operations worse than "D" are considered a significant impact.

Are there any other traffic concerns?

Under Existing Plus Project conditions, the northbound 95th percentile queue at the Skyway/Black Olive Drive intersection is anticipated to increase by approximately 700 feet and the northbound 95th percentile queue at the Skyway/Pearson Road intersection is anticipated to increase by about 300 feet, due to the project traffic. Under 2040 Cumulative Plus Project conditions, the PM peak hour 95th percentile northbound queue length at the Skyway/Elliott Road intersection is anticipated to exceed 2,300 feet, the PM peak hour 95th percentile northbound queue length at the Skyway/Black Olive Drive intersection is anticipated to be close to 2,000 feet, and the southbound 95th percentile queue length at the Skyway/Elliott Road intersection is anticipated to exceed 1,500 feet. The Skyway corridor will experience significant vehicle queuing during peak travel periods.

What mitigation measures are recommended?

- Skyway/Black Olive Drive Intersection – Improve the intersection by constructing exclusive left-turn pockets on both the Black Olive Drive approaches (project driveway approach and westbound approach). Change the signal phasing for side street left-turns from "permissive" to "protected" and re-optimize the signal timings for the Skyway corridor between Neal Road and Elliot Road. Protected left-turn phasing will be necessary at the project and opposing approaches due to sight distance limitations associated with at crest vertical curve on Black Olive Drive at the intersection. The additional of a left-turn lane on Black Olive Drive will require street widening with related drainage, sidewalk, and minor signal modification improvements, all of which are anticipated to be constructed within the existing right-of-way.

- Optimize the Skyway corridor signal timings and overall coordination scheme approximately one month after store opening and one year after store opening.

- Complete a continuous sidewalk on the west (project side) of Skyway from Pearson Road to Black Olive Drive.

- The project shall pay the Town required standard Transportation Impact Fees.

- The project will construct sidewalk along the project frontage and walking routes within the site.

- Bike parking/racks will be provided within the project site.

- The project will construct a bus stop on Skyway adjacent to the site.

Can the transportation impacts be mitigated to a less-than-significant level?

Mitigations have been considered and tested, but a solution has not been identified that would improve traffic operations to LOS "D" or better during 2040 Cumulative Plus Project scenario PM peak hour conditions at each study intersection, or significantly reduce extensive vehicle queuing in the corridor in the future. Therefore from a technical perspective, the traffic operations impact is significant and unavoidable.

However, it is important to recognize that the Town of Paradise values a safe, walkable, downtown business focused environment with on-street parking on the Skyway (generally from Black Olive Drive to Oliver Road) over traffic throughput. Accordingly, the Town Council acknowledged the Transportation and Safety Study for the Downtown Paradise Safety Project (December 2013) and adopted a resolution for the Plans, Specifications and Estimates for the subject project in May 2014. The Town intentionally implemented the Downtown Paradise Safety Project to provide pedestrian safety and local environment benefits. While the dated 1994 Town of Paradise General Plan Circulation Element policies have not been formally modified, the Town fully recognizes and accepts that vehicle queuing and slower travel speeds will occur on Skyway during peak commute times.

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INTRODUCTION

This report presents the technical analysis performed to assess potential impacts on the transportation system associated with the Black Olive Village project in Paradise, California. Vehicular circulation, traffic operations at intersections, vehicle queuing, bicycle facilities, pedestrian facilities, transit/public transportation, travel safety and a variety of other related factors are discussed to provide a review of all potential transportation impacts. The level of significance is presented for each impact area and mitigations are identified to reduce project impacts, where appropriate, to the extent feasible.

Black Olive Village is a proposed retail/commercial development consisting of the following land uses:

- 54,470 square foot Safeway grocery store
- Safeway fueling station with 18 Fueling Positions and a small convenience market
- 4,200 square foot restaurant
- 7,800 square feet of commercial/retail space

The project site currently has a zoning designation of Community Commercial (CC) per the Town of Paradise General Plan. The project site is currently underutilized, with only a few older residential units located on the subject property. The project location and study area are shown in **Figure 1** and the proposed site plan is shown in **Figure 2**.

EXISTING CONDITIONS

Existing Roadway Network

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

According to the California Road System (CRS) Maps published by Caltrans, Skyway is classified as a Principal Arterial. Butte County classifies Skyway as a Major Collector. Regardless of the technical classification, Skyway is the most heavily travelled roadway within the Town of Paradise and is the primary roadway through the commercial core. The Skyway corridor within the study area consists of three character zones that are each different and distinct from each other.

Skyway south of Pearson Road: Skyway within this segment has a five-lane cross-section with two travel lanes in each direction and a center turn lane. The speed limit changes from 50 mph south of Neal Road to 35 mph north of Neal Road. Land uses in this section are generally and mix of commercial and office fronting Skyway. There is no on-street parking. According to Butte County 2013/2014 traffic counts, this roadway segment carries approximately 23,230 vehicles per day.

Skyway between Pearson Road and Elliott Road: This segment through the downtown area has a three-lane cross-section with one lane in each direction and a center turn lane. There are multiple crosswalks and enhanced mid-block pedestrian crossings at select locations. Sidewalks are present on both sides of Skyway with widths varying from 5 feet to 8 feet. On-street parking exists on both sides of Skyway. Land uses in this segment are predominantly commercial/retail. The speed limit on Skyway is 30 mph in this section and the segment carries in excess of 20,000 vehicles per day on a three-lane cross-section. The Town maintains an optimized and highly coordinated signal system to manage the near capacity existing traffic volumes.

Skyway North of Elliott Road: The cross-section of Skyway north of Elliott Road transitions between a five-lane roadway including a two-way left turn lane and a four-lane undivided roadway. The land uses in this section are primarily commercial. There is no on-street parking and the speed limit is 30 to 35 mph in this segment.

Black Olive Drive: Black Olive Drive is a 25 mph two lane roadway with one lane in each direction. There are no continuous sidewalks or bicycle lanes on Black Olive Drive between Skyway and Pearson Road. A new west leg at the intersection of Skyway and Black Olive Drive is proposed as the main access for the project.

Pearson Road: Within the project study area, Pearson Road is a four lane roadway with two lanes in each direction. Pearson Road is a major east-west arterial within the Town of Paradise.

Elliott Road: Elliott Road is also a significant east-west connector roadway. It has a two-lane cross-section and a posted speed limit of 25 miles per hour.

Existing Transit Facilities

Butte Regional Transit operates the B-Line public transit service in Paradise, CA as shown in **Exhibit 1** via three fixed routes. Routes 41, 40, and 31 all operate in the study area. Route 41 is a regional route that runs between Magalia and Chico through Paradise. Route 40 is an express route that runs between Paradise and Chico during the school year. Route 40 and Route 41 both follow the same route from the transit station in downtown Paradise on Skyway to Chico. Route 31 is a regional service that runs between Paradise and Oroville, Monday through Friday.

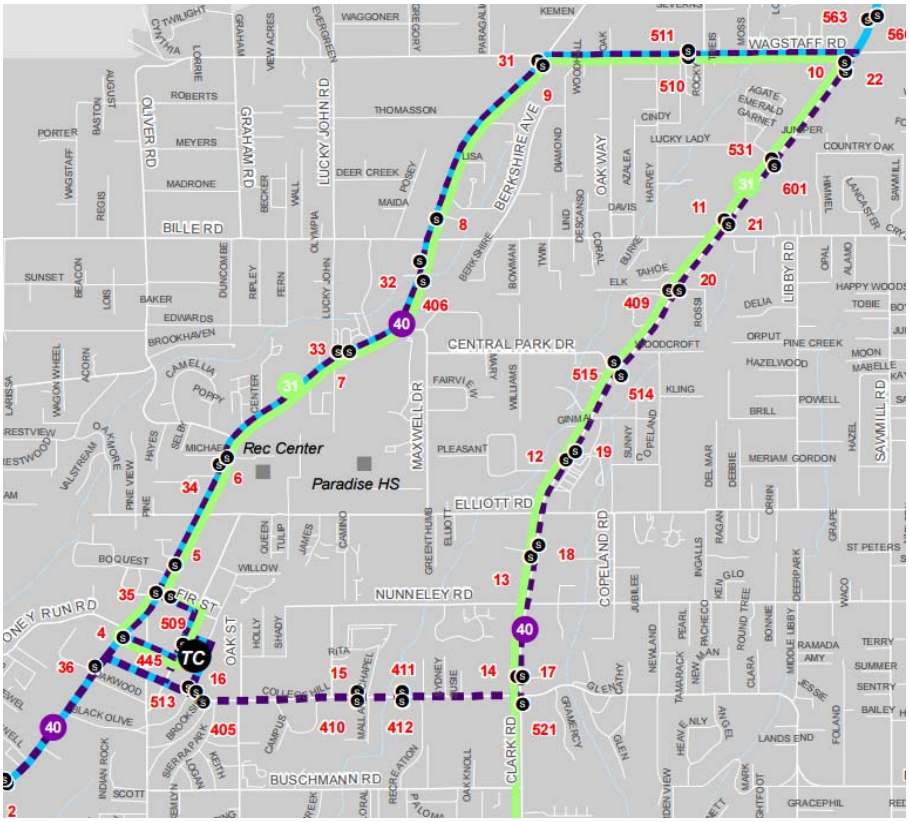


Exhibit 1. Existing Transit Routes

There are multiple existing bus stops along Skyway in the project vicinity. Bus stops are currently located on Skyway a few hundred feet south of Jewell Road, at Oakwood Lane, and at Birch Street. The project site is well served by public transit routes.

Existing Bicycle & Pedestrian Facilities

The Skyway corridor and project area currently have a mix of bicycle and pedestrian facilities.

Cycling on both Skyway south of Pearson Road and Pearson Road east of Skyway is currently very difficult to the high vehicular volumes and inadequate lane width to share the outside travel lane with passing vehicles. Bicycle lanes exist on Skyway north of Pearson Road and on Pearson Road east of Black Olive Drive. There are no bicycle lanes on Black Olive Drive between Skyway and Pearson Road. Overall, cycling to the project site is currently challenging and not a likely travel mode for the vast majority of Paradise residents.

There are discontinuous sidewalks on Skyway between Pearson Road and Neal Road (through the project frontage). In the downtown area (Pearson to Elliott), new sidewalks were constructed on Skyway with the Downtown Paradise Safety project with widths varying between 5 feet and 8 feet. Crosswalks across Skyway were also improved in the downtown area with that project.

Sidewalk exists on the north side of Pearson Road, on the north side of Elliott Road, and on both sides of Neal Road between Skyway and Circlewood Drive. No sidewalks exist on Black Olive Drive. Walking facilities in the immediate project vicinity could be generally characterized as "fair" to "poor" since there are no existing continuous sidewalk routes to the project site.

Existing Traffic Volumes

Existing traffic volumes were determined by conducting new video counts at the study intersections during the morning (7:00AM to 9:00AM) and evening (4:00PM to 6:00PM) peak periods. The counts were conducted on average mid-week days in March and April 2017 with local schools in regular session.

Baseline Traffic Volumes

A traffic signal will be constructed in 2017 or 2018 at the Skyway/Black Olive intersection prior to the Black Olive Village development project. The signal has already been funded under a Highway Safety Improvement Program (HSIP) project to improve the safety of left turn movements from Black Olive Drive and is completely unrelated to the proposed development.

With this improvement, some of the traffic travelling on Skyway south of Pearson Road is anticipated to re-route to the improved Skyway/Black Olive Drive intersection and utilize Black Olive Drive, changing localized travel patterns. In order to account for this re-routing of traffic, approximately 30% of the existing northbound right turn and westbound left turning traffic volumes at the Skyway/Pearson Road intersection were diverted from the Skyway/Pearson Road intersection to the same movements at the Skyway/Black Olive Road intersection.

Corresponding volume adjustments were made at the Pearson Road/Black Olive Drive and Black Olive Drive/Foster Road intersections. These modified traffic volumes were then used for the baseline analysis since the modified conditions will exist prior to the project. The baseline AM and PM peak hour intersection traffic volumes are shown in **Figure 3** and **Figure 4**, respectively.

Analysis Methodology

Level of service (LOS) is a term commonly used by transportation practitioners to measure and describe the operational characteristics of the roadway network (i.e. intersections, roadway segments, freeway facilities, etc). This term uses letter grades, "A" through "F", to represent the perspective of drivers with "A" representing optimum conditions (free-flow traffic with no congestion) and "F" representing severe congestion (stop-and-go conditions).

Signalized Intersection Operations

Chapter 16 of the Highway Capacity Manual (HCM) 2010 provides level of service methodology for analysis of signalized intersections. The level of service for signalized intersections is based on the average control delay measured in seconds per vehicle for the overall intersection, and is determined using the delay thresholds shown in **Table 1**.

Unsignalized Intersection Operations

Similarly, the analysis methodology for unsignalized (all-way stop controlled and side street stop controlled) intersections is provided in Chapter 17 of the HCM 2010.

Table 1: Level of Service Definition for Intersections

Level of Service	Brief Description	Average Delay (seconds per vehicle)	
		Signalized Intersections	Unsignalized Intersections
A	Free flow conditions.	< 10	< 10
B	Stable conditions with some affect from other vehicles.	10 to 20	10 to 15
C	Stable conditions with significant affect from other vehicles.	20 to 35	15 to 25
D	High density traffic conditions still with stable flow.	35 to 55	25 to 35
E	At or near capacity flows.	55 to 80	35 to 50
F	Over capacity conditions.	> 80	> 50

Source: Highway Capacity Manual (2010), Chapters 16 and 17

The level of service for all-way stop controlled intersections is based on the average control delay in seconds per vehicle for the overall intersection. For side street stop controlled intersections, the level of service is determined based on the average control delay in seconds per vehicle for the worst approach/movement. **Table 1** also shows the delay thresholds and corresponding levels of service for unsignalized intersections. As shown in the table, the delay ranges for unsignalized intersections are less than for signalized intersections, as drivers expect less delay at unsignalized intersections.

Level of Service calculations were performed at the study intersections using SimTraffic micro-simulation software. Micro-simulation was used to determine LOS instead of Synchro/HCM calculation software as the study intersections on Skyway are closely spaced, tightly coordinated, and known to be congested with significant existing queuing. The basic HCM analysis techniques do not properly assess the interaction impacts of closely spaced signals and significant queuing interactions. Hence, for a complex and congested corridor such as Skyway, a dynamic micro-simulation model (SimTraffic) provides more realistic and accurate results compared to static models using only HCM methods. A SimTraffic micro simulation analysis combined with progression analysis (Synchro signal timing optimization), it is necessary to accurately analyze these study are conditions.

A detailed micro-simulation analysis was performed in order to determine the intersection LOS and 95th percentile queue lengths. Simulations were run for 60 minute periods with a 10 minute seeding time. The average of five different 60-minute simulation runs was used to report delays and queue lengths at the study intersections. Averaging multiple simulation runs accounts for variations in traffic and minimizes anomalies in the simulations.

Level of Service Policy

Based on the Town of Paradise General Plan (1994), Policy CP-1, the Town strives to maintain Level of Service "D" or better for all new and existing roadways. The policy is understood to apply to intersection operations as there is no separate discussion of intersections. The transition point between LOS "D" and LOS "E" was therefore used as the criteria and threshold for determining significant operational impacts. Additional threshold criteria are discussed later in this report.

Baseline Traffic Operations

Baseline Intersection Level of Service

Level of service calculations were performed using the baseline traffic volumes and lane configurations. A traffic signal will be installed at the Skyway/Black Olive Drive intersection in the summer/fall of 2017, therefore this intersection was analyzed with signal control and the planned

lane and phasing configurations. The LOS summary is presented in **Table 2.** Detailed calculation sheets are provided in **Appendix A**, attached.

Table 2: Baseline Level of Service Summary

Intersection	Control	Baseline			
		AM Peak Hour		PM Peak Hour	
		LOS	Delay	LOS	Delay
Skyway/Neal Rd	Signal	B	17.6	C	34.9
Skyway/Black Olive Dr	Signal	B	10.5	B	16.6
Skyway/Pearson	Signal	B	17.8	C	23.0
Skyway/Elliott Rd	Signal	C	27.5	C	24.0
Black Olive Dr/Foster Rd	Side Street STOP	A	6.4	A	7.7
Pearson Rd/Black Olive Dr	Signal	B	11.1	B	13.1

Delay is reported in seconds/vehicle for the overall intersection at signalized and All-Way STOP locations and for the worst approach or movement at side-street STOP controlled locations.

As shown in **Table 2**, all the study intersections are projected to operate at acceptable LOS conditions under Baseline conditions.

Baseline Queuing

While the Town of Paradise does not have an established threshold for vehicle queuing, this operational factor is important to consider in the overall decision making process. Some cities/local agencies have adopted guidelines that essential state vehicle queue lengths should not exceed the available storage pocket lengths for exclusive left and right-turn lanes or extend through the next adjacent intersection for through movements.

For the purposes of this study, since there is no Town defined queuing policy, 95th percentile queue lengths are simply stated for consideration. The 95th percentile queue is the maximum back of queue with 95th percentile traffic volumes. In other words, the 95th-percentile queue is the queue length that has only a 5-percent probability of being exceeded during the analysis time period.

Notable queuing, as exists today, will occur in the northbound direction (Skyway through movement) during the PM peak hour at the Skyway/Neal Road and Skyway/Pearson Road intersections. The 95th percentile northbound queue length at the Skyway/Neal Road intersection may exceed 450 feet and the northbound queue at the Skyway/Pearson Road intersection will likely extend to approximately 700 feet under baseline conditions.

Note that the baseline queue lengths will be somewhat different than existing queues because of corridor-wide signal coordination changes that will be implemented with installation of a

traffic signal at the Skyway/Black Olive intersection. The baseline condition 95th percentile queue length summary is presented in **Table 3**.

Table 3: Baseline Queuing Summary

Intersection (95% Queue in Feet)	Distance to nearest Upstream Intersection (feet)	Baseline	
		AM Peak	PM Peak
Skyway/Neal Rd			
NB	1,100	184	491
SB	675	197	315
EB	170	37	149
WB	235	139	104
Skyway/Black Olive Dr			
NB	880	50	136
SB	575	193	129
WB	935	307	204
Skyway/Pearson			
NB	350	71	723
SB	325	326	300
WB	575	220	180
Skyway/Elliott Rd			
NB	925	192	206
SB	530	480	272
EB	850	109	85
WB	525	330	332
Black Olive Dr/Foster Rd			
EB	935	67	89
WB	790	78	86
Pearson Rd/Black Olive Dr			
NB	790	114	113
SB	325	61	68
EB	290	91	217
WB	350	104	108

THRESHOLDS OF SIGNIFICANCE

The CEQA *Appendix G Environmental Checklist Form*, excerpts below, was used to develop significance criteria for determining potential transportation impacts. The checklist specifically asks the following questions, but is also clear that other questions may be pertinent in special cases and should be considered based on local or regional policies or other special factors defined during the study.

The standard CEQA questions are, would the project:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
- Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?
- Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?
- Result in inadequate emergency access?
- Conflict with adopted policies, plans, programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

After a thorough review of Town of Paradise General Plan Circulation Element Policies and Butte County's Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS) Policies, it was determined the standard CEQA questions are consistent with the goals and policies of the local and regional plans. The questions above, and identified specific local/regional policies, were utilized to develop the thresholds of significance by which impact levels were compared through the remainder of this study. The specific criteria and thresholds by which the proposed project is to be evaluated are as follows:

Question 1: Will the project result in an impact on intersections, roadway segments, highways, or freeway facilities?

The specific Town policies for this topic area are:

> Policy CP-1 "The town shall strive to maintain a level of service (LOS) "D" or better as the standard for new and existing roadways in the Paradise planning area. LOS 'D' or better should be maintained on all local streets within the town limits, and LOS "C" or better should be maintained whenever feasible."
>
> Policy CP-4 "New land use development shall be required to mitigate its share of the circulation impacts it creates."

Policy CP-7 “The feasibility of synchronization of new traffic signals to improve traffic flow shall be investigated.”

Policy CP-17 “Whenever the LOS "D" is reached on roadways within Paradise, the town shall explore all feasible alternatives for improving traffic flow, rather than automatically implementing a road widening project.”

Additional related RTP/SCS policies are:

Policy 13.2.2. “Manage the efficiency of the transportation system to improve traffic flow.”

Policy 13.3.2. “Work towards reducing bottlenecks and increase safety by improving operations.”

Question 2: Will the project result in an impact on transit facilities?

The specific Town policies for this topic area are:

Policy CP-14 “As staff and funding become available, expanded transit services for seniors and the handicapped should be promoted in accordance with the results of future studies.”

Policy CP-15 “Expand public transportation services within Paradise and between Paradise and major employment centers as feasible, based on service demand and financial constraints.”

Policy CP-19 “As staff and resources become available, the town should strive to increase the transit opportunities for children and senior citizens in the community.”

Question 3: Will the project result in an impact on bicycle or pedestrian facilities?

The specific Town policies for this topic area are:

Policy CP-10 “Safe paths for pedestrians, equestrians and bicyclists should be provided, particularly for school children and the elderly. A sidewalk and pathway development program should be instituted for selected locations and where feasible should link with the Paradise Memorial Trailway.”

Additional related RTP/SCS policies are:

Policy 6.1.1. "Support the construction of bike facilities and access to transit as designated in the local alternative transportation plans."

Policy 6.1.3. "Support projects and policies for bicycles on the fixed route transit system (bike racks, etc.)."

Policy 10.3.1. "Assist member jurisdictions in developing and implementing strategies and design criteria that make new commercial and residential developments friendly to pedestrians and bicyclists."

Policy 13.1.2. "Provide convenient travel choices including transit, driving, ridesharing, walking, and biking."

Policy 13.1.4. "Increase the use of transit, ridesharing, walking and biking in major corridors and communities."

Question 4: Will the project conflict with adopted parking standards?

Question 5: Will the project result in an impact related to air traffic patterns?

Question 6: Will the project substantially increase hazards due to a design feature or incompatible uses?

Question 7: Will the project result in inadequate emergency access?

Question 8: Will the project result in a temporary impact to the existing transportation system due to construction traffic?

Question 9: Will the project conflict with adopted policies regarding Vehicle Miles Travelled (VMT)?

The specific Town policies for this topic area are:

Policy CP-13 "Automobile dependency within Paradise should be reduced for local residents and visitors by implementing congestion management and trip reduction plan program that decrease the number of vehicle miles travelled which, in turn, reduces air pollution and congestion and saves energy."

Additional related RTP/SCS policies are:

Policy 14.2.2. "Work towards reducing greenhouse gas emissions from vehicles and continue to improve air quality in the region."

PROJECT ANALYSIS

Project Description & Access Plan

Black Olive Village is a proposed retail/commercial development consisting of the following land uses:

- 54,470 square foot Safeway grocery store
- Safeway fueling station with 18 Fueling Positions and a small convenience market
- 4,200 square foot restaurant
- 7,800 square feet of commercial/retail space

The project site is located on the west side of Skyway at Udovich Lane, opposite Black Olive Drive. Udovich Lane will be improved and reconfigured to be the main project access point. The Skyway/Black Olive Drive/Udovich Lane intersection will be signalized prior to and separate from the proposed project. The project proposes to perform minor signal modifications and construct an exclusive left-turn lanes on both the Udovich Lane and Black Olive Drive approaches, including roadway widening and related improvements on Black Olive Drive so that protected left-turn phasing can be implemented in the east/west directions. Protected left-turn phasing is necessary on the Black Olive Drive/Udovich Lane approaches due to the limited sight lines that exist because of crest and sag vertical curves on Black Olive Drive and the safety issues that would be created without these improvements. In short, drivers on the east/west approaches would not be able to safely make left-turn movements under permissive phasing because on-coming vehicles would not be visible to drivers seeking gaps in oncoming traffic.

A second access point is proposed on Skyway at the north property boundary. This driveway is proposed as a STOP controlled side-street approach. The left-out movement will be prohibited due to safety concerns of left-turning conflicts with the significant through traffic volumes on Skyway. All other movements will be permitted to/from the secondary driveway.

Additionally, related to transportation, the project proposes to:

- Construct sidewalk along the project frontage and walking routes within the site
- Provide bike parking/racks within the project site
- Construct a new bus stop on Skyway adjacent to the site
- Pay the Town required standard Transportation Impact Fees

Photo 1: View looking east at Black Olive Drive from Udovich Lane

Trip Generation

Trip generation rates for each land use (except the Safeway fuel station) of the proposed project were obtained from the Trip Generation Manual, 9th Edition, published by the Institute of Transportation Engineers.

Considering the unique trip generation nature of a Safeway fuel station and the linked trips that occur with the Safeway store, Safeway Gas Station specific trip generation rates and linking characteristics were used for this land use. The proposed Safeway Gas Station, although open to the general public, offers fuel discounts and incentives for Safeway grocery store shoppers. Considering these incentives, the majority of Safeway Gas Station trips are not stand-alone trips, they are linked trips, where the stop at the gas station is combined or "linked" with a stop at the Safeway Grocery Store. Hence a Safeway Gas Station specific study "*Trip Generation Analysis for the Safeway Fuel Center Otis Drive I South Shore Shopping Center - Alameda, CA*" dated October 19, 2005 by Fehr & Peers was used to estimate the PM peak hour fuel station trips. Daily and AM

peak hour rates were obtained from the ITE manual, but the percentage of linked trips was obtained from the Safeway specific study. These rates take into account the linked trips with a typical Safeway Grocery Store, other general public pass-by trips, and net new trips.

Table 4 provides the Daily, AM Peak Hour, and PM Peak Hour trip generation calculations for the proposed project. As shown in **Table 4**, the proposed project is estimated to generate up to a total of 9,470 daily trips, 420 AM peak hour trips, and 935 PM peak hour trips. These numbers include internal trips (between internal uses), linked trips, and pass-by trips (those already on the adjacent roadway system that make an intermediate stop enroute to another destination). The trip rates used for trip generation are shown in **Appendix B**, attached.

Internal trip capture can be defined as a reduction of trips within a development having a mix of land uses, resulting from the proximity of complementary land uses within the development. Procedures outlined in NCHRP report 684, titled "Enhancing Internal Trip Capture Estimation for Mixed-Use Developments" were used to calculate internal trips, which is ITE recommended and an industry standard procedure.

Pass-by trips are made by drivers already using the adjacent roadway, which enter the site as an intermediate stop on the way to another destination. The trip may not necessarily be "generated" by the land use under study, and thus, is not a new trip added to the local transportation system. These trips only appear at the project driveways. Pass-by trip percentages specified in the ITE Trip Generation Handbook were used to estimate the pass-by rates for uses within this project.

Internal trips, Pass-by trips, and Safeway Linked trips were all subtracted from the total trips to obtain the External or Net New Trips. After accounting for internal, linked, and pass-by trips, the project is estimated to generate up to 5,162 net new daily trips, 242 net new AM peak hour trips, and 376 net new PM peak hour trips. These are the volumes of traffic that would be added to the adjacent roadway network.

It should be noted that since the Safeway is being relocated from its current location on Clark Road, some of the trips to this development on Skyway will be redistributed/relocated trips from the existing Safeway location on Clark Road. However, in order to provide a conservative analysis, no trips associated with the existing store were deducted/rerouted from the study intersections. Since the existing building will remain, it must be assumed that another business would utilize that space and have similar trip generating characteristics.

Table 4: Trip Generation Summary

Land Use	Size	Weekday			PM Peak Hour			AM Peak Hour		
		Total	Entry	Exit	Total	Entry	Exit	Total	Entry	Exit
Supermarket	54,470 Sq. Feet Gross Floor Area	5,569	2,785	2,784	516	263	253	185	115	70
Reduction		0	0	0	0	0	0	0	0	0
Internal		290	73	217	14	7	7	12	3	9
Pass-by		977	487	490	181	92	89	0	0	0
Non-pass-by		4,302	2,225	2,077	321	164	157	173	112	61
Shopping Center/Retail	7,800 Sq. Feet Gross Leasable Area	333	167	166	29	14	15	7	4	3
Reduction		0	0	0	0	0	0	0	0	0
Internal		64	42	22	11	7	4	0	0	0
Pass-by		86	36	50	15	6	9	0	0	0
Non-pass-by		183	89	94	3	1	2	7	4	3
High-Turnover (Sit-Down) Restaurant	4,200 Sq. Feet Gross Floor Area	534	267	267	41	25	16	45	25	20
Reduction		0	0	0	0	0	0	0	0	0
Internal		244	107	137	25	11	14	12	9	3
Pass-by		40	32	8	7	6	1	0	0	0
Non-pass-by		250	128	122	9	8	1	33	16	17
Safeway Gasoline Station	18 Vehicle Fueling Positions	3,034	1,517	1,517	349	175	174	183	92	91
Safeway Linked Trips		913	592	321	136	68	68	39	36	3
Internal		0	0	0	0	0	0	0	0	0
Pass-by		1,694	744	950	170	86	84	115	45	70
Non-pass-by		427	181	246	43	21	22	29	11	18
Total Trips		9,470	4,736	4,734	935	477	458	420	236	184
Safeway Fuel Station Linked Trips		913	592	321	136	68	68	39	36	3
Total Internal Trips		598	222	376	50	25	25	24	12	12
Total Pass-By trips		2,797	1,299	1,498	373	190	183	115	45	70
Total External Trips		**5,162**	**2,623**	**2,539**	**376**	**194**	**182**	**242**	**143**	**99**

Trip Distribution

Traffic generated by the project was distributed to the road network based on the location of the project in relation to the population base, major activity centers, and the roadway network. The vast majority of the local Paradise/Magalia population is physically located north and east of the project site.

The following trip distribution percentages were used for routing the project traffic:

- 5% to/from the south on Skyway
- 5% to/from the south on Neal Road
- 10% to/from the south on Foster Drive via Black Olive Drive
- 30% to/from the east on Pearson Road
- 5% to/from the west on Elliott Road
- 25% to/from the east on Elliott Road
- 20% to/from the north on Skyway (north of Elliott Road)

Project generated trips were assigned to the adjacent roadway system and intersections based on the distributions outlined above. The project trip assignments for the AM and PM peak hours are shown in **Figure 5** and **Figure 6**, respectively.

Vehicle Miles Travelled (VMT) Estimation

With adoption of and implementation of California Senate Bill 743, Vehicle Miles Travelled (VMT) is an important consideration and a key metric of vehicular travel contributions to Green House Gas (GHG) emissions and energy consumption. VMT is typically expressed in miles per day and can simplistically be calculated by multiplying the number of daily project generated trips by the anticipated trip length. The average Home-Based Other trip length in Paradise (3.57 miles) was obtained from the BCAG Travel Demand Model. The projected VMT is estimated differently for external trips and pass-by trips considering the difference in their travel patterns and trip lengths. A trip length of 0.1 miles was estimated for pass-by trips since they would nearly all originate on, and return to, Skyway immediately adjacent to the project site.

Table 5: Project Generated Vehicle Miles Travelled

Number of Trips	Type of Trips	Average Trip Length	Daily VMT
5,162	External	3.57	18,428
2,797	Pass-By	0.1	280
Total			18,708

As shown in **Table 5**, the proposed project is anticipated to cause an increase in VMT of 18,708 miles per day. Neither Butte County nor the Town of Paradise currently have any specific thresholds or significance criteria related to VMT at this time. Both agencies have general goals of reducing VMT and Green House Gas emissions.

BASELINE PLUS PROJECT CONDITIONS

Baseline Plus Project Traffic Volumes

Baseline Plus Project traffic volumes were developed by adding the project generated trips to the Baseline traffic volumes and are shown in **Figure 7** and **Figure 8**, attached.

Baseline Plus Project Intersection Level of Service

Baseline Plus Project level of service was calculated using the Baseline Plus Project traffic volumes and the existing traffic signal timings/coordination scheme except that re-optimized signal timings were utilized for the proposed signal configuration and protected left-turn phasing at the Skyway/Black Olive intersection. **Table 6** summarizes the Baseline Plus Project conditions LOS. Detailed calculation sheets are provided in **Appendix C**, attached. As shown in **Table 6**, all the study intersections are anticipated to operate at acceptable LOS conditions. Operations at the Skyway Black Olive are anticipated to degrade from LOS "B" to LOS "D" during the PM peak hour with the addition of project traffic and change to east/west protected left-turn phasing.

The change in travel patterns due to a new signal at the Skyway/Black Olive Drive intersection will result in higher traffic volumes on Black Olive Drive between Skyway and Pearson Road. In order to better manage the change in travel patterns, STOP sign orientation at the Black Olive Drive/Foster Road intersection could be changed to have vehicles on Foster Drive stop for vehicles on Black Olive Drive. However, the current configuration with STOP signs on Black Olive Drive presents a conservative and worse-case analysis, under which the intersection is anticipated to operate at acceptable LOS. If the STOP sign orientation were to be changed in the future, the Black Olive Drive/Foster Road intersection would operate at acceptable LOS and better than the conditions reported in this study.

Baseline Plus Project Queuing

The Baseline Plus Project conditions queuing summary is provided in **Table 7.** With the addition of project traffic, the Skyway/Black Olive Drive and Skyway/Pearson Road intersections are anticipated to experience heavy northbound queuing during the PM peak hour.

Table 6: Baseline Plus Project Level of Service Summary

Intersection	Control	AM Peak		PM Peak	
		LOS	Delay	LOS	Delay
Skyway/Neal Rd	Signal	B	18.1	C	33.5
Skyway/Black Olive Dr	Signal	B	18.1	D	41.2
Skyway/Driveway	Side Street STOP	B	10.6	A	9.6
Skyway/Pearson	Signal	B	18.7	C	29.2
Skyway/Elliott Rd	Signal	C	32.9	C	29.4
Black Olive Dr/Foster Rd	Side Street STOP	A	7.7	A	7.9
Pearson Rd/Black Olive Dr	Signal	B	11.1	B	15.6

Delay is reported in seconds/vehicle for the overall intersection at signalized and All-Way STOP locations and for the worst approach or movement at side-street STOP controlled locations.

Compared to Baseline conditions, the northbound 95th percentile queue at the Skyway/Black Olive Drive intersection is anticipated to increase by approximately 700 feet and the northbound 95th percentile queue at the Skyway/Pearson Road intersection is anticipated to increase by approximately 300 feet. The northbound queue on Skyway at Pearson Road can be expected to extend back to Black Olive Drive during the PM peak hour. Similarly, a northbound queue of approximately 800 feet should be anticipated extending back from Black Olive Drive.

Table 7: Baseline Plus Project Queuing Summary

Intersection (95% Queue in Feet)	Distance to nearest Upstream Intersection (feet)	Baseline Plus Prj	
		AM Peak	PM Peak
Skyway/Neal Rd			
NB	1,100	197	499
SB	675	221	273
EB	170	42	141
WB	235	142	119
Skyway/Black Olive Dr			
NB	880	67	843
SB	575	311	220
WB	935	217	160
EB	NA	130	303
Skyway/Driveway			
EB	NA	49	50
Skyway/Pearson			
NB	350	135	1,036
SB	325	369	271
WB	575	220	220
Skyway/Elliott Rd			
NB	925	202	295
SB	530	563	402
EB	850	115	81
WB	525	388	379
Black Olive Dr/Foster Rd			
EB	935	68	108
WB	790	87	99
Pearson Rd/Black Olive Dr			
NB	790	97	134
SB	325	59	68
EB	290	108	253
WB	350	117	123

Recommended Mitigations

Since each of the study intersections is projected to operate at an acceptable level of service, no significant level of service impacts were identified. However, vehicle queuing will be considerable with long queues forming on Skyway, particularly during the PM peak hour between Pearson Road and south of Black Olive Drive.

To manage the anticipated traffic flows and minimize queuing, the project should:

- Improve the Skyway/Black Olive Drive intersection by constructing exclusive left-turn pockets on both the Black Olive Drive approaches (project driveway approach and westbound approach). Change the signal phasing for side street left-turns from “permissive” to “protected” and re-optimize the signal timings for the Skyway corridor between Neal Road and Elliott Road. Protected left-turn phasing will be necessary at the

project and opposing approaches due to sight distance limitations associated with at crest vertical curve on Black Olive Drive at the intersection. The additional of a left-turn lane on Black Olive Drive will require street widening with related drainage, sidewalk, and minor signal modification improvements, all of which are anticipated to be constructed within the existing right-of-way.

- Optimize the Skyway corridor signal timings and overall coordination scheme approximately one month after store opening and one year after store opening.
- Pay the Town required standard Transportation Impact Fees.

2040 CUMULATIVE CONDITIONS

2040 Cumulative Traffic Volumes

Traffic volumes in the study area are anticipated to increase in the future as more development occurs in the region. Traffic growth rates were obtained from the Butte County Association of Government's travel demand forecasting model. Growth rates were calculated based on the traffic volume increases at multiple points along Skyway and at other side street approaches. The growth rate calculations are shown in **Table 8**. In general terms, multipliers of 1.14 to 1.29 (14% to 29% increases in traffic over a period of 23 years) were applied to the study intersections. Future turning movements were developed by applying the growth rates by approach and balancing entry and departure volumes through the study area using the Turns W32 software.

Table 8: Growth Rate Calculations

Location -->	SKYWAY	SKYWAY	SKYWAY	SKYWAY	SKYWAY	SKYWAY	SKYWAY	SKYWAY	ELLIOT RD	ELLIOT RD	PEARSON RD	BLACK OLIVE DR	NEAL RD
	N of ELLIOT	S of ELLIOT	N of PEARSON	S of PEARSON	N of BLACK OLIVE	S of BLACK OLIVE	N of NEAL	S of NEAL	E OF SKYWAY	W OF SKYWAY	E OF SKYWAY	E OF SKYWAY	E OF SKYWAY
2020 Forecast	23,639	20,304	18,399	28,278	24,915	26,698	25,616	25,568	8,136	523	9,914	1,784	3,584
2040 Forecast	26,977	22,843	21,325	33,243	29,826	29,968	32,774	31,360	9,963	558	11,951	143	2,849
Model Difference 2040-2020	3,338	2,539	2,926	4,965	4,911	3,270	7,158	5,792	1,827	35	2,037	-1,641	-735
20 Years % Change	14%	13%	16%	18%	20%	12%	28%	23%	22%	7%	21%	-92%	-21%
% per year	0.7%	0.6%	0.8%	0.9%	1.0%	0.6%	1.4%	1.1%	1.1%	0.3%	1.0%	-4.6%	-1.0%
23 years growth factor (2040-2017)	**1.16**	1.14	1.18	1.20	1.23	1.14	1.32	**1.26**	**1.26**	**1.08**	**1.24**	-0.06	0.76
		1.16		**1.21**		**1.23**						**1.14**	**1.29**

The 2040 Cumulative AM and PM peak hour traffic volumes are shown in **Figure 9** and **Figure 10**, respectively.

2040 Cumulative Conditions Intersection Level of Service

Similar to Baseline conditions, 2040 Cumulative condition level of service calculations were performed using an average of five SimTraffic micro-simulation runs. The signal timings and coordination offsets for all study signals on Skyway were re-optimized for 2040 Cumulative condition traffic volumes as this is a necessary maintenance function over time and would be

completed by the Town regardless of the proposed project. **Table 9** summarizes the 2040 Cumulative condition intersection levels of service. Detailed calculation sheets are provided in **Appendix D**, attached.

Table 9: 2040 Cumulative Conditions Level of Service Summary

Intersection	Control	2040 Cumulative			
		AM Peak		PM Peak	
		LOS	Delay	LOS	Delay
Skyway/Neal Rd	Signal	C	20.5	D	44.9
Skyway/Black Olive Dr	Signal	B	11.7	C	21.2
Skyway/Pearson	Signal	C	21.5	C	25.8
Skyway/Elliott Rd	Signal	D	38.3	D	39.6
Black Olive Dr/Foster Rd	Side Street STOP	A	7.9	A	8.9
Pearson Rd/Black Olive Dr	Signal	B	12.7	B	20.0

Delay is reported in seconds/vehicle for the overall intersection at signalized and All-Way STOP locations and for the worst approach or movement at side-street STOP controlled locations.

As shown in **Table 9**, all the study intersections are anticipated to operate at acceptable LOS conditions in the 2040 Cumulative Conditions scenario with optimized and coordinated signal timings. It should be noted that both the Neal Road and Elliott Road intersections with Skyway are in the middle of the LOS "D" range in this future background condition.

2040 Cumulative Conditions Queuing

Table 10 presents the 2040 Cumulative conditions queuing summary based on the future traffic volumes and intersection conditions outlined above using average values of five simulation runs.

As shown in **Table 10**, the Skyway/Neal Road, Skyway/Pearson Road, and Skyway/Elliott Road intersections will all experience extensive northbound queuing during the future PM peak hour. The Skyway/Pearson Road, and Skyway/Elliott Road intersections should also be expected to experience extensive queuing in the southbound direction during the AM peak hour.

Table 10: 2040 Cumulative Conditions Queuing Summary

Intersection (95% Queue in Feet)	Distance to nearest Upstream Intersection (feet)	2040 Cumulative	
		AM Peak	PM Peak
Skyway/Neal Rd			
NB	1,100	258	759
SB	675	247	329
EB	170	33	275
WB	235	175	132
Skyway/Black Olive Dr			
NB	880	91	354
SB	575	270	111
WB	935	224	228
EB	NA	NA	NA
Skyway/Driveway			
EB	NA	NA	NA
Skyway/Pearson			
NB	350	287	825
SB	325	519	587
WB	575	227	250
Skyway/Elliott Rd			
NB	925	214	1,250
SB	530	1,254	454
EB	850	101	88
WB	525	290	385
Black Olive Dr/Foster Rd			
EB	935	77	103
WB	790	91	105
Pearson Rd/Black Olive Dr			
NB	790	131	164
SB	325	66	99
EB	290	140	335
WB	350	123	152

2040 Cumulative Plus Project Conditions Intersection Level of Service

2040 Cumulative Plus Project traffic volumes were developed by adding the project generated trips to the 2040 Cumulative conditions traffic volumes and are shown in **Figure 11** and **Figure 12**, attached. 2040 Cumulative Plus Project level of service was estimated using 2040 Cumulative Plus Project traffic volumes, optimized signal timings and coordination throughout, and the proposed Skyway/Black Olive Drive intersection configuration with exclusive east/west left-turn lanes and protected left-turn phasing. **Table 11** summarizes the 2040 Cumulative Plus Project conditions levels of service. Detailed calculation sheets are provided in **Appendix E**, attached.

As shown in **Table 11**, under the 2040 Cumulative Plus Project conditions, all the study intersections are anticipated to operate at acceptable levels of service except for the Skyway/Black Olive Drive and Skyway/Elliott Road intersections. The Skyway/Black Olive Drive

intersection is anticipated to deteriorate to LOS "E" with the project generated traffic during PM peak hour conditions. The Skyway/Elliott Road intersection is also anticipated to degrade to LOS "E" with the addition of project traffic in 2040 study year.

Table 11: 2040 Cumulative Plus Project Conditions Level of Service Summary

Intersection	Control	2040 Cumulative Plus Project			
		AM Peak		PM Peak	
		LOS	Delay	LOS	Delay
Skyway/Neal Rd	Signal	C	22.7	D	41.0
Skyway/Black Olive Dr	Signal	B	18.6	**E**	70.2
Skyway/Driveway	Side Street STOP	C	22.0	A	8.8
Skyway/Pearson	Signal	B	19.9	C	31.4
Skyway/Elliott Rd	Signal	D	45.5	**E**	79.8
Black Olive Dr/Foster Rd	Side Street STOP	A	8.2	A	8.9
Pearson Rd/Black Olive Dr	Signal	B	12.9	C	20.3

Delay is reported in seconds/vehicle for the overall intersection at signalized and All-Way STOP locations and for the worst approach or movement at side-street STOP controlled locations.

It should be noted that the signal phasing and coordination offsets must be adjusted between the various study scenarios to obtain optimal traffic operations overall. With the extensive queuing and "at-capacity" conditions anticipated in the 2040 Cumulative Plus Project Conditions, subtle changes in signal timing and coordination can move the delay and queuing between different locations but the overall level of congestion remains. After completing numerous simulation runs with differing signal timings, it was determined a level of service impact is inevitable with the added project traffic in the 2040 future conditions.

The addition of project traffic will result in the Skyway/Black Olive Drive and Skyway/Elliott Road intersections operating at worse than LOS "D" conditions in the 2040 horizon year, therefore the project creates a significant impact.

2040 Cumulative Plus Project Conditions Queuing

As shown in **Table 12**, the 95th percentile queue lengths are anticipated to increase significantly due to the addition of project traffic in the 2040 Cumulative Plus Project conditions scenario. The Skyway corridor traffic volumes can be expected to effectively reach capacity in this scenario. The northbound 95th percentile queue lengths during the PM peak hour at the Skyway/Black Olive Drive and Skyway/Elliott Road intersections are anticipated to increase by more than 1,000 feet with the addition of project traffic.

Table 12: 2040 Cumulative Plus Project Queuing Summary

Intersection (95% Queue in Feet)	Distance to nearest Upstream Intersection (feet)	2040 Cumulative Plus Project	
		AM Peak	PM Peak
Skyway/Neal Rd			
NB	1,100	289	632
SB	675	262	407
EB	170	46	239
WB	235	172	145
Skyway/Black Olive Dr			
NB	880	211	1,986
SB	575	406	220
WB	935	202	200
EB	NA	120	356
Skyway/Driveway			
EB	NA	53	55
Skyway/Pearson			
NB	350	141	986
SB	325	374	537
WB	575	256	312
Skyway/Elliott Rd			
NB	925	136	2,344
SB	530	1,529	597
EB	850	99	95
WB	525	444	524
Black Olive Dr/Foster Rd			
EB	935	92	112
WB	790	93	120
Pearson Rd/Black Olive Dr			
NB	790	149	163
SB	325	69	83
EB	290	148	348
WB	350	131	171

With the addition of the project traffic, the PM peak hour 95th percentile northbound queue length at the Skyway/Elliott Road intersection is anticipated to exceed 2,300 feet and the northbound queue length at the Skyway/Black Olive Drive intersection is anticipated to be close to 2,000 feet. The southbound 95th percentile queue length at the Skyway/Elliott Road intersection is anticipated to exceed 1,500 feet under the 2040 Cumulative Plus Project conditions during the AM peak hour.

Recommended Mitigations

Traffic operations in the 2040 Cumulative Plus Project conditions will be a function of 1) existing traffic and the present level of queuing and congestion, 2) background growth due to other future development, which may or may not materialize the degree projected, and 3) trips added by the proposed project.

With future traffic at capacity levels, additional travel lanes on Skyway, an alternate/downtown bypass route that removes traffic from Skyway in the downtown area, or a notable travel demand management/reduction program are the only realistic options for providing LOS "D" or better operations with the project in 2040. However, widening of Skyway would be inconsistent with the Town of Paradise objectives of creating a safe, inviting, and walkable downtown business environment. An alternate/bypass route would be a significant regional project well beyond the scope of the proposed project. Inadequate consideration of such a concept by the Town and regional authorities renders this mitigation concept infeasible and inappropriate at this time. Travel demand management strategies have been considered as a mitigation option but are not particularly appropriate or effective for grocery stores, fuel stations, and restaurants as these trips are not conducive to car/van pooling, telecommuting, work-shift management, and similar strategies.

Ultimately the most effective mitigation has been determined to be the project developer's payment of the Town required standard Transportation Impact Fees. These fees will be utilized by the Town to manage the Skyway corridor signals and implement other improvements as determined appropriate over the next 20 plus year horizon.

Other mitigations have been considered and tested, but a solution has not been identified that would improve traffic operations to LOS "D" or better during 2040 Cumulative Plus Project scenario PM peak hour conditions at each study intersection, or significantly reduce extensive vehicle queuing in the corridor in the future. Therefore from a technical perspective the impact is not fully mitigated and therefore the traffic operations impact is <u>significant and unavoidable</u>.

IMPACT EVALUATION

Question 1: Will the project result in an impact on intersections, roadway segments, highways, or freeway facilities?

The addition of project traffic will result in the Skyway/Black Olive Drive and Skyway/Elliott Road intersections operating at worse than LOS "D" conditions in the 2040 horizon year, therefore the project creates a significant impact.

Mitigations have been considered and tested, but a solution has not been identified that would improve traffic operations to LOS "D" or better during 2040 Cumulative Plus Project scenario PM peak hour conditions at each study intersection, or significantly reduce extensive vehicle queuing in the corridor in the future. Therefore from a technical perspective, the traffic operations impact is considered significant and unavoidable.

However, it is important to recognize that the Town of Paradise values a safe, walkable, downtown business focused environment with on-street parking on the Skyway (generally from Black Olive Drive to Oliver Road) over traffic throughput. Accordingly, the Town Council acknowledged the Transportation and Safety Study for the Downtown Paradise Safety Project (December 2013) and adopted a resolution for the Plans, Specifications and Estimates for the subject project in May 2014. The Town intentionally implemented the Downtown Paradise Safety Project to provide pedestrian safety and local environment benefits. While the dated 1994 Town of Paradise General Plan Circulation Element policies have not been formally modified, the Town fully recognizes and accepts that vehicle queuing and slower travel speeds will occur on Skyway during peak commute times.

Recommend mitigations consist of optimizing the Skyway corridor signal timings and overall coordination scheme approximately one month after store opening and one year after store opening, and the payment of Town required standard Transportation Impact Fees.

Question 2: Will the project result in an impact on transit facilities?

With the project's mitigation of providing bike parking/racks within the project site and construction of a bus stop on Skyway adjacent to the site, impacts on transit facilities would be mitigated to a less-than-significant level.

Question 3: Will the project result in an impact on bicycle or pedestrian facilities?

The project will construct sidewalk along the project frontage and walking routes within the site. The project's completion of a continuous sidewalk on the west (project side) of Skyway from Pearson Road to Black Olive Drive would mitigate bicycle and pedestrian facility impacts to a less-than-significant level.

Question 4: Will the project conflict with adopted parking standards?

The project will provide on-site parking in accordance with Town standards. Impacts on parking would be less-than-significant.

Question 5: Will the project result in an impact to air traffic patterns?

The project does not include any elements that would affect or be notably affected by air traffic. The project is deemed to have no impact on air traffic.

Question 6: Will the project substantially increase hazards due to a design feature or incompatible uses?

The two project access points have been designed to safely manage traffic flows and delivery truck movements. No other intersections or roadway facilities will be reconfigured as a result of the project and no other new design features or incompatible uses will be introduced.

Left-turn out movements will be prohibited from the access driveway at the north property line to minimize left-turn conflicts on Skyway.

The project will improve the Skyway/Black Olive Drive intersection by constructing exclusive left-turn pockets on both the Black Olive Drive approaches (project driveway approach and westbound approach) and change the signal phasing for side street left-turns from "permissive" to "protected". The project will re-optimize the signal timings for the Skyway corridor between Neal Road and Elliott Road. Protected left-turn phasing will be necessary at the project and opposing approaches due to sight distance limitations associated with at crest vertical curve on Black Olive Drive at the intersection. The additional of a left-turn lane on Black Olive Drive will require street widening with related drainage, sidewalk, and minor signal modification improvements, all of which are anticipated to be constructed within the existing right-of-way.

The above mitigations will reduce safety related impacts to a less-than-significant level.

Question 7: Will the project result in inadequate emergency access?

Two access points are provided for the project site and both will be designed and constructed in accordance with applicable fire access regulations. Circulation routes within the site will accommodate emergency response vehicles. Impacts on emergency access are considered less-than-significant.

Question 8: Will the project result in a temporary impact to the existing transportation system due to construction traffic?

Construction traffic volumes will be very low compared to the project traffic volumes evaluated in this analysis. Since level of service "D" or better was identified for the near term Baseline Plus Project conditions, the roadway network has adequate capacity for the much lower construction traffic volumes.

Skyway is an arterial roadway capable of accommodating large/heavy trucks during construction. This is a considered a less-than-significant impact.

Question 9: Will the project conflict with adopted policies regarding Vehicle Miles Travelled (VMT)?

The project will increase VMT. Neither Butte County nor the Town of Paradise currently have any specific thresholds or significance criteria related to VMT at this time. Both agencies have general goals of reducing VMT and Green House Gas emissions. Since no threshold values have been adopted by the Town of Paradise or Butte County, this is considered a less-than-significant impact.

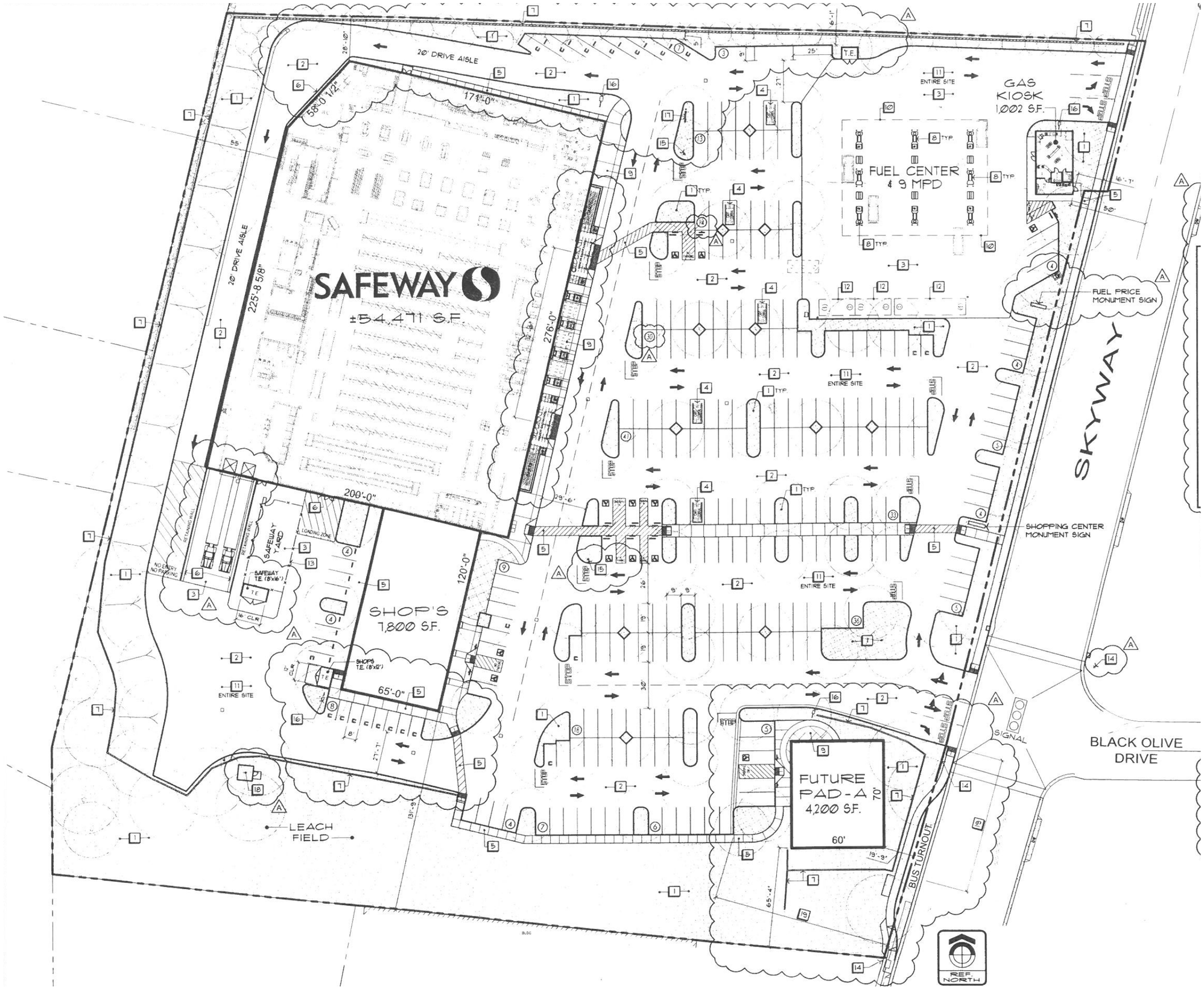
Study Locations

1. Skyway / Elliott Rd
2. Skyway / Pearson Rd
3. Skyway / Project Dwy
4. Skyway / Black Olive Dr
5. Skyway / Neal Rd / Schmale Ln
6. Pearson Rd / Black Olive Dr
7. Black Olive Dr / Foster Rd

TRAFFIC WORKS LLC

NO SCALE

Figure 1
Black Olive Village
Transportation Impact Study
Study Area



TRAFFIC WORKS LLC

NO SCALE

Figure 2
Black Olive Village
Transportation Impact Study
Site Plan

Elliott Rd

Skyway

Pearson Rd

Black Olive Dr

Foster Rd

Schmale Ln

Neal Rd

1

2

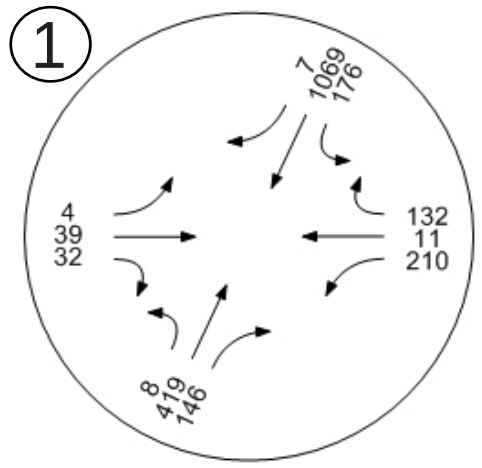
4

5

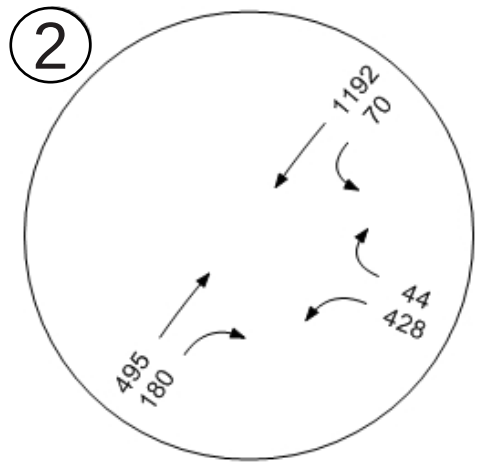
6

7

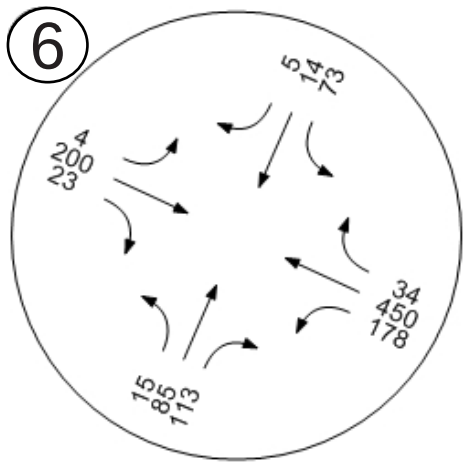
Skyway / Elliott Rd



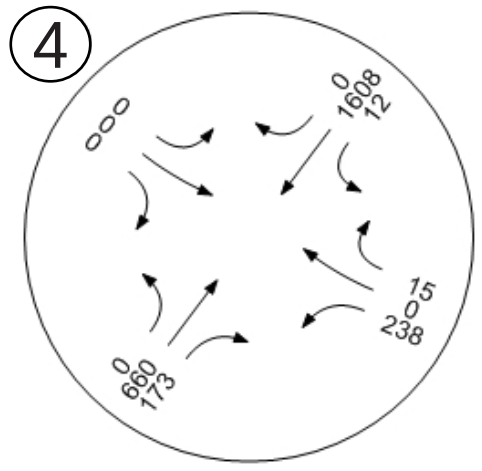
Skyway / Pearson Rd



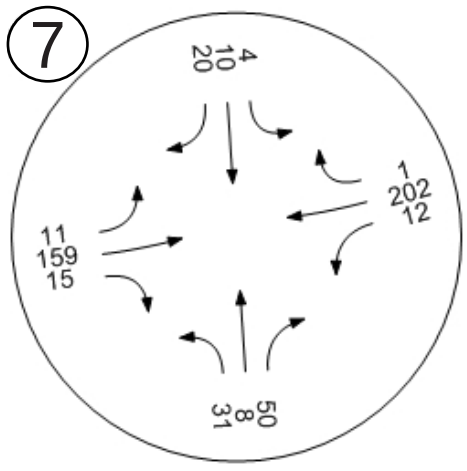
Pearson Rd / Black Olive Dr



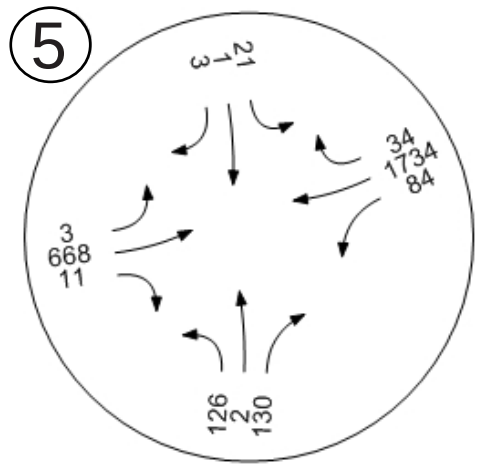
Skyway / Black Olive Dr



Black Olive Dr / Foster Rd



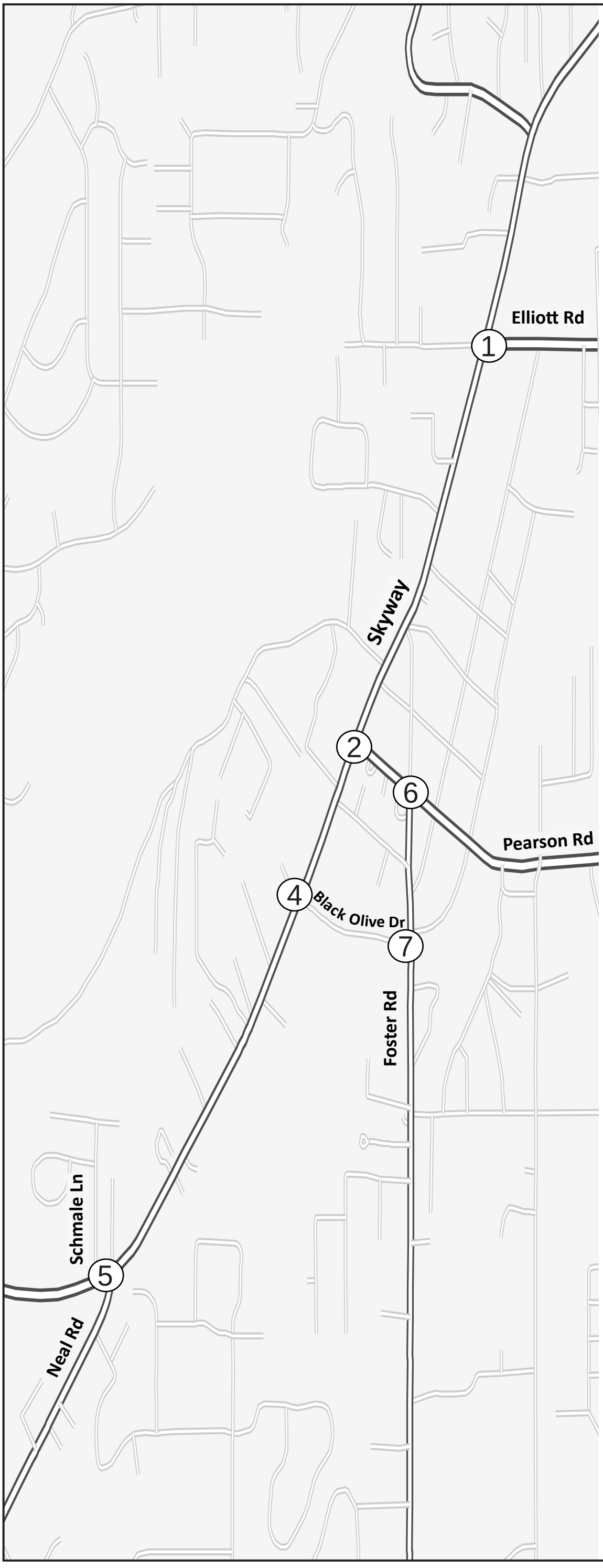
Skyway / Neal Rd /
Schmale Ln



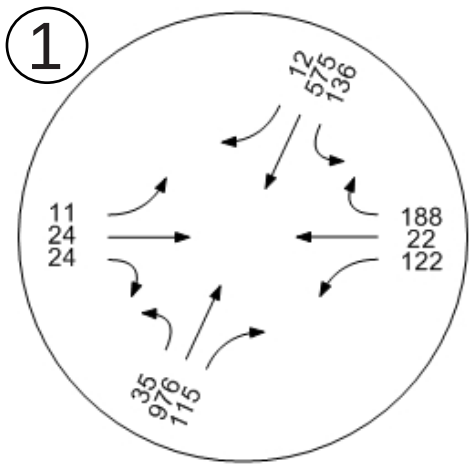
NO SCALE

Figure 3

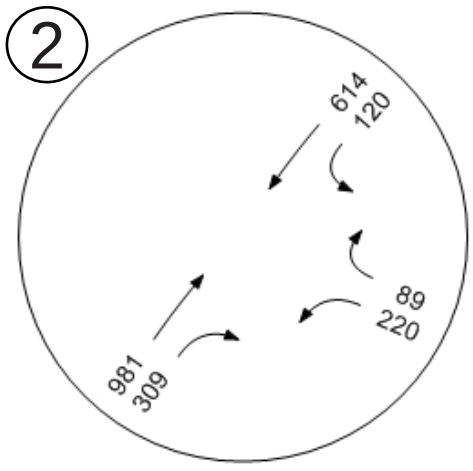
Black Olive Village
Transportation Impact Study
Baseline AM Peak Traffic Volumes



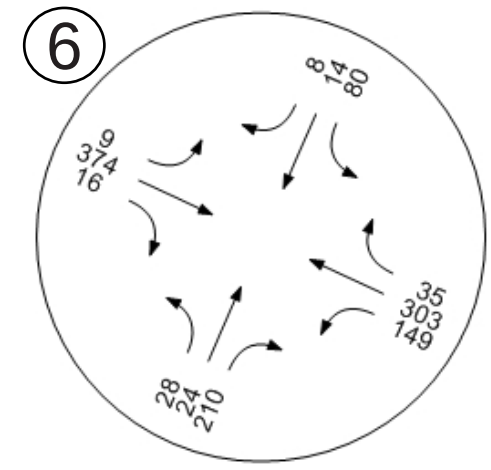
Skyway / Elliott Rd



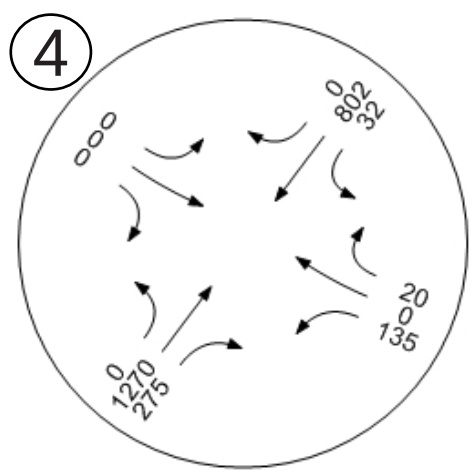
Skyway / Pearson Rd



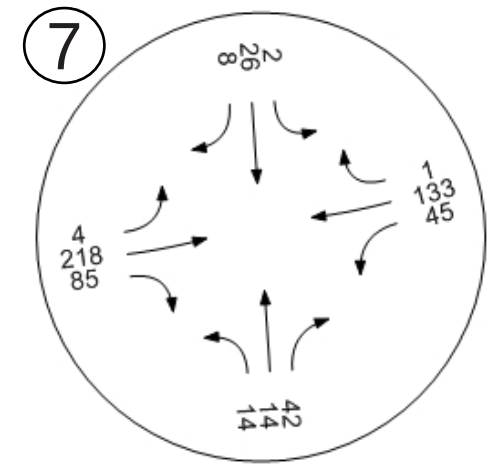
Pearson Rd / Black Olive Dr



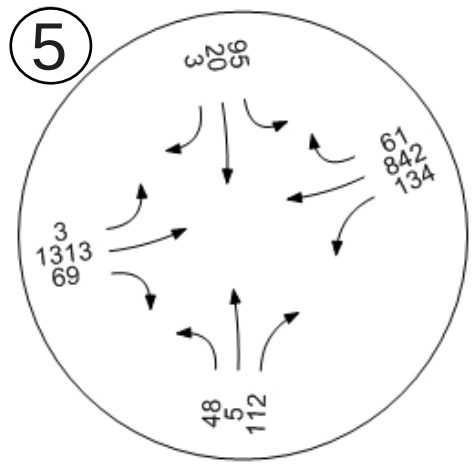
Skyway / Black Olive Dr



Black Olive Dr / Foster Rd



Skyway / Neal Rd / Schmale Ln



TRAFFIC WORKS LLC

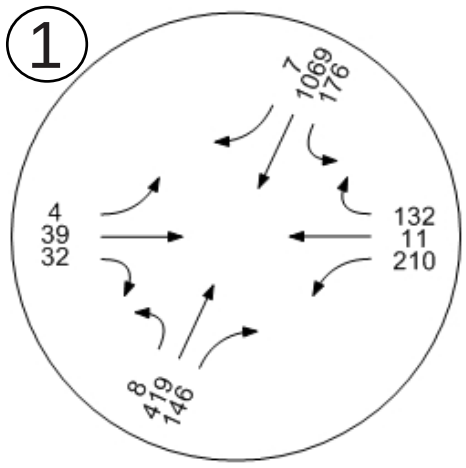
NO SCALE

Figure 4

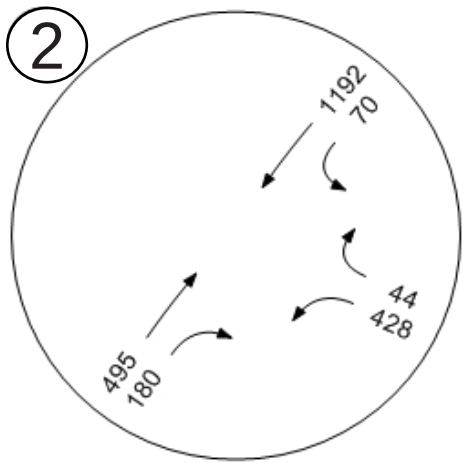
Black Olive Village
Transportation Impact Study
Baseline PM Peak Traffic Volume

Elliott Rd
Skyway
Pearson Rd
Black Olive Dr
Foster Rd
Schmale Ln
Neal Rd

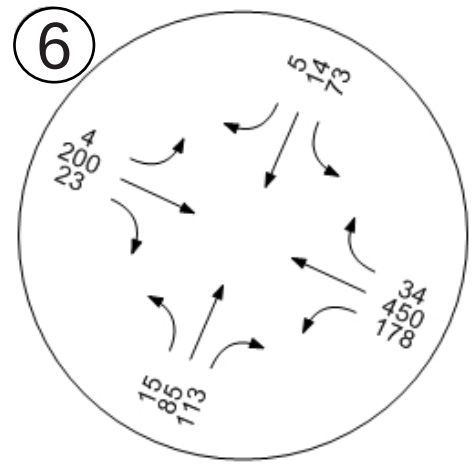
Skyway / Elliott Rd



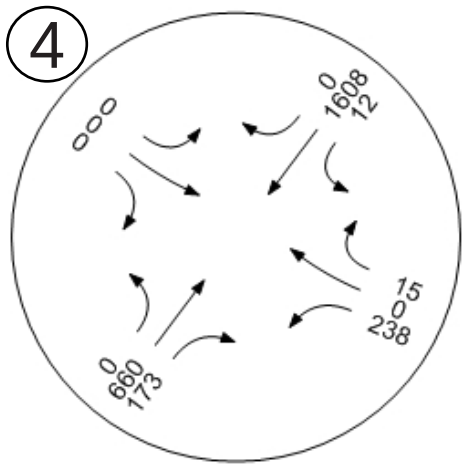
Skyway / Pearson Rd



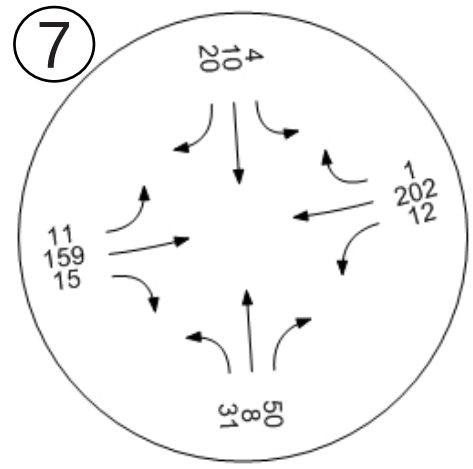
Pearson Rd / Black Olive Dr



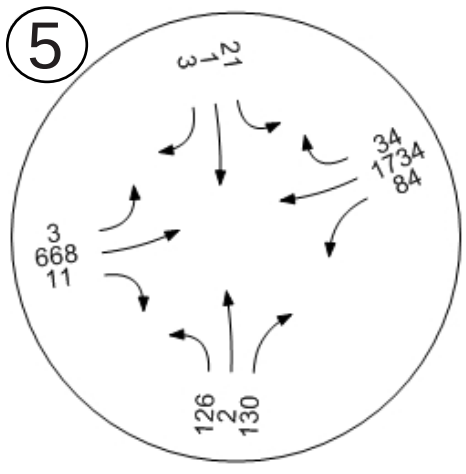
Skyway / Black Olive Dr



Black Olive Dr / Foster Rd



Skyway / Neal Rd /
Schmale Ln



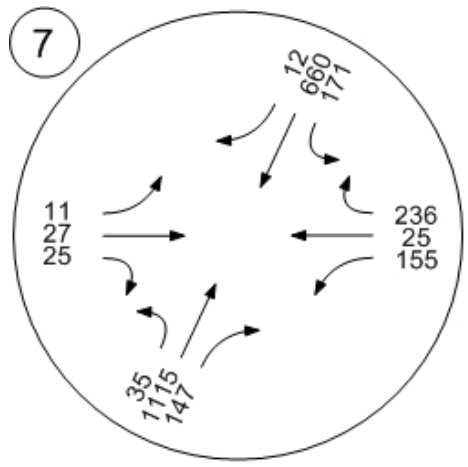
TRAFFIC WORKS

NO SCALE

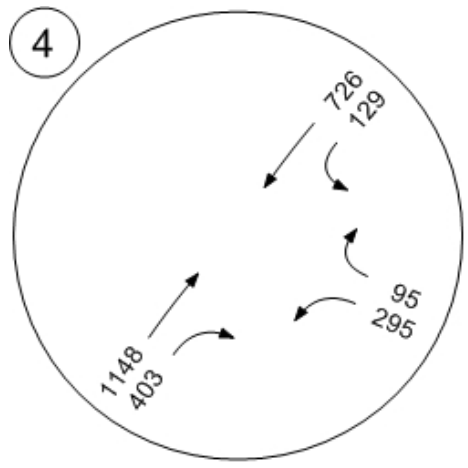
Figure 5
Black Olive Village
Transportation Impact Study
2040 Baseline AM Peak Traffic Volumes

Elliott Rd
Skyway
Pearson Rd
Black Olive Dr
Foster Rd
Schmale Ln
Neal Rd

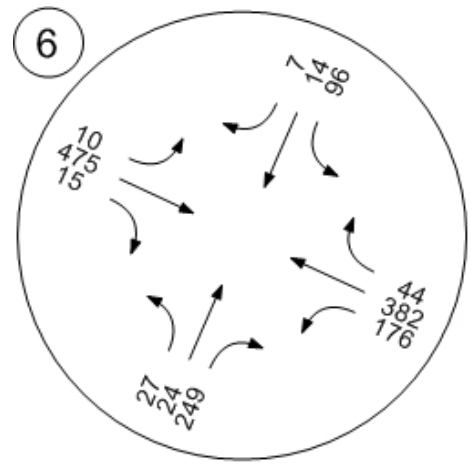
Skyway / Elliott Rd



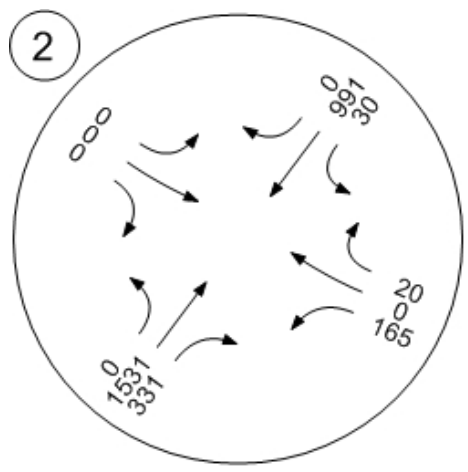
Skyway / Pearson Rd



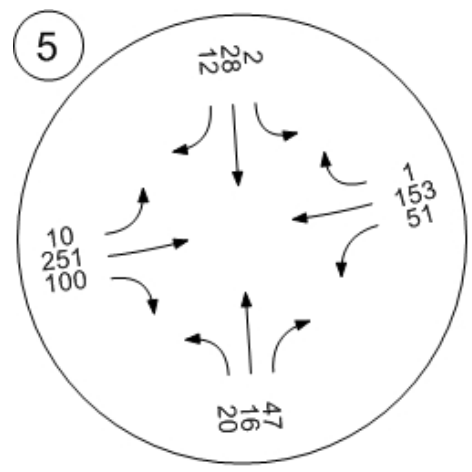
Pearson Rd / Black Olive Dr



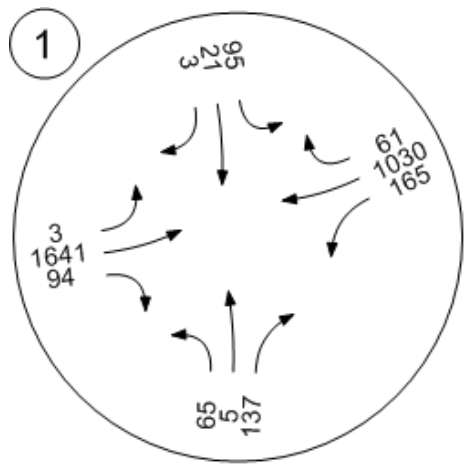
Skyway / Black Olive Dr



Black Olive Dr / Foster Rd



Skyway / Neal Rd / Schmale Ln



TRAFFIC WORKS LLC

NO SCALE

Figure 6
Black Olive Village
Transportation Impact Study
2040 Baseline PM Peak Traffic Volumes

Elliott Rd

Skyway

Pearson Rd

Black Olive Dr

Foster Rd

Schmale Ln

Neal Rd

1

2

3

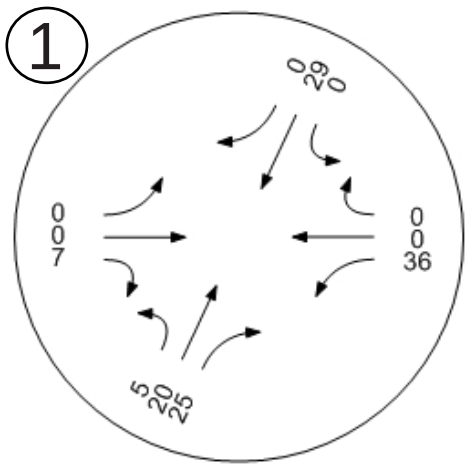
4

5

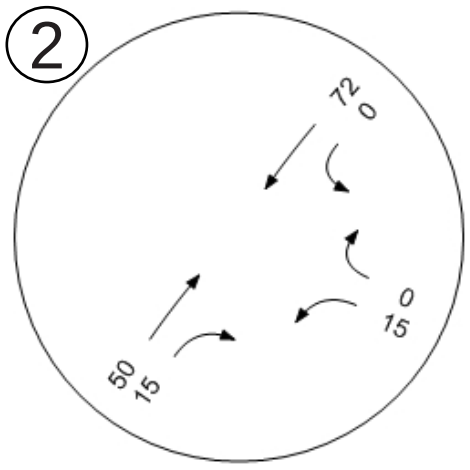
6

7

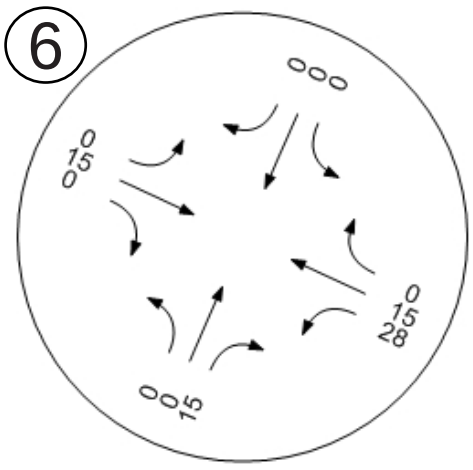
Skyway / Elliott Rd



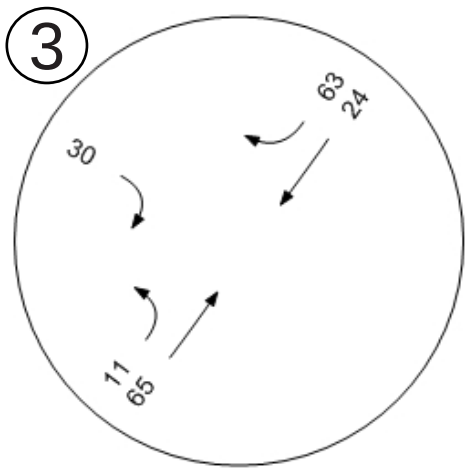
Skyway / Pearson Rd



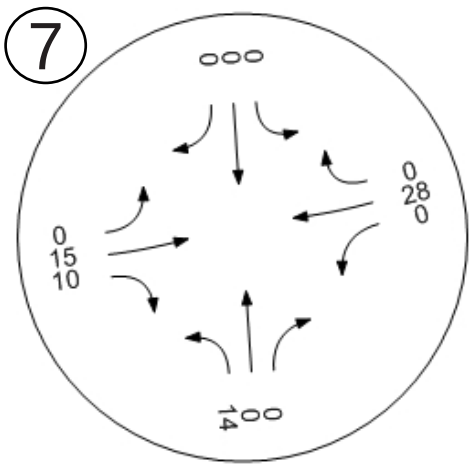
Pearson Rd / Black Olive Dr



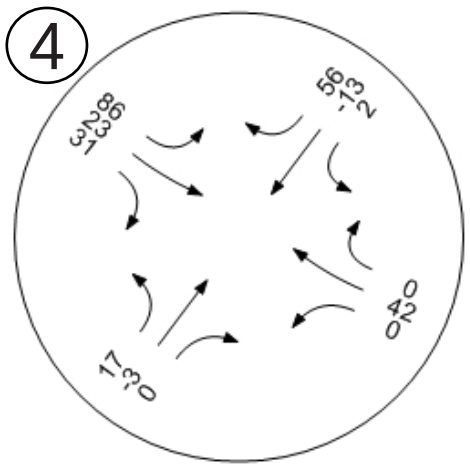
Skyway / Project Dwy



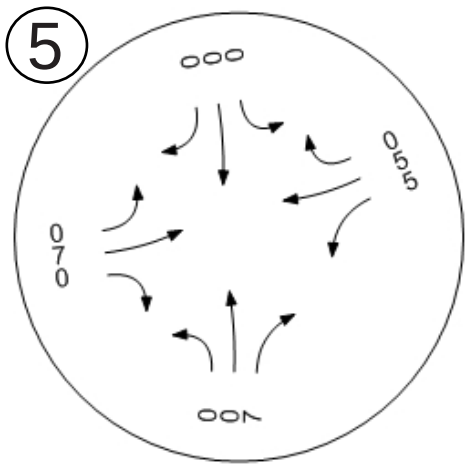
Black Olive Dr / Foster Rd



Skyway / Black Olive Dr



Skyway / Neal Rd /
Schmale Ln



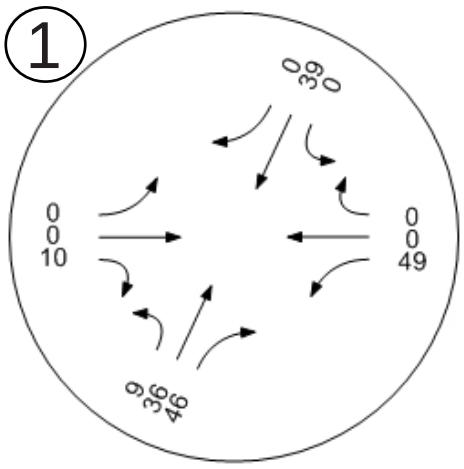
NO SCALE

Figure 7

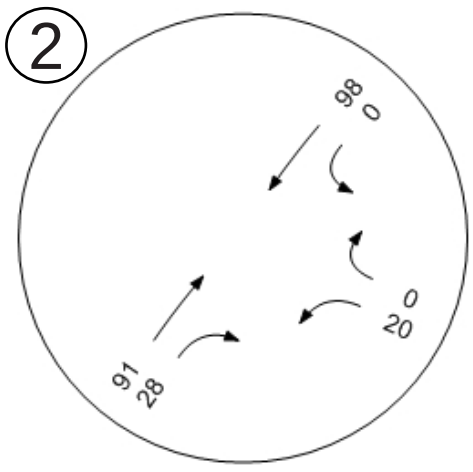
Black Olive Village
Transportation Impact Study
AM Peak Project Trips

Elliott Rd
Skyway
Pearson Rd
Black Olive Dr
Foster Rd
Schmale Ln
Neal Rd

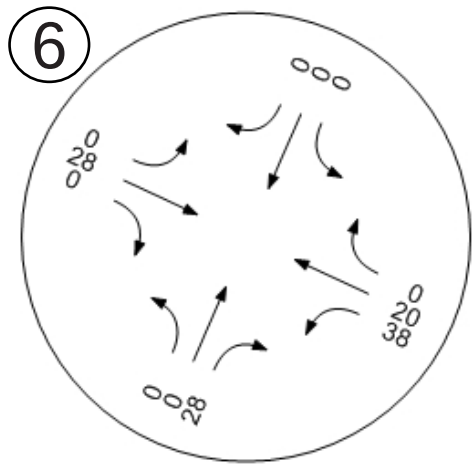
Skyway / Elliott Rd



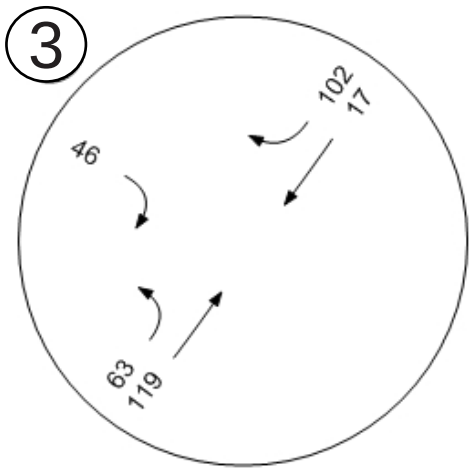
Skyway / Pearson Rd



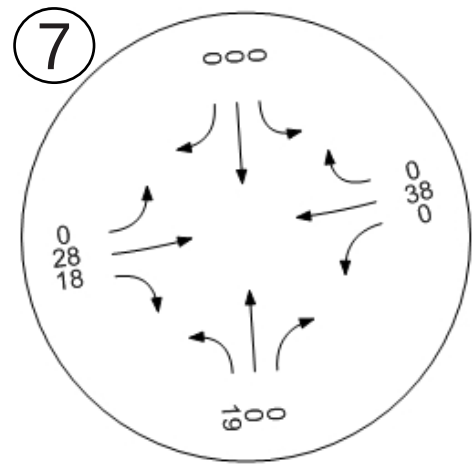
Pearson Rd / Black Olive Dr



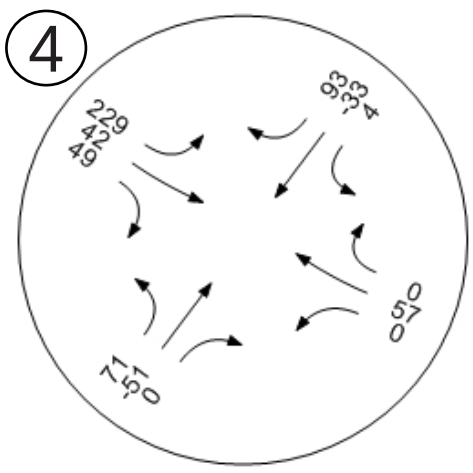
Skyway / Project Dwy



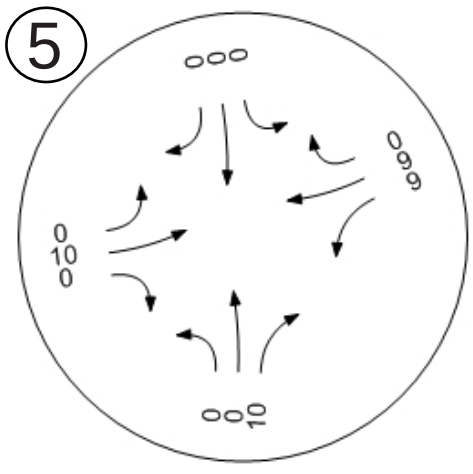
Black Olive Dr / Foster Rd



Skyway / Black Olive Dr

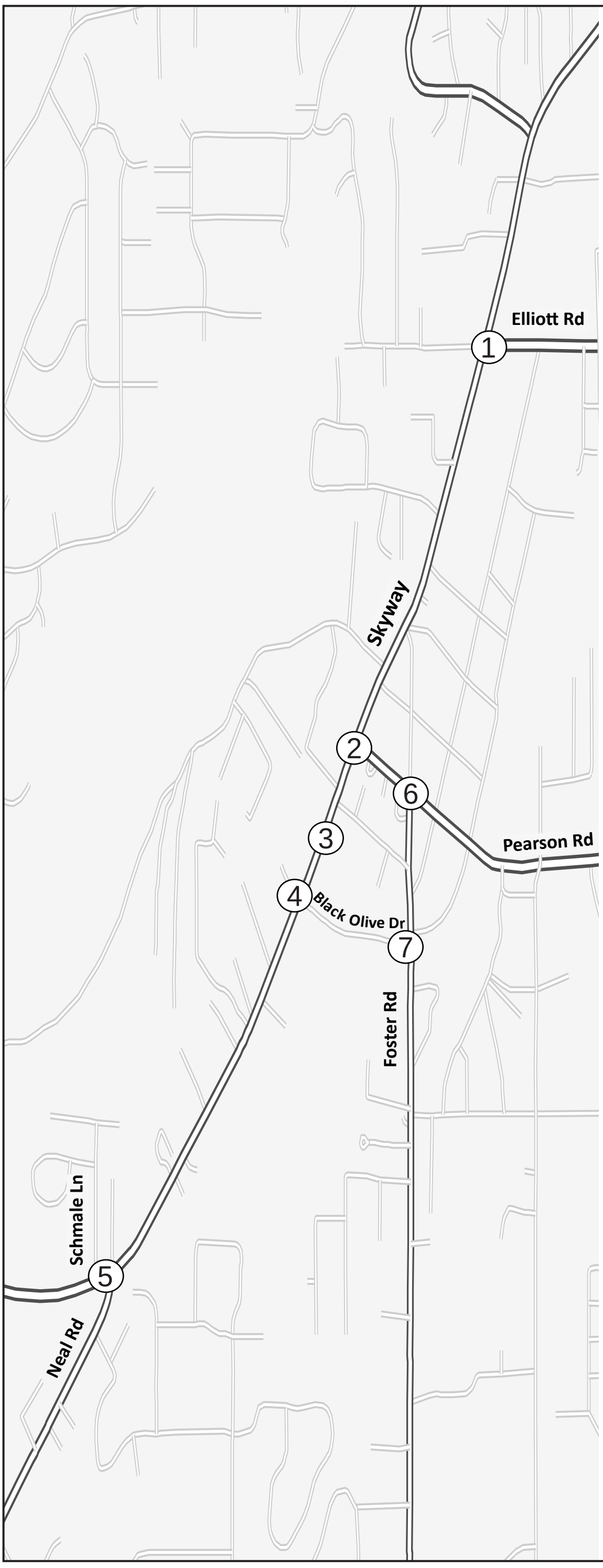


Skyway / Neal Rd / Schmale Ln

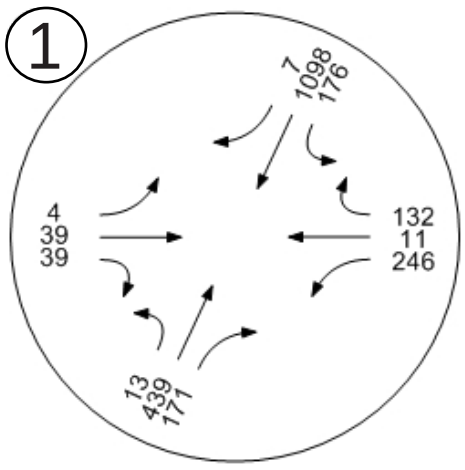


NO SCALE

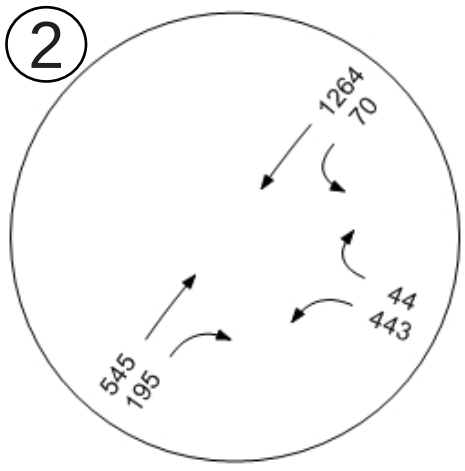
Figure 8
Black Olive Village
Transportation Impact Study
PM Peak Project Trips



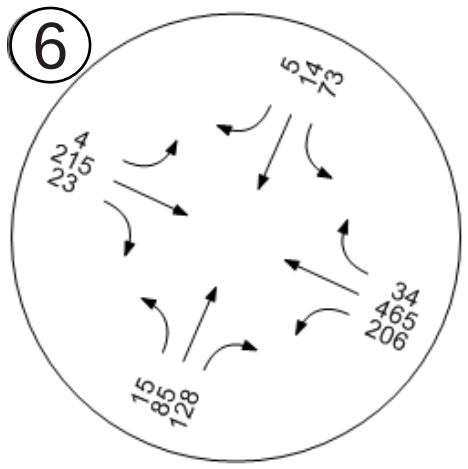
Skyway / Elliott Rd



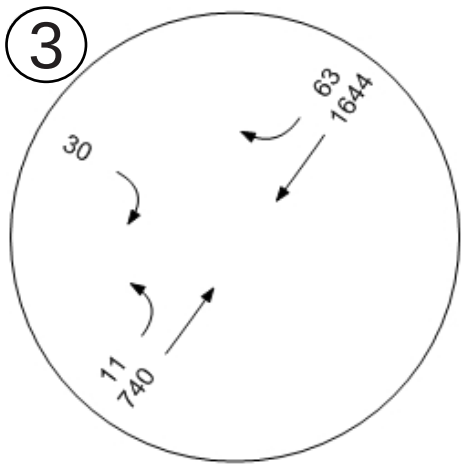
Skyway / Pearson Rd



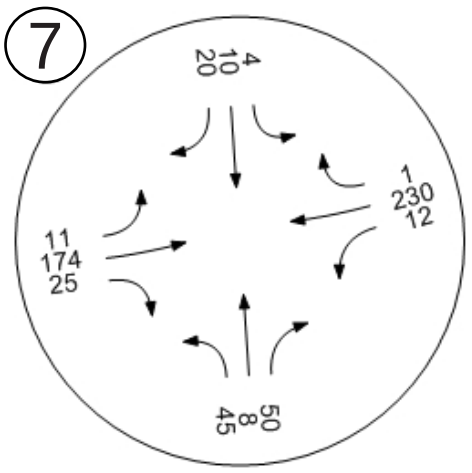
Pearson Rd / Black Olive Dr



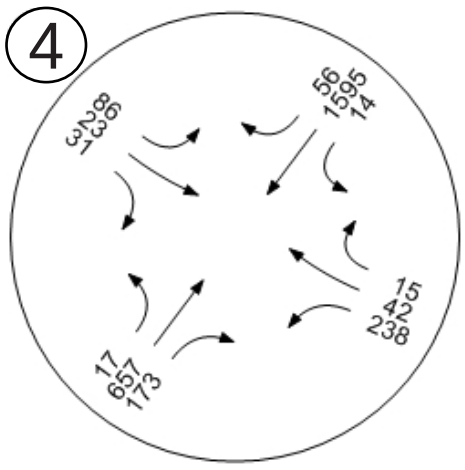
Skyway / Project Dwy



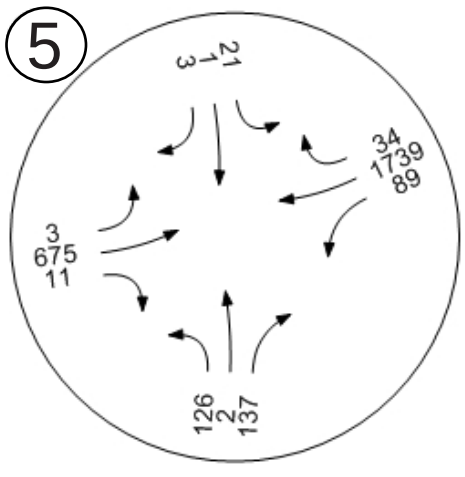
Black Olive Dr / Foster Rd



Skyway / Black Olive Dr



Skyway / Neal Rd /
Schmale Ln



TRAFFIC WORKS LLC

NO SCALE

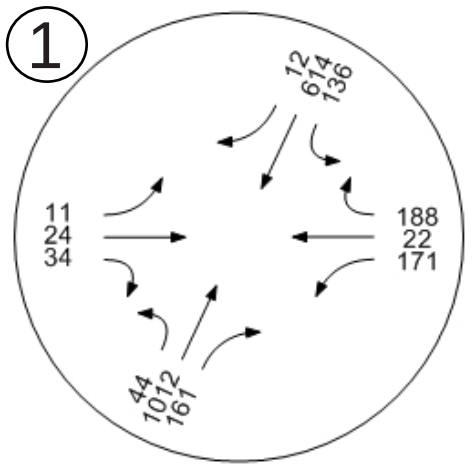
Figure 9

Black Olive Village
Transportation Impact Study

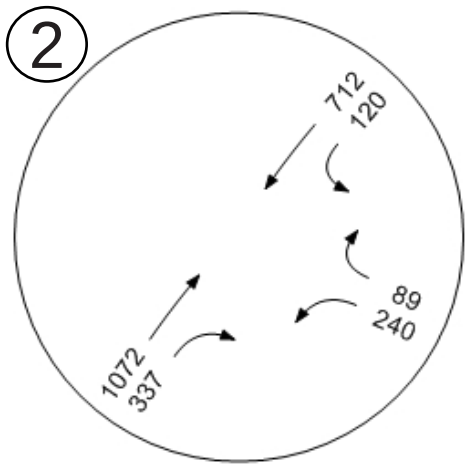
Baseline Plus Project AM Peak Traffic Volumes

Elliott Rd
Skyway
Pearson Rd
Black Olive Dr
Foster Rd
Schmale Ln
Neal Rd

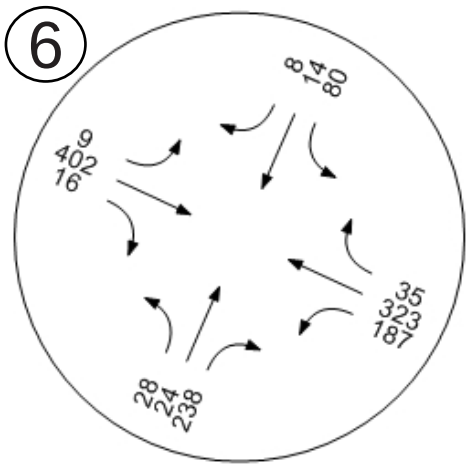
Skyway / Elliott Rd



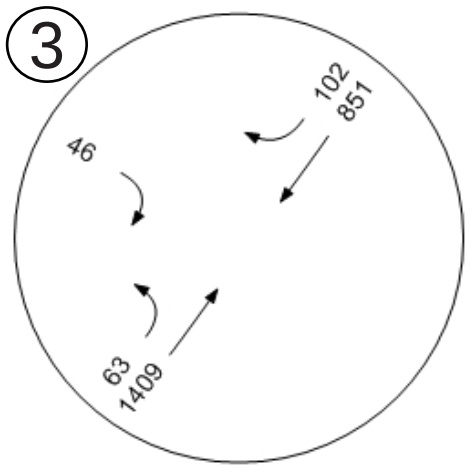
Skyway / Pearson Rd



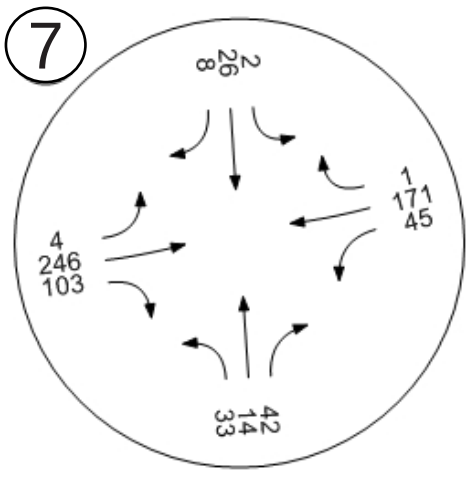
Pearson Rd / Black Olive Dr



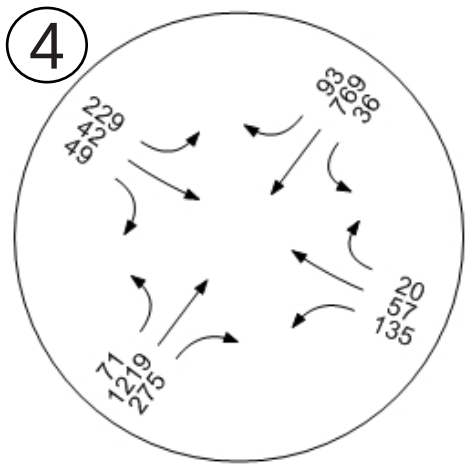
Skyway / Project Dwy



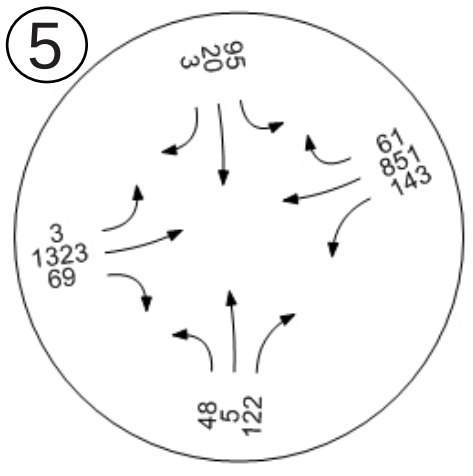
Black Olive Dr / Foster Rd



Skyway / Black Olive Dr



Skyway / Neal Rd / Schmale Ln



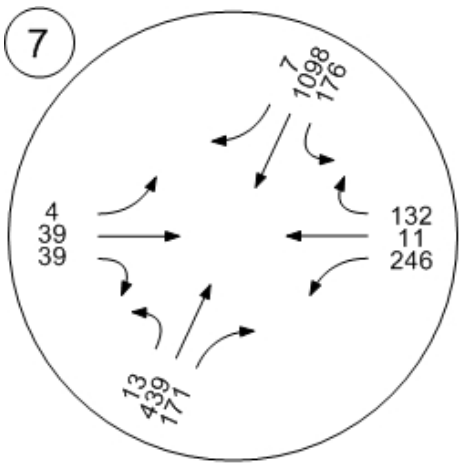
TRAFFIC WORKS LLC

NO SCALE

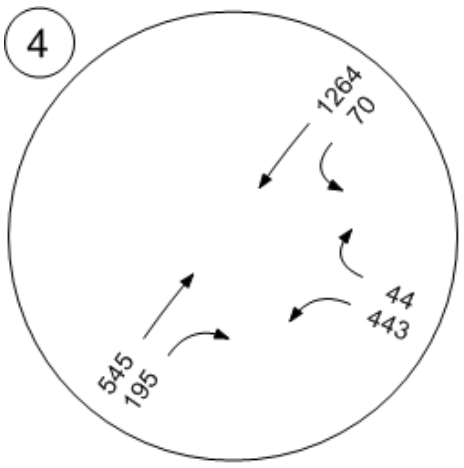
Figure 10
Black Olive Village
Transportation Impact Study
Baseline Plus Project PM Peak Traffic Volumes

Elliott Rd
Skyway
Pearson Rd
Black Olive Dr
Foster Rd
Schmale Ln
Neal Rd

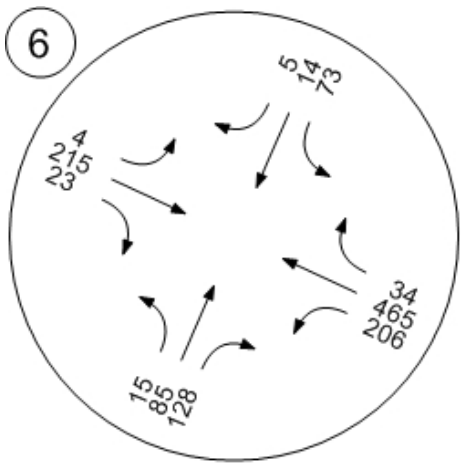
Skyway / Elliott Rd



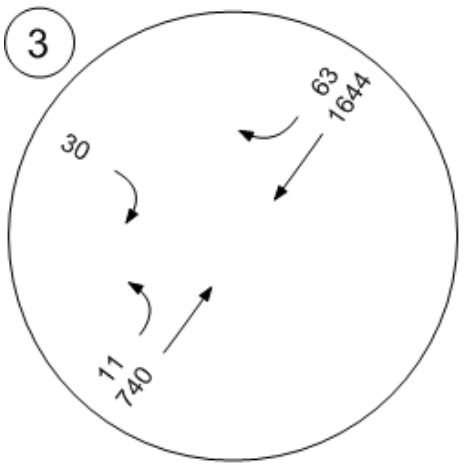
Skyway / Pearson Rd



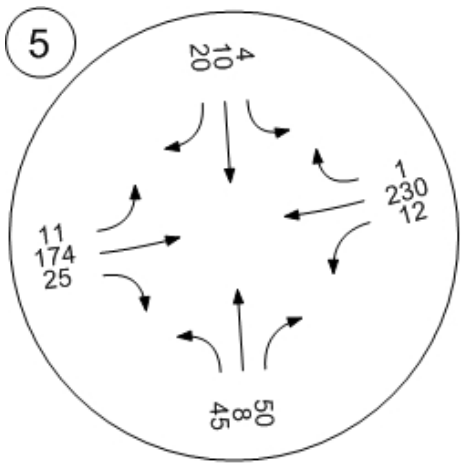
Pearson Rd / Black Olive Dr



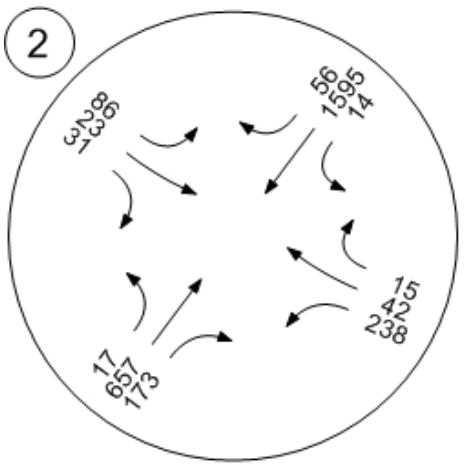
Skyway / Project Dwy



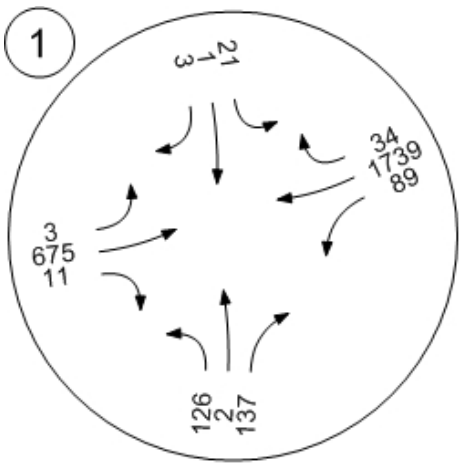
Black Olive Dr / Foster Rd



Skyway / Black Olive Dr



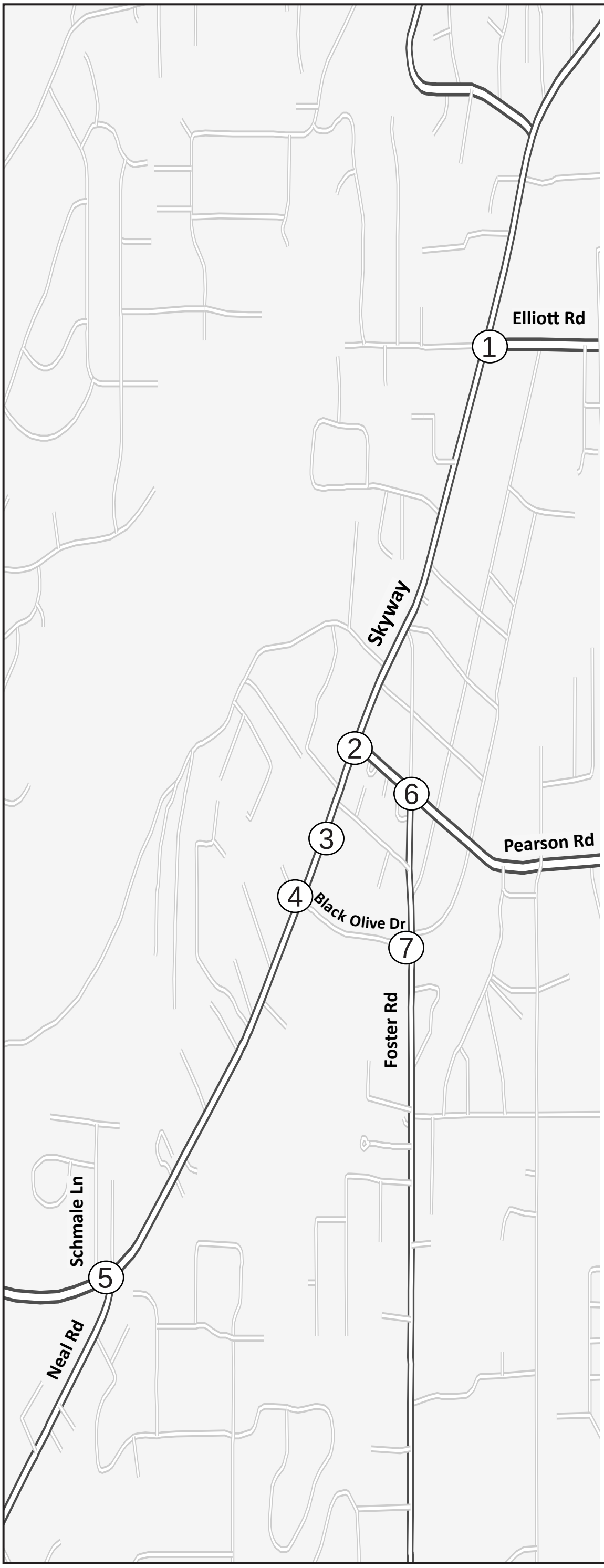
Skyway / Neal Rd / Schmale Ln



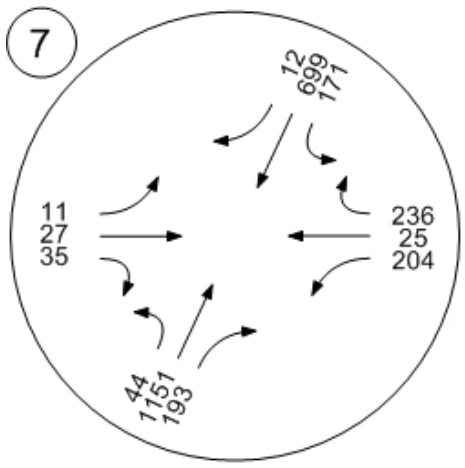
TRAFFIC WORKS LLC

NO SCALE

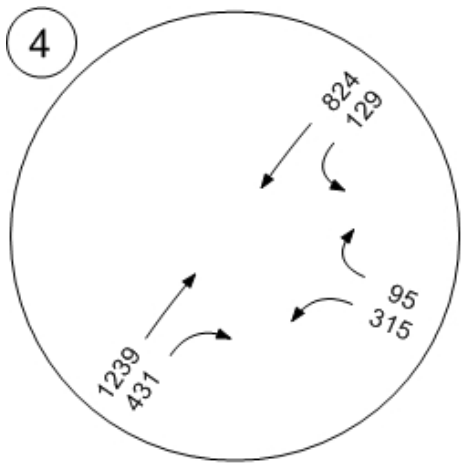
Figure 11
Black Olive Village
Transportation Impact Study
2040 Plus Project AM Peak Traffic Volumes



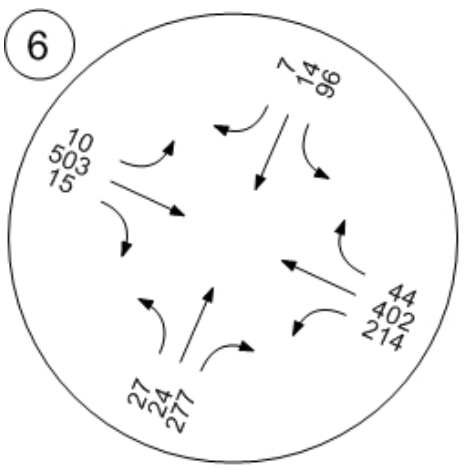
Skyway / Elliott Rd



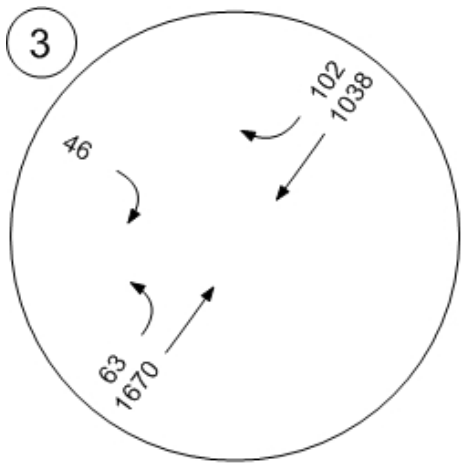
Skyway / Pearson Rd



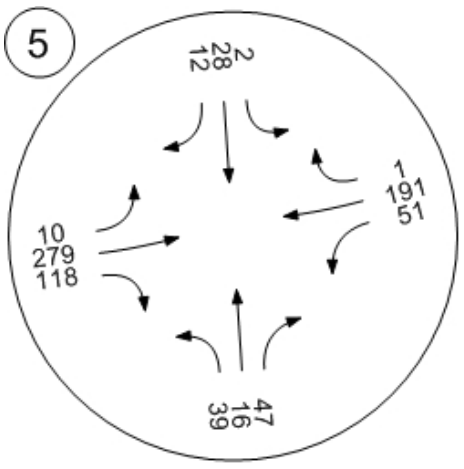
Pearson Rd / Black Olive Dr



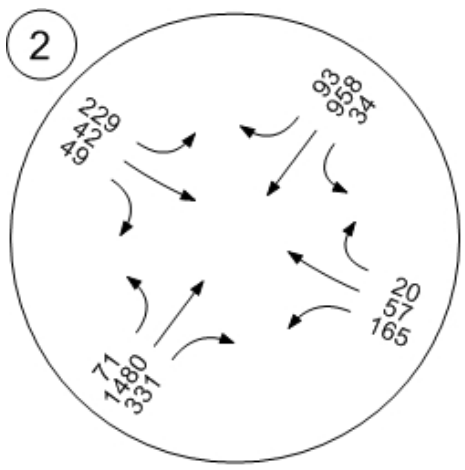
Skyway / Project Dwy



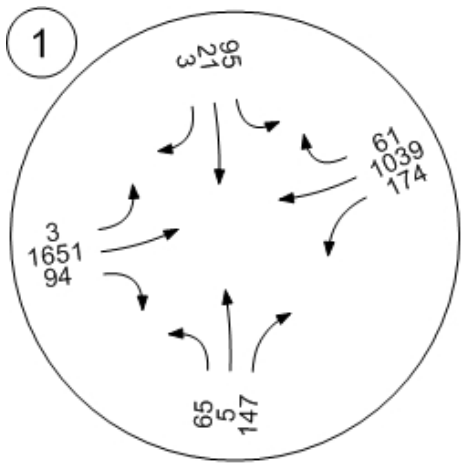
Black Olive Dr / Foster Rd



Skyway / Black Olive Dr



Skyway / Neal Rd / Schmale Ln



TRAFFIC WORKS LLC

NO SCALE

Figure 12

Black Olive Village
Transportation Impact Study
2040 Plus Project PM Peak Traffic Volumes

Appendix A

Baseline Conditions LOS Calculations

1: Skyway & Neal Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	2.4	0.1	0.0	0.2
Total Del/Veh (s)	52.6	27.7	26.4	12.5	17.6

2: Black Olive Dr & Skyway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	11.9	47.8	7.6	6.3	10.5

3: Skyway & Dwy Performance by approach

Approach	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.8	1.5	1.3

4: Skyway & Pearson Rd Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	46.1	2.3	15.6	17.8

5: Black Olive Dr & Foster Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	6.4	7.1	0.9	0.5	5.4

6: Pearson Rd & Black Olive Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.9	0.0	3.2	0.7
Total Del/Veh (s)	9.1	9.4	14.9	18.4	11.1

7: Skyway & Elliott Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.3	0.1	0.6	0.4
Total Del/Veh (s)	37.3	50.0	24.8	22.2	27.5

Total Network Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	60.9

Intersection: 1: Skyway & Neal Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	4	52	179	120	116	199	221	83	116	262	256
Average Queue (ft)	0	13	69	44	7	122	133	8	34	78	95
95th Queue (ft)	3	37	139	100	44	184	197	49	87	184	197
Link Distance (ft)		384	354			4155	4155			2786	2786
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			95	115			140	100		
Storage Blk Time (%)		0	5	0		12	8	0	1	3	
Queuing Penalty (veh)		0	5	0		0	1	0	5	2	

Intersection: 2: Black Olive Dr & Skyway

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	17	282	5	63	50	76	216	232
Average Queue (ft)	1	149	1	17	9	20	88	102
95th Queue (ft)	10	255	6	50	33	57	178	193
Link Distance (ft)	289	307		2786	2786		307	307
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		1						
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)							1	
Queuing Penalty (veh)							0	

Intersection: 3: Skyway & Dwy

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 4: Skyway & Pearson Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	LR	T	R	L	T
Maximum Queue (ft)	220	242	92	28	166	384
Average Queue (ft)	132	145	25	3	67	187
95th Queue (ft)	203	220	71	17	145	326
Link Distance (ft)	381	381	533	533		2379
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)					150	
Storage Blk Time (%)					0	9
Queuing Penalty (veh)					0	6

Intersection: 5: Black Olive Dr & Foster Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	77	87	17	5
Average Queue (ft)	42	50	1	0
95th Queue (ft)	67	78	9	4
Link Distance (ft)	227	205	319	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Pearson Rd & Black Olive Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	43	119	43	118	131	99	49	135	68	70
Average Queue (ft)	4	45	11	61	45	39	14	59	34	10
95th Queue (ft)	23	91	34	104	95	81	42	114	61	41
Link Distance (ft)		454	454		1152	1152		198		698
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	70			100			50		50	
Storage Blk Time (%)		3		1	0		1	9	6	0
Queuing Penalty (veh)		0		2	1		2	1	1	0

Intersection: 7: Skyway & Elliott Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	R
Maximum Queue (ft)	141	380	83	225	215	224	631	4
Average Queue (ft)	49	196	10	116	123	109	251	0
95th Queue (ft)	109	330	46	189	192	220	480	2
Link Distance (ft)	769	3077		2379			2252	2252
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100		200	200		
Storage Blk Time (%)				9	0	0	9	
Queuing Penalty (veh)				26	1	3	13	

Network Summary

Network wide Queuing Penalty: 72

1: Skyway & Neal Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	2.9	0.2	0.1	0.3
Total Del/Veh (s)	62.7	30.8	37.4	28.9	34.9

2: Black Olive Dr & Skyway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	8.4	55.0	18.0	6.8	16.6

3: Skyway & Dwy Performance by approach

Approach	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	3.8	1.3	2.8

4: Skyway & Pearson Rd Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	38.9	19.8	21.5	23.0

5: Black Olive Dr & Foster Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	7.2	7.7	0.7	0.2	6.0

6: Pearson Rd & Black Olive Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.0	0.0	3.1	0.7
Total Del/Veh (s)	13.8	11.0	12.1	22.0	13.1

7: Skyway & Elliott Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.3	0.2	0.6	0.3
Total Del/Veh (s)	34.3	39.4	19.7	22.5	24.0

Total Network Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	75.0

Intersection: 1: Skyway & Neal Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	104	185	136	118	49	513	514	165	124	367	357
Average Queue (ft)	10	81	38	52	4	344	364	52	99	193	198
95th Queue (ft)	59	149	90	104	26	473	491	161	149	315	298
Link Distance (ft)		384	354			4155	4155			2791	2791
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			95	115			140	100		
Storage Blk Time (%)		21	0	2		37	35	0	20	9	
Queuing Penalty (veh)		10	0	1		1	24	0	84	12	

Intersection: 2: Black Olive Dr & Skyway

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	17	234	11	223	189	80	155	142
Average Queue (ft)	1	120	1	39	30	26	54	63
95th Queue (ft)	10	204	6	136	117	62	123	129
Link Distance (ft)	290	307		2791	2791		307	307
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				1			0	
Queuing Penalty (veh)				0			0	

Intersection: 3: Skyway & Dwy

Movement	NB	NB
Directions Served	T	T
Maximum Queue (ft)	203	149
Average Queue (ft)	31	13
95th Queue (ft)	164	106
Link Distance (ft)	307	307
Upstream Blk Time (%)	1	0
Queuing Penalty (veh)	4	0
Storage Bay Dist (ft)		
Storage Blk Time (%)	3	
Queuing Penalty (veh)	0	

Intersection: 4: Skyway & Pearson Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	LR	T	R	L	T
Maximum Queue (ft)	176	205	529	214	174	457
Average Queue (ft)	93	117	327	30	98	140
95th Queue (ft)	154	180	559	130	165	300
Link Distance (ft)	382	382	533	533		2374
Upstream Blk Time (%)			3			
Queuing Penalty (veh)			20			
Storage Bay Dist (ft)					150	
Storage Blk Time (%)					3	3
Queuing Penalty (veh)					17	4

Intersection: 5: Black Olive Dr & Foster Rd

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	104	108	21
Average Queue (ft)	60	54	1
95th Queue (ft)	89	86	9
Link Distance (ft)	227	205	319
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Pearson Rd & Black Olive Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	58	260	39	118	110	85	74	150	73	92
Average Queue (ft)	8	128	8	62	43	39	19	62	42	19
95th Queue (ft)	36	217	29	108	84	75	51	113	68	61
Link Distance (ft)		454	454		1152	1152		198		698
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	70			100			50		50	
Storage Blk Time (%)	0	20		2	0		2	11	14	1
Queuing Penalty (veh)	0	2		3	0		5	3	3	1

Intersection: 7: Skyway & Elliott Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	R
Maximum Queue (ft)	108	366	107	291	222	222	308	9
Average Queue (ft)	41	192	29	103	96	110	141	1
95th Queue (ft)	85	332	70	206	182	207	272	5
Link Distance (ft)	767	3077		2374			2252	2252
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100		200	200		
Storage Blk Time (%)			1	10	0	1	3	
Queuing Penalty (veh)			9	63	1	4	4	

Network Summary

Network wide Queuing Penalty: 276

Appendix B

Trip Generation Rates

Land Use	Daily Rate	AM Peak Rate	PM Peak Rate
Supermarket	102.24	3.4	9.48
Shopping Center	42.7	0.96	3.71
High-Turnover (Sit-Down) Restaurant	127.15	10.81	9.85
Gasoline/Service Station with Convenience Store	168.56	10.16	19.4

Appendix C

Baseline Plus Project Conditions LOS Calculations

1: Skyway & Neal Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.3	2.3	0.1	0.0	0.2
Total Del/Veh (s)	53.3	28.5	25.1	13.5	18.1

2: Black Olive Dr & Skyway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	2.5	0.0	0.0	0.0	0.1
Total Del/Veh (s)	47.6	51.5	10.2	13.0	18.1

3: Skyway & Dwy Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	10.6	1.1	2.2	2.0

4: Skyway & Pearson Rd Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	46.1	4.3	16.9	18.7

5: Black Olive Dr & Foster Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1	0.0
Total Del/Veh (s)	6.3	7.7	1.0	0.4	5.7

6: Pearson Rd & Black Olive Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.1	0.0	3.1	0.8
Total Del/Veh (s)	9.1	10.1	12.7	20.2	11.1

7: Skyway & Elliott Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.3	0.1	0.5	0.4
Total Del/Veh (s)	36.4	59.5	29.0	26.7	32.9

Total Network Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	67.8

Intersection: 1: Skyway & Neal Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	20	65	176	120	26	195	215	114	113	297	296
Average Queue (ft)	1	13	73	48	3	115	120	8	32	79	99
95th Queue (ft)	9	42	142	108	17	172	184	49	84	203	221
Link Distance (ft)		383	354			4155	4155			2779	2779
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			95	115			140	100		
Storage Blk Time (%)		0	7	0		9	5	0	0	3	
Queuing Penalty (veh)		0	8	0		0	0	0	0	2	

Intersection: 2: Black Olive Dr & Skyway

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	142	106	174	283	60	80	79	153	312	314
Average Queue (ft)	70	43	128	84	19	24	20	26	168	188
95th Queue (ft)	130	88	194	217	49	67	55	84	293	311
Link Distance (ft)		289		306		2779	2779		301	301
Upstream Blk Time (%)				0					0	1
Queuing Penalty (veh)				0					2	4
Storage Bay Dist (ft)	150		150		150			150		
Storage Blk Time (%)	0	0	11	0				0	9	
Queuing Penalty (veh)	0	0	6	0				0	2	

Intersection: 3: Skyway & Dwy

Movement	EB	NB	SB	SB
Directions Served	R	L	T	TR
Maximum Queue (ft)	57	39	34	62
Average Queue (ft)	21	7	2	6
95th Queue (ft)	49	30	16	32
Link Distance (ft)	320		533	533
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		150		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Skyway & Pearson Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	LR	T	R	L	T
Maximum Queue (ft)	216	240	155	52	174	401
Average Queue (ft)	129	147	69	9	71	205
95th Queue (ft)	201	220	135	34	144	369
Link Distance (ft)	381	381	533	533		2380
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)					150	
Storage Blk Time (%)					0	10
Queuing Penalty (veh)					5	7

Intersection: 5: Black Olive Dr & Foster Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	80	100	28	5
Average Queue (ft)	44	56	2	0
95th Queue (ft)	68	87	12	4
Link Distance (ft)	227	205	319	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Pearson Rd & Black Olive Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	30	129	39	122	151	90	54	127	62	37
Average Queue (ft)	3	55	10	70	46	41	12	53	33	10
95th Queue (ft)	19	108	32	117	105	80	38	97	59	33
Link Distance (ft)		454	454		1152	1152		198		698
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	70			100			50		50	
Storage Blk Time (%)		5		3	0		1	7	6	0
Queuing Penalty (veh)		0		6	1		1	1	1	0

Intersection: 7: Skyway & Elliott Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	R
Maximum Queue (ft)	149	419	108	221	219	225	622	118
Average Queue (ft)	53	243	14	120	129	131	315	4
95th Queue (ft)	115	388	55	189	202	250	563	81
Link Distance (ft)	768	3077		2380			2252	2252
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100		200	200		
Storage Blk Time (%)				12	1	0	14	
Queuing Penalty (veh)				41	1	3	19	

Network Summary

Network wide Queuing Penalty: 112

1: Skyway & Neal Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.3	2.9	0.2	0.1	0.3
Total Del/Veh (s)	56.1	34.2	37.1	25.9	33.5

2: Black Olive Dr & Skyway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	4.1	0.0	0.0	0.0	0.5
Total Del/Veh (s)	55.1	50.9	51.3	15.1	41.2

3: Skyway & Dwy Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.7	9.6	1.8	6.5

4: Skyway & Pearson Rd Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	45.1	30.3	20.3	29.2

5: Black Olive Dr & Foster Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	7.9	8.5	1.0	0.3	6.8

6: Pearson Rd & Black Olive Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.1	0.0	3.2	0.7
Total Del/Veh (s)	17.7	13.6	13.3	24.7	15.6

7: Skyway & Elliott Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.3	0.2	0.6	0.3
Total Del/Veh (s)	31.2	42.8	26.2	27.9	29.4

Total Network Performance

Denied Del/Veh (s)	1.0
Total Del/Veh (s)	95.2

Intersection: 1: Skyway & Neal Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	92	166	131	118	25	550	528	165	125	289	290
Average Queue (ft)	11	74	41	62	2	346	360	49	95	147	145
95th Queue (ft)	54	141	97	119	12	489	499	156	151	273	254
Link Distance (ft)		385	354			4155	4155			2780	2780
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			95	115			140	100		
Storage Blk Time (%)	0	14	2	3		36	35	0	23	4	
Queuing Penalty (veh)	0	7	3	2		1	24	0	100	6	

Intersection: 2: Black Olive Dr & Skyway

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	175	296	169	237	175	750	1086	115	221	234
Average Queue (ft)	153	142	92	72	93	348	334	30	118	131
95th Queue (ft)	198	303	160	157	190	742	843	80	201	220
Link Distance (ft)		288		306		2780	2780		301	301
Upstream Blk Time (%)		3		0						
Queuing Penalty (veh)		0		0						
Storage Bay Dist (ft)	150		150		150			150		
Storage Blk Time (%)	22	1	4	1	2	37			3	
Queuing Penalty (veh)	20	3	3	1	9	26			1	

Intersection: 3: Skyway & Dwy

Movement	EB	NB	NB	NB	SB
Directions Served	R	L	T	T	TR
Maximum Queue (ft)	56	124	342	334	17
Average Queue (ft)	22	41	168	75	1
95th Queue (ft)	50	106	388	267	7
Link Distance (ft)	320		301	301	533
Upstream Blk Time (%)			3	0	
Queuing Penalty (veh)			22	3	
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	12		
Queuing Penalty (veh)		0	7		

Intersection: 4: Skyway & Pearson Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	LR	T	R	L	T
Maximum Queue (ft)	195	244	603	477	174	322
Average Queue (ft)	107	144	487	73	105	144
95th Queue (ft)	171	220	648	287	174	271
Link Distance (ft)	381	381	533	533		2375
Upstream Blk Time (%)			8	0		
Queuing Penalty (veh)			60	0		
Storage Bay Dist (ft)					150	
Storage Blk Time (%)					4	3
Queuing Penalty (veh)					30	4

Intersection: 5: Black Olive Dr & Foster Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	138	117	33	9
Average Queue (ft)	69	64	2	0
95th Queue (ft)	108	99	16	5
Link Distance (ft)	227	205	319	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Pearson Rd & Black Olive Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	68	280	38	121	139	130	74	177	72	99
Average Queue (ft)	11	147	9	81	47	50	19	73	42	17
95th Queue (ft)	41	253	30	123	104	96	54	134	68	57
Link Distance (ft)		454	454		1152	1152		198		698
Upstream Blk Time (%)								0		
Queuing Penalty (veh)								0		
Storage Bay Dist (ft)	70			100			50		50	
Storage Blk Time (%)	0	26		5	0		1	14	14	1
Queuing Penalty (veh)	0	2		8	0		3	4	3	1

Intersection: 7: Skyway & Elliott Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	R
Maximum Queue (ft)	102	431	121	365	225	224	436	4
Average Queue (ft)	39	225	43	148	136	127	206	0
95th Queue (ft)	81	379	94	295	233	226	402	2
Link Distance (ft)	767	3077		2375			2252	2252
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100		200	200		
Storage Blk Time (%)			1	18	2	1	8	
Queuing Penalty (veh)			10	131	9	8	10	

Network Summary

Network wide Queuing Penalty: 524

Appendix D

2040 Cumulative Conditions LOS Calculations

1: Skyway & Neal Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	2.3	0.1	0.0	0.2
Total Del/Veh (s)	45.7	22.3	32.1	15.7	20.5

2: Black Olive Dr & Skyway Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	33.5	10.6	8.9	11.7

3: Skyway & Dwy Performance by approach

Approach	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.2	1.9	1.7

4: Skyway & Pearson Rd Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	38.7	10.8	20.5	21.5

5: Black Olive Dr & Foster Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	7.0	7.9	1.1	0.5	6.0

6: Pearson Rd & Black Olive Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.9	0.0	3.2	0.7
Total Del/Veh (s)	12.0	10.9	15.4	21.9	12.7

7: Skyway & Elliott Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.3	0.1	0.5	0.4
Total Del/Veh (s)	29.1	33.7	24.7	46.0	38.3

Total Network Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	73.2

Intersection: 1: Skyway & Neal Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	4	45	254	120	71	271	282	109	115	282	289
Average Queue (ft)	0	12	83	50	5	154	164	8	30	108	128
95th Queue (ft)	3	33	175	108	38	244	258	49	84	234	247
Link Distance (ft)		383	354			4155	4155			2782	2782
Upstream Blk Time (%)			0								
Queuing Penalty (veh)			0								
Storage Bay Dist (ft)	80			95	115			140	100		
Storage Blk Time (%)			8	0		19	15	0	0	5	
Queuing Penalty (veh)			10	0		1	2	0	3	4	

Intersection: 2: Black Olive Dr & Skyway

Movement	WB	NB	NB	SB	SB	SB
Directions Served	LTR	T	TR	L	T	TR
Maximum Queue (ft)	249	114	144	44	262	296
Average Queue (ft)	142	32	27	10	140	162
95th Queue (ft)	224	91	86	31	232	257
Link Distance (ft)	307	2782	2782		307	307
Upstream Blk Time (%)	0					0
Queuing Penalty (veh)	0					1
Storage Bay Dist (ft)				150		
Storage Blk Time (%)		0			4	
Queuing Penalty (veh)		0			1	

Intersection: 3: Skyway & Dwy

Movement	NB	SB
Directions Served	T	TR
Maximum Queue (ft)	8	26
Average Queue (ft)	0	1
95th Queue (ft)	5	13
Link Distance (ft)	307	533
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Skyway & Pearson Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	LR	T	R	L	T
Maximum Queue (ft)	251	245	385	70	174	570
Average Queue (ft)	136	148	135	17	64	273
95th Queue (ft)	213	227	287	50	146	519
Link Distance (ft)	382	382	533	533		2377
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)					150	
Storage Blk Time (%)					0	15
Queuing Penalty (veh)					0	11

Intersection: 5: Black Olive Dr & Foster Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	96	99	28	10
Average Queue (ft)	48	58	3	0
95th Queue (ft)	77	91	16	6
Link Distance (ft)	227	205	319	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Pearson Rd & Black Olive Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	60	176	48	123	173	136	62	164	71	81
Average Queue (ft)	5	77	12	76	61	57	14	69	39	15
95th Queue (ft)	28	140	39	121	123	108	41	131	66	49
Link Distance (ft)		454	454		1152	1152		198		698
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	70			100			50		50	
Storage Blk Time (%)		10		4	1		1	11	9	0
Queuing Penalty (veh)		0		8	1		2	2	2	0

Intersection: 7: Skyway & Elliott Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	R
Maximum Queue (ft)	126	331	75	316	223	225	1252	663
Average Queue (ft)	48	172	7	80	76	126	591	52
95th Queue (ft)	101	290	36	214	192	265	1254	422
Link Distance (ft)	767	3077		2377			2252	2252
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100		200	200		
Storage Blk Time (%)				10	0	0	21	
Queuing Penalty (veh)				37	1	0	37	

Network Summary

Network wide Queuing Penalty: 122

1: Skyway & Neal Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	2.7	0.3	0.1	0.4
Total Del/Veh (s)	186.0	33.2	50.3	24.8	44.9

2: Black Olive Dr & Skyway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Del/Veh (s)	7.1	49.6	27.6	4.3	21.2

3: Skyway & Dwy Performance by approach

Approach	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	5.4	1.1	3.7

4: Skyway & Pearson Rd Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	53.2	16.0	29.6	25.8

5: Black Olive Dr & Foster Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	7.6	8.9	0.9	0.3	6.8

6: Pearson Rd & Black Olive Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.0	0.0	3.3	0.6
Total Del/Veh (s)	23.3	16.2	17.1	30.7	20.0

7: Skyway & Elliott Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.3	3.3	0.6	1.9
Total Del/Veh (s)	31.6	36.9	47.1	29.9	39.6

Total Network Performance

Denied Del/Veh (s)	1.6
Total Del/Veh (s)	99.4

Intersection: 1: Skyway & Neal Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	105	317	182	120	49	784	808	165	125	355	332
Average Queue (ft)	69	168	54	67	5	483	503	75	106	169	162
95th Queue (ft)	143	275	132	122	28	739	759	196	147	329	285
Link Distance (ft)		385	354			4155	4155			2788	2788
Upstream Blk Time (%)		0									
Queuing Penalty (veh)		0									
Storage Bay Dist (ft)	80			95	115			140	100		
Storage Blk Time (%)	10	74	3	5		40	39	0	39	3	
Queuing Penalty (veh)	7	35	4	4		1	37	1	202	5	

Intersection: 2: Black Olive Dr & Skyway

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (ft)	23	260	22	356	348	86	127	136
Average Queue (ft)	2	138	1	159	149	24	40	48
95th Queue (ft)	13	228	9	371	354	63	98	111
Link Distance (ft)	287	307		2788	2788		307	307
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		0						
Storage Bay Dist (ft)			150			150		
Storage Blk Time (%)				11			0	
Queuing Penalty (veh)				0			0	

Intersection: 3: Skyway & Dwy

Movement	NB	NB
Directions Served	T	T
Maximum Queue (ft)	259	246
Average Queue (ft)	60	24
95th Queue (ft)	234	149
Link Distance (ft)	307	307
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	3	1
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Skyway & Pearson Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	LR	T	R	L	T
Maximum Queue (ft)	262	274	538	250	174	589
Average Queue (ft)	140	165	293	50	128	201
95th Queue (ft)	225	250	591	179	197	587
Link Distance (ft)	383	383	533	533		2382
Upstream Blk Time (%)			2	0		
Queuing Penalty (veh)			15	0		
Storage Bay Dist (ft)					150	
Storage Blk Time (%)					13	4
Queuing Penalty (veh)					97	6

Intersection: 5: Black Olive Dr & Foster Rd

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	132	116	22
Average Queue (ft)	65	65	1
95th Queue (ft)	103	105	11
Link Distance (ft)	227	205	319
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Pearson Rd & Black Olive Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	76	383	38	124	225	153	74	212	74	136
Average Queue (ft)	13	203	8	87	67	61	20	89	49	29
95th Queue (ft)	48	335	30	135	152	122	54	164	80	99
Link Distance (ft)		454	454		1152	1152		198		698
Upstream Blk Time (%)								1		
Queuing Penalty (veh)								2		
Storage Bay Dist (ft)	70			100			50		50	
Storage Blk Time (%)	0	37		10	1		2	21	25	1
Queuing Penalty (veh)	1	4		18	2		6	6	5	1

Intersection: 7: Skyway & Elliott Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	R
Maximum Queue (ft)	110	420	124	1168	225	224	553	5
Average Queue (ft)	41	216	38	500	191	146	240	0
95th Queue (ft)	88	385	96	1250	277	245	454	3
Link Distance (ft)	768	3077		2382			2252	2252
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100		200	200		
Storage Blk Time (%)			0	28	10	3	9	
Queuing Penalty (veh)			6	206	56	18	16	

Network Summary

Network wide Queuing Penalty: 764

Appendix E

2040 Cumulative Plus Project Conditions LOS Calculations

1: Skyway & Neal Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	2.2	0.1	0.0	0.2
Total Del/Veh (s)	57.7	26.2	35.3	16.9	22.7

2: Black Olive Dr & Skyway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	2.5	0.0	0.0	0.0	0.1
Total Del/Veh (s)	39.2	42.9	16.9	13.4	18.6

3: Skyway & Dwy Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	22.0	2.1	2.4	2.5

4: Skyway & Pearson Rd Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	47.4	3.6	18.5	19.9

5: Black Olive Dr & Foster Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1	0.0
Total Del/Veh (s)	7.3	8.2	1.3	0.5	6.2

6: Pearson Rd & Black Olive Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.9	0.0	3.3	0.7
Total Del/Veh (s)	13.0	10.9	15.3	22.8	12.9

7: Skyway & Elliott Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.3	0.1	0.5	0.4
Total Del/Veh (s)	28.3	57.2	16.3	57.5	45.5

Total Network Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	80.5

Intersection: 1: Skyway & Neal Rd

Movement	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	60	220	120	49	328	338	135	110	309	330
Average Queue (ft)	17	90	57	4	172	182	14	36	103	127
95th Queue (ft)	46	172	119	26	279	289	80	88	232	262
Link Distance (ft)	387	354			4155	4155			2780	2780
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			95	115			140	100		
Storage Blk Time (%)	0	9	1		23	20	0	0	5	
Queuing Penalty (veh)	0	12	1		1	2	0	4	4	

Intersection: 2: Black Olive Dr & Skyway

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	140	122	174	250	55	315	296	123	312	318
Average Queue (ft)	61	43	128	81	14	65	57	16	200	219
95th Queue (ft)	120	92	195	202	42	211	204	70	321	336
Link Distance (ft)		286		306		2780	2780		301	301
Upstream Blk Time (%)				0					1	1
Queuing Penalty (veh)				0					5	11
Storage Bay Dist (ft)	150		150		150			150		
Storage Blk Time (%)	1	0	10	0		3			12	
Queuing Penalty (veh)	0	0	5	0		0			2	

Intersection: 3: Skyway & Dwy

Movement	EB	NB	SB	SB
Directions Served	R	L	T	TR
Maximum Queue (ft)	64	47	87	102
Average Queue (ft)	20	11	8	17
95th Queue (ft)	53	38	47	70
Link Distance (ft)	320		533	533
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Skyway & Pearson Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	LR	T	R	L	T
Maximum Queue (ft)	252	270	196	44	174	397
Average Queue (ft)	154	172	55	10	66	229
95th Queue (ft)	239	256	141	34	141	374
Link Distance (ft)	384	384	533	533		2377
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)					150	
Storage Blk Time (%)					0	13
Queuing Penalty (veh)					0	9

Intersection: 5: Black Olive Dr & Foster Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	127	110	33	5
Average Queue (ft)	55	61	4	1
95th Queue (ft)	92	93	21	7
Link Distance (ft)	227	205	319	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Pearson Rd & Black Olive Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B23	SB	SB
Directions Served	L	T	R	L	T	TR	L	TR	T	L	TR
Maximum Queue (ft)	38	187	38	123	203	145	48	202	12	73	76
Average Queue (ft)	4	78	11	79	64	55	13	75	0	36	13
95th Queue (ft)	22	148	35	125	131	109	40	149	6	69	49
Link Distance (ft)		454	454		1152	1152		198	229		698
Upstream Blk Time (%)								0			
Queuing Penalty (veh)								1			
Storage Bay Dist (ft)	70			100			50			50	
Storage Blk Time (%)		11		4	1		1	13		10	0
Queuing Penalty (veh)		0		9	1		3	2		2	0

Intersection: 7: Skyway & Elliott Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	R
Maximum Queue (ft)	120	472	82	189	174	623	1298	543
Average Queue (ft)	52	259	14	57	66	242	686	140
95th Queue (ft)	99	444	47	127	136	645	1529	833
Link Distance (ft)	769	3077		2377			2252	2252
Upstream Blk Time (%)							0	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)			100		200	600		
Storage Blk Time (%)				2	0	0	13	
Queuing Penalty (veh)				7	0	0	23	

Network Summary

Network wide Queuing Penalty: 107

1: Skyway & Neal Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.3	2.8	0.3	0.1	0.4
Total Del/Veh (s)	134.3	35.8	42.3	31.7	41.0

2: Black Olive Dr & Skyway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	4.3	0.0	0.0	0.0	0.4
Total Del/Veh (s)	64.5	54.2	105.4	12.2	70.2

3: Skyway & Dwy Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.6	8.8	2.0	6.1

4: Skyway & Pearson Rd Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.0
Total Del/Veh (s)	70.6	22.5	28.6	31.4

5: Black Olive Dr & Foster Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.1	0.1	0.1
Total Del/Veh (s)	8.0	8.9	1.1	0.3	7.0

6: Pearson Rd & Black Olive Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.0	0.0	3.3	0.6
Total Del/Veh (s)	23.8	16.9	17.3	31.3	20.3

7: Skyway & Elliott Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.4	35.7	0.6	17.5
Total Del/Veh (s)	30.3	51.8	119.9	39.6	79.8

Total Network Performance

Denied Del/Veh (s)	10.4
Total Del/Veh (s)	149.7

Intersection: 1: Skyway & Neal Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	105	268	188	120	52	660	684	165	125	431	411
Average Queue (ft)	42	124	60	76	5	433	445	58	113	216	216
95th Queue (ft)	121	239	145	130	28	622	632	170	144	407	386
Link Distance (ft)		384	354			4155	4155			2770	2770
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			95	115			140	100		
Storage Blk Time (%)	1	47	3	7		36	35	0	45	6	
Queuing Penalty (veh)	1	22	5	5		1	33	0	232	11	

Intersection: 2: Black Olive Dr & Skyway

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	174	310	174	256	175	2048	2060	91	246	270
Average Queue (ft)	151	178	118	89	93	864	838	27	105	117
95th Queue (ft)	204	356	189	200	192	1986	1984	66	203	220
Link Distance (ft)		286		306		2770	2770		301	301
Upstream Blk Time (%)		8		0					0	0
Queuing Penalty (veh)		0		0					0	1
Storage Bay Dist (ft)	150		150		150			150		
Storage Blk Time (%)	29	1	8	1	1	45			2	
Queuing Penalty (veh)	26	3	6	1	5	32			1	

Intersection: 3: Skyway & Dwy

Movement	EB	NB	NB	NB	SB	SB
Directions Served	R	L	T	T	T	TR
Maximum Queue (ft)	65	124	327	332	12	42
Average Queue (ft)	28	40	125	62	1	3
95th Queue (ft)	55	96	348	244	7	21
Link Distance (ft)	320		301	301	533	533
Upstream Blk Time (%)			2	0		
Queuing Penalty (veh)			20	3		
Storage Bay Dist (ft)		100				
Storage Blk Time (%)		0	7			
Queuing Penalty (veh)		1	5			

Intersection: 4: Skyway & Pearson Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	LR	T	R	L	T
Maximum Queue (ft)	285	339	571	540	263	591
Average Queue (ft)	167	199	406	70	154	163
95th Queue (ft)	269	312	638	284	267	537
Link Distance (ft)	384	384	533	533		2380
Upstream Blk Time (%)	0	0	5	0		
Queuing Penalty (veh)	0	1	39	2		
Storage Bay Dist (ft)					250	
Storage Blk Time (%)					6	1
Queuing Penalty (veh)					52	1

Intersection: 5: Black Olive Dr & Foster Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	150	135	28	6
Average Queue (ft)	69	73	3	0
95th Queue (ft)	112	120	15	3
Link Distance (ft)	227	205	319	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Pearson Rd & Black Olive Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B23	SB	SB
Directions Served	L	T	R	L	T	TR	L	TR	T	L	TR
Maximum Queue (ft)	77	381	38	124	242	175	74	199	6	74	123
Average Queue (ft)	10	212	7	88	77	67	22	90	0	49	25
95th Queue (ft)	40	348	28	134	171	135	58	163	4	77	83
Link Distance (ft)		454	454		1152	1152		198	229		698
Upstream Blk Time (%)		0						0			
Queuing Penalty (veh)		0						2			
Storage Bay Dist (ft)	70			100			50			50	
Storage Blk Time (%)	0	38		8	1		4	21		23	1
Queuing Penalty (veh)	0	4		17	3		14	6		5	1

Intersection: 7: Skyway & Elliott Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	R
Maximum Queue (ft)	109	545	124	2152	225	224	702	5
Average Queue (ft)	45	313	41	1527	221	164	330	1
95th Queue (ft)	95	524	102	2344	240	260	597	3
Link Distance (ft)	770	3077		2380			2252	2252
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100		200	200		
Storage Blk Time (%)			1	39	24	6	15	
Queuing Penalty (veh)			13	320	147	43	26	

Network Summary

Network wide Queuing Penalty: 1108

Transportation Impact Study Supplement
(November 2017)

Traffic Engineering, Transportation Planning & Forensic Services

November 13, 2017

To: Alice Tackett, Michael Baker International

From: Loren E. Chilson, PE, Traffic Works

Transportation Impact Study Supplement
Black Olive Village (Reduced Project Alternative)

This letter serves as a supplement to the Transportation Impact Study titled "*Transportation Impact Study for Black Olive Village*" dated September 18, 2017. This letter summarizes additional traffic operations analysis and impact evaluation for a "reduced project" alternative.

Please refer to the "*Transportation Impact Study for Black Olive Village*" dated September 18, 2017 for a complete discussion of the "proposed project" description related to traffic elements, analysis methods used, significance criteria and thresholds, Existing/Baseline/2040 Baseline Conditions, the roadway network, and all other transportation items, as this supplement is limited to an examination of only the "reduced project" alternative and its potential impacts.

Reduced Project Analysis

Project Description:

The reduced project consists of a lower intensity land use plan compared to the proposed project. Compared to the proposed project, this reduced alternative eliminates the Safeway fueling station with 18 positions & a convenience market and removes the 4,200 square foot restaurant. The reduce project consists of the following land uses:

- 54,470 square foot Safeway grocery store
- 7,800 square feet of commercial/retail space

The reduced project alternative is being considered to determine if a project with lower trip generation would avoid any of the significant impacts identified in the proposed project alternative.

Trip Generation:

Trip generation rates for each land use of the reduced project alternative were obtained from the Trip Generation Manual, 9th Edition, published by the Institute of Transportation Engineers. **Table 1** provides the Daily, AM Peak Hour, and PM Peak Hour trip generation calculations for the reduced project. As shown in **Table 1**, the reduced project is estimated to generate a total of 5,902 daily trips, 192 AM peak hour trips, and 545 PM peak hour trips.

Table 1: Trip Generation Summary – Reduced Project Alternative

Land Use	Size	Weekday			PM Peak Hour			AM Peak Hour		
		Total	Entry	Exit	Total	Entry	Exit	Total	Entry	Exit
Supermarket	54,470 Sq. Feet Gross Floor Area	5,569	2,785	2,784	516	263	253	185	115	70
Pass-by		1,004	503	501	186	95	91	0	0	0
Non-pass-by		4,565	2,282	2,283	330	168	162	185	115	70
Shopping Center/Retail	7,800 Sq. Feet Gross Leasable Area	333	167	166	29	14	15	7	4	3
Pass-by		138	66	72	24	11	13	0	0	0
Non-pass-by		195	101	94	5	3	2	7	4	3
Total Trips		5,902	2,952	2,950	545	277	268	192	119	73
Total Pass-By trips		1,142	569	573	210	106	104	0	0	0
Total External Trips		**4,760**	**2,383**	**2,377**	**335**	**171**	**164**	**192**	**119**	**73**

Pass-by trips are made by drivers already using the adjacent roadway, which enter the site as an intermediate stop on the way to another destination. The trip may not necessarily be "generated" by the land use under study, and thus, is not a new trip added to the local transportation system. These trips only appear at the project driveways. Pass-by trip percentages specified in the ITE Trip Generation Handbook were used to estimate the pass-by rates for uses within this alternative. Pass-by trips were subtracted from the total trips to obtain the External or Net New Trips. After accounting for pass-by trips, the project is estimated to generate up to 4,760 net new daily trips, 192 net new AM peak hour trips, and 335 net new PM peak hour trips. These are the volumes of traffic that would be added to the greater roadway network.

Similar to the proposed project analysis, no trip making reductions were taken for future relocation from the existing Safeway building on Clark Road and no trips were deducted or rerouted.

Trip Distribution and Assignment:

The methodology and trip distribution percentages used for this reduced project alternative are the same as were used in the proposed project alternative. The following trip distribution percentages were used for routing the project generated traffic:

- 5% to/from the south on Skyway
- 5% to/from the south on Neal Road

- 10% to/from the south on Foster Drive via Black Olive Drive
- 30% to/from the east on Pearson Road
- 5% to/from the west on Elliott Road
- 25% to/from the east on Elliott Road
- 20% to/from the north on Skyway (north of Elliott Road)

The Reduced Project trip assignments for the AM and PM peak hours are shown in **Figure 1S** and **Figure 2S**, respectively.

Vehicle Miles Travelled (VMT) Estimation

VMT calculations for the Reduced Project alternative are shown in **Table 2**. As shown in the table, this alternative is anticipated to cause an increase in VMT of 17,107 miles per day. The reduced project would generate 1,601 fewer miles per day of travel than the proposed project that also included a fueling station and restaurant.

Table 2: Project Generated Vehicle Miles Travelled – Reduced Project Alternative

Number of Trips	Type of Trips	Average Trip Length	Daily VMT
4,760	External	3.57	16,993
1,142	Pass-By	0.1	114
Total			17,107

Neither Butte County nor the Town of Paradise currently have any specific thresholds or significance criteria related to VMT at this time. Both agencies have general goals of reducing VMT and Green House Gas emissions.

Baseline Plus Project Conditions

Baseline Plus Project traffic volumes were developed by adding the "reduced project" generated trips to the Baseline traffic volumes and are shown in **Figure 3S** and **Figure 4S**, attached.

Baseline Plus Project Intersection Level of Service

Baseline Plus Project level of service was calculated using the Baseline Plus Project traffic volumes and the same traffic signal timings/coordination scheme used in all other analysis scenarios. **Table 3** summarizes the Baseline Plus Project conditions LOS for the reduced project alternative. Detailed calculation sheets are provided in **Appendix A**, attached. As shown in **Table 3**, all the study intersections are anticipated to operate at acceptable LOS conditions. Operations at the Skyway/Black Olive intersection are anticipated to degrade from LOS "B" to LOS "C" during the

PM peak hour with the addition of the reduced project traffic and the change to east/west protected left-turn phasing that is needed with either project alternative.

Table 3: Baseline Plus Project Level of Service Summary – Reduced Project

Intersection	Control	AM Peak		PM Peak	
		LOS	Delay	LOS	Delay
Skyway/Neal Rd	Signal	B	18.0	C	33.5
Skyway/Black Olive Dr	Signal	B	15.2	C	31.0
Skyway/Driveway	Side Street STOP	A	9.8	A	5.7
Skyway/Pearson	Signal	B	18.4	C	24.7
Skyway/Elliott Rd	Signal	C	32.0	C	28.9
Black Olive Dr/Foster Rd	Side Street STOP	A	5.8	A	7.5
Pearson Rd/Black Olive Dr	Signal	B	10.9	B	15.0

Baseline Plus Project Queuing

The Baseline Plus Project conditions queuing summary is provided in **Table 4**. With the addition of reduced project traffic, the Skyway/Black Olive Drive and Skyway/Pearson Road intersections are anticipated to experience heavy northbound queuing during the PM peak hour.

Compared to Baseline conditions, the northbound 95th percentile queue at the Skyway/Black Olive Drive intersection is anticipated to increase by approximately 360 feet and the northbound 95th percentile queue at the Skyway/Pearson Road intersection is anticipated to increase by approximately 175 feet. The northbound queue on Skyway at Pearson Road can be expected to extend back to Black Olive Drive during the PM peak hour. These increases in queue lengths, although lower than the proposed project alternative, are still notable increases that will impact overall traffic operations.

Table 4: Baseline Plus Project Queuing Summary – Reduced Project Alternative

Intersection (95% Queue in Feet)	Distance to nearest Upstream Intersection (feet)	Baseline Plus Project	
		AM Peak	PM Peak
Skyway/Neal Rd			
NB	1,100	185	462
SB	675	274	302
EB	170	50	159
WB	235	157	111
Skyway/Black Olive Dr			
NB	880	49	497
SB	575	257	207
WB	935	229	116
EB	NA	94	194
Skyway/Driveway			
EB	NA	27	47
Skyway/Pearson			
NB	350	123	898
SB	325	398	279
WB	575	219	217
Skyway/Elliott Rd			
NB	925	208	258
SB	530	631	346
EB	850	100	100
WB	525	357	388
Black Olive Dr/Foster Rd			
EB	935	57	96
WB	790	90	100
Pearson Rd/Black Olive Dr			
NB	790	107	132
SB	325	41	61
EB	290	107	238
WB	350	111	121

2040 Cumulative Plus Project Conditions

2040 Cumulative Plus Project traffic volumes were developed by adding the reduced project generated trips to the 2040 Cumulative conditions traffic volumes and are shown in **Figure 5S** and **Figure 6S**, attached.

2040 Cumulative Plus Project Intersection Level of Service

2040 Cumulative Plus Project level of service was calculated using the 2040 Cumulative Plus Project traffic volumes and a traffic signal timing/coordination scheme very similar to what was utilized for the full project alternative. **Table 5** summarizes the 2040 Cumulative Plus Project conditions level of service analysis. Detailed calculation sheets are provided in **Appendix B**, attached.

Table 5: 2040 Cumulative Plus Project Conditions Level of Service Summary – Reduced Project

Intersection	Control	AM Peak		PM Peak	
		LOS	Delay	LOS	Delay
Skyway/Neal Rd	Signal	C	21.1	D	40.3
Skyway/Black Olive Dr	Signal	B	16.4	D	48.6
Skyway/Driveway	Side Street STOP	C	16.9	A	6.8
Skyway/Pearson	Signal	B	19.1	C	27.3
Skyway/Elliott Rd	Signal	D	41.1	E	73.4
Black Olive Dr/Foster Rd	Side Street STOP	A	8.4	A	7.2
Pearson Rd/Black Olive Dr	Signal	B	12.0	B	19.2

As shown in **Table 5**, under the 2040 Cumulative Plus Project conditions, all the study intersections are anticipated to operate at acceptable levels of service except for the Skyway/Elliott Road intersection. The Skyway/Elliott Road intersection is anticipated to degrade to LOS "E" with the addition of the reduced project alternative traffic in the 2040 study year.

The addition of reduced project alternative traffic volumes will result in the Skyway/Elliott Road intersection operating at worse than LOS "D" conditions in the 2040 horizon year, therefore the reduced project creates a significant impact.

2040 Cumulative Plus Project Queuing

As shown in **Table 6**, the 95th percentile queue lengths are anticipated to increase significantly due to the addition of reduced project alternative traffic in the 2040 Cumulative Plus Project conditions scenario. The Skyway corridor traffic volumes can also be expected to effectively reach capacity in the reduced project scenario. The northbound 95th percentile queue lengths during the PM peak hour at the Skyway/Black Olive Drive and Skyway/Elliott Road intersections are anticipated to increase on the order of 1,000 feet with the addition of reduced project alternative traffic volumes.

With addition of the reduced project traffic, the PM peak hour 95th percentile northbound queue length at the Skyway/Elliott Road intersection is anticipated to exceed 2,300 feet and the

northbound queue length at the Skyway/Black Olive Drive intersection is anticipated to be over 1,300 feet. The southbound 95th percentile queue length at the Skyway/Elliott Road intersection is anticipated to exceed 1,500 feet during the AM peak hour under the 2040 Cumulative Plus Project conditions.

Table 6: 2040 Cumulative Plus Project Queuing Summary – Reduced Project Alternative

Intersection (95% Queue in Feet)	Distance to nearest Upstream Intersection (feet)	2040 Cumulative Plus Project	
		AM Peak	PM Peak
Skyway/Neal Rd			
NB	1,100	261	604
SB	675	243	344
EB	170	41	251
WB	235	199	150
Skyway/Black Olive Dr			
NB	880	244	1,335
SB	575	298	178
WB	935	200	220
EB	NA	86	189
Skyway/Driveway			
EB	NA	23	48
Skyway/Pearson			
NB	350	156	1,020
SB	325	329	234
WB	575	235	278
Skyway/Elliott Rd			
NB	925	145	2,370
SB	530	1,568	628
EB	850	106	96
WB	525	573	529
Black Olive Dr/Foster Rd			
EB	935	74	108
WB	790	89	127
Pearson Rd/Black Olive Dr			
NB	790	135	181
SB	325	68	83
EB	290	167	346
WB	350	123	215

Proposed Project versus Reduced Project Impacts

Under 2040 Cumulative Plus Project conditions, at least one study intersection is anticipated to operate at worse than LOS "D" policy with either the Proposed Project or Reduced Project alternatives. Even with reduced land use quantities/intensity, excessive vehicle queuing is anticipated to occur at the Skyway/Black Olive Drive, Skyway/Pearson Road, and Skyway/Elliott Road intersections during the PM peak hour. Under both alternatives, the 2040 Plus Project conditions PM peak hour 95th percentile northbound queue at the Skyway/Elliott Road intersection is anticipated to be in excess of 2,300 feet. Similarly, under both the alternatives, the 2040 Plus Project conditions AM peak hour 95th percentile southbound queue at the Skyway/Elliott Road intersection is anticipated to be in excess of 1,500 feet.

Both alternatives create a significant impact related to intersection level of service. One notable difference is that the reduced project does not create LOS "E" conditions at the Skyway/Black Olive intersection, whereas the full project does.

Recommended Mitigation Measures

Considering both alternatives create a significant impact at the same location (Skyway/Elliott Road intersection), the recommended mitigation measures for the Reduced Project alternative are the same as those identified for the Proposed Project alternative. Please refer to the "*Transportation Impact Study for Black Olive Village*" dated September 18, 2017 for a complete description of recommended mitigation measures.

Impact Evaluation

Question 1: Will the project (Reduced Project Alternative) result in an impact on intersections, roadway segments, highways, or freeway facilities?

The addition of Reduced Project traffic will result in the Skyway/Elliott Road intersection operating at worse than LOS "D" conditions in the 2040 horizon year, therefore the project creates a significant impact.

Mitigations have been considered and tested, but a solution has not been identified that would improve traffic operations to LOS "D" or better during 2040 Cumulative Plus Project scenario PM peak hour conditions at all the study intersections, or significantly reduce extensive vehicle queuing in the corridor in the future. Therefore, from a technical perspective, the traffic operations impact is considered significant and unavoidable.

However, it is important to recognize that the Town of Paradise values a safe, walkable, downtown business focused environment with on-street parking on the Skyway (generally from Black Olive Drive to Oliver Road) over traffic throughput. Accordingly, the Town Council acknowledged the Transportation and Safety Study for the Downtown Paradise Safety Project (December 2013) and adopted a resolution for the

Plans, Specifications and Estimates for the subject project in May 2014. The Town intentionally implemented the Downtown Paradise Safety Project to provide pedestrian safety and local environment benefits. While the dated 1994 Town of Paradise General Plan Circulation Element policies have not been formally modified, the Town fully recognizes and accepts that vehicle queuing and slower travel speeds will occur on Skyway during peak commute times.

Recommend mitigations consist of optimizing the Skyway corridor signal timings and overall coordination scheme approximately one month after store opening and one year after store opening, and the payment of Town required standard Transportation Impact Fees.

Question 2: Will the project (Reduced Project Alternative) result in an impact on transit facilities?

Similar to the proposed project, the reduced project alternative also proposes to provide bike parking/racks within the project and construct a bus stop on Skyway adjacent to the site. With these proposed improvements, the impacts on transit facilities would be mitigated to a less-than-significant level.

Question 3: Will the project (Reduced Project Alternative) result in an impact on bicycle or pedestrian facilities?

Similar to the proposed project, the Reduced Project alternative would also construct sidewalk along the project frontage and walking routes within the site. The project's completion of a continuous sidewalk on the west (project side) of Skyway from Pearson Road to Black Olive Drive would mitigate bicycle and pedestrian facility impacts to a less-than-significant level.

Question 4: Will the project (Reduced Project Alternative) conflict with adopted parking standards?

Both project alternatives will be required provide on-site parking in accordance with Town standards. Impacts on parking would be less-than-significant.

Question 5: Will the project (Reduced Project Alternative) result in an impact to air traffic patterns?

Neither project scenario would include any elements that would affect or be notably affected by air traffic. The Reduced Project alternative is deemed to have no impact on air traffic.

Question 6: Will the project (Reduced Project Alternative) substantially increase hazards due to a design feature or incompatible uses?

The access point locations and their design under the Reduced Project alternative are the same as identified with the proposed project. The two project access points have been designed to safely manage traffic flows and delivery truck movements. No other intersections or roadway facilities will be reconfigured as a result of the project and no other new design features or incompatible uses will be introduced.

Left-turn out movements will be prohibited from the access driveway at the north property line to minimize left-turn conflicts on Skyway.

The project will improve the Skyway/Black Olive Drive intersection by constructing exclusive left-turn pockets on both Black Olive Drive approaches (project driveway approach and westbound approach) and change the signal phasing for side street left-turns from "permissive" to "protected". The project will re-optimize the signal timings for the Skyway corridor between Neal Road and Elliott Road. Protected left-turn phasing will be necessary at the project and opposing approaches due to sight distance limitations associated with at crest vertical curve on Black Olive Drive at the intersection. The additional of a left-turn lane on Black Olive Drive will require street widening with related drainage, sidewalk, and minor signal modification improvements, all of which are anticipated to be constructed within the existing right-of-way.

The above mitigations will reduce safety related impacts to a less-than-significant level.

Question 7: Will the project (Reduced Project Alternative) result in inadequate emergency access?

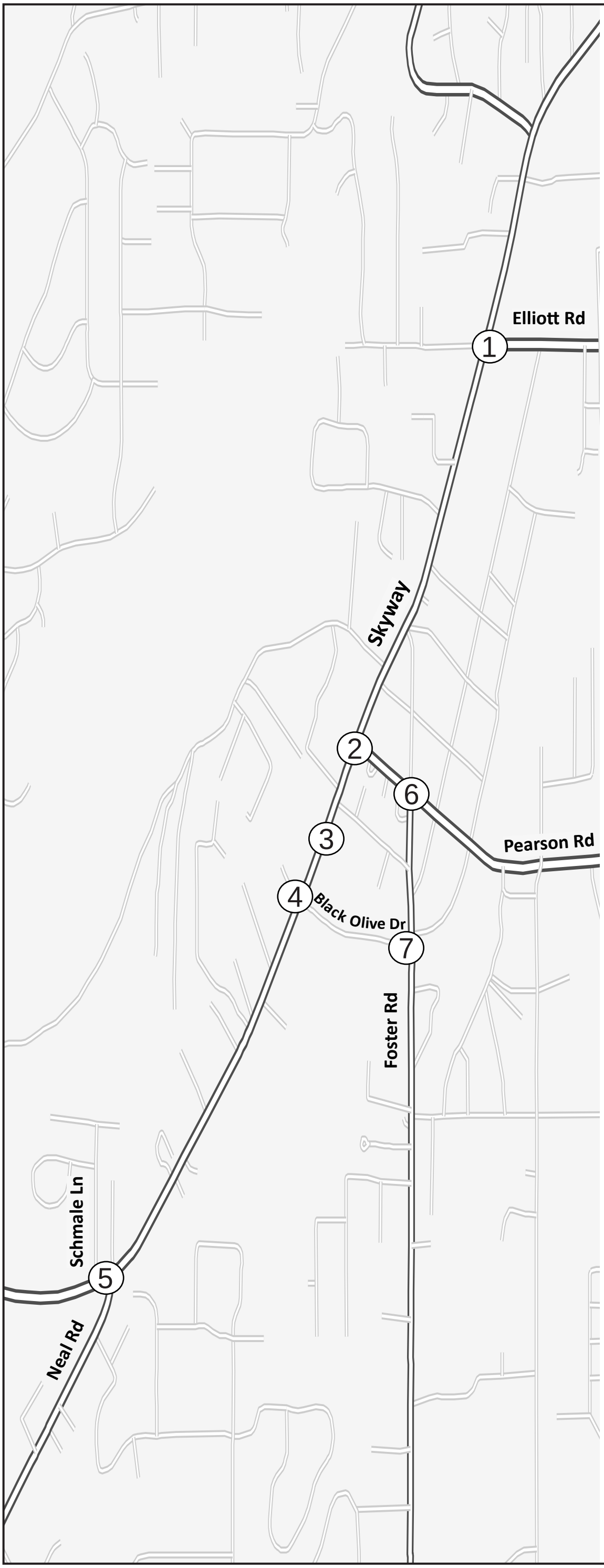
The access point locations and their design remain unchanged under this alternative. Two access points are provided for the project site and both will be designed and constructed in accordance with applicable fire access regulations. Circulation routes within the site will accommodate emergency response vehicles. Impacts on emergency access are considered less-than-significant.

Question 8: Will the project (Reduced Project Alternative) result in a temporary impact to the existing transportation system due to construction traffic?

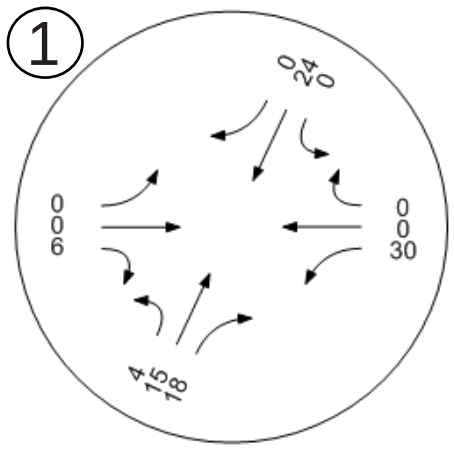
Construction traffic volumes will be very low compared to the project generated traffic volumes evaluated in this analysis. Since level of service "D" or better was identified for the near term Baseline Plus Project conditions, the roadway network has adequate capacity for the much lower construction traffic volumes. Skyway is an arterial roadway capable of accommodating large/heavy trucks during construction. This is a considered a less-than-significant impact.

Question 9: Will the project (Reduced Project Alternative) conflict with adopted policies regarding Vehicle Miles Travelled (VMT)?

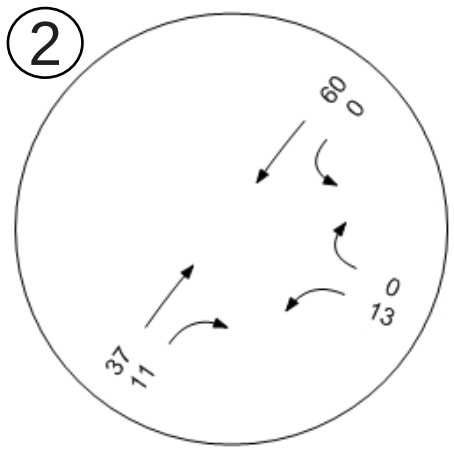
The Reduced Project alternative will increase VMT. Neither Butte County nor the Town of Paradise currently have any specific thresholds or significance criteria related to VMT at this time. Both agencies have general goals of reducing VMT and Green House Gas emissions. Since no threshold values have been adopted by the Town of Paradise or Butte County, this is considered a less-than-significant impact.



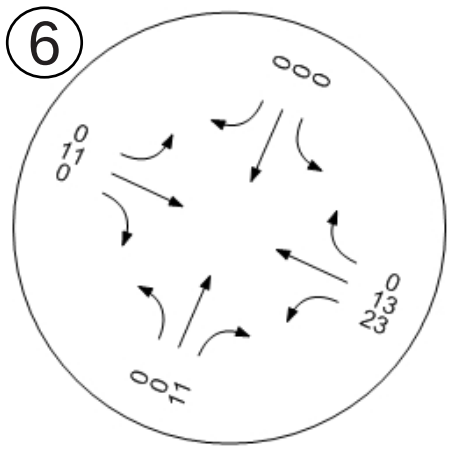
Skyway / Elliott Rd



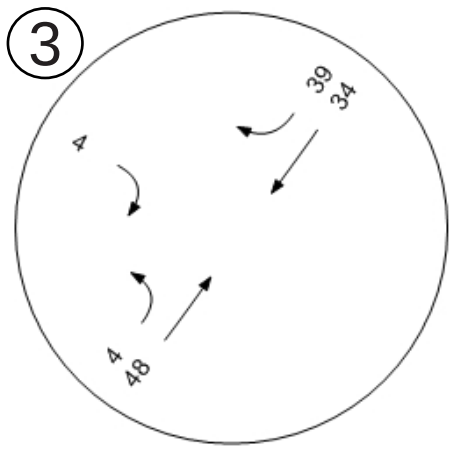
Skyway / Pearson Rd



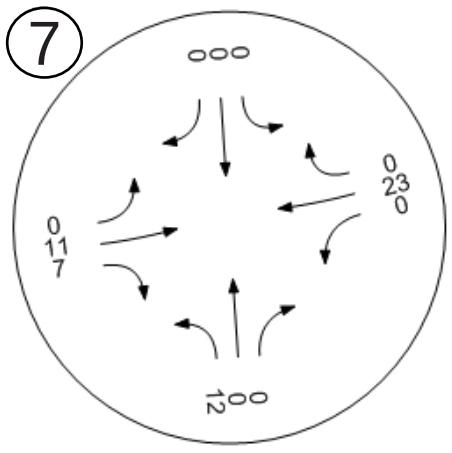
Pearson Rd / Black Olive Dr



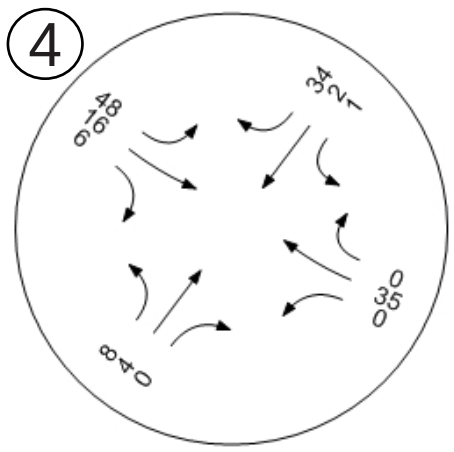
Skyway / Project Dwy



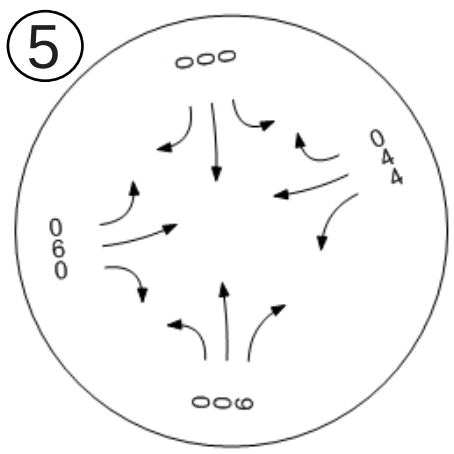
Black Olive Dr / Foster Rd



Skyway / Black Olive Dr



Skyway / Neal Rd / Schmale Ln

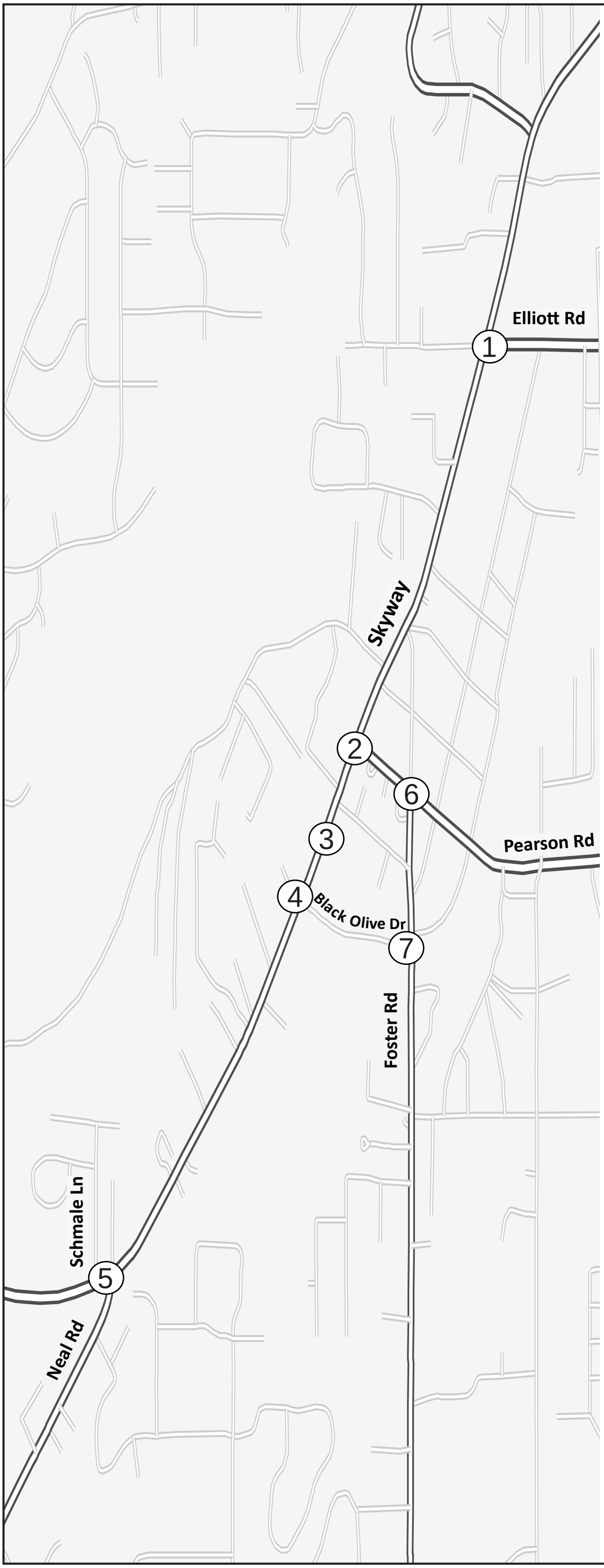


TRAFFIC WORKS LLC

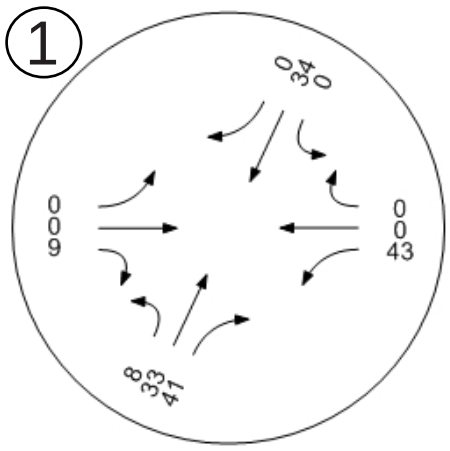
NO SCALE

Figure 1S

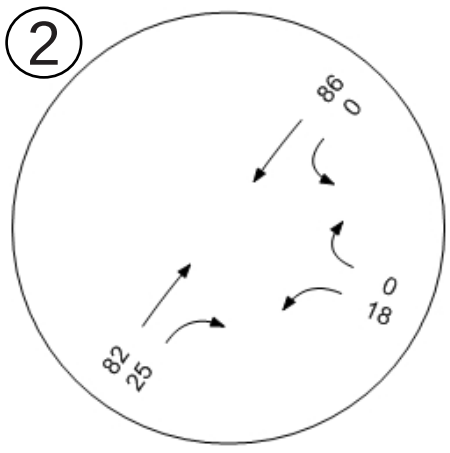
Black Olive Village - Reduced Project Alternative
Transportation Impact Study Supplement
AM Peak Project Trips



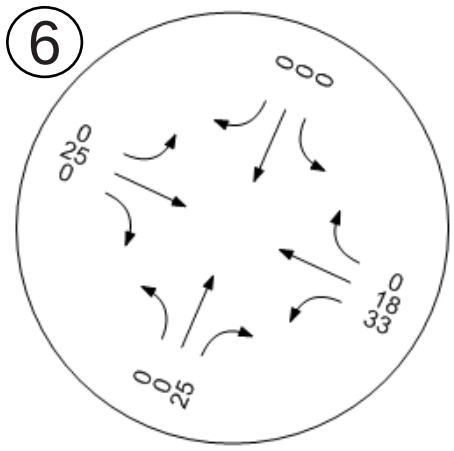
Skyway / Elliott Rd



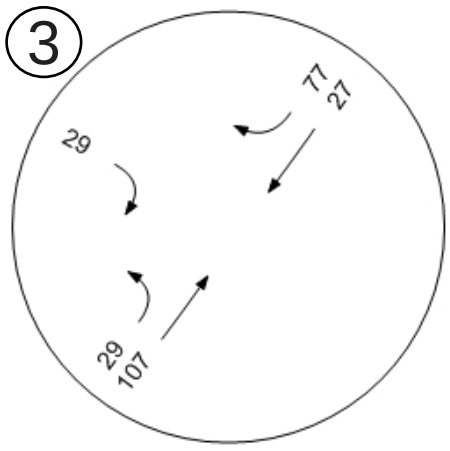
Skyway / Pearson Rd



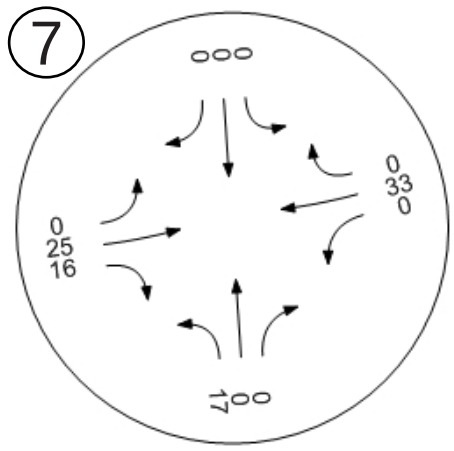
Pearson Rd / Black Olive Dr



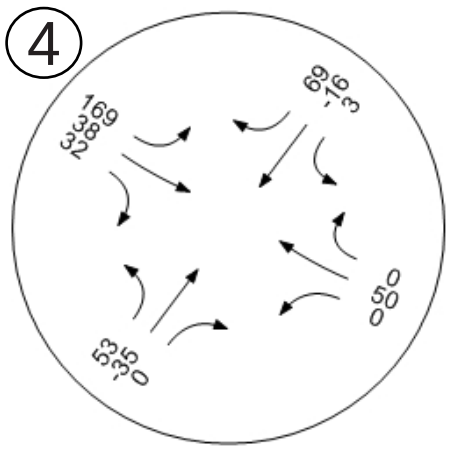
Skyway / Project Dwy



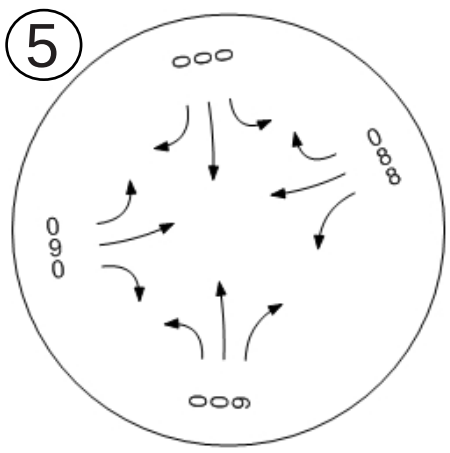
Black Olive Dr / Foster Rd



Skyway / Black Olive Dr



Skyway / Neal Rd /
Schmale Ln



TRAFFIC WORKS LLC

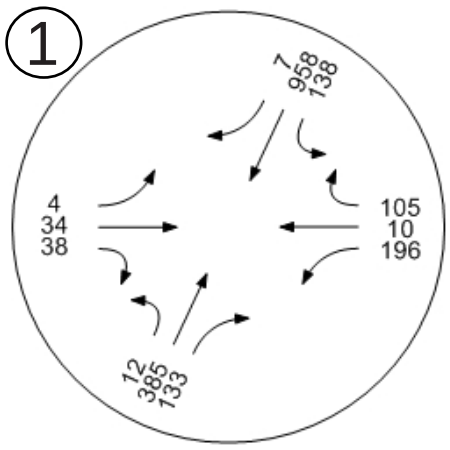
NO SCALE

Figure 2S

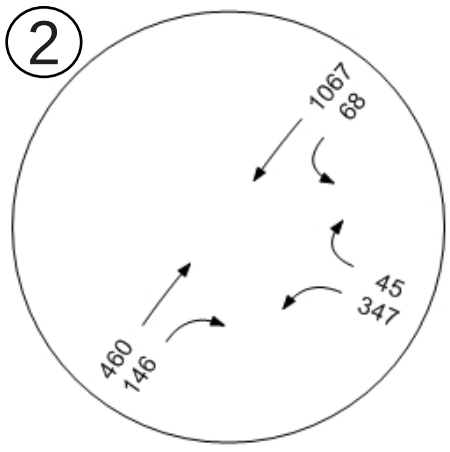
Black Olive Village - Reduced Project Alternative
Transportation Impact Study Supplement
PM Peak Project Trips

Elliott Rd
Skyway
Pearson Rd
Black Olive Dr
Foster Rd
Schmale Ln
Neal Rd

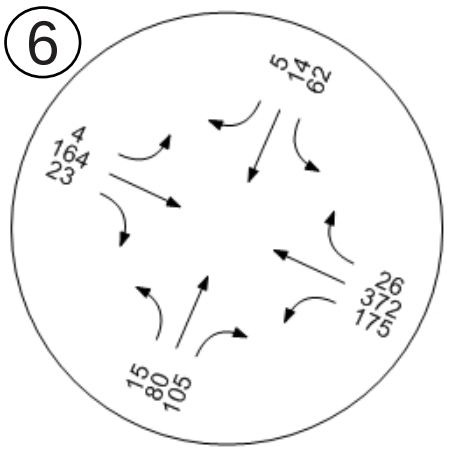
Skyway / Elliott Rd



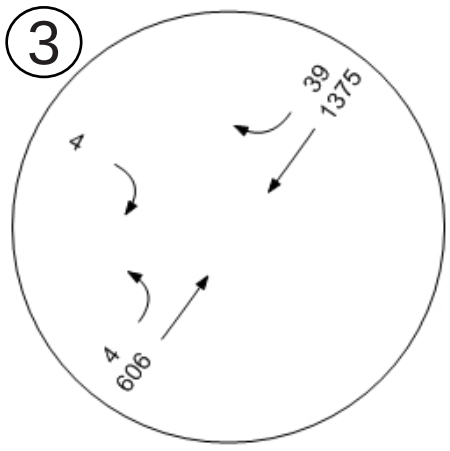
Skyway / Pearson Rd



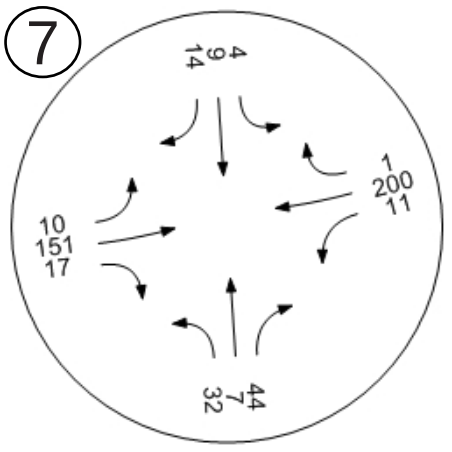
Pearson Rd / Black Olive Dr



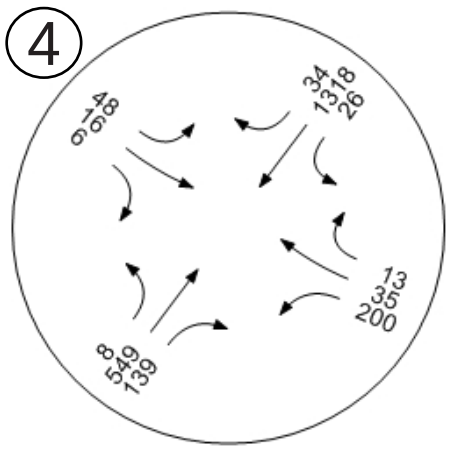
Skyway / Project Dwy



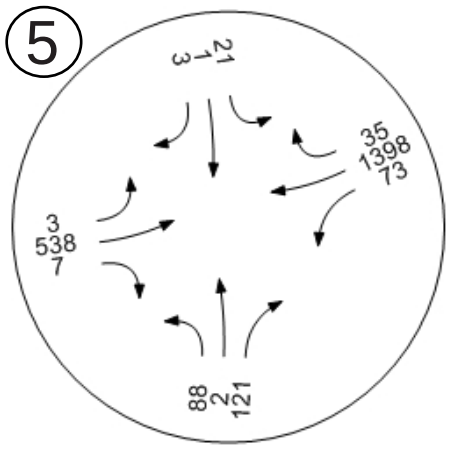
Black Olive Dr / Foster Rd



Skyway / Black Olive Dr



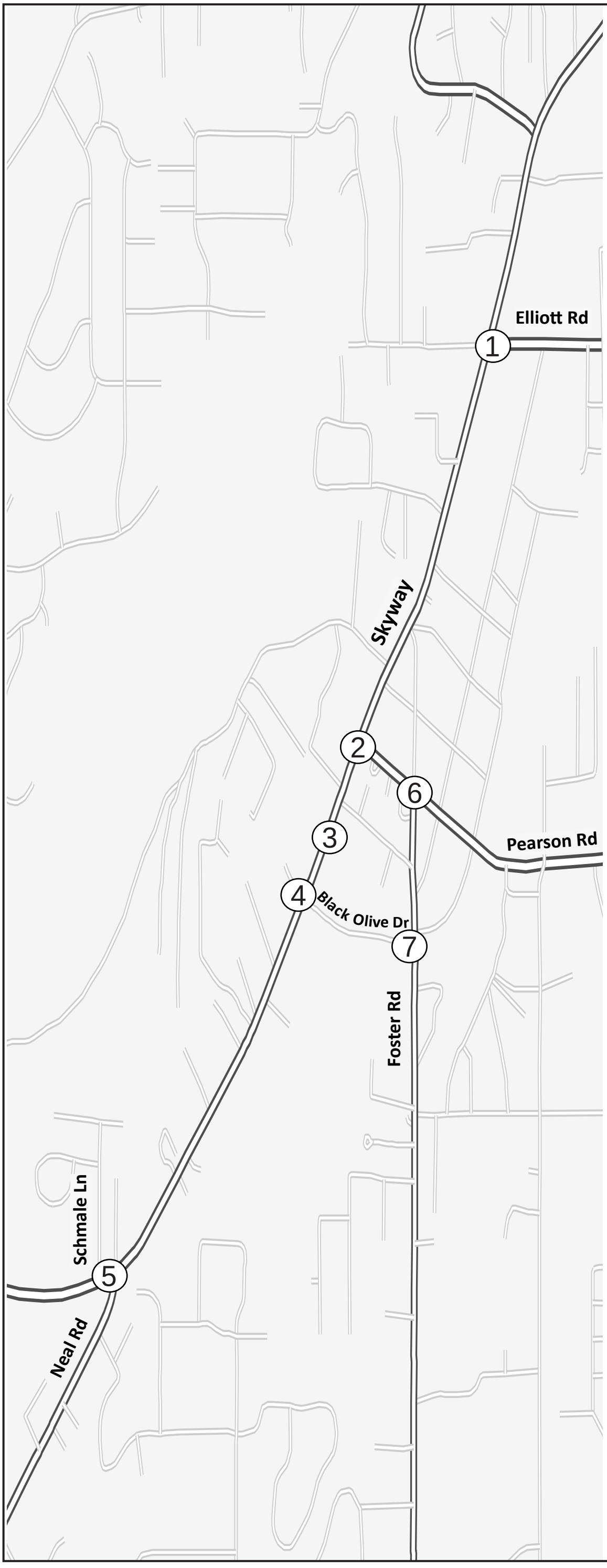
Skyway / Neal Rd / Schmale Ln



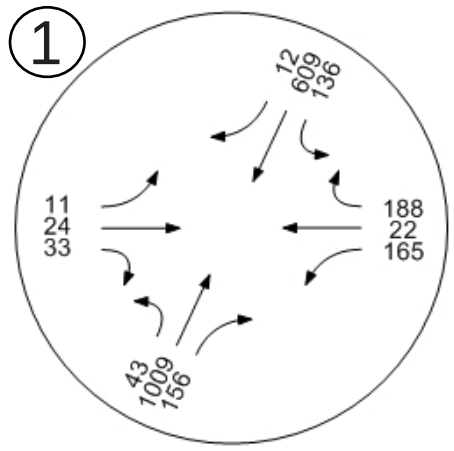
NO SCALE

Figure 3S

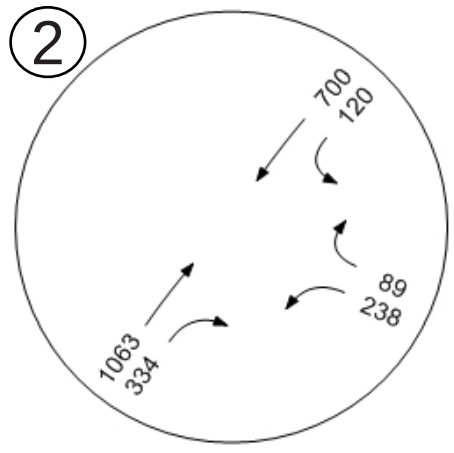
Black Olive Village - Reduced Project Alternative
Transportation Impact Study Supplement
Baseline Plus Project AM Peak Traffic Volumes



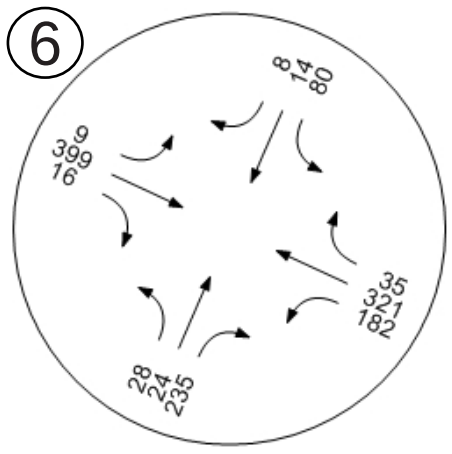
Skyway / Elliott Rd



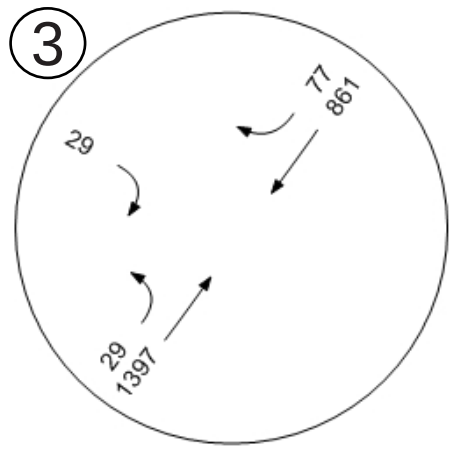
Skyway / Pearson Rd



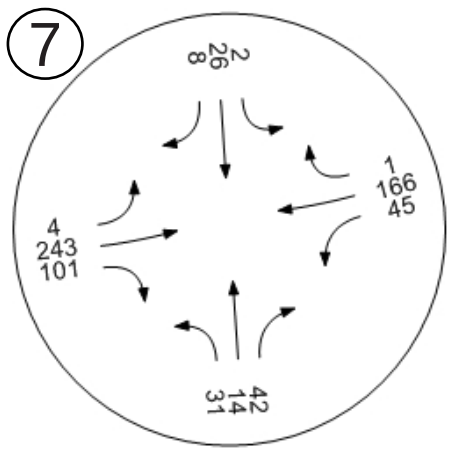
Pearson Rd / Black Olive Dr



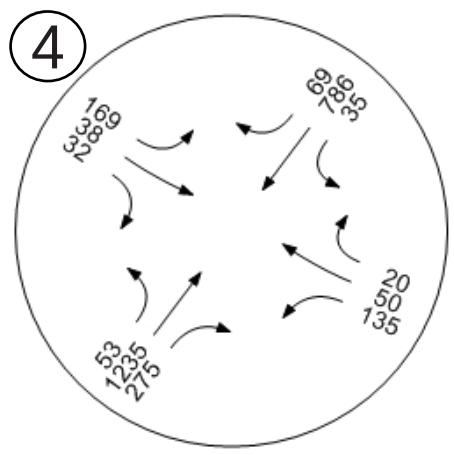
Skyway / Project Dwy



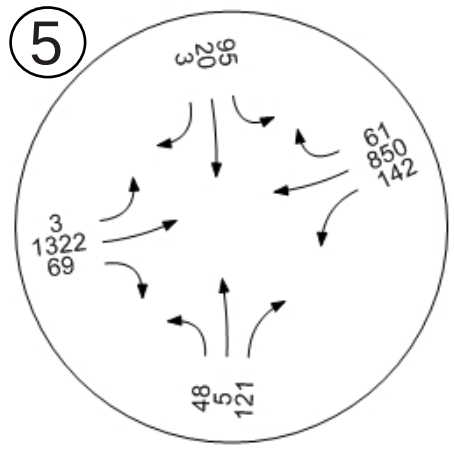
Black Olive Dr / Foster Rd



Skyway / Black Olive Dr



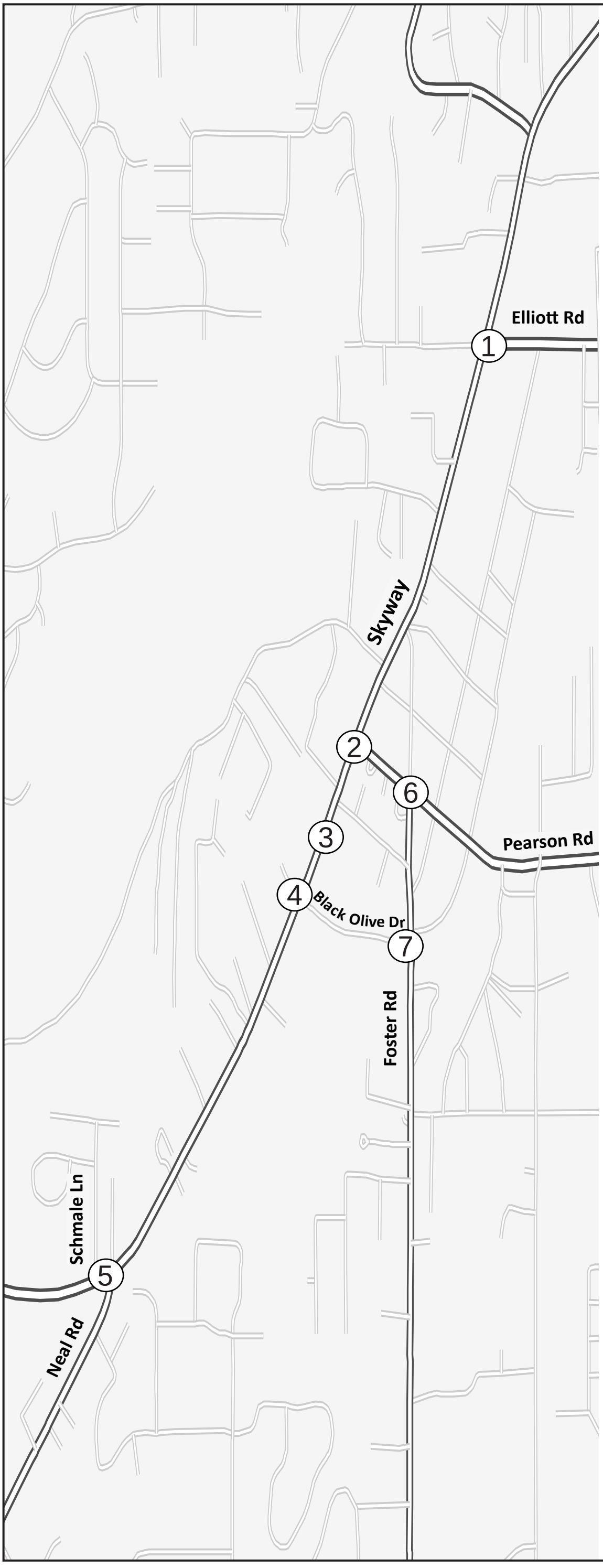
Skyway / Neal Rd / Schmale Ln



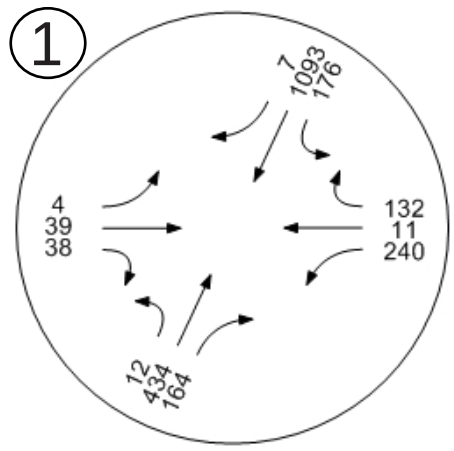
NO SCALE

Figure 4S

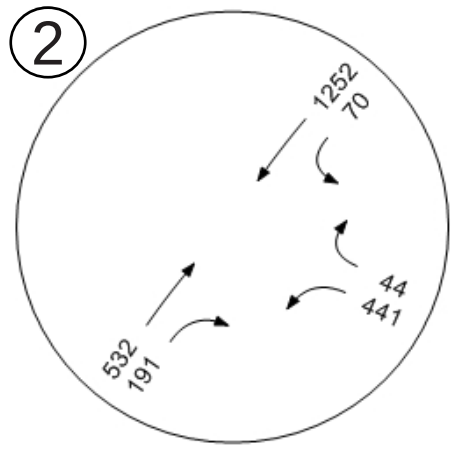
Black Olive Village - Reduced Project Alternative
Transportation Impact Study Supplement
Baseline Plus Project PM Peak Traffic Volumes



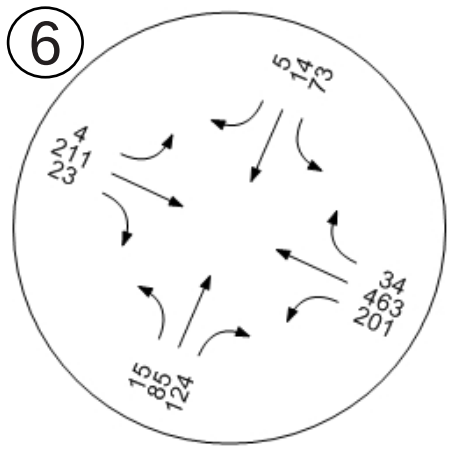
Skyway / Elliott Rd



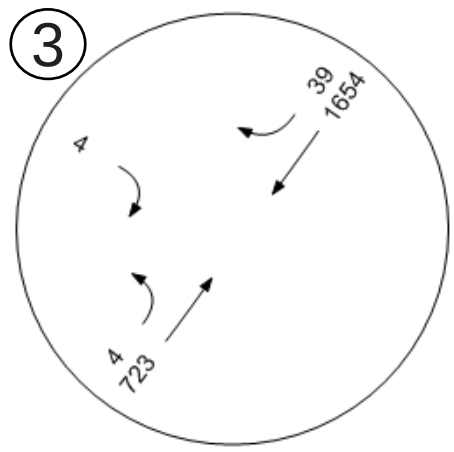
Skyway / Pearson Rd



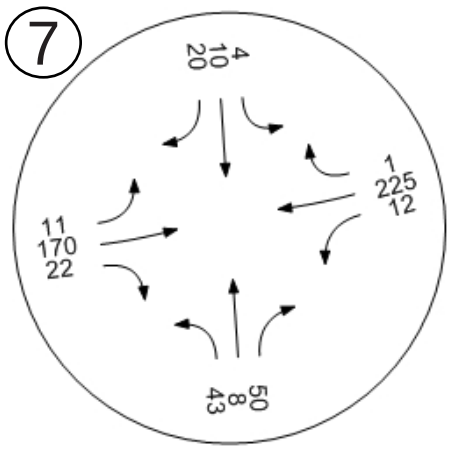
Pearson Rd / Black Olive Dr



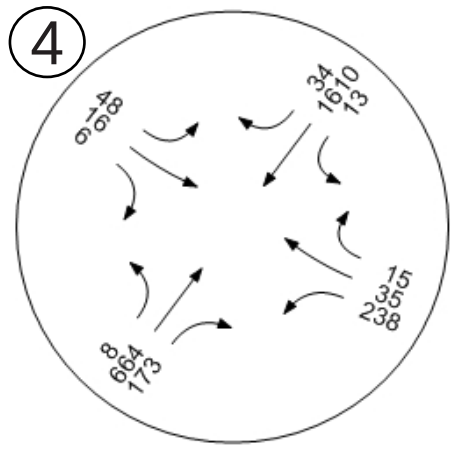
Skyway / Project Dwy



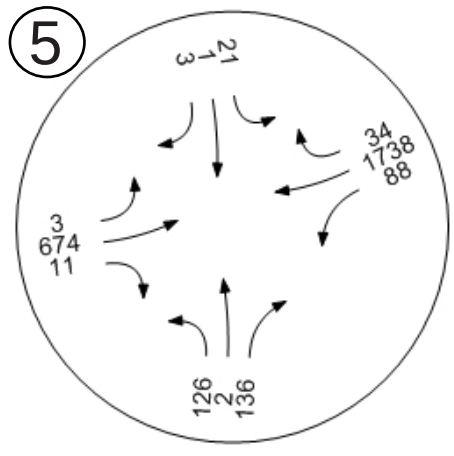
Black Olive Dr / Foster Rd



Skyway / Black Olive Dr



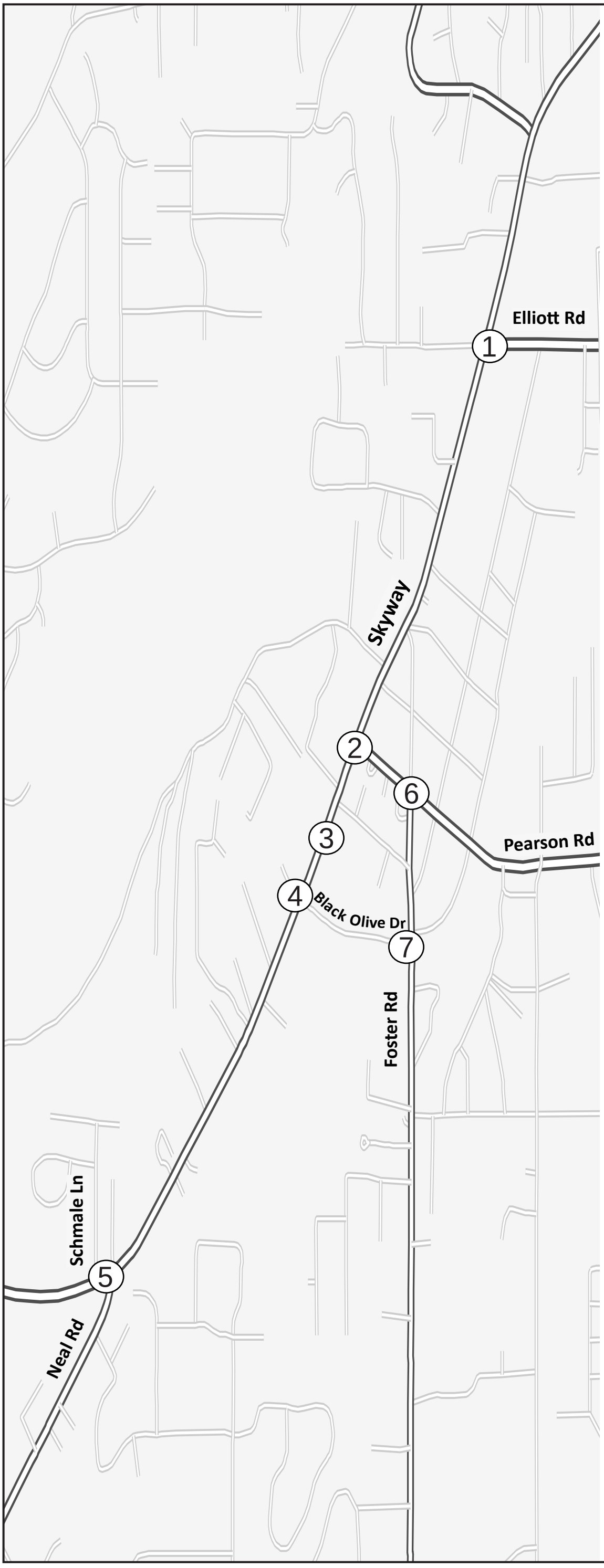
Skyway / Neal Rd /
Schmale Ln



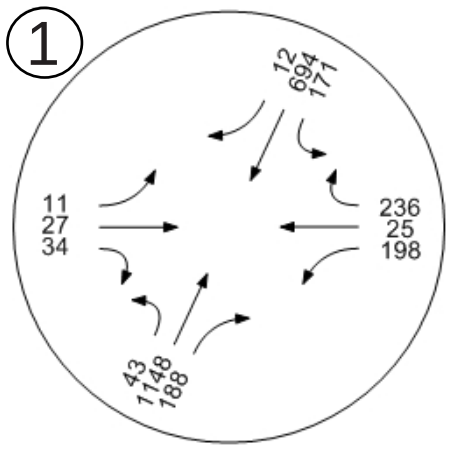
NO SCALE

Figure 5S

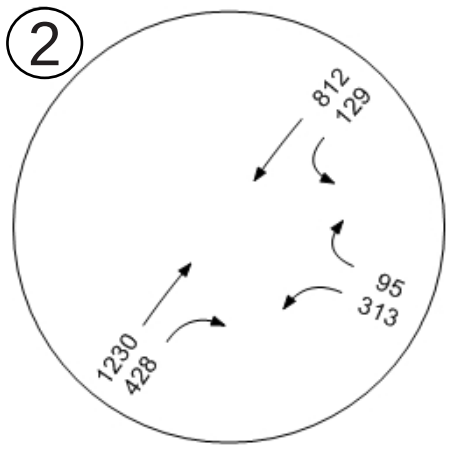
Black Olive Village - Reduced Project Alternative
Transportation Impact Study Supplement
2040 Plus Project AM Peak Traffic Volumes



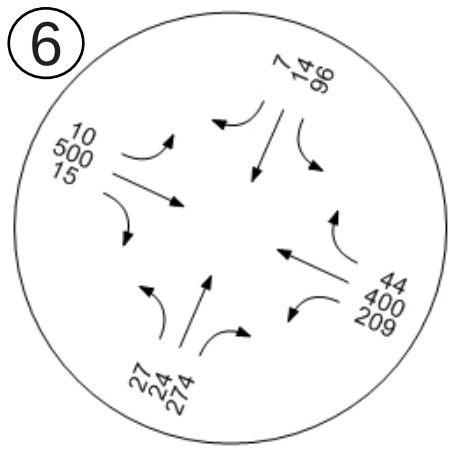
Skyway / Elliott Rd



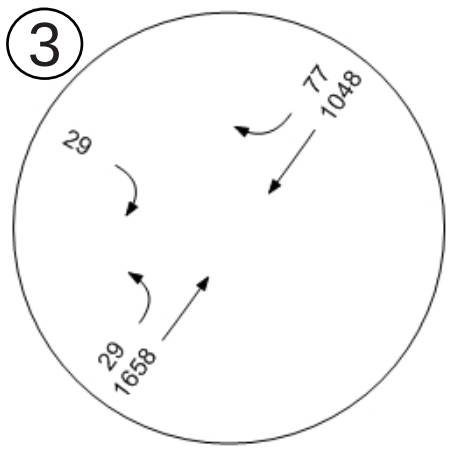
Skyway / Pearson Rd



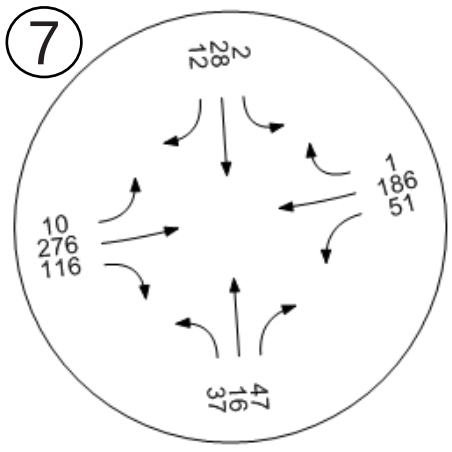
Pearson Rd / Black Olive Dr



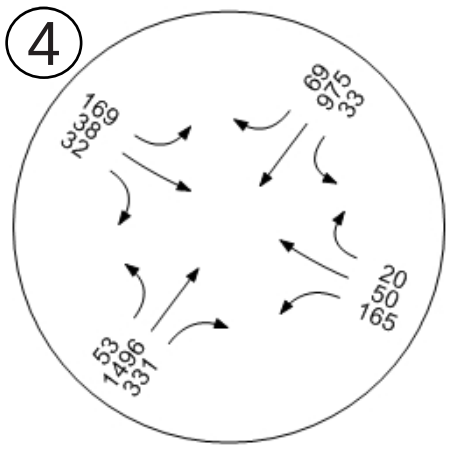
Skyway / Project Dwy



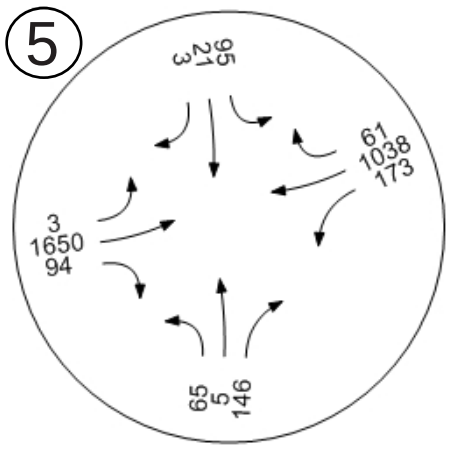
Black Olive Dr / Foster Rd



Skyway / Black Olive Dr



Skyway / Neal Rd /
Schmale Ln



TRAFFIC WORKS LLC

NO SCALE

Figure 6S

Black Olive Village - Reduced Project Alternative
Transportation Impact Study Supplement
2040 Plus Project PM Peak Traffic Volumes

REDUCED PROJECT ALTERNATIVE

APPENDIX A – Baseline Plus Project Scenario Calculation Sheets

SimTraffic Performance Report

Baseline Plus Project (Reduced Project) - AM Peak Hour

1: Skyway & Neal Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	2.4	0.1	0.0	0.3
Total Del/Veh (s)	45.1	27.8	21.7	15.2	18.0

2: Black Olive Dr & Skyway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	2.8	0.2	0.0	0.0	0.1
Total Del/Veh (s)	52.0	51.6	8.9	9.7	15.2

3: Skyway & Dwy Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	9.8	1.0	1.9	1.6

4: Skyway & Pearson Rd Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	39.0	3.5	18.1	18.4

5: Black Olive Dr & Foster Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	6.5	7.7	1.0	0.3	5.8

6: Pearson Rd & Black Olive Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.0	0.0	3.1	0.8
Total Del/Veh (s)	9.3	9.7	12.8	19.5	10.9

7: Skyway & Elliott Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.1	0.6	0.4
Total Del/Veh (s)	36.1	50.3	28.4	27.9	32.0

Total Network Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	69.0

Intersection: 1: Skyway & Neal Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	4	75	197	120	19	193	222	53	119	310	316
Average Queue (ft)	0	17	75	47	2	118	128	3	28	102	125
95th Queue (ft)	3	50	157	104	12	184	185	27	78	236	274
Link Distance (ft)		383	354			4155	4155			2779	2779
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			95	115			140	100		
Storage Blk Time (%)		1	7	0		10	7	0	0	5	
Queuing Penalty (veh)		0	9	0		0	1	0	1	3	

Intersection: 2: Black Olive Dr & Skyway

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	96	78	174	289	28	86	64	104	264	296
Average Queue (ft)	42	23	126	87	5	27	17	24	127	147
95th Queue (ft)	94	60	192	229	22	66	49	79	234	257
Link Distance (ft)		289		306		2779	2779		301	301
Upstream Blk Time (%)				0					0	0
Queuing Penalty (veh)				1					0	1
Storage Bay Dist (ft)	150		150		150			150		
Storage Blk Time (%)			12	0					4	
Queuing Penalty (veh)			7	1					1	

Intersection: 3: Skyway & Dwy

Movement	EB	NB	SB	SB
Directions Served	R	L	T	TR
Maximum Queue (ft)	30	31	38	51
Average Queue (ft)	3	4	1	2
95th Queue (ft)	27	20	19	23
Link Distance (ft)	320		533	533
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		150		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Skyway & Pearson Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	LR	T	R	L	T
Maximum Queue (ft)	225	245	143	42	174	441
Average Queue (ft)	138	151	58	7	76	219
95th Queue (ft)	206	219	123	29	150	398
Link Distance (ft)	381	381	533	533		2380
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)					150	
Storage Blk Time (%)					1	12
Queuing Penalty (veh)					6	8

Intersection: 5: Black Olive Dr & Foster Rd

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	75	108	32
Average Queue (ft)	45	58	3
95th Queue (ft)	57	90	19
Link Distance (ft)	227	205	319
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Pearson Rd & Black Olive Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	43	134	30	121	163	103	42	152	67	67
Average Queue (ft)	3	56	10	68	51	38	11	54	35	14
95th Queue (ft)	20	107	31	112	111	83	34	107	65	41
Link Distance (ft)		454	454		1152	1152		198		698
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	70			100			50		50	
Storage Blk Time (%)		4		2	0		0	7	7	0
Queuing Penalty (veh)		0		4	1		1	1	1	0

Intersection: 7: Skyway & Elliott Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	R
Maximum Queue (ft)	115	382	88	222	216	224	790	4
Average Queue (ft)	49	217	13	120	130	131	319	0
95th Queue (ft)	100	357	54	193	208	249	631	2
Link Distance (ft)	768	3077		2380			2252	2252
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100		200	200		
Storage Blk Time (%)				10	0	1	14	
Queuing Penalty (veh)				32	1	6	19	

Network Summary

Network wide Queuing Penalty: 106

SimTraffic Performance Report

Baseline Plus Project (Reduced Project) - PM Peak Hour

1: Skyway & Neal Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.3	2.9	0.2	0.1	0.3
Total Del/Veh (s)	61.4	31.2	35.8	27.7	33.5

2: Black Olive Dr & Skyway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	3.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	54.9	51.8	35.3	12.4	31.0

3: Skyway & Dwy Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.7	6.1	1.6	4.3

4: Skyway & Pearson Rd Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	44.1	21.8	20.9	24.7

5: Black Olive Dr & Foster Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.1	0.0
Total Del/Veh (s)	7.5	8.1	0.9	0.3	6.4

6: Pearson Rd & Black Olive Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.1	0.0	3.1	0.7
Total Del/Veh (s)	16.8	13.1	12.9	23.5	15.0

7: Skyway & Elliott Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.3	0.2	0.6	0.3
Total Del/Veh (s)	29.1	43.6	25.4	26.5	28.9

Total Network Performance

Denied Del/Veh (s)	0.8
Total Del/Veh (s)	86.6

Intersection: 1: Skyway & Neal Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	104	198	125	118	30	482	496	165	125	339	349
Average Queue (ft)	18	82	35	59	3	318	336	49	97	174	184
95th Queue (ft)	76	159	85	111	17	449	462	154	148	302	302
Link Distance (ft)		385	354			4155	4155			2780	2780
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			95	115			140	100		
Storage Blk Time (%)	0	19	1	4		36	34	0	21	7	
Queuing Penalty (veh)	0	9	1	2		1	23	0	88	10	

Intersection: 2: Black Olive Dr & Skyway

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	174	287	171	158	174	524	479	122	224	249
Average Queue (ft)	128	77	94	59	70	224	197	35	98	113
95th Queue (ft)	189	194	158	116	154	497	472	87	181	207
Link Distance (ft)		288		306		2780	2780		301	301
Upstream Blk Time (%)		1								0
Queuing Penalty (veh)		0								0
Storage Bay Dist (ft)	150		150		150			150		
Storage Blk Time (%)	10	1	2	0	0	23			2	
Queuing Penalty (veh)	7	1	2	0	3	12			1	

Intersection: 3: Skyway & Dwy

Movement	EB	NB	NB	NB	SB
Directions Served	R	L	T	T	TR
Maximum Queue (ft)	60	106	277	139	6
Average Queue (ft)	20	21	81	33	0
95th Queue (ft)	47	72	289	175	5
Link Distance (ft)	320		301	301	533
Upstream Blk Time (%)			2	0	
Queuing Penalty (veh)			12	1	
Storage Bay Dist (ft)		100			
Storage Blk Time (%)			6		
Queuing Penalty (veh)			2		

Intersection: 4: Skyway & Pearson Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	LR	T	R	L	T
Maximum Queue (ft)	188	235	580	373	172	395
Average Queue (ft)	111	141	367	44	107	150
95th Queue (ft)	175	217	609	187	178	279
Link Distance (ft)	381	381	533	533		2375
Upstream Blk Time (%)			4	0		
Queuing Penalty (veh)			28	0		
Storage Bay Dist (ft)					150	
Storage Blk Time (%)					5	4
Queuing Penalty (veh)					33	5

Intersection: 5: Black Olive Dr & Foster Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	115	134	22	5
Average Queue (ft)	63	62	2	0
95th Queue (ft)	96	100	15	3
Link Distance (ft)	227	205	319	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Pearson Rd & Black Olive Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	68	273	38	123	177	160	74	172	70	102
Average Queue (ft)	11	140	9	76	52	52	22	70	43	18
95th Queue (ft)	43	238	31	121	116	110	58	132	70	61
Link Distance (ft)		454	454		1152	1152		198		698
Upstream Blk Time (%)								0		
Queuing Penalty (veh)								0		
Storage Bay Dist (ft)	70			100			50		50	
Storage Blk Time (%)		24		4	0		3	12	13	1
Queuing Penalty (veh)		2		6	1		9	3	3	1

Intersection: 7: Skyway & Elliott Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	R
Maximum Queue (ft)	113	434	124	350	224	224	404	14
Average Queue (ft)	47	237	38	134	125	128	184	1
95th Queue (ft)	100	388	90	258	219	232	346	7
Link Distance (ft)	767	3077		2375			2252	2252
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100		200	200		
Storage Blk Time (%)			1	17	1	1	6	
Queuing Penalty (veh)			6	122	5	5	8	

Network Summary

Network wide Queuing Penalty: 413

REDUCED PROJECT ALTERNATIVE

APPENDIX B – 2040 Cumulative Plus Project Scenario Calculation Sheets

SimTraffic Performance Report

2040 Cumulative Plus Project (Reduced Project) - AM Peak Hour

1: Skyway & Neal Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	2.1	0.1	0.0	0.2
Total Del/Veh (s)	45.2	23.5	35.5	17.4	21.1

2: Black Olive Dr & Skyway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	2.9	0.0	0.0	0.0	0.1
Total Del/Veh (s)	45.3	40.6	18.0	10.1	16.4

3: Skyway & Dwy Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	16.9	1.9	1.9	1.9

4: Skyway & Pearson Rd Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	47.0	3.5	18.3	19.1

5: Black Olive Dr & Foster Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1	0.0
Total Del/Veh (s)	7.4	8.4	1.2	0.5	6.3

6: Pearson Rd & Black Olive Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.9	0.0	3.3	0.8
Total Del/Veh (s)	13.2	11.2	15.7	17.0	12.0

7: Skyway & Elliott Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.3	0.1	0.5	0.4
Total Del/Veh (s)	29.5	57.6	18.4	55.3	41.1

Total Network Performance

Denied Del/Veh (s)	0.7
Total Del/Veh (s)	87.0

Intersection: 1: Skyway & Neal Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	5	56	245	120	25	288	293	111	124	298	311
Average Queue (ft)	0	15	93	56	2	171	180	15	40	124	143
95th Queue (ft)	5	41	199	119	13	260	261	78	97	252	243
Link Distance (ft)		387	354			4155	4155			2780	2780
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			95	115			140	100		
Storage Blk Time (%)		0	10	1		25	21	0	0	6	
Queuing Penalty (veh)		0	14	1		1	2	0	4	5	

Intersection: 2: Black Olive Dr & Skyway

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (ft)	89	63	174	272	38	376	392	96	303	314
Average Queue (ft)	37	18	127	73	6	68	64	11	166	186
95th Queue (ft)	86	50	192	200	25	244	235	55	277	298
Link Distance (ft)		286		306		2780	2780		301	301
Upstream Blk Time (%)				0					0	1
Queuing Penalty (veh)				0					2	5
Storage Bay Dist (ft)	150		150		150			150		
Storage Blk Time (%)			9	0		5			7	
Queuing Penalty (veh)			5	0		0			1	

Intersection: 3: Skyway & Dwy

Movement	EB	NB	SB	SB
Directions Served	R	L	T	TR
Maximum Queue (ft)	34	31	53	81
Average Queue (ft)	5	5	3	7
95th Queue (ft)	23	23	24	40
Link Distance (ft)	320		533	533
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Skyway & Pearson Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	LR	T	R	L	T
Maximum Queue (ft)	281	304	196	48	174	361
Average Queue (ft)	155	173	48	7	69	223
95th Queue (ft)	214	235	156	30	147	329
Link Distance (ft)	384	384	533	533		2377
Upstream Blk Time (%)		0				
Queuing Penalty (veh)		0				
Storage Bay Dist (ft)					150	
Storage Blk Time (%)					1	13
Queuing Penalty (veh)					7	9

Intersection: 5: Black Olive Dr & Foster Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	118	112	28	14
Average Queue (ft)	49	64	4	1
95th Queue (ft)	74	89	21	6
Link Distance (ft)	227	205	319	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Pearson Rd & Black Olive Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	TR	L	TR	L	TR
Maximum Queue (ft)	56	182	43	123	149	135	68	201	71	72
Average Queue (ft)	6	80	10	80	62	53	10	68	39	11
95th Queue (ft)	31	167	34	123	124	103	37	135	68	42
Link Distance (ft)		454	454		1152	1152		198		698
Upstream Blk Time (%)								0		
Queuing Penalty (veh)								0		
Storage Bay Dist (ft)	70			100			50		50	
Storage Blk Time (%)		11		4	1		1	11	10	0
Queuing Penalty (veh)		0		8	2		2	2	2	0

Intersection: 7: Skyway & Elliott Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	R
Maximum Queue (ft)	97	621	61	171	168	625	1731	1346
Average Queue (ft)	47	330	16	58	62	279	779	200
95th Queue (ft)	106	573	47	124	145	697	1568	944
Link Distance (ft)	769	3077		2377			2252	2252
Upstream Blk Time (%)							1	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)			100		200	600		
Storage Blk Time (%)			0	2	0	0	18	
Queuing Penalty (veh)			0	8	0	0	31	

Network Summary

Network wide Queuing Penalty: 113

SimTraffic Performance Report

2040 Cumulative Plus Project (Reduced Project) - PM Peak Hour

1: Skyway & Neal Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.3	2.8	0.3	0.1	0.4
Total Del/Veh (s)	145.4	36.6	41.0	29.6	40.3

2: Black Olive Dr & Skyway Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	2.9	0.0	0.0	0.0	0.2
Total Del/Veh (s)	54.4	57.1	68.1	10.3	48.6

3: Skyway & Dwy Performance by approach

Approach	EB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.8	8.9	1.7	6.0

4: Skyway & Pearson Rd Performance by approach

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.1	0.0	0.1
Total Del/Veh (s)	60.9	21.3	22.6	27.3

5: Black Olive Dr & Foster Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1	0.0
Total Del/Veh (s)	7.9	10.0	1.2	0.3	7.2

6: Pearson Rd & Black Olive Dr Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.0	1.1	0.0	3.4	0.7
Total Del/Veh (s)	24.0	18.8	18.1	25.6	19.2

7: Skyway & Elliott Rd Performance by approach

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.3	23.3	0.6	11.4
Total Del/Veh (s)	28.9	53.9	106.3	40.6	73.4

Total Network Performance

Denied Del/Veh (s)	7.1
Total Del/Veh (s)	133.5

Intersection: 1: Skyway & Neal Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	LTR	LT	R	L	T	T	R	L	T	TR
Maximum Queue (ft)	105	277	212	120	53	638	648	165	125	375	375
Average Queue (ft)	46	136	61	73	4	420	439	55	111	205	206
95th Queue (ft)	124	251	150	130	27	588	604	162	150	344	324
Link Distance (ft)		384	354			4155	4155			2770	2770
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	80			95	115			140	100		
Storage Blk Time (%)	4	55	2	7		36	35	0	38	9	
Queuing Penalty (veh)	3	26	4	5		1	33	0	196	16	

Intersection: 2: Black Olive Dr & Skyway

Movement	EB	EB	WB	WB	B9	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	T	L	T	TR	L	T	TR
Maximum Queue (ft)	174	232	174	303	6	175	1316	1315	70	218	209
Average Queue (ft)	125	73	123	92	0	81	553	532	24	94	99
95th Queue (ft)	189	177	188	220	5	181	1335	1096	58	177	178
Link Distance (ft)		286		306	460		2770	2770		301	301
Upstream Blk Time (%)		0		0							
Queuing Penalty (veh)		0		1							
Storage Bay Dist (ft)	150		150			150			150		
Storage Blk Time (%)	9	0	11	0		1	41			2	
Queuing Penalty (veh)	7	1	8	0		5	22			1	

Intersection: 3: Skyway & Dwy

Movement	EB	NB	NB	NB	SB
Directions Served	R	L	T	T	TR
Maximum Queue (ft)	56	95	337	304	20
Average Queue (ft)	20	28	135	52	1
95th Queue (ft)	48	81	355	218	13
Link Distance (ft)	320		301	301	533
Upstream Blk Time (%)			2	0	
Queuing Penalty (veh)			18	3	
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		0	8		
Queuing Penalty (veh)		0	2		

Intersection: 4: Skyway & Pearson Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	LR	T	R	L	T
Maximum Queue (ft)	263	283	592	407	246	309
Average Queue (ft)	156	184	392	52	140	106
95th Queue (ft)	247	278	665	216	234	233
Link Distance (ft)	384	384	533	533		2380
Upstream Blk Time (%)			4	0		
Queuing Penalty (veh)			31	1		
Storage Bay Dist (ft)					250	
Storage Blk Time (%)					1	0
Queuing Penalty (veh)					8	1

Intersection: 5: Black Olive Dr & Foster Rd

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	135	149	28	5
Average Queue (ft)	67	78	5	0
95th Queue (ft)	108	127	22	6
Link Distance (ft)	227	205	319	369
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Pearson Rd & Black Olive Dr

Movement	EB	EB	EB	WB	WB	WB	NB	NB	B23	SB	SB
Directions Served	L	T	R	L	T	TR	L	TR	T	L	TR
Maximum Queue (ft)	68	407	38	124	265	185	68	228	6	73	132
Average Queue (ft)	12	210	7	99	97	73	20	94	0	49	23
95th Queue (ft)	48	346	28	141	215	144	58	181	4	74	83
Link Distance (ft)		454	454		1152	1152		198	229		698
Upstream Blk Time (%)		0						1			
Queuing Penalty (veh)		0						3			
Storage Bay Dist (ft)	70			100			50			50	
Storage Blk Time (%)	0	38		15	1		3	23		23	1
Queuing Penalty (veh)	0	4		31	2		10	6		5	1

Intersection: 7: Skyway & Elliott Rd

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	R
Maximum Queue (ft)	116	550	124	2054	225	224	795	5
Average Queue (ft)	47	320	49	1260	207	169	336	0
95th Queue (ft)	96	529	113	2370	287	263	628	3
Link Distance (ft)	770	3077		2380			2252	2252
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			100		200	200		
Storage Blk Time (%)			1	35	23	7	15	
Queuing Penalty (veh)			13	282	139	49	26	

Network Summary

Network wide Queuing Penalty: 961

APPENDIX F – ENERGY CALCULATIONS

Black Olive Village
Construction
Fuel Usage

Activity	CO2 (Metric tons)	Total Gallons of Fuel Consumed
Construction		
Retail Center	**780.56**	75,416

Notes:
Primary fuel consumption assumed to be heavy equipment using diesel #2, default emission factor 10.35 kg CO2/gallon from Climate Registry 2017 Table 12.1

CO2 from CalEEMod Version 2016.3.1 model for proposed project (Appendix C this Draft EIR)

Calculated as follows: (total metric tons CO2 ÷ 10.35 kg CO2/gallon) x 1,000 kg/metric ton

Black Olive Village
Operational Vehicle Fuel Demand

EMFAC2014 (v1.0.7) Emissions Inventory
Region: Butte County
Calendar Year: 2019
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Vehicle Model Year: Aggregated
Vehicle Speed: Aggregated

Vehicle Class	VMT (miles)	Fuel Consumption (1000 gallons/day)
Diesel Vehicles		
All Other Buses	1,789.18	0.22
LDA	23,083.24	0.65
LDT1	320.58	0.01
LDT2	1,111.04	0.04
LHD1	112,717.90	6.64
LHD2	23,669.37	1.55
MDV	7,479.97	0.35
MH	1,395.07	0.15
Motor Coach	1,359.51	0.25
PTO	2,336.91	0.50
SBUS	4,159.05	0.58
T6 Ag	2,115.28	0.27
T6 CAIRP heavy	304.99	0.04
T6 CAIRP small	936.26	0.11
T6 instate construction heavy	4,963.41	0.61
T6 instate construction small	7,776.90	0.95
T6 instate heavy	14,822.89	1.81
T6 instate small	34,116.06	4.17
T6 OOS heavy	174.75	0.02
T6 OOS small	536.44	0.06
T6 Public	3,514.68	0.44
T6 utility	328.07	0.04
T7 Ag	2,697.74	0.51
T7 CAIRP	79,992.28	13.73
T7 CAIRP construction	3,521.01	0.61
T7 NNOOS	99,190.53	15.96
T7 NOOS	31,596.93	5.53
T7 other port	965.07	0.16
T7 POAK	1,921.24	0.34
T7 Public	3,039.53	0.64
T7 Single	11,769.16	2.02
T7 single construction	9,108.38	1.53
T7 SWCV	3,628.21	1.66
T7 tractor	53,519.49	8.81
T7 tractor construction	6,790.97	1.15
T7 utility	288.95	0.06
UBUS	3,993.79	0.85
Electric Vehicles		
LDA	34,121.09	0.00
LDT1	171.94	0.00
Gasoline Vehicles		
LDA	1,926,100.27	69.49
LDT1	150,726.12	6.62
LDT2	749,743.89	37.47
LHD1	57,900.50	6.08
LHD2	7,099.19	0.82
MCY	25,431.64	0.70
MDV	530,025.98	35.33
MH	5,307.76	0.82
OBUS	3,839.00	0.60
SBUS	1,231.33	0.11
T6TS	5,205.91	0.84
T7IS	592.42	0.13
UBUS	2,465.49	0.50

Fuel Consumption Calculations

		County			Project	
Fuel	VMT Total (miles)	Fuel Consumtion (1000 gallons/day)	% of VMT	Gallons/VMT	Gallons/Day	% of County Consumption
Diesel	561,034.84	72.99	13.82%	0.130	336.25	0.46%
Gasoline	3,465,669.50	159.51	85.34%	0.046	734.83	0.46%
Electric	34,293.03	0	0.84%	0	0	0
Total	4,060,997.36					
Project	18,708					

Source:
Fuel Consumption from CARB EMFAC2014 Web Database. https://www.arb.ca.gov/emfac/2014/. Accessed 11/5/2018.
Project VMT from Transportation Impact Study for Black Olive Village, Traffic Works LLC, 9/18/2017.