Appendix A

CSP Standard Project Requirements

California Department of Parks and Recreation
Resource Services
STANDARD PROJECT REQUIREMENTS

General

- Prior to the start of on-site construction work, a **[insert who]** will consult with the contractor and project manager to identify all resources that must be protected.
- No track-mounted or heavy-wheeled vehicles will be allowed in identified environmentally sensitive areas at any time; foot traffic will only be allowed with specific permission from the State's Representative after clearance from **[insert who]**.
    - At the discretion of **[insert who]**, mechanized vehicles on **[insert discipline]** resource sites will be restricted to a short term use of rubber tire tractors only. All such vehicles must enter and exit the area via the same route of travel (by backing up). Vehicles are strictly prohibited from turning on the surface of site(s).
- Prior to the start of on-site construction work, a DPR-qualified **[insert discipline]** Resources Specialist will train construction personnel in **[insert discipline]** Resource identification and protection procedures.
- Prior to the start of on-site construction work, and at the discretion of a **[insert who]**, a **[insert who]** will flag and/or fence all **[insert discipline or resource]** with a buffer of **[insert distance]** for avoidance during on-site construction activities. The **[insert who]** will remove the fencing after project completion.
- Prior to any earthmoving activities, a DPR-qualified **[insert who]** will approve all subsurface work, including the operation of heavy equipment within **[insert distance]** of the identified Environmentally Sensitive Area (ESA).
- Prior to the start of **[insert type]** work, **[Insert who]** will notify the **[insert Office name and who]** or **[insert alternative Office name and who]** a minimum of three weeks in advance, unless other arrangements are made, to schedule **[insert discipline or resource]** monitoring.
- A DPR qualified [**insert who]** will monitor all ground disturbing phases of this project at his/her discretion.

Cultural Resources

General Cultural Standard Requirements

- If forest thinning activities are required within a culturally sensitive area, downed timber and other forest debris will be removed by aerial suspension; no portion of logs, slash or debris will be dragged across the surface.
- Prior to the start of on-site construction work, the **[insert who]** will notify the **Cultural Resources Supervisor**, unless other arrangements are made in advance, a minimum of three weeks to schedule a **Cultural Resource Specialist** to monitor work, as necessary, to ensure that removal and reconstruction of historic fabric will occur in a manner consistent with the Secretary of the Interior's Standards.
- Before, during, and after construction, a **[Insert who]** will photo-document all aspects of the project and will add the photos to the historical records (archives) for the park.
- Prior to the start of on-site construction work, and to the extent not already completed, a **[insert who]** will map and record all cultural features within the proposed Area of Potential Effects (APE) to a level appropriate to the Secretary of Interior Standards.

<u>Historian's Standard Requirements</u>

- All historic work will comply with the Secretary of the Interior Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.
    - Historic character will be retained and preserved;
        - where safe, original materials that still maintain structural integrity will be retained; and
        - where replacement is required, materials and features will be replaced "in kind".
    - A **[insert who]** familiar with the project site's cultural/historic resources will monitor all construction activities. All historical resources uncovered during the project will be recorded in place with a photograph and/or drawing showing any new material or recovered and archived, at the discretion of the monitor.
    - Upon completion of the project, **[Insert who]** will record any modifications to historic buildings or alterations of historic fabric on as-built drawings.

<u>Archaeologist's Standard Requirements</u>

- Prior to the start of any ground-disturbing activities, a DPR-approved archaeologist will complete pre-construction testing to determine specific avoidance areas.
    - If necessary, a DPR-qualified Cultural Resource Specialist will prepare a research design, including appropriate trenching and/or pre-construction excavations
    - Based on preconstruction testing, project design and/or implementation will be altered, as necessary, to avoid impacts to archaeological resources or reduce the impacts to a less than significant level, as determined in consultation with a DPR-qualified archaeologist.
- **[Insert who]** will manually remove or flush cut vegetation to avoid ground-disturbing activities; removal of roots will not be allowed. In areas lacking appropriate archaeological survey coverage only chemical treatments will be allowed unless archaeological surveys are performed first.
- If **anyone** discovers previously undocumented cultural resources during project construction, work within **[insert distance]** of the find will be temporarily halted until the archaeologist designs and implements appropriate treatments in accordance with the Secretary of the Interiors Standards and Guidelines for archaeological resource protection.
    - **[Insert who]** will modify the project to ensure that construction activities will avoid cultural resources upon review and approval of a **[insert who]**.
    - If ground disturbing activities uncover intact cultural features (including but not limited to dark soil containing shellfish, bone, flaked stone, groundstone, or deposits of historic ash), when a DPR Qualified cultural resources specialist is not on-site, **[insert who]** will contact the DPR State Representative immediately and **[insert who]** will temporarily halt or divert work within the immediate vicinity of the find a DPR-qualified cultural resources specialist evaluates the find and determines the appropriate treatment and disposition of the cultural resource.
- In the event that human remains are discovered, work will cease immediately in the area of the find and the project manager/site supervisor will notify the appropriate DPR personnel. Any human remains and/or funerary objects will be left in place or returned to the point of discovery and covered with soil. The DPR Sector Superintendent (or authorized representative) will notify the County Coroner, in accordance with §7050.5 of the California Health and Safety Code, and the Native American Heritage Commission (or Tribal Representative). If a Native American

monitor is on-site at the time of the discovery, the monitor will be responsible for notifying the appropriate Native American authorities. The local County Coroner will make the determination of whether the human bone is of Native American origin.

- If the Coroner determines the remains represent Native American interment, the NAHC in Sacramento and/or tribe will be consulted to identify the most likely descendants and appropriate disposition of the remains. Work will not resume in the area of the find until proper disposition is complete (PRC §5097.98). No human remains or funerary objects will be cleaned, photographed, analyzed, or removed from the site prior to determination.
- If it is determined the find indicates a sacred or religious site, the site will be avoided to the maximum extent practicable. Formal consultation with the State Historic Preservation Office and review by the Native American Heritage Commission/Tribal Cultural representatives will occur as necessary to define additional site mitigation or future restrictions.

Natural Resources

General Biological Resource Standard Project Requirements

- All project activities that could spread **[insert organism]** to new locations will be subject to Best Management Practices developed by **[insert group name]** and available online at **[insert location – i.e. web address]**.
- Prior to the start of on-site construction activities, **[insert who]** will conduct a survey of the project area for **[insert what]**.
- Prior to the start of on-site construction activities, **[insert who]** will determine the minimum area required to complete the work and define the boundaries of the work area on the project drawings and with flagging or fencing on the ground, as appropriate.
- To prevent the spread of noxious weeds, all construction vehicles and equipment will enter and leave the project site free of soil, vegetative matter or other debris that could contain weed seeds.
- All construction will be consistent with the State Parks Trail Manual guidelines.
- At the discretion of **[insert who]**, project activities will be monitored to ensure that impacts to **[insert species name(s)]** are minimized.
- **[Insert who]** will submit a summary report of all collecting activities conducted at **[Insert park name]** to the **[insert District name]** Environmental Scientist upon completion of the project.
- The **[insert who]** will post information signs near project areas with restricted access or closures lasting longer than 3 months. The signs will include the following information:
  - Explanation for and description of the project; and
  - Anticipated completion date.

Plants

- No rare or endangered species will be cut, pruned, pulled back, removed or damaged in any way.
- If **[insert plant species or community]** are located within **[insert number]** feet of the project area, the **[insert what]** will be flagged by **[insert who]**, fenced off prior to the start of on-site construction activities, and completely avoided.
- Best Management Practices (BMPs) to avoid creation of dust will be employed during all construction activities within [insert distance] of **[insert species or plant community]**.

Standard Project Requirements

- If **[insert what]** of **[insert species or plant community name]** are discovered within **[insert distance**] of the project area, a **[insert who]** will flag and fence these locations during construction activities to avoid impacts.
- Prior to the start of on-site construction activities and when the plants are in a phenological stage conducive to positive identification (i.e., usually during the blooming period for the species), a **[insert who]** will conduct surveys for special-status plant species throughout the project area.
- Prior to the start of on-site construction activities, a **[insert who]** will flag and fence plant communities (e.g., vegetation series, alliances, or associations) within **[insert number]** feet of the project area to avoid impacts.
- No **[insert what – staging, ground-disturbing, etc.]** will be allowed within **[insert number]** times the diameter-at-breast-height (dbh) of retention trees, unless approved in advance by a DPR-approved biologist, forester, or certified arborist.
- The **[insert who]** will avoid or minimize impacts to federally protected wetlands to the extent practicable by conducting work in upland areas.
- A **[insert who]** will be present during all ground-disturbing activities within the **[insert quantitative area]** of trees.
- Project area will be monitored and maintained by **[insert who]** for up to **[insert time period]**. Including regular watering and replacement planting, as necessary to assure an approximately **[insert percentage]** survival rate.
- Any trenching in a "structural root zone" will be completed by hand; no roots larger than **[insert diameter size]** in diameter will be cut or damaged.
- All herbicides will be handled, applied, and disposed of in accordance with the MSDS Fact Sheet and all local, State, and federal laws.
- To maintain genetic integrity, only plant stock collected within the **[insert area name]** will be used for re-vegetation in the project area.
- **[Insert who]** will employ Best Management Practices (BMPs) for erosion control to avoid runoff of project-related sediments, vehicle fluids, and other liquids into special plant communities.
- The percolation testing will be conducted at a minimum distance of **[insert quantitative distance]** of any significant tree over **[insert number]** DBH.

Wildlife

- **[Insert Name]** will schedule all work between **[insert dates]** to avoid the **[insert species name]** **[insert what – breeding, maternity, nesting, flight period, etc.]**.
- If work is required during the **[insert what]** season (**[insert dates]**), a **[insert who]** will conduct a survey to identify **[insert what - nest, colony, etc]** within **[insert distance]** of the project area. The survey will be conducted no more than **[insert number]** calendar days prior to the beginning of construction.
- If **[insert what]** are located within **[insert distance]** feet of the project area, no construction will occur within **[insert distance]** of the **[insert what]** during the **[insert what]** season or until the young have fledged, as determined by a DPR-approved biologist.
- If work must occur during the breeding season, the USFWS's *"Transmittal of Guidance: Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California"* (dated July 31, 2006) may be used by a DPR-approved biologist to allow limited construction activities that do not create noise disturbance above ambient levels.

  - If limited activities are allowed during the **[insert species name] [insert what breeding, nesting, etc.]** season, work activities will not begin until **[insert number]** hours after sunrise and will cease **[insert number]** hours before sunset each day.
- Prior to the start of on-site construction activities, a **[insert who]** will train on-site construction personnel on the life history of **[insert species name]**, work constraints, and any other pertinent information related to the species.
- Within **[insert number]** hours prior to the start of construction activities, a **[insert who]** will conduct surveys for **[insert what]** in the project area and up to **[insert number]** feet outside the project boundaries.
- If individuals or other recent signs of **[insert species name]** are observed within **[insert distance]** of the project area, **[insert who]** will be present on the site to monitor during construction activities at his/her discretion.
- Immediately prior to the start of work each morning, **[insert who]** will conduct a visual inspection of the construction zone.
- If **[insert species name]** is found on the project site, work in the vicinity of the animal will be delayed until the species moves out of the site on its own accord, or is temporarily relocated by **[insert agency name - approved or -permitted]** biologist.
- To prevent trapping of **[insert species name]**, all holes and trenches will be covered at the close of each working day with plywood or similar materials, or will include escape ramps constructed of earth fill or wooden planks; all pipes will be capped. A **[insert who]**, or other staff trained by a **[insert who]** will inspect trenches and pipes for **[insert species name]** at the beginning of each workday. If a trapped animal is discovered, they will be released in suitable habitat at least **[insert quantitative distance]** from the project area.
- All field staff will wear protective clothing and equipment while working with **[insert species name]** live animals and handling carcasses.
- Baiting will not occur between **[insert months]** when **[Insert sensitive species name]** are present.
- **[Insert who]** will not remove any trees equal to or greater than **[insert number]**-inches dbh unless first inspected by **[insert who]** and determined to be unsuitable as nesting habitat for **[insert species name]**.

Aesthetics

- Projects will be designed to incorporate appropriate park scenic & aesthetic values including the choices for: specific building sites, scope & scale; building and fencing materials and colors; use of compatible aesthetic treatments on pathways, retaining walls or other ancillary structures; location of and materials used in parking areas, campsites and picnic areas; development of appropriate landscaping. The park scenic and aesthetic values will also consider views into the park from neighboring properties.
- **[Insert who]** will store all project-related materials outside of the viewshed of **[insert name of street/place/building]**.
- **[Insert who]** will equip any permanent structure with outdoor light shields that concentrate the illumination downward to reduce direct and reflected light pollution. The direct source of the lighting (bulb, lens, filament, tube, etc) will not be visible off site and the lighting will be installed as low as possible on poles and/or structures to minimize light pollution of the night sky. The candle power of the illumination at ground level will not exceed what is required by any safety or security regulations of any government agency with regulatory oversight.

Air Quality

- During dry, dusty conditions, all active construction areas will be lightly sprayed with dust suppressant to reduce dust without causing runoff.
- All trucks or light equipment hauling soil, sand, or other loose materials on public roads will be covered or required to maintain at least two feet of freeboard.
- All gasoline-powered equipment will be maintained according to manufacturer's specifications, and in compliance with all State and federal requirements**.**
- Paved streets adjacent to the Park shall either be swept or washed at the end of each day, or as required, to remove excessive accumulations of silt and/or mud that could have resulted from project-related activities.
- Excavation and grading activities will be suspended when sustained winds exceed 15 miles per hour (mph), instantaneous gusts exceed 25 mph, or when dust occurs from remediation related activities where visible emissions (dust) cannot be controlled by watering or conventional dust abatement controls.

Geology and Soils (erosion)

- After a large earthquake event (i.e., magnitude 5.0 or greater within 50 miles of the project site), **[insert who]** will inspect all project structures and features for damage, as soon as is possible after the event. Any damaged structures or features will be closed to park visitors, volunteers, residents, contractors, and staff.
- No track-mounted or heavy-wheeled vehicles will be driven through **[insert work area name]** areas during the rainy season or when soils are saturated to avoid compaction and/or damage to soil structure.
- **[Insert who]** will develop a rehabilitation plan for the decommissioned trail that includes using brush and trees removed from the new trail alignment for bio-mechanical erosion control (bundling slash and keying it in to fall of trail, filling damaged trails sections with soil and duff removed from the new trail alignment, constructing water bars, and replanting native trees and shrubs).
- **[Insert who]** will clearly block both ends of the trail and scatter its length with vegetative debris from new trail construction to discourage continued use and degradation of the decommissioned portion of the trail.

Hazards

- Prior to the start of on-site construction activities, **[insert who]** will inspect all equipment for leaks and regularly inspect thereafter until equipment is removed from the project site. All contaminated water, sludge, spill residue, or other hazardous compounds will be contained and disposed of outside the boundaries of the site, at a lawfully permitted or authorized destination.
- Prior to the start of on-site construction activities, **[insert who]** will prepare a Spill Prevention and Response Plan (SPRP) as part of the Storm Water Pollution Prevention Plan (SWPPP) for **[insert who]** approval to provide protection to on-site workers, the public, and the environment from accidental leaks or spills of vehicle fluids or other potential contaminants. This plan will include (but not be limited to);
  - a map that delineates construction staging areas, where refueling, lubrication, and maintenance of equipment will occur;
  - a list of items required in a spill kit on-site that will be maintained throughout the life of the project;
  - procedures for the proper storage, use, and disposal of any solvents or other chemicals used in the restoration process;

  - and identification of lawfully permitted or authorized disposal destinations outside of the project site.

- **[Insert who]** will develop a Materials Management Plan to include protocols and procedures that will protect human health and the environment during remediation and/or maintenance activities that cause disturbances to the native soil and/or mine and mill materials causing the potential exposure to metals and dust resulting from materials disturbances. All work will be performed in accordance with a Site Health and Safety Plan. The Materials Management Plan will include the following (where applicable):
  - Requirement that staff will have appropriate training in compliance with 29 CFR, Section 1910.120;
  - Methods to assess risks prior to starting onsite work;
  - Procedures for the management and disposal of waste soils generated during construction activities or other activities that might disturb contaminated soil;
  - Monitoring requirements;
  - Storm water controls;
  - Record-keeping; and,
  - Emergency response plan.
- **[Insert who]** will set up decontamination areas for vehicles and equipment at Park entry/exit points. The decontamination areas will be designed to completely contain all wash water generated from washing vehicles and equipment. Best Management Practices (BMPs) will be installed, as necessary, to prevent the dispersal of wash water beyond the boundaries of the decontamination area, including over-spray.
- Prior to the start of construction, **[insert who]** will develop a Fire Safety Plan for **[insert name]** approval. The plan will include the emergency calling procedures for both the California Department of Forestry and Fire Protection (CDF) and local fire department(s).
- All heavy equipment will be required to include spark arrestors or turbo chargers (which eliminate sparks in exhaust) and have fire extinguishers on-site.
- Construction crews will park vehicles **[insert distance]** from flammable material, such as dry grass or brush. At the end of each workday, construction crews will park heavy equipment over a non-combustible surface to reduce the chance of fire.
- DPR personnel will have a State Park radio at the Park, which allows direct contact with CalFire and a centralized dispatch center, to facilitate the rapid dispatch of control crews and equipment in case of a fire.
- Prior to the start of on-site construction activities, **[insert who]** will clean and repair (other than emergency repairs) all equipment outside the project site boundaries.
- Under dry conditions, a filled water truck and/or fire engine crew will be onsite during activities with the potential to start a fire.
- **[Insert who]** will designate and/or locate staging and stockpile areas within the existing maintenance yard area or existing roads and campsites to prevent leakage of oil, hydraulic fluids, etc. into **[insert where i.e., native vegetation, sensitive wildlife areas, creek, river, stream , etc.]**.

<u>Hydrology</u>

- Prior to the start of construction involving ground-disturbing activities, **[insert who]** will prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) for DPR approval that identifies temporary Best Management Practices (BMPs) (e.g., tarping of any stockpiled materials or soil; use of silt fences, straw bale barriers, fiber rolls, etc.) and permanent (e.g., structural containment, preserving or planting of vegetation) for use in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during all excavation, grading, trenching, repaving, or other ground-disturbing activities. The SWPPP will include BMPs for hazardous waste and contaminated soils management and a Spill Prevention and Control Plan (SPCP), as appropriate.

- All heavy equipment parking, refueling, and service will be conducted within designated areas outside of the 100-year floodplain to avoid water course contamination.
- The project will comply with all applicable water quality standards as specified in the **[insert WQCB name]** Basin Plan.
- All construction activities will be suspended during heavy precipitation events (i.e., at least 1/2-inch of precipitation in a 24-hour period) or when heavy precipitation events are forecast.
- If construction activities extend into the rainy season (**[insert dates]**) or if an un-seasonal storm is anticipated, **[insert who]** will properly winterize the site by covering (tarping) any stockpiled materials or soils and by constructing silt fences, straw bale barriers, fiber rolls, or other structures around stockpiles and graded areas.
- **[Insert who]** will install appropriate energy dissipators at water discharge points, as appropriate.

Traffic

- Prior to the start of on-site construction activities that would result in **[insert number]** or more vehicle trips during peak hours (7:00 a.m. to 9:00 a.m. or 4:00 p.m. to 6:00 p.m.) for a period exceeding 6 months in duration, **[insert who]** will prepare a Traffic Impact Study (TIS) for submittal and approval by **[insert who]**. The TIS will include, but will not be limited to:
  – Description of traffic inducing actions;
  – Types of vehicles anticipated;
  – Approximate traffic volumes on/ offsite and roadways to be used;
  – Existing Traffic Counts;
  – Analysis of Project Action traffic volume impacts on intersections and traffic index; and
  – Any other TIS requirements as outlined in the appropriate jurisdiction’s guidance on TIS preparation
- Prior to delivery and/or removal of project-related equipment or materials that could impede or block access to driveways, cross streets, or street parking, **[insert name]** will coordinate with the local jurisdictions to develop and implement traffic control measures.

Noise

- Temporary or permanent noise barriers such as berms or walls will be used, as appropriate, to reduce noise levels.
- Internal combustion engines used for project implementation will be equipped with a muffler of a type recommended by the manufacturer. Equipment and trucks used for Project-related activities will utilize the best available noise control techniques (e.g., engine enclosures, acoustically attenuating shields or shrouds, intake silencers, ducts, etc.) whenever necessary.
- **[Insert who]** will locate stationary noise sources and staging areas as far from potential sensitive noise receptors, as possible. If they must be located near potential sensitive noise receptors, stationary noise sources will be muffled or shielded, and/or enclosed within temporary sheds.
- Construction activities will generally be limited to the daylight hours, Monday – Friday. If work during weekends or holidays is required, no work will occur on those days before **[insert time]** a.m. or after **[insert time]** p.m. (check contract docs for time restrictions)
- Internal combustion engines used for any purpose at the job site will be equipped with a muffler of a type recommended by the manufacturer. Equipment and trucks used for

construction will utilize the best available noise control techniques (e.g. engine enclosures, acoustically-attenuating shields, or shrouds, intake silencers, ducts, etc.) whenever necessary.

Appendix B

Air Quality and Greenhouse Gas Emissions Calculations

ASRA Annual Construction Emission				
Alternative	**ROG (lb/day)**	**NOx (lb/day)**	**PM10 (lb/day)**	**MTCO2e (Tons/Year)**
No Action Alternative	**0**	**0**	**0**	**0**
Increased Recreation and Resource Management (IRRM) Alternative (CSP Proposed Action)	8.5	45.7	12.7	380
Resource Management Emphasis (RME) Alternative	6.8	21.0	6.7	148
Recreation Emphasis (RE) Alternative	8.5	45.3	13.1	390

AQ and GHG Emissions Summary - Construction Emissions

Alternative	**ROG (Tons/Year)**	**NOx (Tons/Year)**	**PM2.5 (Tons/Year)**	**CO (Tons/Year)**
No Action Alternative	**0.0**	**0.0**	0.0	**0.0**
Increased Recreation and Resource Management (IRRM) Alternative (CSP Proposed Action)	0.4	2.6	0.2	1.5
Resource Management Emphasis (RME) Alternative	0.2	1.1	0.1	0.9
Recreation Emphasis (RE) Alternative	0.4	2.6	0.21	2.3

Visitation Increase	**Visitation Increase (%)**	**Visitation Increase**	**VMT**
No Action Alternative	30%	300,000	8,237,591
Increased Recreation and Resource Management (IRRM) Alternative (CSP Proposed Action)	35%	350,000	9,610,523
Resource Management Emphasis (RME) Alternative	30%	300,000	8,237,591
Recreation Emphasis (RE) Alternative	45%	450,000	12,356,387

AQ and GHG Emissions Summary - Operational Emissions				
Alternative	ROG (lb/day)	NOx (lb/day)	PM10 (lb/day)	MTCO2e (Tons/Year)
No Action Alternative	7.3	1.9	29.4	966
Increased Recreation and Resource Management (IRRM) Alternative (CSP Proposed Action)	8.4	41.5	41.5	2,198
Resource Management Emphasis (RME) Alternative	7.3	41.0	29.4	966
Recreation Emphasis (RE) Alternative	10.4	42.1	50.6	2,519

NEPA De Minimis Level Analyis	ROG (Tons/Year)	NOx (Tons/Year)	PM2.5 (Tons/Year)	CO (Tons/Year)
No Action Alternative	1.5	1.1	2.2	3.8
Increased Recreation and Resource Management (IRRM) Alternative (CSP Proposed Action)	1.7	0.34	2.3	55
Resource Management Emphasis (RME) Alternative	1.5	1.1	2.2	3.8
Recreation Emphasis (RE) Alternative	2.1	0.4	2.5	56

Increased Recreation and Resource Management Alternative (CSP Proposed Action)

Daily Emissions Air Pollutants

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.9754	21.3813	16.4159	0.0321	6.6801	1.1535	7.6710	3.4014	1.0771	4.3130	0.0000	3,007.3143	3,007.3143	0.7696	0.0000	3,019.6547
Maximum	5.9754	21.3813	16.4159	0.0321	6.6801	1.1535	7.6710	3.4014	1.0771	4.3130	0.0000	**3,007.3143**	**3,007.3143**	0.7696	0.0000	**3,019.65**

Annual Emissions GHG

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2830	1.9242	1.6784	3.2200e-003	0.0594	0.0970	0.1563	0.0198	0.0931	0.1129	0.0000	273.7641	273.7641	0.0446	0.0000	274.8791
Maximum	0.2830	1.9242	1.6784	**3.2200e-003**	0.0594	0.0970	0.1563	0.0198	0.0931	0.1129	0.0000	273.7641	273.7641	0.0446	0.0000	274.8791

Annual Emissions Air Pollutants

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2830	1.9242	1.6784	3.2200e-003	0.0594	0.0970	0.1563	0.0198	0.0931	0.1129	0.0000	273.7641	273.7641	0.0446	0.0000	274.8791
Maximum	0.2830	1.9242	1.6784	**3.2200e-003**	0.0594	0.0970	0.1563	0.0198	0.0931	0.1129	0.0000	273.7641	273.7641	0.0446	0.0000	274.8791

Resource Management Emphasis Alternative

Daily Emissions Air Pollutants

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.3062	20.9873	15.2202	0.0286	5.9018	1.1535	6.7233	2.9808	1.0771	3.7366	0.0000	2,669.7980	2,669.7980	0.6009	0.0000	2,679.6793
Maximum	4.3062	20.9873	15.2202	0.0286	5.9018	1.1535	6.7233	2.9808	1.0771	3.7366	0.0000	**2,669.7980**	**2,669.7980**	0.6009	0.0000	**2,679.6793**

Annual Emissions GHG

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1581	1.0950	0.9436	1.6600e-003	0.0224	0.0611	0.0834	6.3700e-003	0.0564	0.0628	0.0000	147.0610	147.0610	0.0375	0.0000	147.9982
Maximum	0.1581	1.0950	0.9436	**1.6600e-003**	0.0224	0.0611	0.0834	**6.3700e-003**	0.0564	0.0628	0.0000	147.0610	147.0610	0.0375	0.0000	147.9982

Annual Emissions Air Pollutants

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1581	1.0950	0.9436	1.6600e-003	0.0224	0.0611	0.0834	6.3700e-003	0.0564	0.0628	0.0000	147.0610	147.0610	0.0375	0.0000	147.9982
Maximum	0.1581	1.0950	0.9436	**1.6600e-003**	0.0224	0.0611	0.0834	**6.3700e-003**	0.0564	0.0628	0.0000	147.0610	147.0610	0.0375	0.0000	147.9982

Recreation Emphasis Alternative

Daily Emissions Air Pollutants

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.9754	20.9977	15.1426	0.0291	5.9018	1.1535	6.7233	2.9808	1.0771	3.7366	0.0000	2,719.5860	2,719.5860	0.6004	0.0000	2,729.6001
Maximum	5.9754	20.9977	15.1426	0.0291	5.9018	1.1535	6.7233	2.9808	1.0771	3.7366	0.0000	**2,719.5860**	**2,719.5860**	0.6004	0.0000	**2,729.6001**

Annual Emissions GHG

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2856	1.9485	1.6979	3.3200e-003	0.0654	0.0971	0.1625	0.0214	0.0932	0.1147	0.0000	283.0638	283.0638	0.0450	0.0000	284.1879
Maximum	0.2856	1.9485	1.6979	**3.3200e-003**	0.0654	0.0971	0.1625	0.0214	0.0932	0.1147	0.0000	283.0638	283.0638	0.0450	0.0000	284.1879

Annual Emissions Air Pollutants

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2856	1.9485	1.6979	3.3200e-003	0.0654	0.0971	0.1625	0.0214	0.0932	0.1147	0.0000	283.0638	283.0638	0.0450	0.0000	284.1879
Maximum	0.2856	1.9485	1.6979	**3.3200e-003**	0.0654	0.0971	0.1625	0.0214	0.0932	0.1147	0.0000	283.0638	283.0638	0.0450	0.0000	284.1879

Increased Recreation and Resource Management Alternative (CSP Proposed Action)

Daily Emissions Air Pollutants

	ROG	NOx	CO	SO2	Fugitive 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	6.9909	0.0881	7.6714	0.0121		1.0382	1.0382		1.0382	1.0382	101.8929	11.8287	113.7216	4.5000e-	9.2000e-	116.4757
Energy	2.2200e-	0.0198	0.0139	1.2000e-		1.5400e-	1.5400e-		1.5400e-	1.5400e-		24.2433	24.2433	4.6000e-	4.4000e-	24.3873
Mobile	0.3053	2.1308	25.1857	0.1599	30.8057	0.0602	30.8659	8.1668	0.0554	8.2221		15,987.15	15,987.15	0.1217		15,990.19
Total	7.2984	2.2387	32.8710	0.1721	30.8057	1.0999	31.9056	8.1668	1.0951	9.2618	101.8929	**16,023.22 93**	**16,125.12 21**	0.1226	**9.6400e-003**	**16,131.06 20**

Annual Emissions for GHG

	ROG	NOx	CO	SO2	Fugitive 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					
Total	1.3139	0.2482	4.5186	0.0216	3.4898	0.1968	3.6866	0.9283	0.1963	1.1246	17.2145	**1,775.422 5**	**1,792.637 1**	0.0385	**1.9600e-003**	**1,794.18**

Annual Emissions Air Pollutants

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10	Fugitive PM2.5	Exhaust PM2.5	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2755	0.0160	1.3910	2.2000e-		0.1894	0.1894		0.1894	0.1894	16.8695	1.9431	18.8126	6.0000e-	1.5200e-	19.2681
Energy	4.1000e-	3.6100e-	2.5400e-	2.0000e-		2.8000e-	2.8000e-		2.8000e-	2.8000e-	0.0000	11.9449	11.9449	8.6000e-	2.4000e-	12.0366
Mobile	0.0180	0.1079	1.4751	9.1700e-	1.6470	3.3600e-	1.6504	0.4381	3.0900e-	0.4412	0.0000	831.1914	831.1914	6.4900e-	0.0000	831.3535
Waste						0.0000	0.0000		0.0000	0.0000	0.2680	0.0000	0.2680	0.0158	0.0000	0.6638
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.4177	0.4947	7.9600e-	2.0000e-	0.7519
Total	1.2939	0.1275	2.8686	0.0114	1.6470	0.1931	1.8401	0.4381	0.1928	0.6309	17.2145	845.4971	862.7116	0.0312	**1.9600e-003**	864.0739

No Action and Resource Management Emphasis Alternatives

Daily Emissions Air Pollutants

	ROG	NOx	CO	SO2	Fugitive 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	5.9920	0.0769	6.5799	0.0103		0.8900	0.8900		0.8900	0.8900	87.3381	11.8068	99.1449	3.9000e-004	7.9200e-003	101.5148
Energy	2.2200e-	0.0198	0.0139	1.2000e-		1.5400e-	1.5400e-		1.5400e-	1.5400e-		24.2433	24.2433	4.6000e-	4.4000e-	24.3873
Mobile	0.2605	1.8235	21.5503	0.1369	26.3645	0.0515	26.4160	6.9894	0.0474	7.0367		13,681.98	13,681.98	0.1041		13,684.58
Total	6.2546	1.9202	28.1441	0.1473	26.3645	0.9430	27.3075	6.9894	0.9389	7.9283	87.3381	**13,718.03 07**	**13,805.36 88**	0.1050	**8.3600e-003**	**13,810.48 57**

Annual Emissions GHG

	ROG	NOx	CO	SO2	Fugitive 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					
Total	1.1262	0.2134	3.8718	0.0185	2.9892	0.1688	3.1579	0.7952	0.1683	0.9634	14.8008	**1,520.793 2**	**1,535.593 9**	0.0360	**1.7000e-003**	**1,537.00**

Annual Emissions Air Pollutants

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0933	0.0139	1.1928	1.8900e-003		0.1624	0.1624		0.1624	0.1624	14.4598	1.9413	16.4011	5.0000e-005	1.3100e-003	16.7932
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	10.0780	10.0780	6.8000e-004	2.0000e-004	10.1536
Mobile	0.0153	0.0923	1.2622	7.8400e-003	1.4096	2.8800e-003	1.4125	0.3750	2.6500e-003	0.3776	0.0000	711.3429	711.3429	5.5500e-003	0.0000	711.4817
Waste						0.0000	0.0000		0.0000	0.0000	0.2639	0.0000	0.2639	0.0156	0.0000	0.6538
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.3009	0.3780	7.9400e-003	1.9000e-004	0.6341
Total	1.1090	0.1099	2.4575	**9.7500e-003**	1.4096	0.1655	1.5751	0.3750	0.1653	0.5403	14.8008	723.6631	738.4639	0.0298	**1.7000e-003**	739.7163

Recreation Emphasis Alternative

Daily Emissions Air Pollutants

	ROG	NOx	CO	SO2	Fugitive 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	8.9510	0.1104	9.8341	0.0155		1.3344	1.3344		1.3344	1.3344	131.0025	11.8287	142.8312	4.5000e-	0.0118	146.3506
Energy	2.2200e-	0.0198	0.0139	1.2000e-		1.5400e-	1.5400e-		1.5400e-	1.5400e-		24.2433	24.2433	4.6000e-	4.4000e-	24.3873
Mobile	0.3911	2.7401	32.3695	0.2056	39.6221	0.0774	39.6995	10.5034	0.0712	10.5745		20,553.85	20,553.85	0.1565		20,557.76
Total	9.3444	2.8703	42.2175	0.2212	39.6221	1.4133	41.0354	10.5034	1.4071	11.9105	131.0025	**20,589.92 96**	**20,720.93 20**	0.1574	0.0122	**20,728.50 69**

Annual Emissions GHG

	ROG	NOx	CO	SO2	Fugitive 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					
Total	0.6355	0.3045	4.6499	0.0260	4.4882	0.0947	4.5829	1.1938	0.0939	1.2878	7.9321	**2,276.764**	**2,284.696**	0.0421	**1.1100e-**	**2,286.08**

Annual Emissions Air Pollutants

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.6332	0.0201	1.7857	2.8200e-003		0.2435	0.2435		0.2435	0.2435	21.6889	1.9431	23.6321	6.0000e-005	1.9500e-003	24.2143
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	11.9449	11.9449	8.6000e-004	2.4000e-004	12.0366
Mobile	0.0230	0.1388	1.8959	0.0118	2.1184	4.3200e-003	2.1227	0.5635	3.9800e-003	0.5675	0.0000	1,068.620 2	1,068.620 2	8.3400e-003	0.0000	1,068.828 7
Waste						0.0000	0.0000		0.0000	0.0000	0.2639	0.0000	0.2639	0.0156	0.0000	0.6538
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.3009	0.3780	7.9400e-003	1.9000e-004	0.6341
Total	1.6566	0.1624	3.6842	0.0146	2.1184	0.2481	2.3665	0.5635	0.2477	0.8112	22.0299	**1,082.809 2**	**1,104.839 0**	0.0328	**2.3800e-003**	**1,106.367 4**

Mammoth Bar OHV Area Emissions Estimate for RE Alternative

Annual Day Use Visitors	Motocross Track	OHV Trails	Total Day Use Visitors
	15,000	5,000	20,000

Source: Mammoth Bar OHV Area Motocross Track Repair Draft Environmental Assessment and Finding of No Significant Impact. Available: https://www.usbr.gov/mp/nepa/includes/documentShow.php?Doc_ID=2640

Daily Use Per Visitor (Miles)	30
Total Annual VMT	600,000

Source: Final Analysis of the 2008 California Survey of Registered Off-Highway Vehicle Owners: Usage and Storage(Prepared for the California Air Resources Board by the Institute for Social Research at California State University, Sacramento) Available: https://www.arb.ca.gov/msprog/offroad/orrec/1085/final%20analysis%20of%20the%202008%20california%20survey%20of%20registered%20ohv%20owners.pdf

Mammoth Bar OHV Days Allowed for Use (Current)			
Three days per week		Four days per week	
1-Apr	30-Sep	1-Oct	31-Mar
182		184	
Total Days per Year		107	

Source: Mammoth Bar OHV Area Website https://www.parks.ca.gov/?page_id=1343

Mammoth Bar OHV Days Allowed for Use (Proposed RE Alt)			
Three days per week		Four days per week	
1-Apr	30-Sep	1-Oct	31-Mar
182		184	
Total Days per Year		365	
Percent increase in Days		242%	

Annual Emissions					
Vehicle Type	HC	CO	NOX	PM	CO2
OHV (g)	10,260,000	16,230,000	3,000	126,000	23,874,000
ATV (g)	10,260,000	16,230,000	3,000	126,000	32,889,000
Tons	22.62	35.78	0.01	0.28	62.57
Daily Emissions					
Vehicle Type	HC	CO	NOX	PM	CO2
OHV (g)	96,187.50	152,156.25	28.13	1,181.25	223,818.75
ATV (g)	96,187.50	152,156.25	28.13	1,181.25	308,334.38
Tons	0.2121	0.3354	0.0001	0.0026	0.5866
Pounds	424.1	670.9	0.1	5.2	1,173.2

Emissions increase under RE Alternative (Daily Emissions)					
Vehicle Type	HC	CO	NOX	PM	CO2
Tons	0.3015	0.4770	0.0001	0.0037	0.8341
Pounds	603.04	953.93	0.18	7.41	1,668.14

Emissions increase under RE Alternative (Annual Emissions)					
Vehicle Type	HC	CO	NOX	PM	CO2
Tons	32.16196108	50.87608463	0.00940408	0.39497145	88.96731953

Table III-5. Exhaust Emission Factors for RV2013								
Vehicle Type	Tech Group	HP	Model Year	HC	CO	NOX	PM	CO2
OHV (g/mile)	G2	All	All	34.2	54.1	0.01	0.42	79.58
ATV (g/mile)	G2	All	All	34.2	54.1	0.01	0.42	109.63

Source: Emissions Estimation Methodology forOff-Highway Recreational VehiclesMay 2013California Air Resources BoardPlanning and Technical Support Division https://www.arb.ca.gov/regact/2013/ohrv2013/ohrvattachc.pdf

Assumptions	
Gram	Ton
1	0.00000110
Pound	Ton
1	0.0005

Source: Google

VMT Estimate CSP Action

Placer County		# of Responses	Response Percentage	Trip Length	Weighted Trip	Daily Trip increase form Alt
	Auburn	126	27.0%	4.7	1.27	94,433
	Roseville	18	3.9%	20.7	0.80	13,490
	Rocklin	18	3.9%	16.4	0.63	13,490
	Granite Bay	15	3.2%	17.2	0.55	11,242
	Forest Hill	13	2.8%	16.2	0.45	9,743
	Newcastle	13	2.8%	8.2	0.23	9,743
	Colfax	13	2.8%	19.7	0.55	9,743
	Meadow Vista	10	2.1%	12	0.26	7,495
	Penryn	10	2.1%	10.6	0.23	7,495
	Loomis	8	1.7%	13.4	0.23	5,996
	Lincoln	5	1.1%	17.6	0.19	3,747
	Alta	2	0.4%	5.8	0.02	1,499
	Applegate	1	0.2%	12.5	0.03	749
	Gold Run	1	0.2%	27.9	0.06	749
	Weimar	1	0.2%	15.2	0.03	749
Sacramento County					0.00	-
	Sacramento	35	7.5%	37.4	2.80	26,231
	Citrus Heights	6	1.3%	23.1	0.30	4,497
	Orangevale	6	1.3%	23.5	0.30	4,497
	Fair Oaks	5	1.1%	27	0.29	3,747
	Carmichael	3	0.6%	30.3	0.19	2,248
	Elk Grove	3	0.6%	49.8	0.32	2,248
	Folsom	3	0.6%	23.6	0.15	2,248
	North Highlands	3	0.6%	27.9	0.18	2,248
	Elverta	1	0.2%	32	0.07	749
	Rio Linda	1	0.2%	32.5	0.07	749
	Rancho Cordova	1	0.2%	31.5	0.07	749
	Antelope	1	0.2%	27.2	0.06	749
El Dorado County					0.00	-
	Cool	35	7.5%	7.2	0.54	26,231
	Georgetown	5	1.1%	17	0.18	3,747
	Greenwood	4	0.9%	12.4	0.11	2,998
	Shingle Springs	4	0.9%	27	0.23	2,998
	Coloma	3	0.6%	16.1	0.10	2,248
	Garden Valley	3	0.6%	16.8	0.11	2,248
	Pilot Hill	3	0.6%	8.6	0.06	2,248
	Placerville	3	0.6%	24.5	0.16	2,248
	El Dorado	1	0.2%	67	0.14	749
	Lotus	1	0.2%	15.9	0.03	749
	Pollock Pines	1	0.2%	37.2	0.08	749
	El Dorado Hills	1	0.2%	22.1	0.05	749
Nevada County					0.00	-
	Grass Valley	1	0.2%	27.3	0.06	749
	Nevada City	4	0.9%	31.2	0.27	2,998
	Truckee	3	0.6%	70.8	0.45	2,248
	Soda Spings	1	0.2%	59	0.13	749
Yolo County					0.00	-
	Davis	4	0.9%	51.3	0.44	2,998
	Woodland	3	0.6%	52.9	0.34	2,248
	Broderick	1	0.2%	37.1	0.08	749
	Esperato	1	0.2%	68.9	0.15	749
	West Sacramento	1	0.2%	43.3	0.09	749
Santa Clara County					0.00	-
	Cupertino	4	0.9%	165	1.41	2,998
	San Jose	4	0.9%	159	1.36	2,998
	Los Gatos	1	0.2%	166	0.36	749
	Milipitas	1	0.2%	153	0.33	749
Alameda County					0.00	-
	Oakland	4	0.9%	123	1.05	2,998
	Alameda	1	0.2%	138	0.30	749
	American Canyon	1	0.2%	91.7	0.20	749
	Livermore	1	0.2%	127	0.27	749
San Mateo County					0.00	-
	Daly City	3	0.6%	131	0.84	2,248
	Half Moon Bay	1	0.2%	151	0.32	749
	Redwood City	1	0.2%	148	0.32	749
	San Bruno	1	0.2%	133	0.28	749
Contra Costa County					0.00	-
	Pleasant Hill	2	0.4%	143	0.61	1,499
	Orinda	2	0.4%	114	0.49	1,499
	Concord	1	0.2%	104	0.22	749
Solano County					0.00	-
	Vallejo	3	0.6%	95.5	0.61	2,248
	Vacaville	2	0.4%	70.5	0.30	1,499
Sonoma County					0.00	-
	Santa Rosa	4	0.9%	134	1.15	2,998
	Rohnert Park	1	0.2%	127	0.27	749
San Diego County					0.00	-
	San Diego(1)	3	0.6%	30.5	0.20	2,248
Stanislaus					0.00	-
	Newman	2	0.4%	139	0.60	1,499
	Petterson	1	0.2%	126	0.27	749
Venutra County					0.00	-
	Simi Valley(1)	2	0.4%	30.5	0.13	1,499
Marin County					0.00	-
	Inverness	1	0.2%	136	0.29	749
	Novato	1	0.2%	114	0.24	749
					0.00	-
	Other(1)	14	3.0%	30.5	0.91	10,493
	Total	467	1		27.46	350,000

Secondary Trip Length(2)	2.9

Annual VMT (2040)
9,610,523

VMT Estimate CSP Action for AQ Impact

Placer County		# of Responses	Response Percentage	Trip Length	Weighted Trip	Average Daily VMT increase from Alt
	Auburn	126	27.0%	4.7	1.27	80,942
	Roseville	18	3.9%	20.7	0.80	11,563
	Rocklin	18	3.9%	16.4	0.63	11,563
	Granite Bay	15	3.2%	17.2	0.55	9,636
	Forest Hill	13	2.8%	16.2	0.45	8,351
	Newcastle	13	2.8%	8.2	0.23	8,351
	Colfax	13	2.8%	19.7	0.55	8,351
	Meadow Vista	10	2.1%	12	0.26	6,424
	Penryn	10	2.1%	10.6	0.23	6,424
	Loomis	8	1.7%	13.4	0.23	5,139
	Lincoln	5	1.1%	17.6	0.19	3,212
	Alta	2	0.4%	5.8	0.02	1,285
	Applegate	1	0.2%	12.5	0.03	642
	Gold Run	1	0.2%	27.9	0.06	642
	Weimar	1	0.2%	15.2	0.03	642
Sacramento County					0.00	-
	Sacramento	35	7.5%	22	1.65	22,484
	Citrus Heights	6	1.3%	22	0.28	3,854
	Orangevale	6	1.3%	22	0.28	3,854
	Fair Oaks	5	1.1%	22	0.24	3,212
	Carmichael	3	0.6%	22	0.14	1,927
	Elk Grove	3	0.6%	22	0.14	1,927
	Folsom	3	0.6%	22	0.14	1,927
	North Highlands	3	0.6%	22	0.14	1,927
	Elverta	1	0.2%	22	0.05	642
	Rio Linda	1	0.2%	22	0.05	642
	Rancho Cordova	1	0.2%	22	0.05	642
	Antelope	1	0.2%	22	0.05	642
El Dorado County					0.00	-
	Cool	35	7.5%	7.2	0.54	22,484
	Georgetown	5	1.1%	17	0.18	3,212
	Greenwood	4	0.9%	12.4	0.11	2,570
	Shingle Springs	4	0.9%	27	0.23	2,570
	Coloma	3	0.6%	16.1	0.10	1,927
	Garden Valley	3	0.6%	16.8	0.11	1,927
	Pilot Hill	3	0.6%	8.6	0.06	1,927
	Placerville	3	0.6%	24.5	0.16	1,927
	El Dorado	1	0.2%	67	0.14	642
	Lotus	1	0.2%	15.9	0.03	642
	Pollock Pines	1	0.2%	37.2	0.08	642
	El Dorado Hills	1	0.2%	22.1	0.05	642
Nevada County					0.00	-
	Grass Valley	1	0.2%	12	0.03	642
	Nevada City	4	0.9%	12	0.10	2,570
	Truckee	3	0.6%	88	0.57	1,927
	Soda Spings	1	0.2%	88	0.19	642
Yolo County					0.00	-
	Davis	4	0.9%	22	0.19	2,570
	Woodland	3	0.6%	22	0.14	1,927
	Broderick	1	0.2%	22	0.05	642
	Esperato	1	0.2%	22	0.05	642
	West Sacramento	1	0.2%	22	0.05	642
Santa Clara County					0.00	-
	Cupertino	4	0.9%	22	0.19	2,570
	San Jose	4	0.9%	22	0.19	2,570
	Los Gatos	1	0.2%	22	0.05	642
	Milipitas	1	0.2%	22	0.05	642
Alameda County					0.00	-
	Oakland	4	0.9%	22	0.19	2,570
	Alameda	1	0.2%	22	0.05	642
	American Canyon	1	0.2%	22	0.05	642
	Livermore	1	0.2%	22	0.05	642
San Mateo County					0.00	-
	Daly City	3	0.6%	22	0.14	1,927
	Half Moon Bay	1	0.2%	22	0.05	642
	Redwood City	1	0.2%	22	0.05	642
	San Bruno	1	0.2%	22	0.05	642
Contra Costa County					0.00	-
	Pleasant Hill	2	0.4%	22	0.09	1,285
	Orinda	2	0.4%	22	0.09	1,285
	Concord	1	0.2%	22	0.05	642
Solano County					0.00	-
	Vallejo	3	0.6%	22	0.14	1,927
	Vacaville	2	0.4%	22	0.09	1,285
Sonoma County					0.00	-
	Santa Rosa	4	0.9%	22	0.19	2,570
	Rohnert Park	1	0.2%	22	0.05	642
San Diego County					0.00	-
	San Diego(1)	3	0.6%	22	0.14	1,927
Stanislaus					0.00	-
	Newman	2	0.4%	22	0.09	1,285
	Petterson	1	0.2%	22	0.05	642
Venutra County					0.00	-
	Simi Valley(1)	2	0.4%	22	0.09	1,285
Marin County					0.00	-
	Inverness	1	0.2%	22	0.05	642
	Novato	1	0.2%	22	0.05	642
					0.00	-
	Other(1)	14	3.0%	22	0.66	8,994
	Total	467	1		14.79	350,000

Secondary Trip Length(2)	2.9

Annual VMT (2040)
4,535,356

Itinerary	Auburn SRA Percentage
Primary stop	84.6%
One of many stops	15.4%

Source: 2007-2009 ASRA Survey_Table 14. Trip Itinerary

Assumed Trip Length from beginning of Placer County to ASRA (Miles)	22
Assumed Trip Length from beginning of Placer County to ASRA (Miles) for trips from Grass Valley and Nevada City	12
Assumed Trip Length from beginning of Placer County to ASRA (Miles) for trips from Truckee and Soda Springs	88

Notes

1. Based on conservative regional average trip length estimate for Sacrametno County, assuming these trips were not made by car from origin location.
2. Secondary trip length calculated as the distance from the closest exit (1119C) from I-80 to Auburn Tate Park Kiosk on Forest Hill Road.

VMT Estimate RME Alternative

Placer County		# of Responses	Response Percentage	Trip Length	Weighted Trip	Daily Trip increase form Alt
	Auburn	126	27.0%	4.7	1.27	94,433
	Roseville	18	3.9%	20.7	0.80	13,490
	Rocklin	18	3.9%	16.4	0.63	13,490
	Granite Bay	15	3.2%	17.2	0.55	11,242
	Forest Hill	13	2.8%	16.2	0.45	9,743
	Newcastle	13	2.8%	8.2	0.23	9,743
	Colfax	13	2.8%	19.7	0.55	9,743
	Meadow Vista	10	2.1%	12	0.26	7,495
	Penryn	10	2.1%	10.6	0.23	7,495
	Loomis	8	1.7%	13.4	0.23	5,996
	Lincoln	5	1.1%	17.6	0.19	3,747
	Alta	2	0.4%	5.8	0.02	1,499
	Applegate	1	0.2%	12.5	0.03	749
	Gold Run	1	0.2%	27.9	0.06	749
	Weimar	1	0.2%	15.2	0.03	749
Sacramento County					0.00	-
	Sacramento	35	7.5%	37.4	2.80	26,231
	Citrus Heights	6	1.3%	23.1	0.30	4,497
	Orangevale	6	1.3%	23.5	0.30	4,497
	Fair Oaks	5	1.1%	27	0.29	3,747
	Carmichael	3	0.6%	30.3	0.19	2,248
	Elk Grove	3	0.6%	49.8	0.32	2,248
	Folsom	3	0.6%	23.6	0.15	2,248
	North Highlands	3	0.6%	27.9	0.18	2,248
	Elverta	1	0.2%	32	0.07	749
	Rio Linda	1	0.2%	32.5	0.07	749
	Rancho Cordova	1	0.2%	31.5	0.07	749
	Antelope	1	0.2%	27.2	0.06	749
El Dorado County					0.00	-
	Cool	35	7.5%	7.2	0.54	26,231
	Georgetown	5	1.1%	17	0.18	3,747
	Greenwood	4	0.9%	12.4	0.11	2,998
	Shingle Springs	4	0.9%	27	0.23	2,998
	Coloma	3	0.6%	16.1	0.10	2,248
	Garden Valley	3	0.6%	16.8	0.11	2,248
	Pilot Hill	3	0.6%	8.6	0.06	2,248
	Placerville	3	0.6%	24.5	0.16	2,248
	El Dorado	1	0.2%	67	0.14	749
	Lotus	1	0.2%	15.9	0.03	749
	Pollock Pines	1	0.2%	37.2	0.08	749
	El Dorado Hills	1	0.2%	22.1	0.05	749
Nevada County					0.00	-
	Grass Valley	1	0.2%	27.3	0.06	749
	Nevada City	4	0.9%	31.2	0.27	2,998
	Truckee	3	0.6%	70.8	0.45	2,248
	Soda Spings	1	0.2%	59	0.13	749
Yolo County					0.00	-
	Davis	4	0.9%	51.3	0.44	2,998
	Woodland	3	0.6%	52.9	0.34	2,248
	Broderick	1	0.2%	37.1	0.08	749
	Esperato	1	0.2%	68.9	0.15	749
	West Sacramento	1	0.2%	43.3	0.09	749
Santa Clara County					0.00	-
	Cupertino	4	0.9%	165	1.41	2,998
	San Jose	4	0.9%	159	1.36	2,998
	Los Gatos	1	0.2%	166	0.36	749
	Milipitas	1	0.2%	153	0.33	749
Alameda County					0.00	-
	Oakland	4	0.9%	123	1.05	2,998
	Alameda	1	0.2%	138	0.30	749
	American Canyon	1	0.2%	91.7	0.20	749
	Livermore	1	0.2%	127	0.27	749
San Mateo County					0.00	-
	Daly City	3	0.6%	131	0.84	2,248
	Half Moon Bay	1	0.2%	151	0.32	749
	Redwood City	1	0.2%	148	0.32	749
	San Bruno	1	0.2%	133	0.28	749
Contra Costa County					0.00	-
	Pleasant Hill	2	0.4%	143	0.61	1,499
	Orinda	2	0.4%	114	0.49	1,499
	Concord	1	0.2%	104	0.22	749
Solano County					0.00	-
	Vallejo	3	0.6%	95.5	0.61	2,248
	Vacaville	2	0.4%	70.5	0.30	1,499
Sonoma County					0.00	-
	Santa Rosa	4	0.9%	134	1.15	2,998
	Rohnert Park	1	0.2%	127	0.27	749
San Diego County					0.00	-
	San Diego(1)	3	0.6%	30.5	0.20	2,248
Stanislaus					0.00	-
	Newman	2	0.4%	139	0.60	1,499
	Petterson	1	0.2%	126	0.27	749
Venutra County					0.00	-
	Simi Valley(1)	2	0.4%	30.5	0.13	1,499
Marin County					0.00	-
	Inverness	1	0.2%	136	0.29	749
	Novato	1	0.2%	114	0.24	749
					0.00	-
	Other(1)	14	3.0%	30.5	0.91	10,493
	Total	467	1		27.46	300,000

Secondary Trip Length(2)	2.9

Annual VMT (2040)
8,237,591

Notes

1. Based on conservative regional average trip length estimate for Sacramento County, assuming these trips were not made by car from origin location.
2. Secondary trip length calculated as the distance from the closest exit (119C) from I-80 to Auburn Tate Park Kiosk on Forest Hill Road.

VMT Estimate RME Alternative for AQ Impact

Placer County		# of Responses	Response Percentage	Trip Length	Weighted Trip	Average Daily VMT increase from Alt
	Auburn	126	27.0%	4.7	1.27	80,942
	Roseville	18	3.9%	20.7	0.80	11,563
	Rocklin	18	3.9%	16.4	0.63	11,563
	Granite Bay	15	3.2%	17.2	0.55	9,636
	Forest Hill	13	2.8%	16.2	0.45	8,351
	Newcastle	13	2.8%	8.2	0.23	8,351
	Colfax	13	2.8%	19.7	0.55	8,351
	Meadow Vista	10	2.1%	12	0.26	6,424
	Penryn	10	2.1%	10.6	0.23	6,424
	Loomis	8	1.7%	13.4	0.23	5,139
	Lincoln	5	1.1%	17.6	0.19	3,212
	Alta	2	0.4%	5.8	0.02	1,285
	Applegate	1	0.2%	12.5	0.03	642
	Gold Run	1	0.2%	27.9	0.06	642
	Weimar	1	0.2%	15.2	0.03	642
Sacramento County					0.00	-
	Sacramento	35	7.5%	22	1.65	22,484
	Citrus Heights	6	1.3%	22	0.28	3,854
	Orangevale	6	1.3%	22	0.28	3,854
	Fair Oaks	5	1.1%	22	0.24	3,212
	Carmichael	3	0.6%	22	0.14	1,927
	Elk Grove	3	0.6%	22	0.14	1,927
	Folsom	3	0.6%	22	0.14	1,927
	North Highlands	3	0.6%	22	0.14	1,927
	Elverta	1	0.2%	22	0.05	642
	Rio Linda	1	0.2%	22	0.05	642
	Rancho Cordova	1	0.2%	22	0.05	642
	Antelope	1	0.2%	22	0.05	642
El Dorado County					0.00	-
	Cool	35	7.5%	7.2	0.54	22,484
	Georgetown	5	1.1%	17	0.18	3,212
	Greenwood	4	0.9%	12.4	0.11	2,570
	Shingle Springs	4	0.9%	27	0.23	2,570
	Coloma	3	0.6%	16.1	0.10	1,927
	Garden Valley	3	0.6%	16.8	0.11	1,927
	Pilot Hill	3	0.6%	8.6	0.06	1,927
	Placerville	3	0.6%	24.5	0.16	1,927
	El Dorado	1	0.2%	67	0.14	642
	Lotus	1	0.2%	15.9	0.03	642
	Pollock Pines	1	0.2%	37.2	0.08	642
	El Dorado Hills	1	0.2%	22.1	0.05	642
Nevada County					0.00	-
	Grass Valley	1	0.2%	12	0.03	642
	Nevada City	4	0.9%	12	0.10	2,570
	Truckee	3	0.6%	88	0.57	1,927
	Soda Spings	1	0.2%	88	0.19	642
Yolo County					0.00	-
	Davis	4	0.9%	22	0.19	2,570
	Woodland	3	0.6%	22	0.14	1,927
	Broderick	1	0.2%	22	0.05	642
	Esperato	1	0.2%	22	0.05	642
	West Sacramento	1	0.2%	22	0.05	642
Santa Clara County					0.00	-
	Cupertino	4	0.9%	22	0.19	2,570
	San Jose	4	0.9%	22	0.19	2,570
	Los Gatos	1	0.2%	22	0.05	642
	Milipitas	1	0.2%	22	0.05	642
Alameda County					0.00	-
	Oakland	4	0.9%	22	0.19	2,570
	Alameda	1	0.2%	22	0.05	642
	American Canyon	1	0.2%	22	0.05	642
	Livermore	1	0.2%	22	0.05	642
San Mateo County					0.00	-
	Daly City	3	0.6%	22	0.14	1,927
	Half Moon Bay	1	0.2%	22	0.05	642
	Redwood City	1	0.2%	22	0.05	642
	San Bruno	1	0.2%	22	0.05	642
Contra Costa County					0.00	-
	Pleasant Hill	2	0.4%	22	0.09	1,285
	Orinda	2	0.4%	22	0.09	1,285
	Concord	1	0.2%	22	0.05	642
Solano County					0.00	-
	Vallejo	3	0.6%	22	0.14	1,927
	Vacaville	2	0.4%	22	0.09	1,285
Sonoma County					0.00	-
	Santa Rosa	4	0.9%	22	0.19	2,570
	Rohnert Park	1	0.2%	22	0.05	642
San Diego County					0.00	-
	San Diego(1)	3	0.6%	22	0.14	1,927
Stanislaus					0.00	-
	Newman	2	0.4%	22	0.09	1,285
	Petterson	1	0.2%	22	0.05	642
Venutra County					0.00	-
	Simi Valley(1)	2	0.4%	22	0.09	1,285
Marin County					0.00	-
	Inverness	1	0.2%	22	0.05	642
	Novato	1	0.2%	22	0.05	642
					0.00	-
	Other(1)	14	3.0%	22	0.66	8,994
	Total	467	1		14.79	300,000

Secondary Trip Length(2)	2.9

Annual VMT (2040)
3,887,448

Itinerary	**Auburn SRA Percentage**
Primary stop	84.6%
One of many stops	15.4%

Source: 2007-2009 ASRA Survey_Table 14. Trip Itinerary

Assumed Trip Length from beginning of Placer County to ASRA (Miles)	22
Assumed Trip Length from beginning of Placer County to ASRA (Miles) for trips from Grass Valley and Nevada City	12
Assumed Trip Length from beginning of Placer County to ASRA (Miles) for trips from Truckee and Soda Springs	88

Notes

1. Based on conservative regional average trip length estimate for Sacrametno County, assuming these trips were not made by car from origin location.
2. Secondary trip length calculated as the distance from the closest exit (1119C) from I-80 to Auburn Tate Park Kiosk on Forest Hill Road.

VMT Estimate RE Alternative

Placer County		# of Responses	Response Percentage	Trip Length	Weighted Trip	Daily Trip increase form Alt
	Auburn	126	27.0%	4.7	1.27	94,433
	Roseville	18	3.9%	20.7	0.80	13,490
	Rocklin	18	3.9%	16.4	0.63	13,490
	Granite Bay	15	3.2%	17.2	0.55	11,242
	Forest Hill	13	2.8%	16.2	0.45	9,743
	Newcastle	13	2.8%	8.2	0.23	9,743
	Colfax	13	2.8%	19.7	0.55	9,743
	Meadow Vista	10	2.1%	12	0.26	7,495
	Penryn	10	2.1%	10.6	0.23	7,495
	Loomis	8	1.7%	13.4	0.23	5,996
	Lincoln	5	1.1%	17.6	0.19	3,747
	Alta	2	0.4%	5.8	0.02	1,499
	Applegate	1	0.2%	12.5	0.03	749
	Gold Run	1	0.2%	27.9	0.06	749
	Weimar	1	0.2%	15.2	0.03	749
Sacramento County					0.00	-
	Sacramento	35	7.5%	37.4	2.80	26,231
	Citrus Heights	6	1.3%	23.1	0.30	4,497
	Orangevale	6	1.3%	23.5	0.30	4,497
	Fair Oaks	5	1.1%	27	0.29	3,747
	Carmichael	3	0.6%	30.3	0.19	2,248
	Elk Grove	3	0.6%	49.8	0.32	2,248
	Folsom	3	0.6%	23.6	0.15	2,248
	North Highlands	3	0.6%	27.9	0.18	2,248
	Elverta	1	0.2%	32	0.07	749
	Rio Linda	1	0.2%	32.5	0.07	749
	Rancho Cordova	1	0.2%	31.5	0.07	749
	Antelope	1	0.2%	27.2	0.06	749
El Dorado County					0.00	-
	Cool	35	7.5%	7.2	0.54	26,231
	Georgetown	5	1.1%	17	0.18	3,747
	Greenwood	4	0.9%	12.4	0.11	2,998
	Shingle Springs	4	0.9%	27	0.23	2,998
	Coloma	3	0.6%	16.1	0.10	2,248
	Garden Valley	3	0.6%	16.8	0.11	2,248
	Pilot Hill	3	0.6%	8.6	0.06	2,248
	Placerville	3	0.6%	24.5	0.16	2,248
	El Dorado	1	0.2%	67	0.14	749
	Lotus	1	0.2%	15.9	0.03	749
	Pollock Pines	1	0.2%	37.2	0.08	749
	El Dorado Hills	1	0.2%	22.1	0.05	749
Nevada County					0.00	-
	Grass Valley	1	0.2%	27.3	0.06	749
	Nevada City	4	0.9%	31.2	0.27	2,998
	Truckee	3	0.6%	70.8	0.45	2,248
	Soda Spings	1	0.2%	59	0.13	749
Yolo County					0.00	-
	Davis	4	0.9%	51.3	0.44	2,998
	Woodland	3	0.6%	52.9	0.34	2,248
	Broderick	1	0.2%	37.1	0.08	749
	Esperato	1	0.2%	68.9	0.15	749
	West Sacramento	1	0.2%	43.3	0.09	749
Santa Clara County					0.00	-
	Cupertino	4	0.9%	165	1.41	2,998
	San Jose	4	0.9%	159	1.36	2,998
	Los Gatos	1	0.2%	166	0.36	749
	Milipitas	1	0.2%	153	0.33	749
Alameda County					0.00	-
	Oakland	4	0.9%	123	1.05	2,998
	Alameda	1	0.2%	138	0.30	749
	American Canyon	1	0.2%	91.7	0.20	749
	Livermore	1	0.2%	127	0.27	749
San Mateo County					0.00	-
	Daly City	3	0.6%	131	0.84	2,248
	Half Moon Bay	1	0.2%	151	0.32	749
	Redwood City	1	0.2%	148	0.32	749
	San Bruno	1	0.2%	133	0.28	749
Contra Costa County					0.00	-
	Pleasant Hill	2	0.4%	143	0.61	1,499
	Orinda	2	0.4%	114	0.49	1,499
	Concord	1	0.2%	104	0.22	749
Solano County					0.00	-
	Vallejo	3	0.6%	95.5	0.61	2,248
	Vacaville	2	0.4%	70.5	0.30	1,499
Sonoma County					0.00	-
	Santa Rosa	4	0.9%	134	1.15	2,998
	Rohnert Park	1	0.2%	127	0.27	749
San Diego County					0.00	-
	San Diego(1)	3	0.6%	30.5	0.20	2,248
Stanislaus					0.00	-
	Newman	2	0.4%	139	0.60	1,499
	Petterson	1	0.2%	126	0.27	749
Venutra County					0.00	-
	Simi Valley(1)	2	0.4%	30.5	0.13	1,499
Marin County					0.00	-
	Inverness	1	0.2%	136	0.29	749
	Novato	1	0.2%	114	0.24	749
					0.00	-
	Other(1)	14	3.0%	30.5	0.91	10,493
	Total	467	1		27.46	450,000

Secondary Trip Length(2)	2.9

Annual VMT (2040)
12,356,387

Notes

1. Based on conservative regional average trip length estimate for Sacramento County, assuming these trips were not made by car from origin location.
2. Secondary trip length calculated as the distance from the closest exit (119C) from I-80 to Auburn Tate Park Kiosk on Forest Hill Road.

VMT Estimate RE Alternative for AQ Impact

Placer County		# of Responses	Response Percentage	Trip Length	Weighted Trip	Average Daily VMT increase from Alt
	Auburn	126	27.0%	4.7	1.27	80,942
	Roseville	18	3.9%	20.7	0.80	11,563
	Rocklin	18	3.9%	16.4	0.63	11,563
	Granite Bay	15	3.2%	17.2	0.55	9,636
	Forest Hill	13	2.8%	16.2	0.45	8,351
	Newcastle	13	2.8%	8.2	0.23	8,351
	Colfax	13	2.8%	19.7	0.55	8,351
	Meadow Vista	10	2.1%	12	0.26	6,424
	Penryn	10	2.1%	10.6	0.23	6,424
	Loomis	8	1.7%	13.4	0.23	5,139
	Lincoln	5	1.1%	17.6	0.19	3,212
	Alta	2	0.4%	5.8	0.02	1,285
	Applegate	1	0.2%	12.5	0.03	642
	Gold Run	1	0.2%	27.9	0.06	642
	Weimar	1	0.2%	15.2	0.03	642
Sacramento County					0.00	-
	Sacramento	35	7.5%	22	1.65	22,484
	Citrus Heights	6	1.3%	22	0.28	3,854
	Orangevale	6	1.3%	22	0.28	3,854
	Fair Oaks	5	1.1%	22	0.24	3,212
	Carmichael	3	0.6%	22	0.14	1,927
	Elk Grove	3	0.6%	22	0.14	1,927
	Folsom	3	0.6%	22	0.14	1,927
	North Highlands	3	0.6%	22	0.14	1,927
	Elverta	1	0.2%	22	0.05	642
	Rio Linda	1	0.2%	22	0.05	642
	Rancho Cordova	1	0.2%	22	0.05	642
	Antelope	1	0.2%	22	0.05	642
El Dorado County					0.00	-
	Cool	35	7.5%	7.2	0.54	22,484
	Georgetown	5	1.1%	17	0.18	3,212
	Greenwood	4	0.9%	12.4	0.11	2,570
	Shingle Springs	4	0.9%	27	0.23	2,570
	Coloma	3	0.6%	16.1	0.10	1,927
	Garden Valley	3	0.6%	16.8	0.11	1,927
	Pilot Hill	3	0.6%	8.6	0.06	1,927
	Placerville	3	0.6%	24.5	0.16	1,927
	El Dorado	1	0.2%	67	0.14	642
	Lotus	1	0.2%	15.9	0.03	642
	Pollock Pines	1	0.2%	37.2	0.08	642
	El Dorado Hills	1	0.2%	22.1	0.05	642
Nevada County					0.00	-
	Grass Valley	1	0.2%	12	0.03	642
	Nevada City	4	0.9%	12	0.10	2,570
	Truckee	3	0.6%	88	0.57	1,927
	Soda Spings	1	0.2%	88	0.19	642
Yolo County					0.00	-
	Davis	4	0.9%	22	0.19	2,570
	Woodland	3	0.6%	22	0.14	1,927
	Broderick	1	0.2%	22	0.05	642
	Esperato	1	0.2%	22	0.05	642
	West Sacramento	1	0.2%	22	0.05	642
Santa Clara County					0.00	-
	Cupertino	4	0.9%	22	0.19	2,570
	San Jose	4	0.9%	22	0.19	2,570
	Los Gatos	1	0.2%	22	0.05	642
	Milipitas	1	0.2%	22	0.05	642
Alameda County					0.00	-
	Oakland	4	0.9%	22	0.19	2,570
	Alameda	1	0.2%	22	0.05	642
	American Canyon	1	0.2%	22	0.05	642
	Livermore	1	0.2%	22	0.05	642
San Mateo County					0.00	-
	Daly City	3	0.6%	22	0.14	1,927
	Half Moon Bay	1	0.2%	22	0.05	642
	Redwood City	1	0.2%	22	0.05	642
	San Bruno	1	0.2%	22	0.05	642
Contra Costa County					0.00	-
	Pleasant Hill	2	0.4%	22	0.09	1,285
	Orinda	2	0.4%	22	0.09	1,285
	Concord	1	0.2%	22	0.05	642
Solano County					0.00	-
	Vallejo	3	0.6%	22	0.14	1,927
	Vacaville	2	0.4%	22	0.09	1,285
Sonoma County					0.00	-
	Santa Rosa	4	0.9%	22	0.19	2,570
	Rohnert Park	1	0.2%	22	0.05	642
San Diego County					0.00	-
	San Diego(1)	3	0.6%	22	0.14	1,927
Stanislaus					0.00	-
	Newman	2	0.4%	22	0.09	1,285
	Petterson	1	0.2%	22	0.05	642
Venutra County					0.00	-
	Simi Valley(1)	2	0.4%	22	0.09	1,285
Marin County					0.00	-
	Inverness	1	0.2%	22	0.05	642
	Novato	1	0.2%	22	0.05	642
					0.00	-
	Other(1)	14	3.0%	22	0.66	8,994
	Total	467	1		14.79	450,000

Secondary Trip Length(2)	2.9

Annual VMT (2040)	
	5,831,172

Itinerary	Auburn SRA Percentage
Primary stop	84.6%
One of many stops	15.4%

Source: 2007-2009 ASRA Survey_Table 14. Trip Itinerary

Assumed Trip Length from beginning of Placer County to ASRA (Miles)	22
Assumed Trip Length from beginning of Placer County to ASRA (Miles) for trips from Grass Valley and Nevada City	12
Assumed Trip Length from beginning of Placer County to ASRA (Miles) for trips from Truckee and Soda Springs	88

Notes

1. Based on conservative regional average trip length estimate for Sacrametno County, assuming these trips were not made by car from origin location.
2. Secondary trip length calculated as the distance from the closest exit (1119C) from I-80 to Auburn Tate Park Kiosk on Forest Hill Road.

ASRA Monthly Visitation				
Month/Year	**Paid Day Use**	**Free Day Use**	**Total Day Use**	**Camping**
1/1/2002	0	40,827	40,827	9
2/1/2002	0	49,552	49,552	41
3/1/2002	0	50,013	50,013	46
4/1/2002	310	59,312	59,622	160
5/1/2002	1,676	98,680	100,356	574
6/1/2002	3,039	107,669	110,708	577
7/1/2002	6,035	148,515	154,550	748
8/1/2002	10,541	266,567	277,108	2,459
9/1/2002	6,469	85,410	91,879	522
10/1/2002	0	71,798	71,798	397
11/1/2002	0	24,802	24,802	46
12/1/2002	0	29,271	29,271	12
1/1/2003	0	42,323	42,323	6
2/1/2003	0	50,427	50,427	93
3/1/2003	0	66,853	66,853	75
4/1/2003	0	52,157	52,157	38
5/1/2003	1,210	102,597	103,807	754
6/1/2003	3,597	119,103	122,700	1,517
7/1/2003	5,189	154,393	159,582	1,093
8/1/2003	5,674	83,120	88,794	1,189
9/1/2003	0	69,377	69,377	566
10/1/2003	0	35,877	35,877	23
11/1/2003	0	26,559	26,559	55
12/1/2003	0	43,630	43,630	20
1/1/2004	0	53,758	53,758	70
			0	
2/1/2004	0	47,480	47,480	0
3/1/2004	0	64,053	64,053	55
4/1/2004	152	71,713	71,865	0
5/1/2004	2,122	107,539	109,661	1,952
6/1/2004	0	105,280	105,280	1,059
7/1/2004	5,813	183,199	189,012	2,108
8/1/2004	6,217	123,096	129,313	1,589
9/1/2004	2,156	99,264	101,420	882
10/1/2004	0	104,623	104,623	55
11/1/2004	0	66,172	66,172	104
12/1/2004	0	26,334	26,334	0
			0	
1/1/2005	0	38,381	38,381	38
2/1/2005	0	48,504	48,504	61
3/1/2005	0	68,243	68,243	52
4/1/2005	30	44,831	44,861	0
5/1/2005	661	54,717	55,378	876
6/1/2005	2,470	53,165	55,635	963
7/1/2005	7,214	140,991	148,205	2,062
8/1/2005	6,623	90,221	96,844	1,070
9/1/2005	2,744	50,322	53,066	1,221
10/1/2005	0	15,195	15,195	450
11/1/2005	0	25,926	25,926	447
12/1/2005	0	21,710	21,710	452
			0	
1/1/2006	0	25,708	25,708	450
2/1/2006	0	19,858	19,858	409
3/1/2006	0	25,913	25,913	299
4/1/2006	0	51,826	51,826	0
5/1/2006	611	74,381	74,992	1,296
6/1/2006	2,776	117,434	120,210	1,610
7/1/2006	7,972	58,209	66,181	2,639
8/1/2006	7,411	82,229	89,640	546
9/1/2006	1,428	21,754	23,182	261
10/1/2006	20	40,610	40,630	64
11/1/2006	0	37,798	37,798	287
12/1/2006	255	17,236	17,491	180
			0	
1/1/2007	647	22,889	23,536	46
2/1/2007	454	26,077	26,531	0
3/1/2007	1,008	74,517	75,525	116
4/1/2007	528	42,530	43,058	467
5/1/2007	2,694	44,055	46,749	1,198
6/1/2007	3,759	58,717	62,476	0
7/1/2007	21,250	107,296	128,546	2,494
8/1/2007	2,037	18,381	20,418	951
9/1/2007	140	31,264	31,404	786
10/1/2007	8,641	2,686	11,327	200
11/1/2007	2,517	19,552	22,069	4,578
12/1/2007	1,957	13,965	15,922	9
			0	
1/1/2008	4,477	10,319	14,796	87
2/1/2008	11,227	23,572	34,799	165
3/1/2008	15,979	45,510	61,489	452
4/1/2008	18,485	34,422	52,907	1,601
5/1/2008	35,512	72,478	107,990	2,088
6/1/2008	51,251	66,479	117,730	2,523
7/1/2008	25,728	78,794	104,522	1,800
8/1/2008	42,386	53,525	95,911	1,818
9/1/2008	11,467	34,939	46,406	574
10/1/2008	3,307	11,573	14,880	229
11/1/2008	6,468	27,522	33,990	17
12/1/2008	2,647	9,999	12,646	0
			0	
1/1/2009	9,662	26,789	36,451	122
2/1/2009	8,351	25,431	33,782	38
3/1/2009	15,390	56,921	72,311	154
4/1/2009	10,134	48,320	58,454	972
5/1/2009	20,997	84,263	105,260	1,056
6/1/2009	26,551	94,689	121,240	1,749
7/1/2009	35,560	120,183	155,743	2,825
8/1/2009	28,592	86,793	115,385	2,999
9/1/2009	20,160	67,148	87,308	780
10/1/2009	13,790	54,107	67,897	470
11/1/2009	2,331	13,031	15,362	139
12/1/2009	**1,981**	7,266	9,247	9
			0	
1/1/2010	6,601	38,273	44,874	64
2/1/2010	3,213	17,000	20,213	17
3/1/2010	9,748	51,041	60,789	345
4/1/2010	6,367	37,590	43,957	325
5/1/2010	20,684	81,617	102,301	992
6/1/2010	19,012	95,419	114,431	1,583
7/1/2010	29,211	121,242	150,453	2,575
8/1/2010	23,802	88,028	111,830	2,253
9/1/2010	18,125	63,750	81,875	1,264
10/1/2010	6,397	33,718	40,115	258
11/1/2010	1,054	6,689	7,743	64
12/1/2010	3,878	16,946	20,824	46
			0	
1/1/2011	8,673	36,372	45,045	81
2/1/2011	10,181	46,581	56,762	342
3/1/2011	**7,000**	29,620	36,620	49
4/1/2011	11,158	66,881	78,039	400
5/1/2011	16,135	78,952	95,087	1,226
6/1/2011	13,440	67,010	80,450	1,154
7/1/2011	29,267	151,458	180,725	2,192
8/1/2011	23,801	87,916	111,717	2,253
9/1/2011	18,071	98,853	116,924	1,224
10/1/2011	8,519	44,657	53,176	253
11/1/2011	4,620	21,189	25,809	67
12/1/2011	13,139	55,540	68,679	52
			0	
1/1/2012	10,525	42,793	53,318	313
2/1/2012	6,545	29,782	36,327	46
3/1/2012	11,970	45,374	57,344	84
4/1/2012	11,967	70,279	82,246	426
5/1/2012	17,541	98,357	115,898	1,172
6/1/2012	21,249	136,764	158,013	1,824
7/1/2012	26,929	138,411	165,340	1,844
8/1/2012	23,391	122,973	146,364	2,018
9/1/2012	15,932	73,359	89,291	621
10/1/2012	7,977	40,036	48,013	241
11/1/2012	3,539	13,654	17,193	61
12/1/2012	2,013	5,165	7,178	6
			0	
1/1/2013	7,221	30,881	38,102	23
2/1/2013	15,057	32,508	47,565	67
3/1/2013	18,103	67,133	85,236	206
4/1/2013	6,353	50,819	57,172	542
5/1/2013	12,978	56,703	69,681	797
6/1/2013	23,362	80,713	104,075	916
7/1/2013	23,551	90,514	114,065	1,270
8/1/2013	22,032	86,100	108,132	1,641
9/1/2013	14,798	65,474	80,272	609
10/1/2013	10,283	47,826	58,109	342
11/1/2013	10,220	37,560	47,780	58
12/1/2013	7,703	28,098	35,801	14
			0	
1/1/2014	9,880	43,922	53,802	63
2/1/2014	7,767	28,466	36,233	107
3/1/2014	11,946	51,208	63,154	136
4/1/2014	11,197	52,473	63,670	383
5/1/2014	16,440	79,359	95,799	731
6/1/2014	20,822	107,246	128,068	795
7/1/2014	28,417	98,992	127,409	1,467
8/1/2014	23,128	97,293	120,421	849
9/1/2014	17,374	84,157	101,531	1,847
10/1/2014	10,587	46,725	57,312	600
11/1/2014	10,171	40,414	50,585	226
12/1/2014	**7,847**	30,807	38,654	113
			0	
1/1/2015	10,339	37,286	47,625	228
2/1/2015	10,143	28,016	38,159	107
3/1/2015	24,220	30,667	54,887	533
4/1/2015	19,470	38,190	57,660	1,346
5/1/2015	33,050	40,256	73,306	574
6/1/2015	38,406	4,875	43,281	716
7/1/2015	35,037	3,497	38,534	1,820
8/1/2015	60,047	11,690	71,737	1,810
9/1/2015	47,712	7,934	55,646	1,244
10/1/2015	17,070	4,102	21,172	485
11/1/2015	**8,610**	1,323	9,933	55
12/1/2015	**1,407**	1,687	3,094	20
			0	
1/1/2016	1,852		1,852	0
2/1/2016	**6,566**	24,692	31,258	46
3/1/2016	4,109	860	4,969	174
4/1/2016	13,325	1,747	15,072	162
5/1/2016	23,440	1,057	24,497	493
6/1/2016	41,110	6,186	47,296	53
7/1/2016	47,902	12,110	60,012	1,123
8/1/2016	23,669	86,166	109,835	1,696
9/1/2016	15,944	65,422	81,366	699
10/1/2016	**5,551**	1,631	7,182	284
11/1/2016	**8,117**	3,007	11,124	110
12/1/2016	**5,999**	5,789	11,788	9
			0	
1/1/2017	**6,976**	6,146	13,122	3
2/1/2017	13,349	16,944	30,293	41
3/1/2017	11,696	30,690	42,386	164
4/1/2017	26,901	26,429	53,330	235
5/1/2017	23,375	56,490	79,865	724
6/1/2017	41,103	5,508	46,611	746
7/1/2017	44,366	14,798	59,164	635
8/1/2017	23,464	87,441	110,905	1,704
9/1/2017	15,916	65,114	81,030	604
10/1/2017	10,441	4,126	14,567	424
11/1/2017	**8,144**	3,026	11,170	116
12/1/2017	**7,869**	5,844	13,713	16

Average Monthly Visitation (2002 -2016)				
Month	**Total Day Use**	**Camping**	**Total**	**Percent Visitation Compared to Peak Month (July)**
January	35,453	96	35,548	29%
February	39,020	102	39,122	32%
March	56,100	180	56,280	46%
April	57,731	574	58,305	47%
May	84,765	976	85,741	70%
June	101,371	1,177	102,548	83%
July	121,397	1,761	123,158	100%
August	111,029	1,634	112,662	91%
September	74,699	805	75,504	61%
October	38,964	302	39,265	32%
November	24,636	395	25,031	20%
December	21,853	64	21,917	18%
Total	767,016	8,065	775,081	
		GP Estimtate	1,000,000	

Visitation Increase	Percent Increase	Total Visitation	Camping Visitation	Three visitors per campsite (Assumption)
No Action Alternative	30%	300,000	2,420	807
Increased Recreation and Resource Management (IRRM) Alternative (CSP Proposed Action)	35%	350,000	2,823	941
Resource Management Emphasis (RME) Alternative	30%	300,000	2,420	807
Recreation Emphasis (RE) Alternative	45%	450,000	3,629	1,210

Fuel Management Activity (Equipment Emissions)

Increased Recreation and Resource Management Alternative (CSP Proposed Action)

Daily Emissions

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1820	39.0704	29.3840	0.0529	0.1533	1.9891	2.1424	0.0407	1.8722	1.9128	0.0000	5,093.4445	5,093.4445	1.1341	0.0000	5,121.7956
Maximum	4.1820	39.0704	29.3840	0.0529	0.1533	1.9891	2.1424	0.0407	1.8722	1.9128	0.0000	**5,093.4445**	**5,093.4445**	1.1341	0.0000	**5,121.7956**

Annual Emissions

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1044	0.9769	0.7328	1.3200e-003	3.6600e-003	0.0497	0.0534	9.7000e-004	0.0468	0.0478	0.0000	115.2156	115.2156	0.0257	0.0000	115.8584
Maximum	0.1044	0.9769	0.7328	**1.3200e-003**	**3.6600e-003**	0.0497	0.0534	**9.7000e-004**	0.0468	0.0478	0.0000	115.2156	115.2156	0.0257	0.0000	115.8584

Resource Management Emphasis Alternative

Daily Emissions

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	1.2880	9.1680	11.3174	0.0204	0.1533	0.5285	0.6818	0.0407	0.5285	0.5691	0.0000	1,938.4043	1,938.4043	0.1136	0.0000	1,941.2453
Maximum	1.2880	9.1680	11.3174	0.0204	0.1533	0.5285	0.6818	0.0407	0.5285	0.5691	0.0000	**1,938.4043**	**1,938.4043**	0.1136	0.0000	**1,941.2453**

Annual Emissions

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0321	0.2293	0.2812	5.1000e-004	3.6600e-003	0.0132	0.0169	9.7000e-004	0.0132	0.0142	0.0000	43.6605	43.6605	2.5700e-003	0.0000	43.7247
Maximum	0.0321	0.2293	0.2812	**5.1000e-004**	**3.6600e-003**	0.0132	0.0169	**9.7000e-004**	0.0132	0.0142	0.0000	43.6605	43.6605	**2.5700e-003**	0.0000	43.7247

Recreation Emphasis Alternative

Daily Emissions

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1820	39.0704	29.3840	0.0529	0.1533	1.9891	2.1424	0.0407	1.8722	1.9128	0.0000	5,093.4445	5,093.4445	1.1341	0.0000	5,121.7956
Maximum	4.1820	39.0704	29.3840	0.0529	0.1533	1.9891	2.1424	0.0407	1.8722	1.9128	0.0000	**5,093.4445**	**5,093.4445**	1.1341	0.0000	**5,121.7956**

Annual Emissions

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1044	0.9769	0.7328	1.3200e-003	3.6600e-003	0.0497	0.0534	9.7000e-004	0.0468	0.0478	0.0000	115.2156	115.2156	0.0257	0.0000	115.8584
Maximum	0.1044	0.9769	0.7328	**1.3200e-003**	**3.6600e-003**	0.0497	0.0534	**9.7000e-004**	0.0468	0.0478	0.0000	115.2156	115.2156	0.0257	0.0000	115.8584

Fuel Management Activity (Pile Burning Emissions)

Alternative	Road treatments[1]	Existing Facilities[2]	Proposed Facilities[3]	Total Additional acres	Per year additional[4]	Existing treatment per year[5]	Total treatment per year (Acres)	**Total Fuel Management Days** (Assumed 3 acres per day cleared of fuel)	**Assumed tons of fuel cleared per acre** (Source: Fuel Reduction Guide for Sierra Nevada Forest Landowners University of California Cooperative Extension (Table 5: Almanor West Project which used both mechanical thinning and chipping)	**Assumed percentage managed through pile burns** (with the rest managed through chipping) (Source: AP-42: Compilation of Air Emissions Factors)	**Total Tons Burned**	**Total Pounds Burned**	**Assumed number of tons burned per day** (Total tons divided by total days of activity)
Increased Recreation and Resource	3633	513	127	4273	214	57	270	90.0	6.8	0.06	110.16	220,320	1.2
Resource Management	3354	513	20	3887	194	57	270	90.0	6.8	0.06	110.2	220,320	1.2
Recreation Emphasis	3633	513	178	4324	216	57	270	90.0	6.8	0.06	110.2	220,320	1.2

NOTES

1 Road treatments are based on an estimated 300' treatment on either side of roads open to the public under each alt (excluding roads in grassland (i.e. knickerbocker)

2 Existing facilities assumes a 300 foot buffer around existing facilities including parking areas, trailheads, campgrounds, etc.)

3 Proposed facilities estimate is based on 300' buffer (6.5 acre polygon) around proposed facility locations, adjusted for facility size. Excludes proposed facilities that fall within the footprint of existing treatment footprints

4 Per year assumes a constant rate of treatment over 20 yeasr

5 Existing treatment per year occurs entirely within shaded fuelbreaks. Estimate based on CSP reporting from 2014 - 2018 (37 acres/year), and Reclamation estimate of 20 acres/yr from B. Dyer, Pers Comm

Table 13.1-4 (Metric Units). EMISSION FACTORS FOR PRESCRIBED BURNING BY U. S. REGION

Configuration And Fuel Type[a]	Percent Of Fuel	Pollutant[c]			
		Particulate (g/kg)			
		PM-2.5	PM-10	PM	CO
Piled slash	**6**	**13**	**13**	**20**	**126**

Source: AP-42: Compilation of Air Emissions Factors 13.1 Wildfires And Prescribed Burning

NOx	Volatile Organics	
	Methane	Nonmethane
Particulate (g/kg)		
2	2.3	2.1

Source: AP-42: Compilation of Air Emissions Factors 13.1 Wildfires And Prescribed Burning (P. 13.1-6)

Source: AP-42: Compilation of Air Emissions Factors 13.1 Wildfires And Prescribed Burning Table 13.1-3 - Short Needle Conifer

kg CO2 / short ton
1639.62

Source: The Climate Registry 2016 Emissions Factors

Conversions	
Kilogram (kg)	Ton
907.185	1
Grams	Pounds
1	0.00220462
Gram	Ton
1	1.00E-06

Source: Google

Emissions Estimate from Pile Burning (all three alternatives) (Pounds/day)

PM-2.5	PM-10	PM	CO	NOx	VOC
0.035	0.035	0.054	0.340	0.005	1.069

Emissions Estimate from Pile Burning (Ton/Year)

Alternative	PM-2.5	PM-10	PM	CO	NOx	VOC	CO2
Increased Recreation and Resource Management Alternative (CSP Proposed Action)	1.2992	1.2992	1.2992	1.2992	0.1999	0.4397	199.1
Resource Management Emphasis Alternative	1.2992	1.2992	1.2992	1.2992	0.1999	0.4397	199.1
Recreation Emphasis Alternative	1.2992	1.2992	1.2992	1.2992	0.1999	0.4397	199.1

Campsite Campfire wood use estimate

	CSP Action	RME Alt	RE Alt	**Source**
# of Campsites	230	50	390	Project Description for EIR
Wood burned per Campsite per day (lb)	23.25	23.25	23.25	31 lbs/ft3 Poplar (https://www.bellforestproducts.com/info/popups/average-dry-weight/?s=3); 0.75 cu. ft. Firewood Bundle (https://www.homedepot.com/p/0-75-cu-ft-Firewood-Bundle-1-75FWD60/207158057)
Wood burned per Year (lb)	21,877	18,752	28,127	
Assumed Increase in Campsite visitation	941	807	1,210	Proposed campsites multiplied by annual campsite visitors

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> ASRA Trail Bridge Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.04	0.56	0.18	5.03	0.03	5.00	1.05	0.01	1.04	0.00	304.21	0.00	0.01	306.34
Grading/Excavation	2.52	19.91	24.32	6.38	1.38	5.00	2.25	1.21	1.04	0.04	3,642.54	0.86	0.04	3,675.97
Drainage/Utilities/Sub-Grade	0.12	1.94	0.32	5.08	0.08	5.00	1.07	0.03	1.04	0.01	734.87	0.01	0.01	739.02
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	2.52	19.91	24.32	6.38	1.38	5.00	2.25	1.21	1.04	0.04	3,642.54	0.86	0.04	3,675.97
Total (tons/construction project)	0.07	0.57	0.65	0.32	0.04	0.28	0.09	0.03	0.06	0.00	115.15	0.02	0.00	116.14

Notes:
- Project Start Year -> 2020
- Project Length (months) -> 6
- Total Project Area (acres) -> 2
- Maximum Area Disturbed/Day (acres) -> 1
- Water Truck Used? -> Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	200	40
Grading/Excavation	0	0	0	0	1,120	40
Drainage/Utilities/Sub-Grade	0	0	0	0	720	40
Paving	0	0	0	0	320	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> ASRA Trail Bridge Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00	2.01	0.00	0.00	1.83
Grading/Excavation	0.07	0.53	0.64	0.17	0.04	0.13	0.06	0.03	0.03	0.00	96.16	0.02	0.00	88.04
Drainage/Utilities/Sub-Grade	0.00	0.04	0.01	0.12	0.00	0.12	0.02	0.00	0.02	0.00	16.98	0.00	0.00	15.49
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.07	0.53	0.64	0.17	0.04	0.13	0.06	0.03	0.03	0.00	96.16	0.02	0.00	88.04
Total (tons/construction project)	0.07	0.57	0.65	0.32	0.04	0.28	0.09	0.03	0.06	0.00	115.15	0.02	0.00	105.36

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Energy Calculations Summary

Operational Fuel Use Summary

IRRM Alternative		
	Gas (gal)	Diesel (gal)
Passenger	140,774	1,121
Truck	90,967	527
Total	231,741	1,648

RME Alternative		
	Gas (gal)	Diesel (gal)
Passenger	120,663	961
Truck	77,972	452
Total	198,635	1,413

RE Alternative		
	Gas (gal)	Diesel (gal)
Passenger	180,995	1,441
Truck	116,957	678
Total	297,952	2,119

Energy Calculations Summary

IRRM Alt
Construction Fuel Usage Summary

	Diesel	Gasoline	Diesel	Diesel
Construction Phase	Off-road Equipment (gallons)	On-road (gallons)	On-road (gallons)	Total
All	21,903	3,672	1,373	23,277
TOTAL	21,903	3,672	1,373	23,277

Total Gasoline	3,672	gallons
Total Diesel	23,277	gallons

RME Alt
Construction Fuel Usage Summary

	Diesel	Gasoline	Diesel	Diesel
Construction Phase	Off-road Equipment (gallons)	On-road (gallons)	On-road (gallons)	Total
All	9,247	780	229	9,476
TOTAL	9,247	780	229	9,476

Total Gasoline	780	gallons
Total Diesel	9,476	gallons

RE Alt
Construction Fuel Usage Summary

	Diesel	Gasoline	Diesel	Diesel
Construction Phase	Off-road Equipment (gallons)	On-road (gallons)	On-road (gallons)	Total
All	10,319	1,816	916	11,234
TOTAL	10,319	1,816	916	11,234

Total Gasoline	1,816	gallons
Total Diesel	11,234	gallons

IRRM Alternative

Phase 1 Construction Offroad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Site Preparation	Graders	1	8	187	0.4	5	150
Site Preparation	Tractors/Loaders/Backhoes	1	8	367	0.48	5	352
Site Preparation	Scrapers	1	8	97	0.37	5	72
Grading	Grader	1	8.00	187	0.41	5	153
Grading	Rubber Tired Dozers	1	8.00	247	0.40	5	198
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37	5	126
Building Construction	Cranes	1	8.00	231	0.29	200	5,359
Building Construction	Forklifts	2	7.00	89	0.20	200	2,492
Building Construction	Generator Sets	1	8.00	84	0.74	200	4,973
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37	200	2,153
Building Construction	Welders	3	8.00	46	0.45	200	4,968
Paving	Cement/Mortar Mixer	1	8.00	9	0.56	10	0
Paving	Pavers	1	8.00	130	0.42	10	218
Paving	Paving Equipment	1	8.00	132	0.36	10	190
Paving	Rollers	2	8.00	80	0.38	10	243
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37	10	144
Architectural Coating	Air Compressors	1	6.00	78	0.48	10	112
						TOTAL	21,903

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

Trips and VMT

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Site Preparation	8	0	0	5	40	0	0	16.80	6.60	20.00	672	0	-	22	0
Architectural Coating	6	0	0	10	60	0	0	16.80	6.60	20.00	1,008.00	0.00	-	33	0
Building Construction	32	15	0	200	6,400	3,000	0	16.80	6.60	20.00	107,520.00	19,800.00	-	3,502	1,373
Grading	10	0	0	6	60	0	0	16.80	6.60	20.00	1,008.00	0.00	-	33	0
Paving	15	0	0	10	150	0	0	16.80	6.60	20.00	2,520.00	0.00	-	82	0
													TOTAL	3,672	1,373

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

RME Alternative

Phase 1 Construction Offroad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Site Preparation	Graders	1	8	187	0.4	1	30
Site Preparation	Tractors/Loaders/Backhoes	1	8	367	0.48	1	70
Grading	Grader	1	8.00	187	0.41	2	61
Grading	Rubber Tired Dozers	1	8.00	247	0.40	2	79
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37	2	50
Building Construction	Cranes	1	8.00	231	0.29	100	2,680
Building Construction	Forklifts	2	7.00	89	0.20	100	1,246
Building Construction	Tractors/Loaders/Backhoes	2	6.00	97	0.37	100	2,153
Building Construction	Welders	3	8.00	46	0.45	100	2,484
Paving	Cement/Mortar Mixer	4	8.00	9	0.56	5	0
Paving	Pavers	1	8.00	130	0.42	5	109
Paving	Paving Equipment	1	8.00	132	0.36	5	95
Paving	Rollers	1	8.00	80	0.38	5	61
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37	5	72
Architectural Coating	Air Compressors	1	6.00	78	0.48	5	56
						TOTAL	9,247

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

Trips and VMT

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	**Total gallons of gasoline**	**Total gallons of diesel**
Site Preparation	5	0	0	2	10	0	0	16.80	6.60	20.00	168	0	-	5	0
Architectural Coating	2	0	0	10	20	0	0	16.80	6.60	20.00	336.00	0.00	-	11	0
Building Construction	12	5	0	100	1,200	500	0	16.80	6.60	20.00	20,160.00	3,300.00	-	657	229
Grading	4	0	0	4	16	0	0	16.80	6.60	20.00	268.80	0.00	-	9	0
Paving	18	0	0	10	180	0	0	16.80	6.60	20.00	3,024.00	0.00	-	98	0
													TOTAL	780	229

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

RE Alternative

Phase 1 Construction Offroad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of days	Diesel Fuel Usage
Site Preparation	Tractors/Loaders/Backhoes	1	8	367	0.48	1	70
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40	1	40
Site Preparation	Graders	1	8.00	1878	0.40	1	300
Grading	Grader	1	8.00	187	0.41	2	61
Grading	Rubber Tired Dozers	1	8.00	247	0.40	2	79
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37	2	25
Building Construction	Cranes	1	8.00	231	0.29	100	2,680
Building Construction	Forklifts	1	7.00	89	0.20	100	623
Building Construction	Generator Sets	1	8.00	84	0.74	100	2,486
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37	100	1,077
Building Construction	Welders	3	8.00	46	0.45	100	2,484
Paving	Cement/Mortar Mixer	1	8.00	9	0.56	5	0
Paving	Pavers	1	8.00	130	0.42	5	109
Paving	Paving Equipment	1	8.00	132	0.36	5	95
Paving	Rollers	1	8.00	80	0.38	5	61
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37	5	72
Architectural Coating	Air Compressors	1	6.00	78	0.48	5	56
						TOTAL	10,319

Notes: Equipment assumptions are consistent with CalEEMod. Fuel usage average of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

Trips and VMT

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	**Total gallons of gasoline**	**Total gallons of diesel**
Site Preparation	8	0	0	1	8	0	0	16.80	6.60	20.00	134.4	0	-	4	0
Architectural Coating	6	0	0	5	30	0	0	16.80	6.60	20.00	504.00	0.00	-	16	0
Building Construction	32	20	0	100	3,200	2,000	0	16.80	6.60	20.00	53,760.00	13,200.00	-	1,751	916
Grading	8	0	0	2	16	0	0	16.80	6.60	20.00	268.80	0.00	-	9	0
Paving	13	0	0	5	65	0	0	16.80	6.60	20.00	1,092.00	0.00	-	36	0
													TOTAL	1,816	916

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County
Region: PLACER
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per gallon	Diesel miles per gallon
Placer	2020	LDA	Aggregated	Aggregated	GAS	123,597	4,664,456	581,629	144.2	0.00	32.34	30.70	14.42
Placer	2020	LDT1	Aggregated	Aggregated	GAS	16,642	626,084	76,034	22.9	0.00	27.33		
Placer	2020	LDT2	Aggregated	Aggregated	GAS	57,708	2,240,154	268,117	72.7	0.00	30.80		
Placer	2020	T7 tractor construction	Aggregated	Aggregated	DSL	336	43,018	1,296	0.00	2.98	14.42		

Notes: Consistent with CalEEMod, worker vehicles assumed to be gasoline and 50% LDA, 25% LDT1, and 25% LDT2. Vendor trips are assumed to be 100% diesel Heavy-Duty Trucks (T7).

IRRM Alternative

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: PLACER
Calendar Year: 2040
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	Class	MdlYr	Speed	Fuel	Population	VMT (mi/day)	Trips	Fuel_Consumption (1000 gal/day)	Fuel (gal/day)	mi/gal	% of vehicle class EMFAC	% vehicle class CalEEM	% vehicle class project	VMT by project vehicle class (mi/yr)	Gallons of fuel
Sacramento	2036	LDA	Passenger	Aggregated	Aggregated	GAS	179423.5	6224656.527	4157303	144.2394994	144239.4994	43.15500645	0.987701353	0.64	0.632128866	6075088.906	140773.6762
Sacramento	2036	LDA	Passenger	Aggregated	Aggregated	DSL	2218.109	77508.09648	56294.66	1.148516229	1148.516229	67.48541684	0.012298647	0.64	0.007871134	75645.71234	1120.919391
Sacramento	2036	LDT1	Truck	Aggregated	Aggregated	GAS	24947.26	853272.2319	114462.1	22.90693718	22906.93718	37.24951202	0.999861408	0.085	0.08498822	816781.2265	21927.30004
Sacramento	2036	LDT1	Truck	Aggregated	Aggregated	DSL	3.530197	118.2729968	16.01035	0.003345112	3.345111842	35.35696336	0.000138592	0.085	1.17803E-05	113.2149387	3.202054926
Sacramento	2036	LDT2	Truck	Aggregated	Aggregated	GAS	78914.92	2726090.696	363243.2	72.73883988	72738.83988	37.4777863	0.989819459	0.272	0.269230893	2587449.644	69039.55382
Sacramento	2036	LDT2	Truck	Aggregated	Aggregated	DSL	787.513	28038.52672	3670.642	0.552022089	552.0220894	50.7923999	0.010180541	0.272	0.002769107	26612.56871	523.9478498

Gasoline Sum	231,741
Diesel Sum	1,648

Project VMT (mi/yr) 9,610,523 From CalEEMod output

	Gas (gal)	Diesel (gal)
Passenger	140,774	1,121
Truck	90,967	527
Total	231,741	1,648

RME Alternative

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: PLACER
Calendar Year: 2040
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	Class	MdlYr	Speed	Fuel	Population	VMT (mi/day)	Trips	Fuel_Consumption (1000 gal/day)	Fuel (gal/day)	mi/gal	% of vehicle class EMFAC	% vehicle class CalEEM	% vehicle class project	VMT by project vehicle class (mi/yr)	Gallons of fuel
Sacramento	2036	LDA	Passenger	Aggregated	Aggregated	GAS	179423.5	6224656.527	4157303	144.2394994	144239.4994	43.15500645	0.987701353	0.64	0.632128866	5207219.062	120663.151
Sacramento	2036	LDA	Passenger	Aggregated	Aggregated	DSL	2218.109	77508.09648	56294.66	1.148516229	1148.516229	67.48541684	0.012298647	0.64	0.007871134	64839.182	960.7880493
Sacramento	2036	LDT1	Truck	Aggregated	Aggregated	GAS	24947.26	853272.2319	114462.1	22.90693718	22906.93718	37.24951202	0.999861408	0.085	0.08498822	700098.1942	18794.82861
Sacramento	2036	LDT1	Truck	Aggregated	Aggregated	DSL	3.530197	118.2729968	16.01035	0.003345112	3.345111842	35.35696336	0.000138592	0.085	1.17803E-05	97.04137603	2.744618508
Sacramento	2036	LDT2	Truck	Aggregated	Aggregated	GAS	78914.92	2726090.696	363243.2	72.73883988	72738.83988	37.4777863	0.989819459	0.272	0.269230893	2217813.981	59176.76041
Sacramento	2036	LDT2	Truck	Aggregated	Aggregated	DSL	787.513	28038.52672	3670.642	0.552022089	552.0220894	50.7923999	0.010180541	0.272	0.002769107	22810.77318	449.098157

Gasoline Sum	198,635
Diesel Sum	1,413

Project VMT (mi/yr) 8,237,591 From CalEEMod output

	Gas (gal)	Diesel (gal)
Passenger	120,663	961
Truck	77,972	452
Total	198,635	1,413

RE Alternative

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: PLACER
Calendar Year: 2040
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	Class	MdlYr	Speed	Fuel	Population	VMT (mi/day)	Trips	Fuel_Consumption (1000 gal/day)	Fuel (gal/day)	mi/gal	% of vehicle class EMFAC	% vehicle class CalEEM	% vehicle class project	VMT by project vehicle class (mi/yr)	Gallons of fuel
Sacramento	2036	LDA	Passenger	Aggregate	Aggregate	GAS	179423.5	6224656.527	4157303	144.2394994	144239.4994	43.15500645	0.987701353	0.64	0.632128866	7810828.593	180994.7266
Sacramento	2036	LDA	Passenger	Aggregate	Aggregate	DSL	2218.109	77508.09648	56294.66	1.148516229	1148.516229	67.48541684	0.012298647	0.64	0.007871134	97258.773	1441.182074
Sacramento	2036	LDT1	Truck	Aggregate	Aggregate	GAS	24947.26	853272.2319	114462.1	22.90693718	22906.93718	37.24951202	0.999861408	0.085	0.08498822	1050147.291	28192.24291
Sacramento	2036	LDT1	Truck	Aggregate	Aggregate	DSL	3.530197	118.2729968	16.01035	0.003345112	3.345111842	35.35696336	0.000138592	0.085	1.17803E-05	145.562064	4.116927762
Sacramento	2036	LDT2	Truck	Aggregate	Aggregate	GAS	78914.92	2726090.696	363243.2	72.73883988	72738.83988	37.4777863	0.989819459	0.272	0.269230893	3326720.971	88765.14062
Sacramento	2036	LDT2	Truck	Aggregate	Aggregate	DSL	787.513	28038.52672	3670.642	0.552022089	552.0220894	50.7923999	0.010180541	0.272	0.002769107	34216.15977	673.6472355

Gasoline Sum	297,952
Diesel Sum	2,119

Project VMT (mi/yr) 12,356,387 From CalEEMod output

	Gas (gal)	Diesel (gal)
Passenger	180,995	1,441
Truck	116,957	678
Total	297,952	2,119

IRRM CSP Alt

Placer-Mountain Counties County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	3,000.00	0
Parking Lot	150.00	Space	1.35	60,000.00	0
City Park	0.31	Acre	0.31	13,503.60	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,000.00	1

1.2 Other Project Characteristics

Urbanization Rural **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 74

Climate Zone 2 **Operational Year** 2040

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 294 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor for PG&E Adjusted - Source: The Climate Registry - Default Emissions Factors (2016)

Land Use - Residential land use in place to acount for wood burn at campfires from new campsites.

Construction Phase - No demolition would occur as part of the project.

Vehicle Trips - Trip rate adjusted to match project generated VMT based on project traffic study.

Woodstoves - Adjusted to account for campfire emissions.

Energy Use - Single family home modeled for alternative campsite (cabin). Cabin assumed only to have lighting demand.

Fleet Mix - Adjusted base on Regional Park land use

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceDayYear	82.00	365.00
tblFireplaces	FireplaceWoodMass	3,078.40	21,877.00
tblFireplaces	NumberWood	0.35	1.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	LDA	0.53	0.64
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.04	0.09
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.22	0.27
tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LDT2	0.22	0.00

tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00

tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblLandUse	LandUseSquareFeet	1,000.00	3,000.00
tblLandUse	LandUseSquareFeet	1,800.00	1,000.00
tblLandUse	Population	3.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	294
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	CW_TL	14.70	23,850.70
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3141	2.2429	1.8945	3.6600e-003	0.0647	0.1138	0.1785	0.0204	0.1086	0.1290	0.0000	312.9665	312.9665	0.0546	0.0000	314.3309
Maximum	**0.3141**	**2.2429**	**1.8945**	**3.6600e-003**	**0.0647**	**0.1138**	**0.1785**	**0.0204**	**0.1086**	**0.1290**	**0.0000**	**312.9665**	**312.9665**	**0.0546**	**0.0000**	**314.3309**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3141	2.2429	1.8945	3.6600e-003	0.0647	0.1138	0.1785	0.0204	0.1086	0.1290	0.0000	312.9662	312.9662	0.0546	0.0000	314.3306
Maximum	**0.3141**	**2.2429**	**1.8945**	**3.6600e-003**	**0.0647**	**0.1138**	**0.1785**	**0.0204**	**0.1086**	**0.1290**	**0.0000**	**312.9662**	**312.9662**	**0.0546**	**0.0000**	**314.3306**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	0.7207	0.7207
2	**4-1-2020**	**6-30-2020**	0.6988	0.6988
3	**7-1-2020**	**9-30-2020**	0.7065	0.7065
		Highest	0.7207	0.7207

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2755	0.0160	1.3910	2.2000e-003		0.1894	0.1894		0.1894	0.1894	16.8695	1.9431	18.8126	6.0000e-005	1.5200e-003	19.2681
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	11.9449	11.9449	8.6000e-004	2.4000e-004	12.0366
Mobile	0.0180	0.1079	1.4751	9.1700e-003	1.6470	3.3600e-003	1.6504	0.4381	3.0900e-003	0.4412	0.0000	831.1914	831.1914	6.4900e-003	0.0000	831.3535
Waste						0.0000	0.0000		0.0000	0.0000	0.2680	0.0000	0.2680	0.0158	0.0000	0.6638
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.4177	0.4947	7.9600e-003	2.0000e-004	0.7519
Total	**1.2939**	**0.1275**	**2.8686**	**0.0114**	**1.6470**	**0.1931**	**1.8401**	**0.4381**	**0.1928**	**0.6309**	**17.2145**	**845.4971**	**862.7116**	**0.0312**	**1.9600e-003**	**864.0739**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2755	0.0160	1.3910	2.2000e-003		0.1894	0.1894		0.1894	0.1894	16.8695	1.9431	18.8126	6.0000e-005	1.5200e-003	19.2681
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	11.9449	11.9449	8.6000e-004	2.4000e-004	12.0366
Mobile	0.0180	0.1079	1.4751	9.1700e-003	1.6470	3.3600e-003	1.6504	0.4381	3.0900e-003	0.4412	0.0000	831.1914	831.1914	6.4900e-003	0.0000	831.3535
Waste						0.0000	0.0000		0.0000	0.0000	0.2680	0.0000	0.2680	0.0158	0.0000	0.6638
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.4177	0.4947	7.9600e-003	2.0000e-004	0.7519
Total	**1.2939**	**0.1275**	**2.8686**	**0.0114**	**1.6470**	**0.1931**	**1.8401**	**0.4381**	**0.1928**	**0.6309**	**17.2145**	**845.4971**	**862.7116**	**0.0312**	**1.9600e-003**	**864.0739**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	1/30/2020	5	2	
3	Grading	Grading	1/31/2020	2/5/2020	5	4	
4	Building Construction	Building Construction	2/6/2020	11/11/2020	5	200	
5	Paving	Paving	11/12/2020	11/25/2020	5	10	
6	Architectural Coating	Architectural Coating	11/26/2020	12/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 2

Acres of Paving: 1.35

Residential Indoor: 2,025; Residential Outdoor: 675; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 3,600 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	32.00	13.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0677	21.0677	5.4200e-003	0.0000	21.2031
Total	**0.0213**	**0.2095**	**0.1466**	**2.4000e-004**		**0.0115**	**0.0115**		**0.0108**	**0.0108**	**0.0000**	**21.0677**	**21.0677**	**5.4200e-003**	**0.0000**	**21.2031**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.7000e-004	4.8700e-003	1.0000e-005	1.5900e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3561	1.3561	3.0000e-005	0.0000	1.3569
Total	**6.3000e-004**	**4.7000e-004**	**4.8700e-003**	**1.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.6000e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3561**	**1.3561**	**3.0000e-005**	**0.0000**	**1.3569**

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	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0676	21.0676	5.4200e-003	0.0000	21.2030
Total	**0.0213**	**0.2095**	**0.1466**	**2.4000e-004**		**0.0115**	**0.0115**		**0.0108**	**0.0108**	**0.0000**	**21.0676**	**21.0676**	**5.4200e-003**	**0.0000**	**21.2030**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.7000e-004	4.8700e-003	1.0000e-005	1.5900e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3561	1.3561	3.0000e-005	0.0000	1.3569
Total	**6.3000e-004**	**4.7000e-004**	**4.8700e-003**	**1.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.6000e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3561**	**1.3561**	**3.0000e-005**	**0.0000**	**1.3569**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5900e-003	0.0000	1.5900e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6500e-003	0.0199	0.0113	2.0000e-005		7.8000e-004	7.8000e-004		7.1000e-004	7.1000e-004	0.0000	2.1527	2.1527	7.0000e-004	0.0000	2.1701
Total	**1.6500e-003**	**0.0199**	**0.0113**	**2.0000e-005**	**1.5900e-003**	**7.8000e-004**	**2.3700e-003**	**1.7000e-004**	**7.1000e-004**	**8.8000e-004**	**0.0000**	**2.1527**	**2.1527**	**7.0000e-004**	**0.0000**	**2.1701**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0835	0.0835	0.0000	0.0000	0.0835
Total	**4.0000e-005**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0835**	**0.0835**	**0.0000**	**0.0000**	**0.0835**

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					1.5900e-003	0.0000	1.5900e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6500e-003	0.0199	0.0113	2.0000e-005		7.8000e-004	7.8000e-004		7.1000e-004	7.1000e-004	0.0000	2.1527	2.1527	7.0000e-004	0.0000	2.1701
Total	**1.6500e-003**	**0.0199**	**0.0113**	**2.0000e-005**	**1.5900e-003**	**7.8000e-004**	**2.3700e-003**	**1.7000e-004**	**7.1000e-004**	**8.8000e-004**	**0.0000**	**2.1527**	**2.1527**	**7.0000e-004**	**0.0000**	**2.1701**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0835	0.0835	0.0000	0.0000	0.0835
Total	**4.0000e-005**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0835**	**0.0835**	**0.0000**	**0.0000**	**0.0835**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0131	0.0000	0.0131	6.7300e-003	0.0000	6.7300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8400e-003	0.0427	0.0199	4.0000e-005		1.9800e-003	1.9800e-003		1.8200e-003	1.8200e-003	0.0000	3.6222	3.6222	1.1700e-003	0.0000	3.6515
Total	**3.8400e-003**	**0.0427**	**0.0199**	**4.0000e-005**	**0.0131**	**1.9800e-003**	**0.0151**	**6.7300e-003**	**1.8200e-003**	**8.5500e-003**	**0.0000**	**3.6222**	**3.6222**	**1.1700e-003**	**0.0000**	**3.6515**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	7.0000e-005	7.5000e-004	0.0000	2.4000e-004	0.0000	2.5000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2086	0.2086	0.0000	0.0000	0.2088
Total	**1.0000e-004**	**7.0000e-005**	**7.5000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.5000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2086**	**0.2086**	**0.0000**	**0.0000**	**0.2088**

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					0.0131	0.0000	0.0131	6.7300e-003	0.0000	6.7300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8400e-003	0.0427	0.0199	4.0000e-005		1.9800e-003	1.9800e-003		1.8200e-003	1.8200e-003	0.0000	3.6222	3.6222	1.1700e-003	0.0000	3.6515
Total	**3.8400e-003**	**0.0427**	**0.0199**	**4.0000e-005**	**0.0131**	**1.9800e-003**	**0.0151**	**6.7300e-003**	**1.8200e-003**	**8.5500e-003**	**0.0000**	**3.6222**	**3.6222**	**1.1700e-003**	**0.0000**	**3.6515**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	7.0000e-005	7.5000e-004	0.0000	2.4000e-004	0.0000	2.5000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2086	0.2086	0.0000	0.0000	0.2088
Total	**1.0000e-004**	**7.0000e-005**	**7.5000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.5000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2086**	**0.2086**	**0.0000**	**0.0000**	**0.2088**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2288	1.7434	1.4897	2.5000e-003		0.0948	0.0948		0.0909	0.0909	0.0000	207.6444	207.6444	0.0421	0.0000	208.6980
Total	**0.2288**	**1.7434**	**1.4897**	**2.5000e-003**		**0.0948**	**0.0948**		**0.0909**	**0.0909**	**0.0000**	**207.6444**	**207.6444**	**0.0421**	**0.0000**	**208.6980**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5400e-003	0.1487	0.0293	3.5000e-004	7.6800e-003	6.2000e-004	8.2900e-003	2.2200e-003	5.9000e-004	2.8100e-003	0.0000	33.3267	33.3267	1.7400e-003	0.0000	33.3703
Worker	0.0155	0.0115	0.1198	3.7000e-004	0.0391	2.5000e-004	0.0393	0.0104	2.3000e-004	0.0106	0.0000	33.3799	33.3799	7.9000e-004	0.0000	33.3996
Total	**0.0201**	**0.1602**	**0.1490**	**7.2000e-004**	**0.0468**	**8.7000e-004**	**0.0476**	**0.0126**	**8.2000e-004**	**0.0134**	**0.0000**	**66.7066**	**66.7066**	**2.5300e-003**	**0.0000**	**66.7699**

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	0.2288	1.7434	1.4897	2.5000e-003		0.0948	0.0948		0.0909	0.0909	0.0000	207.6442	207.6442	0.0421	0.0000	208.6977
Total	**0.2288**	**1.7434**	**1.4897**	**2.5000e-003**		**0.0948**	**0.0948**		**0.0909**	**0.0909**	**0.0000**	**207.6442**	**207.6442**	**0.0421**	**0.0000**	**208.6977**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5400e-003	0.1487	0.0293	3.5000e-004	7.6800e-003	6.2000e-004	8.2900e-003	2.2200e-003	5.9000e-004	2.8100e-003	0.0000	33.3267	33.3267	1.7400e-003	0.0000	33.3703
Worker	0.0155	0.0115	0.1198	3.7000e-004	0.0391	2.5000e-004	0.0393	0.0104	2.3000e-004	0.0106	0.0000	33.3799	33.3799	7.9000e-004	0.0000	33.3996
Total	**0.0201**	**0.1602**	**0.1490**	**7.2000e-004**	**0.0468**	**8.7000e-004**	**0.0476**	**0.0126**	**8.2000e-004**	**0.0134**	**0.0000**	**66.7066**	**66.7066**	**2.5300e-003**	**0.0000**	**66.7699**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.5400e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.7000e-004	2.8100e-003	1.0000e-005	9.2000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7823	0.7823	2.0000e-005	0.0000	0.7828
Total	**3.6000e-004**	**2.7000e-004**	**2.8100e-003**	**1.0000e-005**	**9.2000e-004**	**1.0000e-005**	**9.2000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.7823**	**0.7823**	**2.0000e-005**	**0.0000**	**0.7828**

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	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.5400e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.7000e-004	2.8100e-003	1.0000e-005	9.2000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7823	0.7823	2.0000e-005	0.0000	0.7828
Total	**3.6000e-004**	**2.7000e-004**	**2.8100e-003**	**1.0000e-005**	**9.2000e-004**	**1.0000e-005**	**9.2000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.7823**	**0.7823**	**2.0000e-005**	**0.0000**	**0.7828**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0285					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0297**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.1200e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3129	0.3129	1.0000e-005	0.0000	0.3131
Total	**1.5000e-004**	**1.1000e-004**	**1.1200e-003**	**0.0000**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3129**	**0.3129**	**1.0000e-005**	**0.0000**	**0.3131**

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	0.0285					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0297**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.1200e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3129	0.3129	1.0000e-005	0.0000	0.3131
Total	**1.5000e-004**	**1.1000e-004**	**1.1200e-003**	**0.0000**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3129**	**0.3129**	**1.0000e-005**	**0.0000**	**0.3131**

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	0.0180	0.1079	1.4751	9.1700e-003	1.6470	3.3600e-003	1.6504	0.4381	3.0900e-003	0.4412	0.0000	831.1914	831.1914	6.4900e-003	0.0000	831.3535
Unmitigated	0.0180	0.1079	1.4751	9.1700e-003	1.6470	3.3600e-003	1.6504	0.4381	3.0900e-003	0.4412	0.0000	831.1914	831.1914	6.4900e-003	0.0000	831.3535

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.59	7.05	5.19	4,535,355	4,535,355
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.59	7.05	5.19	4,535,355	4,535,355

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
City Park	23,850.70	6.60	6.60	33.00	48.00	19.00	66	28	6
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Single Family Housing	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.644000	0.085000	0.272000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
General Office Building	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Parking Lot	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Single Family Housing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.9312	7.9312	7.8000e-004	1.6000e-004	7.9990
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.9312	7.9312	7.8000e-004	1.6000e-004	7.9990
NaturalGas Mitigated	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	4.0137	4.0137	8.0000e-005	7.0000e-005	4.0376
NaturalGas Unmitigated	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	4.0137	4.0137	8.0000e-005	7.0000e-005	4.0376

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					
City Park	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
General Office Building	49380	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6351	2.6351	5.0000e-005	5.0000e-005	2.6508
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
Single Family Housing	25834.7	1.4000e-004	1.1900e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3786	1.3786	3.0000e-005	3.0000e-005	1.3868
Total		**4.1000e-004**	**3.6100e-003**	**2.5400e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**4.0137**	**4.0137**	**8.0000e-005**	**8.0000e-005**	**4.0376**

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					
City Park	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
General Office Building	49380	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6351	2.6351	5.0000e-005	5.0000e-005	2.6508
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
Single Family Housing	25834.7	1.4000e-004	1.1900e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3786	1.3786	3.0000e-005	3.0000e-005	1.3868
Total		**4.1000e-004**	**3.6100e-003**	**2.5400e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**4.0137**	**4.0137**	**8.0000e-005**	**8.0000e-005**	**4.0376**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30030	4.0047	4.0000e-004	8.0000e-005	4.0389
Parking Lot	21000	2.8005	2.8000e-004	6.0000e-005	2.8244
Single Family Housing	8443.78	1.1260	1.1000e-004	2.0000e-005	1.1357
Total		**7.9312**	**7.9000e-004**	**1.6000e-004**	**7.9990**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30030	4.0047	4.0000e-004	8.0000e-005	4.0389
Parking Lot	21000	2.8005	2.8000e-004	6.0000e-005	2.8244
Single Family Housing	8443.78	1.1260	1.1000e-004	2.0000e-005	1.1357
Total		**7.9312**	**7.9000e-004**	**1.6000e-004**	**7.9990**

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	1.2755	0.0160	1.3910	2.2000e-003		0.1894	0.1894		0.1894	0.1894	16.8695	1.9431	18.8126	6.0000e-005	1.5200e-003	19.2681
Unmitigated	1.2755	0.0160	1.3910	2.2000e-003		0.1894	0.1894		0.1894	0.1894	16.8695	1.9431	18.8126	6.0000e-005	1.5200e-003	19.2681

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	2.8500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0196					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2527	0.0159	1.3822	2.2000e-003		0.1894	0.1894		0.1894	0.1894	16.8695	1.9283	18.7978	4.0000e-005	1.5200e-003	19.2528
Landscaping	3.5000e-004	1.0000e-004	8.7700e-003	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0148	0.0148	2.0000e-005	0.0000	0.0153
Total	**1.2755**	**0.0160**	**1.3910**	**2.2000e-003**		**0.1894**	**0.1894**		**0.1894**	**0.1894**	**16.8695**	**1.9431**	**18.8126**	**6.0000e-005**	**1.5200e-003**	**19.2681**

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	2.8500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0196					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2527	0.0159	1.3822	2.2000e-003		0.1894	0.1894		0.1894	0.1894	16.8695	1.9283	18.7978	4.0000e-005	1.5200e-003	19.2528
Landscaping	3.5000e-004	1.0000e-004	8.7700e-003	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0148	0.0148	2.0000e-005	0.0000	0.0153
Total	**1.2755**	**0.0160**	**1.3910**	**2.2000e-003**		**0.1894**	**0.1894**		**0.1894**	**0.1894**	**16.8695**	**1.9431**	**18.8126**	**6.0000e-005**	**1.5200e-003**	**19.2681**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4947	7.9600e-003	2.0000e-004	0.7519
Unmitigated	0.4947	7.9600e-003	2.0000e-004	0.7519

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.369359	0.1724	2.0000e-005	0.0000	0.1739
General Office Building	0.177734 / 0.108934	0.2355	5.8100e-003	1.4000e-004	0.4226
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.0869	2.1300e-003	5.0000e-005	0.1554
Total		**0.4947**	**7.9600e-003**	**1.9000e-004**	**0.7519**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.369359	0.1724	2.0000e-005	0.0000	0.1739
General Office Building	0.177734 / 0.108934	0.2355	5.8100e-003	1.4000e-004	0.4226
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.0869	2.1300e-003	5.0000e-005	0.1554
Total		**0.4947**	**7.9600e-003**	**1.9000e-004**	**0.7519**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2680	0.0158	0.0000	0.6638
Unmitigated	0.2680	0.0158	0.0000	0.6638

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.36	0.0731	4.3200e-003	0.0000	0.1810
Total		**0.2680**	**0.0158**	**0.0000**	**0.6638**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.36	0.0731	4.3200e-003	0.0000	0.1810
Total		**0.2680**	**0.0158**	**0.0000**	**0.6638**

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

IRRM CSP Alt

Placer-Mountain Counties County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	3,000.00	0
Parking Lot	150.00	Space	1.35	60,000.00	0
City Park	0.31	Acre	0.31	13,503.60	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,000.00	1

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	294	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor for PG&E Adjusted - Source: The Climate Registry - Default Emissions Factors (2016)

Land Use - Residential land use in place to acount for wood burn at campfires from new campsites.

Construction Phase - No demolition would occur as part of the project.

Vehicle Trips - Trip rate adjusted to match project generated VMT based on project traffic study.

Woodstoves - Adjusted to account for campfire emissions.

Energy Use - Single family home modeled for alternative campsite (cabin). Cabin assumed only to have lighting demand.

Fleet Mix - Adjusted base on Regional Park land use

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceDayYear	82.00	365.00
tblFireplaces	FireplaceWoodMass	3,078.40	21,877.00
tblFireplaces	NumberWood	0.35	1.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	LDA	0.53	0.64
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.04	0.09
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.22	0.27
tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LDT2	0.22	0.00

tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00

tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblLandUse	LandUseSquareFeet	1,000.00	3,000.00
tblLandUse	LandUseSquareFeet	1,800.00	1,000.00
tblLandUse	Population	3.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	294
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	CW_TL	14.70	23,850.70
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.9754	21.3813	16.4159	0.0321	6.6801	1.1535	7.6710	3.4014	1.0771	4.3130	0.0000	3,007.3143	3,007.3143	0.7696	0.0000	3,019.6547
Maximum	**5.9754**	**21.3813**	**16.4159**	**0.0321**	**6.6801**	**1.1535**	**7.6710**	**3.4014**	**1.0771**	**4.3130**	**0.0000**	**3,007.3143**	**3,007.3143**	**0.7696**	**0.0000**	**3,019.6547**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.9754	21.3813	16.4159	0.0321	6.6801	1.1535	7.6710	3.4014	1.0771	4.3130	0.0000	3,007.3143	3,007.3143	0.7696	0.0000	3,019.6547
Maximum	**5.9754**	**21.3813**	**16.4159**	**0.0321**	**6.6801**	**1.1535**	**7.6710**	**3.4014**	**1.0771**	**4.3130**	**0.0000**	**3,007.3143**	**3,007.3143**	**0.7696**	**0.0000**	**3,019.6547**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.9909	0.0881	7.6714	0.0121		1.0382	1.0382		1.0382	1.0382	101.8929	11.8287	113.7216	4.5000e-004	9.2000e-003	116.4757
Energy	2.2200e-003	0.0198	0.0139	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003		24.2433	24.2433	4.6000e-004	4.4000e-004	24.3873
Mobile	0.3053	2.1308	25.1857	0.1599	30.8057	0.0602	30.8659	8.1668	0.0554	8.2221		15,987.1573	15,987.1573	0.1217		15,990.1990
Total	**7.2984**	**2.2387**	**32.8710**	**0.1721**	**30.8057**	**1.0999**	**31.9056**	**8.1668**	**1.0951**	**9.2618**	**101.8929**	**16,023.2293**	**16,125.1221**	**0.1226**	**9.6400e-003**	**16,131.0620**

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	6.9909	0.0881	7.6714	0.0121		1.0382	1.0382		1.0382	1.0382	101.8929	11.8287	113.7216	4.5000e-004	9.2000e-003	116.4757
Energy	2.2200e-003	0.0198	0.0139	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003		24.2433	24.2433	4.6000e-004	4.4000e-004	24.3873
Mobile	0.3053	2.1308	25.1857	0.1599	30.8057	0.0602	30.8659	8.1668	0.0554	8.2221		15,987.1573	15,987.1573	0.1217		15,990.1990
Total	**7.2984**	**2.2387**	**32.8710**	**0.1721**	**30.8057**	**1.0999**	**31.9056**	**8.1668**	**1.0951**	**9.2618**	**101.8929**	**16,023.2293**	**16,125.1221**	**0.1226**	**9.6400e-003**	**16,131.0620**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	1/30/2020	5	2	
3	Grading	Grading	1/31/2020	2/5/2020	5	4	
4	Building Construction	Building Construction	2/6/2020	11/11/2020	5	200	
5	Paving	Paving	11/12/2020	11/25/2020	5	10	
6	Architectural Coating	Architectural Coating	11/26/2020	12/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 2

Acres of Paving: 1.35

Residential Indoor: 2,025; Residential Outdoor: 675; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 3,600 (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	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	32.00	13.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761		2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**		**1.1525**	**1.1525**		**1.0761**	**1.0761**		**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0697	0.0514	0.4854	1.4600e-003	0.1661	1.0100e-003	0.1671	0.0440	9.3000e-004	0.0450		145.7891	145.7891	3.4700e-003		145.8759
Total	**0.0697**	**0.0514**	**0.4854**	**1.4600e-003**	**0.1661**	**1.0100e-003**	**0.1671**	**0.0440**	**9.3000e-004**	**0.0450**		**145.7891**	**145.7891**	**3.4700e-003**		**145.8759**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761	0.0000	2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**		**1.1525**	**1.1525**		**1.0761**	**1.0761**	**0.0000**	**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0697	0.0514	0.4854	1.4600e-003	0.1661	1.0100e-003	0.1671	0.0440	9.3000e-004	0.0450		145.7891	145.7891	3.4700e-003		145.8759
Total	**0.0697**	**0.0514**	**0.4854**	**1.4600e-003**	**0.1661**	**1.0100e-003**	**0.1671**	**0.0440**	**9.3000e-004**	**0.0450**		**145.7891**	**145.7891**	**3.4700e-003**		**145.8759**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.6521	19.9196	11.2678	0.0245		0.7771	0.7771		0.7149	0.7149		2,372.906 2	2,372.906 2	0.7675		2,392.092 4
Total	**1.6521**	**19.9196**	**11.2678**	**0.0245**	**1.5908**	**0.7771**	**2.3678**	**0.1718**	**0.7149**	**0.8867**		**2,372.906 2**	**2,372.906 2**	**0.7675**		**2,392.092 4**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0429	0.0316	0.2987	9.0000e-004	0.1022	6.2000e-004	0.1028	0.0271	5.7000e-004	0.0277		89.7164	89.7164	2.1300e-003		89.7698
Total	**0.0429**	**0.0316**	**0.2987**	**9.0000e-004**	**0.1022**	**6.2000e-004**	**0.1028**	**0.0271**	**5.7000e-004**	**0.0277**		**89.7164**	**89.7164**	**2.1300e-003**		**89.7698**

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					1.5908	0.0000	1.5908	0.1718	0.0000	0.1718			0.0000			0.0000
Off-Road	1.6521	19.9196	11.2678	0.0245		0.7771	0.7771		0.7149	0.7149	0.0000	2,372.9062	2,372.9062	0.7675		2,392.0924
Total	**1.6521**	**19.9196**	**11.2678**	**0.0245**	**1.5908**	**0.7771**	**2.3678**	**0.1718**	**0.7149**	**0.8867**	**0.0000**	**2,372.9062**	**2,372.9062**	**0.7675**		**2,392.0924**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0429	0.0316	0.2987	9.0000e-004	0.1022	6.2000e-004	0.1028	0.0271	5.7000e-004	0.0277		89.7164	89.7164	2.1300e-003		89.7698
Total	**0.0429**	**0.0316**	**0.2987**	**9.0000e-004**	**0.1022**	**6.2000e-004**	**0.1028**	**0.0271**	**5.7000e-004**	**0.0277**		**89.7164**	**89.7164**	**2.1300e-003**		**89.7698**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110		1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.5523**	**0.9902**	**7.5425**	**3.3675**	**0.9110**	**4.2784**		**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0395	0.3733	1.1300e-003	0.1277	7.8000e-004	0.1285	0.0339	7.2000e-004	0.0346		112.1455	112.1455	2.6700e-003		112.2122
Total	**0.0536**	**0.0395**	**0.3733**	**1.1300e-003**	**0.1277**	**7.8000e-004**	**0.1285**	**0.0339**	**7.2000e-004**	**0.0346**		**112.1455**	**112.1455**	**2.6700e-003**		**112.2122**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.9219	21.3418	9.9355	0.0206		0.9902	0.9902		0.9110	0.9110	0.0000	1,996.4061	1,996.4061	0.6457		2,012.5480
Total	**1.9219**	**21.3418**	**9.9355**	**0.0206**	**6.5523**	**0.9902**	**7.5425**	**3.3675**	**0.9110**	**4.2784**	**0.0000**	**1,996.4061**	**1,996.4061**	**0.6457**		**2,012.5480**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0395	0.3733	1.1300e-003	0.1277	7.8000e-004	0.1285	0.0339	7.2000e-004	0.0346		112.1455	112.1455	2.6700e-003		112.2122
Total	**0.0536**	**0.0395**	**0.3733**	**1.1300e-003**	**0.1277**	**7.8000e-004**	**0.1285**	**0.0339**	**7.2000e-004**	**0.0346**		**112.1455**	**112.1455**	**2.6700e-003**		**112.2122**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089		2,288.887 7	2,288.887 7	0.4646		2,300.501 4
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**		**2,288.887 7**	**2,288.887 7**	**0.4646**		**2,300.501 4**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0470	1.4788	0.3241	3.4400e-003	0.0796	6.2800e-003	0.0859	0.0229	6.0100e-003	0.0289		359.5610	359.5610	0.0205		360.0743
Worker	0.1716	0.1265	1.1947	3.6000e-003	0.4087	2.4900e-003	0.4112	0.1084	2.2900e-003	0.1107		358.8655	358.8655	8.5400e-003		359.0790
Total	**0.2187**	**1.6053**	**1.5188**	**7.0400e-003**	**0.4884**	**8.7700e-003**	**0.4971**	**0.1313**	**8.3000e-003**	**0.1396**		**718.4266**	**718.4266**	**0.0291**		**719.1534**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2879	17.4336	14.8972	0.0250		0.9482	0.9482		0.9089	0.9089	0.0000	2,288.8877	2,288.8877	0.4646		2,300.5014
Total	**2.2879**	**17.4336**	**14.8972**	**0.0250**		**0.9482**	**0.9482**		**0.9089**	**0.9089**	**0.0000**	**2,288.8877**	**2,288.8877**	**0.4646**		**2,300.5014**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0470	1.4788	0.3241	3.4400e-003	0.0796	6.2800e-003	0.0859	0.0229	6.0100e-003	0.0289		359.5610	359.5610	0.0205		360.0743
Worker	0.1716	0.1265	1.1947	3.6000e-003	0.4087	2.4900e-003	0.4112	0.1084	2.2900e-003	0.1107		358.8655	358.8655	8.5400e-003		359.0790
Total	**0.2187**	**1.6053**	**1.5188**	**7.0400e-003**	**0.4884**	**8.7700e-003**	**0.4971**	**0.1313**	**8.3000e-003**	**0.1396**		**718.4266**	**718.4266**	**0.0291**		**719.1534**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051		1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.3537					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5084**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**		**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0805	0.0593	0.5600	1.6900e-003	0.1916	1.1700e-003	0.1928	0.0508	1.0700e-003	0.0519		168.2182	168.2182	4.0000e-003		168.3183
Total	**0.0805**	**0.0593**	**0.5600**	**1.6900e-003**	**0.1916**	**1.1700e-003**	**0.1928**	**0.0508**	**1.0700e-003**	**0.0519**		**168.2182**	**168.2182**	**4.0000e-003**		**168.3183**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1547	11.5873	11.8076	0.0178		0.6565	0.6565		0.6051	0.6051	0.0000	1,709.2180	1,709.2180	0.5417		1,722.7605
Paving	0.3537					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.5084**	**11.5873**	**11.8076**	**0.0178**		**0.6565**	**0.6565**		**0.6051**	**0.6051**	**0.0000**	**1,709.2180**	**1,709.2180**	**0.5417**		**1,722.7605**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0805	0.0593	0.5600	1.6900e-003	0.1916	1.1700e-003	0.1928	0.0508	1.0700e-003	0.0519		168.2182	168.2182	4.0000e-003		168.3183
Total	**0.0805**	**0.0593**	**0.5600**	**1.6900e-003**	**0.1916**	**1.1700e-003**	**0.1928**	**0.0508**	**1.0700e-003**	**0.0519**		**168.2182**	**168.2182**	**4.0000e-003**		**168.3183**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.7011					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**5.9432**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0322	0.0237	0.2240	6.8000e-004	0.0766	4.7000e-004	0.0771	0.0203	4.3000e-004	0.0208		67.2873	67.2873	1.6000e-003		67.3273
Total	**0.0322**	**0.0237**	**0.2240**	**6.8000e-004**	**0.0766**	**4.7000e-004**	**0.0771**	**0.0203**	**4.3000e-004**	**0.0208**		**67.2873**	**67.2873**	**1.6000e-003**		**67.3273**

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	5.7011					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**5.9432**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0322	0.0237	0.2240	6.8000e-004	0.0766	4.7000e-004	0.0771	0.0203	4.3000e-004	0.0208		67.2873	67.2873	1.6000e-003		67.3273
Total	**0.0322**	**0.0237**	**0.2240**	**6.8000e-004**	**0.0766**	**4.7000e-004**	**0.0771**	**0.0203**	**4.3000e-004**	**0.0208**		**67.2873**	**67.2873**	**1.6000e-003**		**67.3273**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	0.3053	2.1308	25.1857	0.1599	30.8057	0.0602	30.8659	8.1668	0.0554	8.2221		15,987.1573	15,987.1573	0.1217		15,990.1990
Unmitigated	0.3053	2.1308	25.1857	0.1599	30.8057	0.0602	30.8659	8.1668	0.0554	8.2221		15,987.1573	15,987.1573	0.1217		15,990.1990

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.59	7.05	5.19	4,535,355	4,535,355
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.59	7.05	5.19	4,535,355	4,535,355

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
City Park	23,850.70	6.60	6.60	33.00	48.00	19.00	66	28	6
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Single Family Housing	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.644000	0.085000	0.272000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
General Office Building	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Parking Lot	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Single Family Housing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.2200e-003	0.0198	0.0139	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003		24.2433	24.2433	4.6000e-004	4.4000e-004	24.3873
NaturalGas Unmitigated	2.2200e-003	0.0198	0.0139	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003		24.2433	24.2433	4.6000e-004	4.4000e-004	24.3873

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					
City Park	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
General Office Building	135.288	1.4600e-003	0.0133	0.0111	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.9162	15.9162	3.1000e-004	2.9000e-004	16.0108
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
Single Family Housing	70.78	7.6000e-004	6.5200e-003	2.7800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.3271	8.3271	1.6000e-004	1.5000e-004	8.3765
Total		**2.2200e-003**	**0.0198**	**0.0139**	**1.2000e-004**		**1.5400e-003**	**1.5400e-003**		**1.5400e-003**	**1.5400e-003**		**24.2433**	**24.2433**	**4.7000e-004**	**4.4000e-004**	**24.3873**

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					
City Park	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
General Office Building	0.135288	1.4600e-003	0.0133	0.0111	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.9162	15.9162	3.1000e-004	2.9000e-004	16.0108
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
Single Family Housing	0.07078	7.6000e-004	6.5200e-003	2.7800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.3271	8.3271	1.6000e-004	1.5000e-004	8.3765
Total		**2.2200e-003**	**0.0198**	**0.0139**	**1.2000e-004**		**1.5400e-003**	**1.5400e-003**		**1.5400e-003**	**1.5400e-003**		**24.2433**	**24.2433**	**4.7000e-004**	**4.4000e-004**	**24.3873**

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	6.9909	0.0881	7.6714	0.0121		1.0382	1.0382		1.0382	1.0382	101.8929	11.8287	113.7216	4.5000e-004	9.2000e-003	116.4757
Unmitigated	6.9909	0.0881	7.6714	0.0121		1.0382	1.0382		1.0382	1.0382	101.8929	11.8287	113.7216	4.5000e-004	9.2000e-003	116.4757

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	0.0156					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1076					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	6.8639	0.0870	7.5739	0.0121		1.0377	1.0377		1.0377	1.0377	101.8929	11.6471	113.5399	2.2000e-004	9.2000e-003	116.2883
Landscaping	3.8600e-003	1.0900e-003	0.0975	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.1817	0.1817	2.3000e-004		0.1873
Total	**6.9909**	**0.0881**	**7.6714**	**0.0121**		**1.0382**	**1.0382**		**1.0382**	**1.0382**	**101.8929**	**11.8287**	**113.7216**	**4.5000e-004**	**9.2000e-003**	**116.4757**

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	0.0156					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1076					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	6.8639	0.0870	7.5739	0.0121		1.0377	1.0377		1.0377	1.0377	101.8929	11.6471	113.5399	2.2000e-004	9.2000e-003	116.2883
Landscaping	3.8600e-003	1.0900e-003	0.0975	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.1817	0.1817	2.3000e-004		0.1873
Total	**6.9909**	**0.0881**	**7.6714**	**0.0121**		**1.0382**	**1.0382**		**1.0382**	**1.0382**	**101.8929**	**11.8287**	**113.7216**	**4.5000e-004**	**9.2000e-003**	**116.4757**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

IRRM CSP Alt

Placer-Mountain Counties County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	3,000.00	0
Parking Lot	150.00	Space	1.35	60,000.00	0
City Park	0.31	Acre	0.31	13,503.60	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,000.00	1

1.2 Other Project Characteristics

Urbanization Rural **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 74

Climate Zone 2 **Operational Year** 2040

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 294 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor for PG&E Adjusted - Source: The Climate Registry - Default Emissions Factors (2016)

Land Use - Residential land use in place to acount for wood burn at campfires from new campsites.

Construction Phase - No demolition would occur as part of the project.

Vehicle Trips - Trip rate adjusted to match project generated VMT based on project traffic study.

Woodstoves - Adjusted to account for campfire emissions.

Energy Use - Single family home modeled for alternative campsite (cabin). Cabin assumed only to have lighting demand.

Fleet Mix - Adjusted base on Regional Park land use

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceDayYear	82.00	365.00
tblFireplaces	FireplaceWoodMass	3,078.40	21,877.00
tblFireplaces	NumberWood	0.35	1.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	LDA	0.53	0.64
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.04	0.09
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.22	0.27
tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LDT2	0.22	0.00

tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00

tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblLandUse	LandUseSquareFeet	1,000.00	3,000.00
tblLandUse	LandUseSquareFeet	1,800.00	1,000.00
tblLandUse	Population	3.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	294
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	CW_TL	14.70	50,550.60
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3141	2.2429	1.8945	3.6600e-003	0.0647	0.1138	0.1785	0.0204	0.1086	0.1290	0.0000	312.9665	312.9665	0.0546	0.0000	314.3309
Maximum	**0.3141**	**2.2429**	**1.8945**	**3.6600e-003**	**0.0647**	**0.1138**	**0.1785**	**0.0204**	**0.1086**	**0.1290**	**0.0000**	**312.9665**	**312.9665**	**0.0546**	**0.0000**	**314.3309**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3141	2.2429	1.8945	3.6600e-003	0.0647	0.1138	0.1785	0.0204	0.1086	0.1290	0.0000	312.9662	312.9662	0.0546	0.0000	314.3306
Maximum	**0.3141**	**2.2429**	**1.8945**	**3.6600e-003**	**0.0647**	**0.1138**	**0.1785**	**0.0204**	**0.1086**	**0.1290**	**0.0000**	**312.9662**	**312.9662**	**0.0546**	**0.0000**	**314.3306**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2020**	**3-31-2020**	0.7207	0.7207
2	**4-1-2020**	**6-30-2020**	0.6988	0.6988
3	**7-1-2020**	**9-30-2020**	0.7065	0.7065
		Highest	0.7207	0.7207

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2755	0.0160	1.3910	2.2000e-003		0.1894	0.1894		0.1894	0.1894	16.8695	1.9431	18.8126	6.0000e-005	1.5200e-003	19.2681
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	11.9449	11.9449	8.6000e-004	2.4000e-004	12.0366
Mobile	0.0380	0.2286	3.1250	0.0194	3.4898	7.1200e-003	3.4969	0.9283	6.5500e-003	0.9349	0.0000	1,761.1168	1,761.1168	0.0137	0.0000	1,761.4604
Waste						0.0000	0.0000		0.0000	0.0000	0.2680	0.0000	0.2680	0.0158	0.0000	0.6638
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.4177	0.4947	7.9600e-003	2.0000e-004	0.7519
Total	**1.3139**	**0.2482**	**4.5186**	**0.0216**	**3.4898**	**0.1968**	**3.6866**	**0.9283**	**0.1963**	**1.1246**	**17.2145**	**1,775.4225**	**1,792.6371**	**0.0385**	**1.9600e-003**	**1,794.1808**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2755	0.0160	1.3910	2.2000e-003		0.1894	0.1894		0.1894	0.1894	16.8695	1.9431	18.8126	6.0000e-005	1.5200e-003	19.2681
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	11.9449	11.9449	8.6000e-004	2.4000e-004	12.0366
Mobile	0.0380	0.2286	3.1250	0.0194	3.4898	7.1200e-003	3.4969	0.9283	6.5500e-003	0.9349	0.0000	1,761.1168	1,761.1168	0.0137	0.0000	1,761.4604
Waste						0.0000	0.0000		0.0000	0.0000	0.2680	0.0000	0.2680	0.0158	0.0000	0.6638
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.4177	0.4947	7.9600e-003	2.0000e-004	0.7519
Total	**1.3139**	**0.2482**	**4.5186**	**0.0216**	**3.4898**	**0.1968**	**3.6866**	**0.9283**	**0.1963**	**1.1246**	**17.2145**	**1,775.4225**	**1,792.6371**	**0.0385**	**1.9600e-003**	**1,794.1808**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	1/30/2020	5	2	
3	Grading	Grading	1/31/2020	2/5/2020	5	4	
4	Building Construction	Building Construction	2/6/2020	11/11/2020	5	200	
5	Paving	Paving	11/12/2020	11/25/2020	5	10	
6	Architectural Coating	Architectural Coating	11/26/2020	12/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 3

Acres of Grading (Grading Phase): 2

Acres of Paving: 1.35

Residential Indoor: 2,025; Residential Outdoor: 675; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 3,600 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	32.00	13.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0677	21.0677	5.4200e-003	0.0000	21.2031
Total	**0.0213**	**0.2095**	**0.1466**	**2.4000e-004**		**0.0115**	**0.0115**		**0.0108**	**0.0108**	**0.0000**	**21.0677**	**21.0677**	**5.4200e-003**	**0.0000**	**21.2031**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.7000e-004	4.8700e-003	1.0000e-005	1.5900e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3561	1.3561	3.0000e-005	0.0000	1.3569
Total	**6.3000e-004**	**4.7000e-004**	**4.8700e-003**	**1.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.6000e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3561**	**1.3561**	**3.0000e-005**	**0.0000**	**1.3569**

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	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0676	21.0676	5.4200e-003	0.0000	21.2030
Total	**0.0213**	**0.2095**	**0.1466**	**2.4000e-004**		**0.0115**	**0.0115**		**0.0108**	**0.0108**	**0.0000**	**21.0676**	**21.0676**	**5.4200e-003**	**0.0000**	**21.2030**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.7000e-004	4.8700e-003	1.0000e-005	1.5900e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3561	1.3561	3.0000e-005	0.0000	1.3569
Total	**6.3000e-004**	**4.7000e-004**	**4.8700e-003**	**1.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.6000e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3561**	**1.3561**	**3.0000e-005**	**0.0000**	**1.3569**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5900e-003	0.0000	1.5900e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6500e-003	0.0199	0.0113	2.0000e-005		7.8000e-004	7.8000e-004		7.1000e-004	7.1000e-004	0.0000	2.1527	2.1527	7.0000e-004	0.0000	2.1701
Total	**1.6500e-003**	**0.0199**	**0.0113**	**2.0000e-005**	**1.5900e-003**	**7.8000e-004**	**2.3700e-003**	**1.7000e-004**	**7.1000e-004**	**8.8000e-004**	**0.0000**	**2.1527**	**2.1527**	**7.0000e-004**	**0.0000**	**2.1701**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0835	0.0835	0.0000	0.0000	0.0835
Total	**4.0000e-005**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0835**	**0.0835**	**0.0000**	**0.0000**	**0.0835**

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					1.5900e-003	0.0000	1.5900e-003	1.7000e-004	0.0000	1.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6500e-003	0.0199	0.0113	2.0000e-005		7.8000e-004	7.8000e-004		7.1000e-004	7.1000e-004	0.0000	2.1527	2.1527	7.0000e-004	0.0000	2.1701
Total	**1.6500e-003**	**0.0199**	**0.0113**	**2.0000e-005**	**1.5900e-003**	**7.8000e-004**	**2.3700e-003**	**1.7000e-004**	**7.1000e-004**	**8.8000e-004**	**0.0000**	**2.1527**	**2.1527**	**7.0000e-004**	**0.0000**	**2.1701**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0835	0.0835	0.0000	0.0000	0.0835
Total	**4.0000e-005**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0835**	**0.0835**	**0.0000**	**0.0000**	**0.0835**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0131	0.0000	0.0131	6.7300e-003	0.0000	6.7300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8400e-003	0.0427	0.0199	4.0000e-005		1.9800e-003	1.9800e-003		1.8200e-003	1.8200e-003	0.0000	3.6222	3.6222	1.1700e-003	0.0000	3.6515
Total	**3.8400e-003**	**0.0427**	**0.0199**	**4.0000e-005**	**0.0131**	**1.9800e-003**	**0.0151**	**6.7300e-003**	**1.8200e-003**	**8.5500e-003**	**0.0000**	**3.6222**	**3.6222**	**1.1700e-003**	**0.0000**	**3.6515**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	7.0000e-005	7.5000e-004	0.0000	2.4000e-004	0.0000	2.5000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2086	0.2086	0.0000	0.0000	0.2088
Total	**1.0000e-004**	**7.0000e-005**	**7.5000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.5000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2086**	**0.2086**	**0.0000**	**0.0000**	**0.2088**

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					0.0131	0.0000	0.0131	6.7300e-003	0.0000	6.7300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8400e-003	0.0427	0.0199	4.0000e-005		1.9800e-003	1.9800e-003		1.8200e-003	1.8200e-003	0.0000	3.6222	3.6222	1.1700e-003	0.0000	3.6515
Total	**3.8400e-003**	**0.0427**	**0.0199**	**4.0000e-005**	**0.0131**	**1.9800e-003**	**0.0151**	**6.7300e-003**	**1.8200e-003**	**8.5500e-003**	**0.0000**	**3.6222**	**3.6222**	**1.1700e-003**	**0.0000**	**3.6515**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	7.0000e-005	7.5000e-004	0.0000	2.4000e-004	0.0000	2.5000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2086	0.2086	0.0000	0.0000	0.2088
Total	**1.0000e-004**	**7.0000e-005**	**7.5000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.5000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2086**	**0.2086**	**0.0000**	**0.0000**	**0.2088**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2288	1.7434	1.4897	2.5000e-003		0.0948	0.0948		0.0909	0.0909	0.0000	207.6444	207.6444	0.0421	0.0000	208.6980
Total	**0.2288**	**1.7434**	**1.4897**	**2.5000e-003**		**0.0948**	**0.0948**		**0.0909**	**0.0909**	**0.0000**	**207.6444**	**207.6444**	**0.0421**	**0.0000**	**208.6980**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5400e-003	0.1487	0.0293	3.5000e-004	7.6800e-003	6.2000e-004	8.2900e-003	2.2200e-003	5.9000e-004	2.8100e-003	0.0000	33.3267	33.3267	1.7400e-003	0.0000	33.3703
Worker	0.0155	0.0115	0.1198	3.7000e-004	0.0391	2.5000e-004	0.0393	0.0104	2.3000e-004	0.0106	0.0000	33.3799	33.3799	7.9000e-004	0.0000	33.3996
Total	**0.0201**	**0.1602**	**0.1490**	**7.2000e-004**	**0.0468**	**8.7000e-004**	**0.0476**	**0.0126**	**8.2000e-004**	**0.0134**	**0.0000**	**66.7066**	**66.7066**	**2.5300e-003**	**0.0000**	**66.7699**

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	0.2288	1.7434	1.4897	2.5000e-003		0.0948	0.0948		0.0909	0.0909	0.0000	207.6442	207.6442	0.0421	0.0000	208.6977
Total	**0.2288**	**1.7434**	**1.4897**	**2.5000e-003**		**0.0948**	**0.0948**		**0.0909**	**0.0909**	**0.0000**	**207.6442**	**207.6442**	**0.0421**	**0.0000**	**208.6977**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5400e-003	0.1487	0.0293	3.5000e-004	7.6800e-003	6.2000e-004	8.2900e-003	2.2200e-003	5.9000e-004	2.8100e-003	0.0000	33.3267	33.3267	1.7400e-003	0.0000	33.3703
Worker	0.0155	0.0115	0.1198	3.7000e-004	0.0391	2.5000e-004	0.0393	0.0104	2.3000e-004	0.0106	0.0000	33.3799	33.3799	7.9000e-004	0.0000	33.3996
Total	**0.0201**	**0.1602**	**0.1490**	**7.2000e-004**	**0.0468**	**8.7000e-004**	**0.0476**	**0.0126**	**8.2000e-004**	**0.0134**	**0.0000**	**66.7066**	**66.7066**	**2.5300e-003**	**0.0000**	**66.7699**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.5400e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.7000e-004	2.8100e-003	1.0000e-005	9.2000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7823	0.7823	2.0000e-005	0.0000	0.7828
Total	**3.6000e-004**	**2.7000e-004**	**2.8100e-003**	**1.0000e-005**	**9.2000e-004**	**1.0000e-005**	**9.2000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.7823**	**0.7823**	**2.0000e-005**	**0.0000**	**0.7828**

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	5.7700e-003	0.0579	0.0590	9.0000e-005		3.2800e-003	3.2800e-003		3.0300e-003	3.0300e-003	0.0000	7.7529	7.7529	2.4600e-003	0.0000	7.8143
Paving	1.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.5400e-003**	**0.0579**	**0.0590**	**9.0000e-005**		**3.2800e-003**	**3.2800e-003**		**3.0300e-003**	**3.0300e-003**	**0.0000**	**7.7529**	**7.7529**	**2.4600e-003**	**0.0000**	**7.8143**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.7000e-004	2.8100e-003	1.0000e-005	9.2000e-004	1.0000e-005	9.2000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7823	0.7823	2.0000e-005	0.0000	0.7828
Total	**3.6000e-004**	**2.7000e-004**	**2.8100e-003**	**1.0000e-005**	**9.2000e-004**	**1.0000e-005**	**9.2000e-004**	**2.4000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.7823**	**0.7823**	**2.0000e-005**	**0.0000**	**0.7828**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0285					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0297**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.1200e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3129	0.3129	1.0000e-005	0.0000	0.3131
Total	**1.5000e-004**	**1.1000e-004**	**1.1200e-003**	**0.0000**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3129**	**0.3129**	**1.0000e-005**	**0.0000**	**0.3131**

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	0.0285					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0297**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.1200e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3129	0.3129	1.0000e-005	0.0000	0.3131
Total	**1.5000e-004**	**1.1000e-004**	**1.1200e-003**	**0.0000**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3129**	**0.3129**	**1.0000e-005**	**0.0000**	**0.3131**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Mitigated	0.0380	0.2286	3.1250	0.0194	3.4898	7.1200e-003	3.4969	0.9283	6.5500e-003	0.9349	0.0000	1,761.1168	1,761.1168	0.0137	0.0000	1,761.4604
Unmitigated	0.0380	0.2286	3.1250	0.0194	3.4898	7.1200e-003	3.4969	0.9283	6.5500e-003	0.9349	0.0000	1,761.1168	1,761.1168	0.0137	0.0000	1,761.4604

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.59	7.05	5.19	9,609,647	9,609,647
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.59	7.05	5.19	9,609,647	9,609,647

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
City Park	50,550.60	6.60	6.60	33.00	48.00	19.00	66	28	6
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Single Family Housing	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.644000	0.085000	0.272000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
General Office Building	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Parking Lot	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Single Family Housing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.9312	7.9312	7.8000e-004	1.6000e-004	7.9990
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.9312	7.9312	7.8000e-004	1.6000e-004	7.9990
NaturalGas Mitigated	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	4.0137	4.0137	8.0000e-005	7.0000e-005	4.0376
NaturalGas Unmitigated	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	4.0137	4.0137	8.0000e-005	7.0000e-005	4.0376

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					
City Park	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
General Office Building	49380	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6351	2.6351	5.0000e-005	5.0000e-005	2.6508
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
Single Family Housing	25834.7	1.4000e-004	1.1900e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3786	1.3786	3.0000e-005	3.0000e-005	1.3868
Total		**4.1000e-004**	**3.6100e-003**	**2.5400e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**4.0137**	**4.0137**	**8.0000e-005**	**8.0000e-005**	**4.0376**

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					
City Park	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
General Office Building	49380	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6351	2.6351	5.0000e-005	5.0000e-005	2.6508
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
Single Family Housing	25834.7	1.4000e-004	1.1900e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3786	1.3786	3.0000e-005	3.0000e-005	1.3868
Total		**4.1000e-004**	**3.6100e-003**	**2.5400e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**4.0137**	**4.0137**	**8.0000e-005**	**8.0000e-005**	**4.0376**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30030	4.0047	4.0000e-004	8.0000e-005	4.0389
Parking Lot	21000	2.8005	2.8000e-004	6.0000e-005	2.8244
Single Family Housing	8443.78	1.1260	1.1000e-004	2.0000e-005	1.1357
Total		**7.9312**	**7.9000e-004**	**1.6000e-004**	**7.9990**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30030	4.0047	4.0000e-004	8.0000e-005	4.0389
Parking Lot	21000	2.8005	2.8000e-004	6.0000e-005	2.8244
Single Family Housing	8443.78	1.1260	1.1000e-004	2.0000e-005	1.1357
Total		**7.9312**	**7.9000e-004**	**1.6000e-004**	**7.9990**

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	1.2755	0.0160	1.3910	2.2000e-003		0.1894	0.1894		0.1894	0.1894	16.8695	1.9431	18.8126	6.0000e-005	1.5200e-003	19.2681
Unmitigated	1.2755	0.0160	1.3910	2.2000e-003		0.1894	0.1894		0.1894	0.1894	16.8695	1.9431	18.8126	6.0000e-005	1.5200e-003	19.2681

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	2.8500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0196					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2527	0.0159	1.3822	2.2000e-003		0.1894	0.1894		0.1894	0.1894	16.8695	1.9283	18.7978	4.0000e-005	1.5200e-003	19.2528
Landscaping	3.5000e-004	1.0000e-004	8.7700e-003	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0148	0.0148	2.0000e-005	0.0000	0.0153
Total	**1.2755**	**0.0160**	**1.3910**	**2.2000e-003**		**0.1894**	**0.1894**		**0.1894**	**0.1894**	**16.8695**	**1.9431**	**18.8126**	**6.0000e-005**	**1.5200e-003**	**19.2681**

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	2.8500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0196					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.2527	0.0159	1.3822	2.2000e-003		0.1894	0.1894		0.1894	0.1894	16.8695	1.9283	18.7978	4.0000e-005	1.5200e-003	19.2528
Landscaping	3.5000e-004	1.0000e-004	8.7700e-003	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0148	0.0148	2.0000e-005	0.0000	0.0153
Total	**1.2755**	**0.0160**	**1.3910**	**2.2000e-003**		**0.1894**	**0.1894**		**0.1894**	**0.1894**	**16.8695**	**1.9431**	**18.8126**	**6.0000e-005**	**1.5200e-003**	**19.2681**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4947	7.9600e-003	2.0000e-004	0.7519
Unmitigated	0.4947	7.9600e-003	2.0000e-004	0.7519

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.369359	0.1724	2.0000e-005	0.0000	0.1739
General Office Building	0.177734 / 0.108934	0.2355	5.8100e-003	1.4000e-004	0.4226
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.0869	2.1300e-003	5.0000e-005	0.1554
Total		**0.4947**	**7.9600e-003**	**1.9000e-004**	**0.7519**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.369359	0.1724	2.0000e-005	0.0000	0.1739
General Office Building	0.177734 / 0.108934	0.2355	5.8100e-003	1.4000e-004	0.4226
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.0869	2.1300e-003	5.0000e-005	0.1554
Total		**0.4947**	**7.9600e-003**	**1.9000e-004**	**0.7519**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2680	0.0158	0.0000	0.6638
Unmitigated	0.2680	0.0158	0.0000	0.6638

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.36	0.0731	4.3200e-003	0.0000	0.1810
Total		**0.2680**	**0.0158**	**0.0000**	**0.6638**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.36	0.0731	4.3200e-003	0.0000	0.1810
Total		**0.2680**	**0.0158**	**0.0000**	**0.6638**

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

RE Alt

Placer-Mountain Counties County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	3,000.00	0
Parking Lot	150.00	Space	1.35	60,000.00	0
City Park	0.30	Acre	0.30	13,068.00	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,000.00	1

1.2 Other Project Characteristics

Urbanization Rural **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 74

Climate Zone 2 **Operational Year** 2040

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 294 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor for PG&E Adjusted - Source: The Climate Registry - Default Emissions Factors (2016)

Land Use - Residential land use in place to acount for wood burn at campfires from new campsites.

Construction Phase - No demolition would occur as part of the project.

Vehicle Trips - Trip rate adjusted to match project generated VMT based on project traffic study.

Woodstoves - Adjusted to account for campfire emissions. Modeling is based on historical annual campsite visitation and accounts for increase in visitation under each alternative. Assumes 3 people per campsite.

Energy Use - Single family home modeled for alternative campsite (cabin). Cabin assumed only to have lighting demand.

Fleet Mix - Adjusted base on Regional Park land use

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	1,000.00	3,000.00
tblLandUse	LandUseSquareFeet	1,800.00	1,000.00
tblLandUse	Population	3.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	294
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	CW_TL	14.70	31,720.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	9.52	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2856	1.9485	1.6979	3.3200e-003	0.0654	0.0971	0.1625	0.0214	0.0932	0.1147	0.0000	283.0638	283.0638	0.0450	0.0000	284.1879
Maximum	**0.2856**	**1.9485**	**1.6979**	**3.3200e-003**	**0.0654**	**0.0971**	**0.1625**	**0.0214**	**0.0932**	**0.1147**	**0.0000**	**283.0638**	**283.0638**	**0.0450**	**0.0000**	**284.1879**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2856	1.9485	1.6979	3.3200e-003	0.0654	0.0971	0.1625	0.0214	0.0932	0.1147	0.0000	283.0635	283.0635	0.0450	0.0000	284.1876
Maximum	**0.2856**	**1.9485**	**1.6979**	**3.3200e-003**	**0.0654**	**0.0971**	**0.1625**	**0.0214**	**0.0932**	**0.1147**	**0.0000**	**283.0635**	**283.0635**	**0.0450**	**0.0000**	**284.1876**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	0.6478	0.6478
2	4-1-2020	6-30-2020	0.6045	0.6045
3	7-1-2020	9-30-2020	0.6111	0.6111
		Highest	0.6478	0.6478

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	0.0856	1.3200e-003	0.0862	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4480	1.4810	9.7000e-004	8.0000e-005	1.5295
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	11.9449	11.9449	8.6000e-004	2.4000e-004	12.0366
Mobile	0.1334	0.8689	2.6656	0.0191	2.1681	7.1700e-003	2.1753	0.5830	6.7100e-003	0.5897	0.0000	1,763.2896	1,763.2896	0.0252	0.0000	1,763.9197
Waste						0.0000	0.0000		0.0000	0.0000	0.2680	0.0000	0.2680	0.0158	0.0000	0.6638
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.4121	0.4892	7.9600e-003	2.0000e-004	0.7463
Total	**0.2194**	**0.8739**	**2.7543**	**0.0193**	**2.1681**	**0.0184**	**2.1865**	**0.5830**	**0.0179**	**0.6009**	**1.3780**	**1,776.0947**	**1,777.4726**	**0.0508**	**5.2000e-004**	**1,778.8959**

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	0.0856	1.3200e-003	0.0862	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4480	1.4810	9.7000e-004	8.0000e-005	1.5295
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	11.9449	11.9449	8.6000e-004	2.4000e-004	12.0366
Mobile	0.1334	0.8689	2.6656	0.0191	2.1681	7.1700e-003	2.1753	0.5830	6.7100e-003	0.5897	0.0000	1,763.2896	1,763.2896	0.0252	0.0000	1,763.9197
Waste						0.0000	0.0000		0.0000	0.0000	0.2680	0.0000	0.2680	0.0158	0.0000	0.6638
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.4121	0.4892	7.9600e-003	2.0000e-004	0.7463
Total	**0.2194**	**0.8739**	**2.7543**	**0.0193**	**2.1681**	**0.0184**	**2.1865**	**0.5830**	**0.0179**	**0.6009**	**1.3780**	**1,776.0947**	**1,777.4726**	**0.0508**	**5.2000e-004**	**1,778.8959**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	1/30/2020	5	2	
3	Grading	Grading	1/31/2020	2/5/2020	5	4	
4	Building Construction	Building Construction	2/6/2020	11/11/2020	5	200	
5	Paving	Paving	11/12/2020	11/25/2020	5	10	
6	Architectural Coating	Architectural Coating	11/26/2020	12/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 1.35

Residential Indoor: 2,025; Residential Outdoor: 675; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 3,600 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	32.00	13.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0677	21.0677	5.4200e-003	0.0000	21.2031
Total	**0.0213**	**0.2095**	**0.1466**	**2.4000e-004**		**0.0115**	**0.0115**		**0.0108**	**0.0108**	**0.0000**	**21.0677**	**21.0677**	**5.4200e-003**	**0.0000**	**21.2031**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.7000e-004	4.8700e-003	1.0000e-005	1.5900e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3561	1.3561	3.0000e-005	0.0000	1.3569
Total	**6.3000e-004**	**4.7000e-004**	**4.8700e-003**	**1.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.6000e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3561**	**1.3561**	**3.0000e-005**	**0.0000**	**1.3569**

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	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0676	21.0676	5.4200e-003	0.0000	21.2030
Total	**0.0213**	**0.2095**	**0.1466**	**2.4000e-004**		**0.0115**	**0.0115**		**0.0108**	**0.0108**	**0.0000**	**21.0676**	**21.0676**	**5.4200e-003**	**0.0000**	**21.2030**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.7000e-004	4.8700e-003	1.0000e-005	1.5900e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3561	1.3561	3.0000e-005	0.0000	1.3569
Total	**6.3000e-004**	**4.7000e-004**	**4.8700e-003**	**1.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.6000e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3561**	**1.3561**	**3.0000e-005**	**0.0000**	**1.3569**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0184	7.7100e-003	2.0000e-005		8.2000e-004	8.2000e-004		7.6000e-004	7.6000e-004	0.0000	1.5127	1.5127	4.9000e-004	0.0000	1.5249
Total	**1.6300e-003**	**0.0184**	**7.7100e-003**	**2.0000e-005**	**5.8000e-003**	**8.2000e-004**	**6.6200e-003**	**2.9500e-003**	**7.6000e-004**	**3.7100e-003**	**0.0000**	**1.5127**	**1.5127**	**4.9000e-004**	**0.0000**	**1.5249**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0835	0.0835	0.0000	0.0000	0.0835
Total	**4.0000e-005**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0835**	**0.0835**	**0.0000**	**0.0000**	**0.0835**

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					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0184	7.7100e-003	2.0000e-005		8.2000e-004	8.2000e-004		7.6000e-004	7.6000e-004	0.0000	1.5127	1.5127	4.9000e-004	0.0000	1.5249
Total	**1.6300e-003**	**0.0184**	**7.7100e-003**	**2.0000e-005**	**5.8000e-003**	**8.2000e-004**	**6.6200e-003**	**2.9500e-003**	**7.6000e-004**	**3.7100e-003**	**0.0000**	**1.5127**	**1.5127**	**4.9000e-004**	**0.0000**	**1.5249**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0835	0.0835	0.0000	0.0000	0.0835
Total	**4.0000e-005**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0835**	**0.0835**	**0.0000**	**0.0000**	**0.0835**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-003	0.0302	0.0129	3.0000e-005		1.3700e-003	1.3700e-003		1.2600e-003	1.2600e-003	0.0000	2.4779	2.4779	8.0000e-004	0.0000	2.4980
Total	**2.7000e-003**	**0.0302**	**0.0129**	**3.0000e-005**	**9.8300e-003**	**1.3700e-003**	**0.0112**	**5.0500e-003**	**1.2600e-003**	**6.3100e-003**	**0.0000**	**2.4779**	**2.4779**	**8.0000e-004**	**0.0000**	**2.4980**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	6.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1669	0.1669	0.0000	0.0000	0.1670
Total	**8.0000e-005**	**6.0000e-005**	**6.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1669**	**0.1669**	**0.0000**	**0.0000**	**0.1670**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-003	0.0302	0.0129	3.0000e-005		1.3700e-003	1.3700e-003		1.2600e-003	1.2600e-003	0.0000	2.4779	2.4779	8.0000e-004	0.0000	2.4980
Total	**2.7000e-003**	**0.0302**	**0.0129**	**3.0000e-005**	**9.8300e-003**	**1.3700e-003**	**0.0112**	**5.0500e-003**	**1.2600e-003**	**6.3100e-003**	**0.0000**	**2.4779**	**2.4779**	**8.0000e-004**	**0.0000**	**2.4980**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	6.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1669	0.1669	0.0000	0.0000	0.1670
Total	**8.0000e-005**	**6.0000e-005**	**6.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1669**	**0.1669**	**0.0000**	**0.0000**	**0.1670**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2031	1.4788	1.3188	2.2000e-003		0.0796	0.0796		0.0769	0.0769	0.0000	181.5421	181.5421	0.0337	0.0000	182.3847
Total	**0.2031**	**1.4788**	**1.3188**	**2.2000e-003**		**0.0796**	**0.0796**		**0.0769**	**0.0769**	**0.0000**	**181.5421**	**181.5421**	**0.0337**	**0.0000**	**182.3847**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5400e-003	0.1487	0.0293	3.5000e-004	7.6800e-003	6.2000e-004	8.2900e-003	2.2200e-003	5.9000e-004	2.8100e-003	0.0000	33.3267	33.3267	1.7400e-003	0.0000	33.3703
Worker	0.0155	0.0115	0.1198	3.7000e-004	0.0391	2.5000e-004	0.0393	0.0104	2.3000e-004	0.0106	0.0000	33.3799	33.3799	7.9000e-004	0.0000	33.3996
Total	**0.0201**	**0.1602**	**0.1490**	**7.2000e-004**	**0.0468**	**8.7000e-004**	**0.0476**	**0.0126**	**8.2000e-004**	**0.0134**	**0.0000**	**66.7066**	**66.7066**	**2.5300e-003**	**0.0000**	**66.7699**

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	0.2031	1.4788	1.3188	2.2000e-003		0.0796	0.0796		0.0769	0.0769	0.0000	181.5419	181.5419	0.0337	0.0000	182.3844
Total	**0.2031**	**1.4788**	**1.3188**	**2.2000e-003**		**0.0796**	**0.0796**		**0.0769**	**0.0769**	**0.0000**	**181.5419**	**181.5419**	**0.0337**	**0.0000**	**182.3844**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5400e-003	0.1487	0.0293	3.5000e-004	7.6800e-003	6.2000e-004	8.2900e-003	2.2200e-003	5.9000e-004	2.8100e-003	0.0000	33.3267	33.3267	1.7400e-003	0.0000	33.3703
Worker	0.0155	0.0115	0.1198	3.7000e-004	0.0391	2.5000e-004	0.0393	0.0104	2.3000e-004	0.0106	0.0000	33.3799	33.3799	7.9000e-004	0.0000	33.3996
Total	**0.0201**	**0.1602**	**0.1490**	**7.2000e-004**	**0.0468**	**8.7000e-004**	**0.0476**	**0.0126**	**8.2000e-004**	**0.0134**	**0.0000**	**66.7066**	**66.7066**	**2.5300e-003**	**0.0000**	**66.7699**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.2000e-003	0.0423	0.0444	7.0000e-005		2.3500e-003	2.3500e-003		2.1600e-003	2.1600e-003	0.0000	5.8829	5.8829	1.8600e-003	0.0000	5.9295
Paving	1.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.9700e-003**	**0.0423**	**0.0444**	**7.0000e-005**		**2.3500e-003**	**2.3500e-003**		**2.1600e-003**	**2.1600e-003**	**0.0000**	**5.8829**	**5.8829**	**1.8600e-003**	**0.0000**	**5.9295**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.3000e-004	2.4300e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6780	0.6780	2.0000e-005	0.0000	0.6784
Total	**3.2000e-004**	**2.3000e-004**	**2.4300e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**8.0000e-004**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6780**	**0.6780**	**2.0000e-005**	**0.0000**	**0.6784**

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	4.2000e-003	0.0423	0.0444	7.0000e-005		2.3500e-003	2.3500e-003		2.1600e-003	2.1600e-003	0.0000	5.8828	5.8828	1.8600e-003	0.0000	5.9295
Paving	1.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.9700e-003**	**0.0423**	**0.0444**	**7.0000e-005**		**2.3500e-003**	**2.3500e-003**		**2.1600e-003**	**2.1600e-003**	**0.0000**	**5.8828**	**5.8828**	**1.8600e-003**	**0.0000**	**5.9295**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.3000e-004	2.4300e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6780	0.6780	2.0000e-005	0.0000	0.6784
Total	**3.2000e-004**	**2.3000e-004**	**2.4300e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**8.0000e-004**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6780**	**0.6780**	**2.0000e-005**	**0.0000**	**0.6784**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0285					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0297**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.1200e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3129	0.3129	1.0000e-005	0.0000	0.3131
Total	**1.5000e-004**	**1.1000e-004**	**1.1200e-003**	**0.0000**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3129**	**0.3129**	**1.0000e-005**	**0.0000**	**0.3131**

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	0.0285					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0297**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.1200e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3129	0.3129	1.0000e-005	0.0000	0.3131
Total	**1.5000e-004**	**1.1000e-004**	**1.1200e-003**	**0.0000**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3129**	**0.3129**	**1.0000e-005**	**0.0000**	**0.3131**

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	0.1334	0.8689	2.6656	0.0191	2.1681	7.1700e-003	2.1753	0.5830	6.7100e-003	0.5897	0.0000	1,763.2896	1,763.2896	0.0252	0.0000	1,763.9197
Unmitigated	0.1334	0.8689	2.6656	0.0191	2.1681	7.1700e-003	2.1753	0.5830	6.7100e-003	0.5897	0.0000	1,763.2896	1,763.2896	0.0252	0.0000	1,763.9197

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.57	6.83	5.02	5,836,363	5,836,363
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.57	6.83	5.02	5,836,363	5,836,363

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
City Park	31,720.00	6.60	6.60	33.00	48.00	19.00	66	28	6
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Single Family Housing	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.528459	0.035705	0.222674	0.107184	0.010160	0.004389	0.036292	0.046532	0.001290	0.001075	0.005013	0.000658	0.000569
General Office Building	0.528459	0.035705	0.222674	0.107184	0.010160	0.004389	0.036292	0.046532	0.001290	0.001075	0.005013	0.000658	0.000569
Parking Lot	0.528459	0.035705	0.222674	0.107184	0.010160	0.004389	0.036292	0.046532	0.001290	0.001075	0.005013	0.000658	0.000569
Single Family Housing	0.528459	0.035705	0.222674	0.107184	0.010160	0.004389	0.036292	0.046532	0.001290	0.001075	0.005013	0.000658	0.000569

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.9312	7.9312	7.8000e-004	1.6000e-004	7.9990
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.9312	7.9312	7.8000e-004	1.6000e-004	7.9990
NaturalGas Mitigated	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	4.0137	4.0137	8.0000e-005	7.0000e-005	4.0376
NaturalGas Unmitigated	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	4.0137	4.0137	8.0000e-005	7.0000e-005	4.0376

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					
City Park	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
General Office Building	49380	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6351	2.6351	5.0000e-005	5.0000e-005	2.6508
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
Single Family Housing	25834.7	1.4000e-004	1.1900e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3786	1.3786	3.0000e-005	3.0000e-005	1.3868
Total		**4.1000e-004**	**3.6100e-003**	**2.5400e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**4.0137**	**4.0137**	**8.0000e-005**	**8.0000e-005**	**4.0376**

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					
City Park	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
General Office Building	49380	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6351	2.6351	5.0000e-005	5.0000e-005	2.6508
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
Single Family Housing	25834.7	1.4000e-004	1.1900e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3786	1.3786	3.0000e-005	3.0000e-005	1.3868
Total		**4.1000e-004**	**3.6100e-003**	**2.5400e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**4.0137**	**4.0137**	**8.0000e-005**	**8.0000e-005**	**4.0376**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30030	4.0047	4.0000e-004	8.0000e-005	4.0389
Parking Lot	21000	2.8005	2.8000e-004	6.0000e-005	2.8244
Single Family Housing	8443.78	1.1260	1.1000e-004	2.0000e-005	1.1357
Total		**7.9312**	**7.9000e-004**	**1.6000e-004**	**7.9990**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30030	4.0047	4.0000e-004	8.0000e-005	4.0389
Parking Lot	21000	2.8005	2.8000e-004	6.0000e-005	2.8244
Single Family Housing	8443.78	1.1260	1.1000e-004	2.0000e-005	1.1357
Total		**7.9312**	**7.9000e-004**	**1.6000e-004**	**7.9990**

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	0.0856	1.3200e-003	0.0862	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4480	1.4810	9.7000e-004	8.0000e-005	1.5295
Unmitigated	0.0856	1.3200e-003	0.0862	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4480	1.4810	9.7000e-004	8.0000e-005	1.5295

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	2.8500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0196					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0628	1.2300e-003	0.0775	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4332	1.4662	9.5000e-004	8.0000e-005	1.5142
Landscaping	3.5000e-004	1.0000e-004	8.7700e-003	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0148	0.0148	2.0000e-005	0.0000	0.0153
Total	**0.0856**	**1.3300e-003**	**0.0862**	**1.4000e-004**		**0.0109**	**0.0109**		**0.0109**	**0.0109**	**1.0330**	**0.4480**	**1.4810**	**9.7000e-004**	**8.0000e-005**	**1.5295**

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	2.8500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0196					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0628	1.2300e-003	0.0775	1.4000e-004		0.0109	0.0109		0.0109	0.0109	1.0330	0.4332	1.4662	9.5000e-004	8.0000e-005	1.5142
Landscaping	3.5000e-004	1.0000e-004	8.7700e-003	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0148	0.0148	2.0000e-005	0.0000	0.0153
Total	**0.0856**	**1.3300e-003**	**0.0862**	**1.4000e-004**		**0.0109**	**0.0109**		**0.0109**	**0.0109**	**1.0330**	**0.4480**	**1.4810**	**9.7000e-004**	**8.0000e-005**	**1.5295**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.4892	7.9600e-003	2.0000e-004	0.7463
Unmitigated	0.4892	7.9600e-003	2.0000e-004	0.7463

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.357444	0.1668	2.0000e-005	0.0000	0.1683
General Office Building	0.177734 / 0.108934	0.2355	5.8100e-003	1.4000e-004	0.4226
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.0869	2.1300e-003	5.0000e-005	0.1554
Total		**0.4892**	**7.9600e-003**	**1.9000e-004**	**0.7463**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.357444	0.1668	2.0000e-005	0.0000	0.1683
General Office Building	0.177734 / 0.108934	0.2355	5.8100e-003	1.4000e-004	0.4226
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.0869	2.1300e-003	5.0000e-005	0.1554
Total		**0.4892**	**7.9600e-003**	**1.9000e-004**	**0.7463**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2680	0.0158	0.0000	0.6638
Unmitigated	0.2680	0.0158	0.0000	0.6638

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.36	0.0731	4.3200e-003	0.0000	0.1810
Total		**0.2680**	**0.0158**	**0.0000**	**0.6638**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.03	6.0900e-003	3.6000e-004	0.0000	0.0151
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.36	0.0731	4.3200e-003	0.0000	0.1810
Total		**0.2680**	**0.0158**	**0.0000**	**0.6638**

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

RE Alt

Placer-Mountain Counties County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	3,000.00	0
Parking Lot	150.00	Space	1.35	60,000.00	0
City Park	0.10	Acre	0.10	4,356.00	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,000.00	1

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	294	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor for PG&E Adjusted - Source: The Climate Registry - Default Emissions Factors (2016)

Land Use - Residential land use in place to acount for wood burn at campfires from new campsites.

Construction Phase - No demolition would occur as part of the project.

Vehicle Trips - Trip rate adjusted to match project generated VMT based on project traffic study.

Woodstoves - Adjusted to account for campfire emissions.

Energy Use - Single family home modeled for alternative campsite (cabin). Cabin assumed only to have lighting demand.

Fleet Mix - Adjusted base on Regional Park land use

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceWoodMass	3,078.40	28,127.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	LDA	0.53	0.64
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.04	0.09
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.22	0.27
tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LHD1	0.01	0.00

tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00

tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblLandUse	LandUseSquareFeet	1,000.00	3,000.00
tblLandUse	LandUseSquareFeet	1,800.00	1,000.00
tblLandUse	Population	3.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	294
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	CW_TL	14.70	201,609.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2830	1.9242	1.6784	3.2200e-003	0.0594	0.0970	0.1563	0.0198	0.0931	0.1129	0.0000	273.7641	273.7641	0.0446	0.0000	274.8791
Maximum	**0.2830**	**1.9242**	**1.6784**	**3.2200e-003**	**0.0594**	**0.0970**	**0.1563**	**0.0198**	**0.0931**	**0.1129**	**0.0000**	**273.7641**	**273.7641**	**0.0446**	**0.0000**	**274.8791**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2830	1.9242	1.6784	3.2200e-003	0.0594	0.0970	0.1563	0.0198	0.0931	0.1129	0.0000	273.7639	273.7639	0.0446	0.0000	274.8788
Maximum	**0.2830**	**1.9242**	**1.6784**	**3.2200e-003**	**0.0594**	**0.0970**	**0.1563**	**0.0198**	**0.0931**	**0.1129**	**0.0000**	**273.7639**	**273.7639**	**0.0446**	**0.0000**	**274.8788**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	0.6425	0.6425
2	4-1-2020	6-30-2020	0.5958	0.5958
3	7-1-2020	9-30-2020	0.6024	0.6024
		Highest	0.6425	0.6425

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	0.5864	6.8700e-003	0.6306	9.9000e-004		0.0852	0.0852		0.0852	0.0852	7.5911	0.4480	8.0392	3.0000e-005	6.8000e-004	8.2418
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	11.9449	11.9449	8.6000e-004	2.4000e-004	12.0366
Mobile	0.0488	0.2940	4.0167	0.0250	4.4882	9.1500e-003	4.4974	1.1938	8.4200e-003	1.2023	0.0000	2,264.0703	2,264.0703	0.0177	0.0000	2,264.5120
Waste						0.0000	0.0000		0.0000	0.0000	0.2639	0.0000	0.2639	0.0156	0.0000	0.6538
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.3009	0.3780	7.9400e-003	1.9000e-004	0.6341
Total	**0.6355**	**0.3045**	**4.6499**	**0.0260**	**4.4882**	**0.0947**	**4.5829**	**1.1938**	**0.0939**	**1.2878**	**7.9321**	**2,276.7641**	**2,284.6962**	**0.0421**	**1.1100e-003**	**2,286.0783**

2.2 Overall Operational

Mitigated Operational

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Area	0.5864	6.8700e-003	0.6306	9.9000e-004		0.0852	0.0852		0.0852	0.0852	7.5911	0.4480	8.0392	3.0000e-005	6.8000e-004	8.2418
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	11.9449	11.9449	8.6000e-004	2.4000e-004	12.0366
Mobile	0.0488	0.2940	4.0167	0.0250	4.4882	9.1500e-003	4.4974	1.1938	8.4200e-003	1.2023	0.0000	2,264.0703	2,264.0703	0.0177	0.0000	2,264.5120
Waste						0.0000	0.0000		0.0000	0.0000	0.2639	0.0000	0.2639	0.0156	0.0000	0.6538
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.3009	0.3780	7.9400e-003	1.9000e-004	0.6341
Total	**0.6355**	**0.3045**	**4.6499**	**0.0260**	**4.4882**	**0.0947**	**4.5829**	**1.1938**	**0.0939**	**1.2878**	**7.9321**	**2,276.7641**	**2,284.6962**	**0.0421**	**1.1100e-003**	**2,286.0783**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	1/30/2020	5	2	
3	Grading	Grading	1/31/2020	2/5/2020	5	4	
4	Building Construction	Building Construction	2/6/2020	11/11/2020	5	200	
5	Paving	Paving	11/12/2020	11/25/2020	5	10	
6	Architectural Coating	Architectural Coating	11/26/2020	12/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 1.35

Residential Indoor: 2,025; Residential Outdoor: 675; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 3,600 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Graders	1	6.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Building Construction	Welders	3	8.00	46	0.45

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	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	28.00	11.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0677	21.0677	5.4200e-003	0.0000	21.2031
Total	**0.0213**	**0.2095**	**0.1466**	**2.4000e-004**		**0.0115**	**0.0115**		**0.0108**	**0.0108**	**0.0000**	**21.0677**	**21.0677**	**5.4200e-003**	**0.0000**	**21.2031**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.7000e-004	4.8700e-003	1.0000e-005	1.5900e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3561	1.3561	3.0000e-005	0.0000	1.3569
Total	**6.3000e-004**	**4.7000e-004**	**4.8700e-003**	**1.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.6000e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3561**	**1.3561**	**3.0000e-005**	**0.0000**	**1.3569**

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	0.0213	0.2095	0.1466	2.4000e-004		0.0115	0.0115		0.0108	0.0108	0.0000	21.0676	21.0676	5.4200e-003	0.0000	21.2030
Total	**0.0213**	**0.2095**	**0.1466**	**2.4000e-004**		**0.0115**	**0.0115**		**0.0108**	**0.0108**	**0.0000**	**21.0676**	**21.0676**	**5.4200e-003**	**0.0000**	**21.2030**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.7000e-004	4.8700e-003	1.0000e-005	1.5900e-003	1.0000e-005	1.6000e-003	4.2000e-004	1.0000e-005	4.3000e-004	0.0000	1.3561	1.3561	3.0000e-005	0.0000	1.3569
Total	**6.3000e-004**	**4.7000e-004**	**4.8700e-003**	**1.0000e-005**	**1.5900e-003**	**1.0000e-005**	**1.6000e-003**	**4.2000e-004**	**1.0000e-005**	**4.3000e-004**	**0.0000**	**1.3561**	**1.3561**	**3.0000e-005**	**0.0000**	**1.3569**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0184	7.7100e-003	2.0000e-005		8.2000e-004	8.2000e-004		7.6000e-004	7.6000e-004	0.0000	1.5127	1.5127	4.9000e-004	0.0000	1.5249
Total	**1.6300e-003**	**0.0184**	**7.7100e-003**	**2.0000e-005**	**5.8000e-003**	**8.2000e-004**	**6.6200e-003**	**2.9500e-003**	**7.6000e-004**	**3.7100e-003**	**0.0000**	**1.5127**	**1.5127**	**4.9000e-004**	**0.0000**	**1.5249**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0835	0.0835	0.0000	0.0000	0.0835
Total	**4.0000e-005**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0835**	**0.0835**	**0.0000**	**0.0000**	**0.0835**

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					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6300e-003	0.0184	7.7100e-003	2.0000e-005		8.2000e-004	8.2000e-004		7.6000e-004	7.6000e-004	0.0000	1.5127	1.5127	4.9000e-004	0.0000	1.5249
Total	**1.6300e-003**	**0.0184**	**7.7100e-003**	**2.0000e-005**	**5.8000e-003**	**8.2000e-004**	**6.6200e-003**	**2.9500e-003**	**7.6000e-004**	**3.7100e-003**	**0.0000**	**1.5127**	**1.5127**	**4.9000e-004**	**0.0000**	**1.5249**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0835	0.0835	0.0000	0.0000	0.0835
Total	**4.0000e-005**	**3.0000e-005**	**3.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0835**	**0.0835**	**0.0000**	**0.0000**	**0.0835**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-003	0.0302	0.0129	3.0000e-005		1.3700e-003	1.3700e-003		1.2600e-003	1.2600e-003	0.0000	2.4779	2.4779	8.0000e-004	0.0000	2.4980
Total	**2.7000e-003**	**0.0302**	**0.0129**	**3.0000e-005**	**9.8300e-003**	**1.3700e-003**	**0.0112**	**5.0500e-003**	**1.2600e-003**	**6.3100e-003**	**0.0000**	**2.4779**	**2.4779**	**8.0000e-004**	**0.0000**	**2.4980**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	6.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1669	0.1669	0.0000	0.0000	0.1670
Total	**8.0000e-005**	**6.0000e-005**	**6.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1669**	**0.1669**	**0.0000**	**0.0000**	**0.1670**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-003	0.0302	0.0129	3.0000e-005		1.3700e-003	1.3700e-003		1.2600e-003	1.2600e-003	0.0000	2.4779	2.4779	8.0000e-004	0.0000	2.4980
Total	**2.7000e-003**	**0.0302**	**0.0129**	**3.0000e-005**	**9.8300e-003**	**1.3700e-003**	**0.0112**	**5.0500e-003**	**1.2600e-003**	**6.3100e-003**	**0.0000**	**2.4779**	**2.4779**	**8.0000e-004**	**0.0000**	**2.4980**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	6.0000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1669	0.1669	0.0000	0.0000	0.1670
Total	**8.0000e-005**	**6.0000e-005**	**6.0000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**2.0000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1669**	**0.1669**	**0.0000**	**0.0000**	**0.1670**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2031	1.4788	1.3188	2.2000e-003		0.0796	0.0796		0.0769	0.0769	0.0000	181.5421	181.5421	0.0337	0.0000	182.3847
Total	**0.2031**	**1.4788**	**1.3188**	**2.2000e-003**		**0.0796**	**0.0796**		**0.0769**	**0.0769**	**0.0000**	**181.5421**	**181.5421**	**0.0337**	**0.0000**	**182.3847**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8400e-003	0.1258	0.0248	3.0000e-004	6.5000e-003	5.2000e-004	7.0200e-003	1.8800e-003	5.0000e-004	2.3800e-003	0.0000	28.1995	28.1995	1.4800e-003	0.0000	28.2364
Worker	0.0136	0.0100	0.1048	3.2000e-004	0.0342	2.2000e-004	0.0344	9.1000e-003	2.0000e-004	9.3000e-003	0.0000	29.2074	29.2074	6.9000e-004	0.0000	29.2246
Total	**0.0174**	**0.1359**	**0.1296**	**6.2000e-004**	**0.0407**	**7.4000e-004**	**0.0414**	**0.0110**	**7.0000e-004**	**0.0117**	**0.0000**	**57.4069**	**57.4069**	**2.1700e-003**	**0.0000**	**57.4610**

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	0.2031	1.4788	1.3188	2.2000e-003		0.0796	0.0796		0.0769	0.0769	0.0000	181.5419	181.5419	0.0337	0.0000	182.3844
Total	**0.2031**	**1.4788**	**1.3188**	**2.2000e-003**		**0.0796**	**0.0796**		**0.0769**	**0.0769**	**0.0000**	**181.5419**	**181.5419**	**0.0337**	**0.0000**	**182.3844**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.8400e-003	0.1258	0.0248	3.0000e-004	6.5000e-003	5.2000e-004	7.0200e-003	1.8800e-003	5.0000e-004	2.3800e-003	0.0000	28.1995	28.1995	1.4800e-003	0.0000	28.2364
Worker	0.0136	0.0100	0.1048	3.2000e-004	0.0342	2.2000e-004	0.0344	9.1000e-003	2.0000e-004	9.3000e-003	0.0000	29.2074	29.2074	6.9000e-004	0.0000	29.2246
Total	**0.0174**	**0.1359**	**0.1296**	**6.2000e-004**	**0.0407**	**7.4000e-004**	**0.0414**	**0.0110**	**7.0000e-004**	**0.0117**	**0.0000**	**57.4069**	**57.4069**	**2.1700e-003**	**0.0000**	**57.4610**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.2000e-003	0.0423	0.0444	7.0000e-005		2.3500e-003	2.3500e-003		2.1600e-003	2.1600e-003	0.0000	5.8829	5.8829	1.8600e-003	0.0000	5.9295
Paving	1.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.9700e-003**	**0.0423**	**0.0444**	**7.0000e-005**		**2.3500e-003**	**2.3500e-003**		**2.1600e-003**	**2.1600e-003**	**0.0000**	**5.8829**	**5.8829**	**1.8600e-003**	**0.0000**	**5.9295**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.3000e-004	2.4300e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6780	0.6780	2.0000e-005	0.0000	0.6784
Total	**3.2000e-004**	**2.3000e-004**	**2.4300e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**8.0000e-004**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6780**	**0.6780**	**2.0000e-005**	**0.0000**	**0.6784**

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	4.2000e-003	0.0423	0.0444	7.0000e-005		2.3500e-003	2.3500e-003		2.1600e-003	2.1600e-003	0.0000	5.8828	5.8828	1.8600e-003	0.0000	5.9295
Paving	1.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.9700e-003**	**0.0423**	**0.0444**	**7.0000e-005**		**2.3500e-003**	**2.3500e-003**		**2.1600e-003**	**2.1600e-003**	**0.0000**	**5.8828**	**5.8828**	**1.8600e-003**	**0.0000**	**5.9295**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.3000e-004	2.4300e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6780	0.6780	2.0000e-005	0.0000	0.6784
Total	**3.2000e-004**	**2.3000e-004**	**2.4300e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**8.0000e-004**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6780**	**0.6780**	**2.0000e-005**	**0.0000**	**0.6784**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0285					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0297**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.1200e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3129	0.3129	1.0000e-005	0.0000	0.3131
Total	**1.5000e-004**	**1.1000e-004**	**1.1200e-003**	**0.0000**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3129**	**0.3129**	**1.0000e-005**	**0.0000**	**0.3131**

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	0.0285					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0297**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.5000e-004	1.1000e-004	1.1200e-003	0.0000	3.7000e-004	0.0000	3.7000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3129	0.3129	1.0000e-005	0.0000	0.3131
Total	**1.5000e-004**	**1.1000e-004**	**1.1200e-003**	**0.0000**	**3.7000e-004**	**0.0000**	**3.7000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3129**	**0.3129**	**1.0000e-005**	**0.0000**	**0.3131**

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	0.0488	0.2940	4.0167	0.0250	4.4882	9.1500e-003	4.4974	1.1938	8.4200e-003	1.2023	0.0000	2,264.0703	2,264.0703	0.0177	0.0000	2,264.5120
Unmitigated	0.0488	0.2940	4.0167	0.0250	4.4882	9.1500e-003	4.4974	1.1938	8.4200e-003	1.2023	0.0000	2,264.0703	2,264.0703	0.0177	0.0000	2,264.5120

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.19	2.28	1.67	12,360,696	12,360,696
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.19	2.28	1.67	12,360,696	12,360,696

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
City Park	201,609.00	6.60	6.60	33.00	48.00	19.00	66	28	6
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Single Family Housing	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.640000	0.090000	0.270000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
General Office Building	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Parking Lot	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Single Family Housing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.9312	7.9312	7.8000e-004	1.6000e-004	7.9990
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	7.9312	7.9312	7.8000e-004	1.6000e-004	7.9990
NaturalGas Mitigated	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	4.0137	4.0137	8.0000e-005	7.0000e-005	4.0376
NaturalGas Unmitigated	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	4.0137	4.0137	8.0000e-005	7.0000e-005	4.0376

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					
City Park	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
General Office Building	49380	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6351	2.6351	5.0000e-005	5.0000e-005	2.6508
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
Single Family Housing	25834.7	1.4000e-004	1.1900e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3786	1.3786	3.0000e-005	3.0000e-005	1.3868
Total		**4.1000e-004**	**3.6100e-003**	**2.5400e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**4.0137**	**4.0137**	**8.0000e-005**	**8.0000e-005**	**4.0376**

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					
City Park	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
General Office Building	49380	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6351	2.6351	5.0000e-005	5.0000e-005	2.6508
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
Single Family Housing	25834.7	1.4000e-004	1.1900e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3786	1.3786	3.0000e-005	3.0000e-005	1.3868
Total		**4.1000e-004**	**3.6100e-003**	**2.5400e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**4.0137**	**4.0137**	**8.0000e-005**	**8.0000e-005**	**4.0376**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30030	4.0047	4.0000e-004	8.0000e-005	4.0389
Parking Lot	21000	2.8005	2.8000e-004	6.0000e-005	2.8244
Single Family Housing	8443.78	1.1260	1.1000e-004	2.0000e-005	1.1357
Total		**7.9312**	**7.9000e-004**	**1.6000e-004**	**7.9990**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30030	4.0047	4.0000e-004	8.0000e-005	4.0389
Parking Lot	21000	2.8005	2.8000e-004	6.0000e-005	2.8244
Single Family Housing	8443.78	1.1260	1.1000e-004	2.0000e-005	1.1357
Total		**7.9312**	**7.9000e-004**	**1.6000e-004**	**7.9990**

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	0.5864	6.8700e-003	0.6306	9.9000e-004		0.0852	0.0852		0.0852	0.0852	7.5911	0.4480	8.0392	3.0000e-005	6.8000e-004	8.2418
Unmitigated	0.5864	6.8700e-003	0.6306	9.9000e-004		0.0852	0.0852		0.0852	0.0852	7.5911	0.4480	8.0392	3.0000e-005	6.8000e-004	8.2418

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	2.8500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0195					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.5636	6.7700e-003	0.6218	9.9000e-004		0.0852	0.0852		0.0852	0.0852	7.5911	0.4332	8.0243	1.0000e-005	6.8000e-004	8.2265
Landscaping	3.5000e-004	1.0000e-004	8.7700e-003	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0148	0.0148	2.0000e-005	0.0000	0.0153
Total	**0.5864**	**6.8700e-003**	**0.6306**	**9.9000e-004**		**0.0852**	**0.0852**		**0.0852**	**0.0852**	**7.5911**	**0.4480**	**8.0392**	**3.0000e-005**	**6.8000e-004**	**8.2418**

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	2.8500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0195					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.5636	6.7700e-003	0.6218	9.9000e-004		0.0852	0.0852		0.0852	0.0852	7.5911	0.4332	8.0243	1.0000e-005	6.8000e-004	8.2265
Landscaping	3.5000e-004	1.0000e-004	8.7700e-003	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0148	0.0148	2.0000e-005	0.0000	0.0153
Total	**0.5864**	**6.8700e-003**	**0.6306**	**9.9000e-004**		**0.0852**	**0.0852**		**0.0852**	**0.0852**	**7.5911**	**0.4480**	**8.0392**	**3.0000e-005**	**6.8000e-004**	**8.2418**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.3780	7.9400e-003	1.9000e-004	0.6341
Unmitigated	0.3780	7.9400e-003	1.9000e-004	0.6341

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.119148	0.0556	1.0000e-005	0.0000	0.0561
General Office Building	0.177734 / 0.108934	0.2355	5.8100e-003	1.4000e-004	0.4226
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.0869	2.1300e-003	5.0000e-005	0.1554
Total		**0.3780**	**7.9500e-003**	**1.9000e-004**	**0.6341**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.119148	0.0556	1.0000e-005	0.0000	0.0561
General Office Building	0.177734 / 0.108934	0.2355	5.8100e-003	1.4000e-004	0.4226
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.0869	2.1300e-003	5.0000e-005	0.1554
Total		**0.3780**	**7.9500e-003**	**1.9000e-004**	**0.6341**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2639	0.0156	0.0000	0.6538
Unmitigated	0.2639	0.0156	0.0000	0.6538

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.01	2.0300e-003	1.2000e-004	0.0000	5.0300e-003
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.36	0.0731	4.3200e-003	0.0000	0.1810
Total		**0.2639**	**0.0156**	**0.0000**	**0.6538**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.01	2.0300e-003	1.2000e-004	0.0000	5.0300e-003
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.36	0.0731	4.3200e-003	0.0000	0.1810
Total		**0.2639**	**0.0156**	**0.0000**	**0.6538**

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

RE Alt

Placer-Mountain Counties County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	3,000.00	0
Parking Lot	150.00	Space	1.35	60,000.00	0
City Park	0.30	Acre	0.30	13,068.00	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,000.00	1

1.2 Other Project Characteristics

Urbanization Rural **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 74

Climate Zone 2 **Operational Year** 2040

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 294 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor for PG&E Adjusted - Source: The Climate Registry - Default Emissions Factors (2016)

Land Use - Residential land use in place to acount for wood burn at campfires from new campsites.

Construction Phase - No demolition would occur as part of the project.

Vehicle Trips - Trip rate adjusted to match project generated VMT based on project traffic study.

Woodstoves - Adjusted to account for campfire emissions. Modeling is based on historical annual campsite visitation and accounts for increase in visitation under each alternative. Assumes 3 people per campsite.

Energy Use - Single family home modeled for alternative campsite (cabin). Cabin assumed only to have lighting demand.

Fleet Mix - Adjusted base on Regional Park land use

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	1,000.00	3,000.00
tblLandUse	LandUseSquareFeet	1,800.00	1,000.00
tblLandUse	Population	3.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	294
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	CW_TL	14.70	31,720.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	9.52	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.9754	20.9977	15.1426	0.0291	5.9018	1.1535	6.7233	2.9808	1.0771	3.7366	0.0000	2,719.586 0	2,719.586 0	0.6004	0.0000	2,729.600 1
Maximum	**5.9754**	**20.9977**	**15.1426**	**0.0291**	**5.9018**	**1.1535**	**6.7233**	**2.9808**	**1.0771**	**3.7366**	**0.0000**	**2,719.586 0**	**2,719.586 0**	**0.6004**	**0.0000**	**2,729.600 1**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	5.9754	20.9977	15.1426	0.0291	5.9018	1.1535	6.7233	2.9808	1.0771	3.7366	0.0000	2,719.586 0	2,719.586 0	0.6004	0.0000	2,729.600 1
Maximum	**5.9754**	**20.9977**	**15.1426**	**0.0291**	**5.9018**	**1.1535**	**6.7233**	**2.9808**	**1.0771**	**3.7366**	**0.0000**	**2,719.586 0**	**2,719.586 0**	**0.6004**	**0.0000**	**2,729.600 1**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.6574	0.0310	1.9866	3.4300e-003		0.2654	0.2654		0.2654	0.2654	27.7717	11.8287	39.6005	0.0259	2.1800e-003	40.8978
Energy	2.2200e-003	0.0198	0.0139	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003		24.2433	24.2433	4.6000e-004	4.4000e-004	24.3873
Mobile	2.4116	16.0670	47.0027	0.3367	40.5115	0.1283	40.6398	10.8522	0.1200	10.9723		34,282.0347	34,282.0347	0.4995		34,294.5220
Total	**4.0713**	**16.1178**	**49.0032**	**0.3402**	**40.5115**	**0.3952**	**40.9067**	**10.8522**	**0.3870**	**11.2392**	**27.7717**	**34,318.1067**	**34,345.8784**	**0.5258**	**2.6200e-003**	**34,359.8071**

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	1.6574	0.0310	1.9866	3.4300e-003		0.2654	0.2654		0.2654	0.2654	27.7717	11.8287	39.6005	0.0259	2.1800e-003	40.8978
Energy	2.2200e-003	0.0198	0.0139	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003		24.2433	24.2433	4.6000e-004	4.4000e-004	24.3873
Mobile	2.4116	16.0670	47.0027	0.3367	40.5115	0.1283	40.6398	10.8522	0.1200	10.9723		34,282.0347	34,282.0347	0.4995		34,294.5220
Total	**4.0713**	**16.1178**	**49.0032**	**0.3402**	**40.5115**	**0.3952**	**40.9067**	**10.8522**	**0.3870**	**11.2392**	**27.7717**	**34,318.1067**	**34,345.8784**	**0.5258**	**2.6200e-003**	**34,359.8071**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	1/1/2020	1/28/2020	5	20	
2	Site Preparation	Site Preparation	1/29/2020	1/30/2020	5	2	
3	Grading	Grading	1/31/2020	2/5/2020	5	4	
4	Building Construction	Building Construction	2/6/2020	11/11/2020	5	200	
5	Paving	Paving	11/12/2020	11/25/2020	5	10	
6	Architectural Coating	Architectural Coating	11/26/2020	12/9/2020	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 1.35

Residential Indoor: 2,025; Residential Outdoor: 675; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 3,600 (Architectural Coating – sqft)

OffRoad Equipment

RE Alt - Placer-Mountain Counties County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	32.00	13.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	6.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761		2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**		**1.1525**	**1.1525**		**1.0761**	**1.0761**		**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0697	0.0514	0.4854	1.4600e-003	0.1661	1.0100e-003	0.1671	0.0440	9.3000e-004	0.0450		145.7891	145.7891	3.4700e-003		145.8759
Total	**0.0697**	**0.0514**	**0.4854**	**1.4600e-003**	**0.1661**	**1.0100e-003**	**0.1671**	**0.0440**	**9.3000e-004**	**0.0450**		**145.7891**	**145.7891**	**3.4700e-003**		**145.8759**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1262	20.9463	14.6573	0.0241		1.1525	1.1525		1.0761	1.0761	0.0000	2,322.3127	2,322.3127	0.5970		2,337.2363
Total	**2.1262**	**20.9463**	**14.6573**	**0.0241**		**1.1525**	**1.1525**		**1.0761**	**1.0761**	**0.0000**	**2,322.3127**	**2,322.3127**	**0.5970**		**2,337.2363**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0697	0.0514	0.4854	1.4600e-003	0.1661	1.0100e-003	0.1671	0.0440	9.3000e-004	0.0450		145.7891	145.7891	3.4700e-003		145.8759
Total	**0.0697**	**0.0514**	**0.4854**	**1.4600e-003**	**0.1661**	**1.0100e-003**	**0.1671**	**0.0440**	**9.3000e-004**	**0.0450**		**145.7891**	**145.7891**	**3.4700e-003**		**145.8759**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.6299	18.3464	7.7093	0.0172		0.8210	0.8210		0.7553	0.7553		1,667.4119	1,667.4119	0.5393		1,680.8937
Total	**1.6299**	**18.3464**	**7.7093**	**0.0172**	**5.7996**	**0.8210**	**6.6205**	**2.9537**	**0.7553**	**3.7090**		**1,667.4119**	**1,667.4119**	**0.5393**		**1,680.8937**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0429	0.0316	0.2987	9.0000e-004	0.1022	6.2000e-004	0.1028	0.0271	5.7000e-004	0.0277		89.7164	89.7164	2.1300e-003		89.7698
Total	**0.0429**	**0.0316**	**0.2987**	**9.0000e-004**	**0.1022**	**6.2000e-004**	**0.1028**	**0.0271**	**5.7000e-004**	**0.0277**		**89.7164**	**89.7164**	**2.1300e-003**		**89.7698**

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					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	1.6299	18.3464	7.7093	0.0172		0.8210	0.8210		0.7553	0.7553	0.0000	1,667.4119	1,667.4119	0.5393		1,680.8937
Total	**1.6299**	**18.3464**	**7.7093**	**0.0172**	**5.7996**	**0.8210**	**6.6205**	**2.9537**	**0.7553**	**3.7090**	**0.0000**	**1,667.4119**	**1,667.4119**	**0.5393**		**1,680.8937**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0429	0.0316	0.2987	9.0000e-004	0.1022	6.2000e-004	0.1028	0.0271	5.7000e-004	0.0277		89.7164	89.7164	2.1300e-003		89.7698
Total	**0.0429**	**0.0316**	**0.2987**	**9.0000e-004**	**0.1022**	**6.2000e-004**	**0.1028**	**0.0271**	**5.7000e-004**	**0.0277**		**89.7164**	**89.7164**	**2.1300e-003**		**89.7698**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.3498	15.0854	6.4543	0.0141		0.6844	0.6844		0.6296	0.6296		1,365.718 3	1,365.718 3	0.4417		1,376.760 9
Total	**1.3498**	**15.0854**	**6.4543**	**0.0141**	**4.9143**	**0.6844**	**5.5986**	**2.5256**	**0.6296**	**3.1552**		**1,365.718 3**	**1,365.718 3**	**0.4417**		**1,376.760 9**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0429	0.0316	0.2987	9.0000e-004	0.1022	6.2000e-004	0.1028	0.0271	5.7000e-004	0.0277		89.7164	89.7164	2.1300e-003		89.7698
Total	**0.0429**	**0.0316**	**0.2987**	**9.0000e-004**	**0.1022**	**6.2000e-004**	**0.1028**	**0.0271**	**5.7000e-004**	**0.0277**		**89.7164**	**89.7164**	**2.1300e-003**		**89.7698**

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					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	1.3498	15.0854	6.4543	0.0141		0.6844	0.6844		0.6296	0.6296	0.0000	1,365.7183	1,365.7183	0.4417		1,376.7609
Total	**1.3498**	**15.0854**	**6.4543**	**0.0141**	**4.9143**	**0.6844**	**5.5986**	**2.5256**	**0.6296**	**3.1552**	**0.0000**	**1,365.7183**	**1,365.7183**	**0.4417**		**1,376.7609**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0429	0.0316	0.2987	9.0000e-004	0.1022	6.2000e-004	0.1028	0.0271	5.7000e-004	0.0277		89.7164	89.7164	2.1300e-003		89.7698
Total	**0.0429**	**0.0316**	**0.2987**	**9.0000e-004**	**0.1022**	**6.2000e-004**	**0.1028**	**0.0271**	**5.7000e-004**	**0.0277**		**89.7164**	**89.7164**	**2.1300e-003**		**89.7698**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688		2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**		**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0470	1.4788	0.3241	3.4400e-003	0.0796	6.2800e-003	0.0859	0.0229	6.0100e-003	0.0289		359.5610	359.5610	0.0205		360.0743
Worker	0.1716	0.1265	1.1947	3.6000e-003	0.4087	2.4900e-003	0.4112	0.1084	2.2900e-003	0.1107		358.8655	358.8655	8.5400e-003		359.0790
Total	**0.2187**	**1.6053**	**1.5188**	**7.0400e-003**	**0.4884**	**8.7700e-003**	**0.4971**	**0.1313**	**8.3000e-003**	**0.1396**		**718.4266**	**718.4266**	**0.0291**		**719.1534**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0305	14.7882	13.1881	0.0220		0.7960	0.7960		0.7688	0.7688	0.0000	2,001.1595	2,001.1595	0.3715		2,010.4467
Total	**2.0305**	**14.7882**	**13.1881**	**0.0220**		**0.7960**	**0.7960**		**0.7688**	**0.7688**	**0.0000**	**2,001.1595**	**2,001.1595**	**0.3715**		**2,010.4467**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0470	1.4788	0.3241	3.4400e-003	0.0796	6.2800e-003	0.0859	0.0229	6.0100e-003	0.0289		359.5610	359.5610	0.0205		360.0743
Worker	0.1716	0.1265	1.1947	3.6000e-003	0.4087	2.4900e-003	0.4112	0.1084	2.2900e-003	0.1107		358.8655	358.8655	8.5400e-003		359.0790
Total	**0.2187**	**1.6053**	**1.5188**	**7.0400e-003**	**0.4884**	**8.7700e-003**	**0.4971**	**0.1313**	**8.3000e-003**	**0.1396**		**718.4266**	**718.4266**	**0.0291**		**719.1534**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328		1,296.9461	1,296.9461	0.4111		1,307.2246
Paving	0.3537					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1939**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**		**1,296.9461**	**1,296.9461**	**0.4111**		**1,307.2246**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0697	0.0514	0.4854	1.4600e-003	0.1661	1.0100e-003	0.1671	0.0440	9.3000e-004	0.0450		145.7891	145.7891	3.4700e-003		145.8759
Total	**0.0697**	**0.0514**	**0.4854**	**1.4600e-003**	**0.1661**	**1.0100e-003**	**0.1671**	**0.0440**	**9.3000e-004**	**0.0450**		**145.7891**	**145.7891**	**3.4700e-003**		**145.8759**

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	0.8402	8.4514	8.8758	0.0135		0.4695	0.4695		0.4328	0.4328	0.0000	1,296.946 1	1,296.946 1	0.4111		1,307.224 6
Paving	0.3537					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1939**	**8.4514**	**8.8758**	**0.0135**		**0.4695**	**0.4695**		**0.4328**	**0.4328**	**0.0000**	**1,296.946 1**	**1,296.946 1**	**0.4111**		**1,307.224 6**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0697	0.0514	0.4854	1.4600e-003	0.1661	1.0100e-003	0.1671	0.0440	9.3000e-004	0.0450		145.7891	145.7891	3.4700e-003		145.8759
Total	**0.0697**	**0.0514**	**0.4854**	**1.4600e-003**	**0.1661**	**1.0100e-003**	**0.1671**	**0.0440**	**9.3000e-004**	**0.0450**		**145.7891**	**145.7891**	**3.4700e-003**		**145.8759**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	5.7011					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**5.9432**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0322	0.0237	0.2240	6.8000e-004	0.0766	4.7000e-004	0.0771	0.0203	4.3000e-004	0.0208		67.2873	67.2873	1.6000e-003		67.3273
Total	**0.0322**	**0.0237**	**0.2240**	**6.8000e-004**	**0.0766**	**4.7000e-004**	**0.0771**	**0.0203**	**4.3000e-004**	**0.0208**		**67.2873**	**67.2873**	**1.6000e-003**		**67.3273**

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	5.7011					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**5.9432**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0322	0.0237	0.2240	6.8000e-004	0.0766	4.7000e-004	0.0771	0.0203	4.3000e-004	0.0208		67.2873	67.2873	1.6000e-003		67.3273
Total	**0.0322**	**0.0237**	**0.2240**	**6.8000e-004**	**0.0766**	**4.7000e-004**	**0.0771**	**0.0203**	**4.3000e-004**	**0.0208**		**67.2873**	**67.2873**	**1.6000e-003**		**67.3273**

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	2.4116	16.0670	47.0027	0.3367	40.5115	0.1283	40.6398	10.8522	0.1200	10.9723		34,282.0347	34,282.0347	0.4995		34,294.5220
Unmitigated	2.4116	16.0670	47.0027	0.3367	40.5115	0.1283	40.6398	10.8522	0.1200	10.9723		34,282.0347	34,282.0347	0.4995		34,294.5220

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.57	6.83	5.02	5,836,363	5,836,363
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.57	6.83	5.02	5,836,363	5,836,363

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
City Park	31,720.00	6.60	6.60	33.00	48.00	19.00	66	28	6
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Single Family Housing	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.528459	0.035705	0.222674	0.107184	0.010160	0.004389	0.036292	0.046532	0.001290	0.001075	0.005013	0.000658	0.000569
General Office Building	0.528459	0.035705	0.222674	0.107184	0.010160	0.004389	0.036292	0.046532	0.001290	0.001075	0.005013	0.000658	0.000569
Parking Lot	0.528459	0.035705	0.222674	0.107184	0.010160	0.004389	0.036292	0.046532	0.001290	0.001075	0.005013	0.000658	0.000569
Single Family Housing	0.528459	0.035705	0.222674	0.107184	0.010160	0.004389	0.036292	0.046532	0.001290	0.001075	0.005013	0.000658	0.000569

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.2200e-003	0.0198	0.0139	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003		24.2433	24.2433	4.6000e-004	4.4000e-004	24.3873
NaturalGas Unmitigated	2.2200e-003	0.0198	0.0139	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003		24.2433	24.2433	4.6000e-004	4.4000e-004	24.3873

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					
City Park	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
General Office Building	135.288	1.4600e-003	0.0133	0.0111	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.9162	15.9162	3.1000e-004	2.9000e-004	16.0108
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
Single Family Housing	70.78	7.6000e-004	6.5200e-003	2.7800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.3271	8.3271	1.6000e-004	1.5000e-004	8.3765
Total		**2.2200e-003**	**0.0198**	**0.0139**	**1.2000e-004**		**1.5400e-003**	**1.5400e-003**		**1.5400e-003**	**1.5400e-003**		**24.2433**	**24.2433**	**4.7000e-004**	**4.4000e-004**	**24.3873**

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					
City Park	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
General Office Building	0.135288	1.4600e-003	0.0133	0.0111	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.9162	15.9162	3.1000e-004	2.9000e-004	16.0108
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
Single Family Housing	0.07078	7.6000e-004	6.5200e-003	2.7800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.3271	8.3271	1.6000e-004	1.5000e-004	8.3765
Total		**2.2200e-003**	**0.0198**	**0.0139**	**1.2000e-004**		**1.5400e-003**	**1.5400e-003**		**1.5400e-003**	**1.5400e-003**		**24.2433**	**24.2433**	**4.7000e-004**	**4.4000e-004**	**24.3873**

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	1.6574	0.0310	1.9866	3.4300e-003		0.2654	0.2654		0.2654	0.2654	27.7717	11.8287	39.6005	0.0259	2.1800e-003	40.8978
Unmitigated	1.6574	0.0310	1.9866	3.4300e-003		0.2654	0.2654		0.2654	0.2654	27.7717	11.8287	39.6005	0.0259	2.1800e-003	40.8978

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	0.0156					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1075					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.5304	0.0299	1.8891	3.4200e-003		0.2649	0.2649		0.2649	0.2649	27.7717	11.6471	39.4188	0.0256	2.1800e-003	40.7105
Landscaping	3.8600e-003	1.0900e-003	0.0975	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.1817	0.1817	2.3000e-004		0.1873
Total	**1.6574**	**0.0310**	**1.9866**	**3.4300e-003**		**0.2654**	**0.2654**		**0.2654**	**0.2654**	**27.7717**	**11.8287**	**39.6005**	**0.0259**	**2.1800e-003**	**40.8978**

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	0.0156					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.1075					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	1.5304	0.0299	1.8891	3.4200e-003		0.2649	0.2649		0.2649	0.2649	27.7717	11.6471	39.4188	0.0256	2.1800e-003	40.7105
Landscaping	3.8600e-003	1.0900e-003	0.0975	1.0000e-005		5.1000e-004	5.1000e-004		5.1000e-004	5.1000e-004		0.1817	0.1817	2.3000e-004		0.1873
Total	**1.6574**	**0.0310**	**1.9866**	**3.4300e-003**		**0.2654**	**0.2654**		**0.2654**	**0.2654**	**27.7717**	**11.8287**	**39.6005**	**0.0259**	**2.1800e-003**	**40.8978**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

RME Alt

Placer-Mountain Counties County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	3,000.00	0
Parking Lot	50.00	Space	0.45	20,000.00	0
City Park	0.10	Acre	0.10	4,356.00	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,000.00	1

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	294	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor for PG&E Adjusted - Source: The Climate Registry - Default Emissions Factors (2016)

Land Use - Residential land use in place to acount for wood burn at campfires from new campsites.

Construction Phase - No demolition would occur as part of the project.

Vehicle Trips - Trip rate adjusted to match project generated VMT based on project traffic study.

Woodstoves - Adjusted to account for campfire emissions.

Energy Use - Single family home modeled for alternative campsite (cabin). Cabin assumed only to have lighting demand.

Fleet Mix - Adjusted base on Regional Park land use

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceDayYear	82.00	365.00
tblFireplaces	FireplaceWoodMass	3,078.40	18,752.00
tblFireplaces	NumberNoFireplace	0.10	1.00
tblFireplaces	NumberWood	0.35	1.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	LDA	0.53	0.64
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.04	0.09
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.22	0.27
tblFleetMix	LDT2	0.22	0.00

tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	OBUS	1.2900e-003	0.00

tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblLandUse	LandUseSquareFeet	1,000.00	3,000.00
tblLandUse	LandUseSquareFeet	1,800.00	1,000.00
tblLandUse	Population	3.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	294
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	CW_TL	14.70	63,300.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1581	1.0950	0.9436	1.6600e-003	0.0224	0.0611	0.0834	6.3700e-003	0.0564	0.0628	0.0000	147.0610	147.0610	0.0375	0.0000	147.9982
Maximum	**0.1581**	**1.0950**	**0.9436**	**1.6600e-003**	**0.0224**	**0.0611**	**0.0834**	**6.3700e-003**	**0.0564**	**0.0628**	**0.0000**	**147.0610**	**147.0610**	**0.0375**	**0.0000**	**147.9982**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1581	1.0950	0.9436	1.6600e-003	0.0224	0.0611	0.0834	6.3700e-003	0.0564	0.0628	0.0000	147.0608	147.0608	0.0375	0.0000	147.9980
Maximum	**0.1581**	**1.0950**	**0.9436**	**1.6600e-003**	**0.0224**	**0.0611**	**0.0834**	**6.3700e-003**	**0.0564**	**0.0628**	**0.0000**	**147.0608**	**147.0608**	**0.0375**	**0.0000**	**147.9980**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	0.3183	0.3183
2	4-1-2020	6-30-2020	0.3379	0.3379
3	7-1-2020	9-30-2020	0.3416	0.3416
		Highest	0.3416	0.3416

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0933	0.0139	1.1928	1.8900e-003		0.1624	0.1624		0.1624	0.1624	14.4598	1.9413	16.4011	5.0000e-005	1.3100e-003	16.7932
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	10.0780	10.0780	6.8000e-004	2.0000e-004	10.1536
Mobile	0.0153	0.0923	1.2622	7.8400e-003	1.4096	2.8800e-003	1.4125	0.3750	2.6500e-003	0.3776	0.0000	711.3429	711.3429	5.5500e-003	0.0000	711.4817
Waste						0.0000	0.0000		0.0000	0.0000	0.2639	0.0000	0.2639	0.0156	0.0000	0.6538
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.3009	0.3780	7.9400e-003	1.9000e-004	0.6341
Total	**1.1090**	**0.1099**	**2.4575**	**9.7500e-003**	**1.4096**	**0.1655**	**1.5751**	**0.3750**	**0.1653**	**0.5403**	**14.8008**	**723.6631**	**738.4639**	**0.0298**	**1.7000e-003**	**739.7163**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0933	0.0139	1.1928	1.8900e-003		0.1624	0.1624		0.1624	0.1624	14.4598	1.9413	16.4011	5.0000e-005	1.3100e-003	16.7932
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	10.0780	10.0780	6.8000e-004	2.0000e-004	10.1536
Mobile	0.0153	0.0923	1.2622	7.8400e-003	1.4096	2.8800e-003	1.4125	0.3750	2.6500e-003	0.3776	0.0000	711.3429	711.3429	5.5500e-003	0.0000	711.4817
Waste						0.0000	0.0000		0.0000	0.0000	0.2639	0.0000	0.2639	0.0156	0.0000	0.6538
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.3009	0.3780	7.9400e-003	1.9000e-004	0.6341
Total	**1.1090**	**0.1099**	**2.4575**	**9.7500e-003**	**1.4096**	**0.1655**	**1.5751**	**0.3750**	**0.1653**	**0.5403**	**14.8008**	**723.6631**	**738.4639**	**0.0298**	**1.7000e-003**	**739.7163**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	1/1/2020	1/28/2020	5	10	
2	Site Preparation	Site Preparation	1/29/2020	1/30/2020	5	1	
3	Grading	Grading	1/31/2020	2/5/2020	5	2	
4	Building Construction	Building Construction	2/6/2020	11/11/2020	5	100	
5	Paving	Paving	11/12/2020	11/25/2020	5	5	
6	Architectural Coating	Architectural Coating	11/26/2020	12/9/2020	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.45

Residential Indoor: 2,025; Residential Outdoor: 675; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 1,200 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	12.00	5.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.6700e-003	0.0787	0.0762	1.2000e-004		4.6700e-003	4.6700e-003		4.4600e-003	4.4600e-003	0.0000	10.4075	10.4075	1.9700e-003	0.0000	10.4567
Total	**8.6700e-003**	**0.0787**	**0.0762**	**1.2000e-004**		**4.6700e-003**	**4.6700e-003**		**4.4600e-003**	**4.4600e-003**	**0.0000**	**10.4075**	**10.4075**	**1.9700e-003**	**0.0000**	**10.4567**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	3.6000e-004	3.7400e-003	1.0000e-005	1.2200e-003	1.0000e-005	1.2300e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0431	1.0431	2.0000e-005	0.0000	1.0437
Total	**4.8000e-004**	**3.6000e-004**	**3.7400e-003**	**1.0000e-005**	**1.2200e-003**	**1.0000e-005**	**1.2300e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0431**	**1.0431**	**2.0000e-005**	**0.0000**	**1.0437**

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	8.6700e-003	0.0787	0.0762	1.2000e-004		4.6700e-003	4.6700e-003		4.4600e-003	4.4600e-003	0.0000	10.4075	10.4075	1.9700e-003	0.0000	10.4567
Total	**8.6700e-003**	**0.0787**	**0.0762**	**1.2000e-004**		**4.6700e-003**	**4.6700e-003**		**4.4600e-003**	**4.4600e-003**	**0.0000**	**10.4075**	**10.4075**	**1.9700e-003**	**0.0000**	**10.4567**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	3.6000e-004	3.7400e-003	1.0000e-005	1.2200e-003	1.0000e-005	1.2300e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0431	1.0431	2.0000e-005	0.0000	1.0437
Total	**4.8000e-004**	**3.6000e-004**	**3.7400e-003**	**1.0000e-005**	**1.2200e-003**	**1.0000e-005**	**1.2300e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0431**	**1.0431**	**2.0000e-005**	**0.0000**	**1.0437**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9000e-004	8.4300e-003	4.0900e-003	1.0000e-005		3.4000e-004	3.4000e-004		3.1000e-004	3.1000e-004	0.0000	0.8559	0.8559	2.8000e-004	0.0000	0.8628
Total	**6.9000e-004**	**8.4300e-003**	**4.0900e-003**	**1.0000e-005**	**5.3000e-004**	**3.4000e-004**	**8.7000e-004**	**6.0000e-005**	**3.1000e-004**	**3.7000e-004**	**0.0000**	**0.8559**	**0.8559**	**2.8000e-004**	**0.0000**	**0.8628**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0522	0.0522	0.0000	0.0000	0.0522
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0522**	**0.0522**	**0.0000**	**0.0000**	**0.0522**

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					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9000e-004	8.4300e-003	4.0900e-003	1.0000e-005		3.4000e-004	3.4000e-004		3.1000e-004	3.1000e-004	0.0000	0.8559	0.8559	2.8000e-004	0.0000	0.8628
Total	**6.9000e-004**	**8.4300e-003**	**4.0900e-003**	**1.0000e-005**	**5.3000e-004**	**3.4000e-004**	**8.7000e-004**	**6.0000e-005**	**3.1000e-004**	**3.7000e-004**	**0.0000**	**0.8559**	**0.8559**	**2.8000e-004**	**0.0000**	**0.8628**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0522	0.0522	0.0000	0.0000	0.0522
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0522**	**0.0522**	**0.0000**	**0.0000**	**0.0522**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5100e-003	0.0000	1.5100e-003	8.3000e-004	0.0000	8.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7300e-003	0.0158	0.0153	2.0000e-005		9.3000e-004	9.3000e-004		8.9000e-004	8.9000e-004	0.0000	2.0815	2.0815	3.9000e-004	0.0000	2.0914
Total	**1.7300e-003**	**0.0158**	**0.0153**	**2.0000e-005**	**1.5100e-003**	**9.3000e-004**	**2.4400e-003**	**8.3000e-004**	**8.9000e-004**	**1.7200e-003**	**0.0000**	**2.0815**	**2.0815**	**3.9000e-004**	**0.0000**	**2.0914**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	7.0000e-005	7.5000e-004	0.0000	2.4000e-004	0.0000	2.5000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2086	0.2086	0.0000	0.0000	0.2088
Total	**1.0000e-004**	**7.0000e-005**	**7.5000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.5000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2086**	**0.2086**	**0.0000**	**0.0000**	**0.2088**

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					1.5100e-003	0.0000	1.5100e-003	8.3000e-004	0.0000	8.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7300e-003	0.0158	0.0153	2.0000e-005		9.3000e-004	9.3000e-004		8.9000e-004	8.9000e-004	0.0000	2.0815	2.0815	3.9000e-004	0.0000	2.0913
Total	**1.7300e-003**	**0.0158**	**0.0153**	**2.0000e-005**	**1.5100e-003**	**9.3000e-004**	**2.4400e-003**	**8.3000e-004**	**8.9000e-004**	**1.7200e-003**	**0.0000**	**2.0815**	**2.0815**	**3.9000e-004**	**0.0000**	**2.0913**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	7.0000e-005	7.5000e-004	0.0000	2.4000e-004	0.0000	2.5000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2086	0.2086	0.0000	0.0000	0.2088
Total	**1.0000e-004**	**7.0000e-005**	**7.5000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.5000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2086**	**0.2086**	**0.0000**	**0.0000**	**0.2088**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0862	0.8852	0.7388	1.1400e-003		0.0522	0.0522		0.0481	0.0481	0.0000	100.0605	100.0605	0.0324	0.0000	100.8695
Total	**0.0862**	**0.8852**	**0.7388**	**1.1400e-003**		**0.0522**	**0.0522**		**0.0481**	**0.0481**	**0.0000**	**100.0605**	**100.0605**	**0.0324**	**0.0000**	**100.8695**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7500e-003	0.0572	0.0113	1.4000e-004	2.9500e-003	2.4000e-004	3.1900e-003	8.5000e-004	2.3000e-004	1.0800e-003	0.0000	12.8180	12.8180	6.7000e-004	0.0000	12.8347
Worker	5.8200e-003	4.3000e-003	0.0449	1.4000e-004	0.0147	9.0000e-005	0.0148	3.9000e-003	9.0000e-005	3.9800e-003	0.0000	12.5175	12.5175	3.0000e-004	0.0000	12.5248
Total	**7.5700e-003**	**0.0615**	**0.0562**	**2.8000e-004**	**0.0176**	**3.3000e-004**	**0.0179**	**4.7500e-003**	**3.2000e-004**	**5.0600e-003**	**0.0000**	**25.3354**	**25.3354**	**9.7000e-004**	**0.0000**	**25.3596**

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	0.0862	0.8852	0.7388	1.1400e-003		0.0522	0.0522		0.0481	0.0481	0.0000	100.0604	100.0604	0.0324	0.0000	100.8694
Total	**0.0862**	**0.8852**	**0.7388**	**1.1400e-003**		**0.0522**	**0.0522**		**0.0481**	**0.0481**	**0.0000**	**100.0604**	**100.0604**	**0.0324**	**0.0000**	**100.8694**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7500e-003	0.0572	0.0113	1.4000e-004	2.9500e-003	2.4000e-004	3.1900e-003	8.5000e-004	2.3000e-004	1.0800e-003	0.0000	12.8180	12.8180	6.7000e-004	0.0000	12.8347
Worker	5.8200e-003	4.3000e-003	0.0449	1.4000e-004	0.0147	9.0000e-005	0.0148	3.9000e-003	9.0000e-005	3.9800e-003	0.0000	12.5175	12.5175	3.0000e-004	0.0000	12.5248
Total	**7.5700e-003**	**0.0615**	**0.0562**	**2.8000e-004**	**0.0176**	**3.3000e-004**	**0.0179**	**4.7500e-003**	**3.2000e-004**	**5.0600e-003**	**0.0000**	**25.3354**	**25.3354**	**9.7000e-004**	**0.0000**	**25.3596**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8600e-003	0.0361	0.0356	6.0000e-005		1.9800e-003	1.9800e-003		1.8300e-003	1.8300e-003	0.0000	4.6965	4.6965	1.3700e-003	0.0000	4.7307
Paving	1.1800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0400e-003**	**0.0361**	**0.0356**	**6.0000e-005**		**1.9800e-003**	**1.9800e-003**		**1.8300e-003**	**1.8300e-003**	**0.0000**	**4.6965**	**4.6965**	**1.3700e-003**	**0.0000**	**4.7307**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.2000e-004	3.3700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9388	0.9388	2.0000e-005	0.0000	0.9394
Total	**4.4000e-004**	**3.2000e-004**	**3.3700e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9388**	**0.9388**	**2.0000e-005**	**0.0000**	**0.9394**

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	3.8600e-003	0.0361	0.0356	6.0000e-005		1.9800e-003	1.9800e-003		1.8300e-003	1.8300e-003	0.0000	4.6965	4.6965	1.3700e-003	0.0000	4.7307
Paving	1.1800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0400e-003**	**0.0361**	**0.0356**	**6.0000e-005**		**1.9800e-003**	**1.9800e-003**		**1.8300e-003**	**1.8300e-003**	**0.0000**	**4.6965**	**4.6965**	**1.3700e-003**	**0.0000**	**4.7307**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.2000e-004	3.3700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9388	0.9388	2.0000e-005	0.0000	0.9394
Total	**4.4000e-004**	**3.2000e-004**	**3.3700e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9388**	**0.9388**	**2.0000e-005**	**0.0000**	**0.9394**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0459					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0471**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.7000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1043	0.1043	0.0000	0.0000	0.1044
Total	**5.0000e-005**	**4.0000e-005**	**3.7000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1043**	**0.1043**	**0.0000**	**0.0000**	**0.1044**

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	0.0459					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0471**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.7000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1043	0.1043	0.0000	0.0000	0.1044
Total	**5.0000e-005**	**4.0000e-005**	**3.7000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1043**	**0.1043**	**0.0000**	**0.0000**	**0.1044**

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	0.0153	0.0923	1.2622	7.8400e-003	1.4096	2.8800e-003	1.4125	0.3750	2.6500e-003	0.3776	0.0000	711.3429	711.3429	5.5500e-003	0.0000	711.4817
Unmitigated	0.0153	0.0923	1.2622	7.8400e-003	1.4096	2.8800e-003	1.4125	0.3750	2.6500e-003	0.3776	0.0000	711.3429	711.3429	5.5500e-003	0.0000	711.4817

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.19	2.28	1.67	3,881,503	3,881,503
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.19	2.28	1.67	3,881,503	3,881,503

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
City Park	63,300.00	6.60	6.60	33.00	48.00	19.00	66	28	6
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Single Family Housing	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.644000	0.085000	0.272000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
General Office Building	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Parking Lot	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Single Family Housing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.0642	6.0642	6.0000e-004	1.2000e-004	6.1160
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.0642	6.0642	6.0000e-004	1.2000e-004	6.1160
NaturalGas Mitigated	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	4.0137	4.0137	8.0000e-005	7.0000e-005	4.0376
NaturalGas Unmitigated	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	4.0137	4.0137	8.0000e-005	7.0000e-005	4.0376

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					
City Park	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
General Office Building	49380	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6351	2.6351	5.0000e-005	5.0000e-005	2.6508
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
Single Family Housing	25834.7	1.4000e-004	1.1900e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3786	1.3786	3.0000e-005	3.0000e-005	1.3868
Total		**4.1000e-004**	**3.6100e-003**	**2.5400e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**4.0137**	**4.0137**	**8.0000e-005**	**8.0000e-005**	**4.0376**

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					
City Park	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
General Office Building	49380	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6351	2.6351	5.0000e-005	5.0000e-005	2.6508
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
Single Family Housing	25834.7	1.4000e-004	1.1900e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3786	1.3786	3.0000e-005	3.0000e-005	1.3868
Total		**4.1000e-004**	**3.6100e-003**	**2.5400e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**4.0137**	**4.0137**	**8.0000e-005**	**8.0000e-005**	**4.0376**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30030	4.0047	4.0000e-004	8.0000e-005	4.0389
Parking Lot	7000	0.9335	9.0000e-005	2.0000e-005	0.9415
Single Family Housing	8443.78	1.1260	1.1000e-004	2.0000e-005	1.1357
Total		**6.0642**	**6.0000e-004**	**1.2000e-004**	**6.1160**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30030	4.0047	4.0000e-004	8.0000e-005	4.0389
Parking Lot	7000	0.9335	9.0000e-005	2.0000e-005	0.9415
Single Family Housing	8443.78	1.1260	1.1000e-004	2.0000e-005	1.1357
Total		**6.0642**	**6.0000e-004**	**1.2000e-004**	**6.1160**

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	1.0933	0.0139	1.1928	1.8900e-003		0.1624	0.1624		0.1624	0.1624	14.4598	1.9413	16.4011	5.0000e-005	1.3100e-003	16.7932
Unmitigated	1.0933	0.0139	1.1928	1.8900e-003		0.1624	0.1624		0.1624	0.1624	14.4598	1.9413	16.4011	5.0000e-005	1.3100e-003	16.7932

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	2.2900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0170					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.0738	0.0139	1.1849	1.8900e-003		0.1623	0.1623		0.1623	0.1623	14.4598	1.9283	16.3881	4.0000e-005	1.3100e-003	16.7798
Landscaping	2.6000e-004	9.0000e-005	7.8600e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0130	0.0130	1.0000e-005	0.0000	0.0134
Total	**1.0933**	**0.0139**	**1.1928**	**1.8900e-003**		**0.1624**	**0.1624**		**0.1624**	**0.1624**	**14.4598**	**1.9413**	**16.4011**	**5.0000e-005**	**1.3100e-003**	**16.7932**

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	2.2900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0170					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.0738	0.0139	1.1849	1.8900e-003		0.1623	0.1623		0.1623	0.1623	14.4598	1.9283	16.3881	4.0000e-005	1.3100e-003	16.7798
Landscaping	2.6000e-004	9.0000e-005	7.8600e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0130	0.0130	1.0000e-005	0.0000	0.0134
Total	**1.0933**	**0.0139**	**1.1928**	**1.8900e-003**		**0.1624**	**0.1624**		**0.1624**	**0.1624**	**14.4598**	**1.9413**	**16.4011**	**5.0000e-005**	**1.3100e-003**	**16.7932**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.3780	7.9400e-003	1.9000e-004	0.6341
Unmitigated	0.3780	7.9400e-003	1.9000e-004	0.6341

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.119148	0.0556	1.0000e-005	0.0000	0.0561
General Office Building	0.177734 / 0.108934	0.2355	5.8100e-003	1.4000e-004	0.4226
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.0869	2.1300e-003	5.0000e-005	0.1554
Total		**0.3780**	**7.9500e-003**	**1.9000e-004**	**0.6341**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.119148	0.0556	1.0000e-005	0.0000	0.0561
General Office Building	0.177734 / 0.108934	0.2355	5.8100e-003	1.4000e-004	0.4226
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.0869	2.1300e-003	5.0000e-005	0.1554
Total		**0.3780**	**7.9500e-003**	**1.9000e-004**	**0.6341**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2639	0.0156	0.0000	0.6538
Unmitigated	0.2639	0.0156	0.0000	0.6538

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.01	2.0300e-003	1.2000e-004	0.0000	5.0300e-003
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.36	0.0731	4.3200e-003	0.0000	0.1810
Total		**0.2639**	**0.0156**	**0.0000**	**0.6538**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.01	2.0300e-003	1.2000e-004	0.0000	5.0300e-003
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.36	0.0731	4.3200e-003	0.0000	0.1810
Total		**0.2639**	**0.0156**	**0.0000**	**0.6538**

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

RME Alt

Placer-Mountain Counties County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	3,000.00	0
Parking Lot	50.00	Space	0.45	20,000.00	0
City Park	0.10	Acre	0.10	4,356.00	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,000.00	1

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	74
Climate Zone	2			**Operational Year**	2040
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	294	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 Intensity Factor for PG&E Adjusted - Source: The Climate Registry - Default Emissions Factors (2016)

Land Use - Residential land use in place to acount for wood burn at campfires from new campsites.

Construction Phase - No demolition would occur as part of the project.

Vehicle Trips - Trip rate adjusted to match project generated VMT based on project traffic study.

Woodstoves - Adjusted to account for campfire emissions.

Energy Use - Single family home modeled for alternative campsite (cabin). Cabin assumed only to have lighting demand.

Fleet Mix - Adjusted base on Regional Park land use

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceDayYear	82.00	365.00
tblFireplaces	FireplaceWoodMass	3,078.40	18,752.00
tblFireplaces	NumberNoFireplace	0.10	1.00
tblFireplaces	NumberWood	0.35	1.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	LDA	0.53	0.64
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.04	0.09
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.22	0.27
tblFleetMix	LDT2	0.22	0.00

tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	OBUS	1.2900e-003	0.00

tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblLandUse	LandUseSquareFeet	1,000.00	3,000.00
tblLandUse	LandUseSquareFeet	1,800.00	1,000.00
tblLandUse	Population	3.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	294
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	CW_TL	14.70	63,300.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	9.4302	9.4685	7.9959	0.0141	0.8805	0.5257	1.3485	0.4477	0.4838	0.8940	0.0000	1,375.8454	1,375.8454	0.3678	0.0000	1,385.0410
Maximum	**9.4302**	**9.4685**	**7.9959**	**0.0141**	**0.8805**	**0.5257**	**1.3485**	**0.4477**	**0.4838**	**0.8940**	**0.0000**	**1,375.8454**	**1,375.8454**	**0.3678**	**0.0000**	**1,385.0410**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	9.4302	9.4685	7.9959	0.0141	0.8805	0.5257	1.3485	0.4477	0.4838	0.8940	0.0000	1,375.8454	1,375.8454	0.3678	0.0000	1,385.0410
Maximum	**9.4302**	**9.4685**	**7.9959**	**0.0141**	**0.8805**	**0.5257**	**1.3485**	**0.4477**	**0.4838**	**0.8940**	**0.0000**	**1,375.8454**	**1,375.8454**	**0.3678**	**0.0000**	**1,385.0410**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.9920	0.0769	6.5799	0.0103		0.8900	0.8900		0.8900	0.8900	87.3381	11.8068	99.1449	3.9000e-004	7.9200e-003	101.5148
Energy	2.2200e-003	0.0198	0.0139	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003		24.2433	24.2433	4.6000e-004	4.4000e-004	24.3873
Mobile	0.2605	1.8235	21.5503	0.1369	26.3645	0.0515	26.4160	6.9894	0.0474	7.0367		13,681.9806	13,681.9806	0.1041		13,684.5836
Total	**6.2546**	**1.9202**	**28.1441**	**0.1473**	**26.3645**	**0.9430**	**27.3075**	**6.9894**	**0.9389**	**7.9283**	**87.3381**	**13,718.0307**	**13,805.3688**	**0.1050**	**8.3600e-003**	**13,810.4857**

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	5.9920	0.0769	6.5799	0.0103		0.8900	0.8900		0.8900	0.8900	87.3381	11.8068	99.1449	3.9000e-004	7.9200e-003	101.5148
Energy	2.2200e-003	0.0198	0.0139	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003		24.2433	24.2433	4.6000e-004	4.4000e-004	24.3873
Mobile	0.2605	1.8235	21.5503	0.1369	26.3645	0.0515	26.4160	6.9894	0.0474	7.0367		13,681.9806	13,681.9806	0.1041		13,684.5836
Total	**6.2546**	**1.9202**	**28.1441**	**0.1473**	**26.3645**	**0.9430**	**27.3075**	**6.9894**	**0.9389**	**7.9283**	**87.3381**	**13,718.0307**	**13,805.3688**	**0.1050**	**8.3600e-003**	**13,810.4857**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	1/1/2020	1/28/2020	5	10	
2	Site Preparation	Site Preparation	1/29/2020	1/30/2020	5	1	
3	Grading	Grading	1/31/2020	2/5/2020	5	2	
4	Building Construction	Building Construction	2/6/2020	11/11/2020	5	100	
5	Paving	Paving	11/12/2020	11/25/2020	5	5	
6	Architectural Coating	Architectural Coating	11/26/2020	12/9/2020	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.45

Residential Indoor: 2,025; Residential Outdoor: 675; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 1,200 (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	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	12.00	5.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457		1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**		**0.4672**	**0.4672**		**0.4457**	**0.4457**		**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0395	0.3733	1.1300e-003	0.1277	7.8000e-004	0.1285	0.0339	7.2000e-004	0.0346		112.1455	112.1455	2.6700e-003		112.2122
Total	**0.0536**	**0.0395**	**0.3733**	**1.1300e-003**	**0.1277**	**7.8000e-004**	**0.1285**	**0.0339**	**7.2000e-004**	**0.0346**		**112.1455**	**112.1455**	**2.6700e-003**		**112.2122**

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	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457	0.0000	1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**		**0.4672**	**0.4672**		**0.4457**	**0.4457**	**0.0000**	**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0395	0.3733	1.1300e-003	0.1277	7.8000e-004	0.1285	0.0339	7.2000e-004	0.0346		112.1455	112.1455	2.6700e-003		112.2122
Total	**0.0536**	**0.0395**	**0.3733**	**1.1300e-003**	**0.1277**	**7.8000e-004**	**0.1285**	**0.0339**	**7.2000e-004**	**0.0346**		**112.1455**	**112.1455**	**2.6700e-003**		**112.2122**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085		943.4872	943.4872	0.3051		951.1158
Total	**0.6853**	**8.4307**	**4.0942**	**9.7400e-003**	**0.5303**	**0.3353**	**0.8656**	**0.0573**	**0.3085**	**0.3658**		**943.4872**	**943.4872**	**0.3051**		**951.1158**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0268	0.0198	0.1867	5.6000e-004	0.0639	3.9000e-004	0.0643	0.0169	3.6000e-004	0.0173		56.0727	56.0727	1.3300e-003		56.1061
Total	**0.0268**	**0.0198**	**0.1867**	**5.6000e-004**	**0.0639**	**3.9000e-004**	**0.0643**	**0.0169**	**3.6000e-004**	**0.0173**		**56.0727**	**56.0727**	**1.3300e-003**		**56.1061**

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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6853	8.4307	4.0942	9.7400e-003		0.3353	0.3353		0.3085	0.3085	0.0000	943.4872	943.4872	0.3051		951.1158
Total	**0.6853**	**8.4307**	**4.0942**	**9.7400e-003**	**0.5303**	**0.3353**	**0.8656**	**0.0573**	**0.3085**	**0.3658**	**0.0000**	**943.4872**	**943.4872**	**0.3051**		**951.1158**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	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	0.0268	0.0198	0.1867	5.6000e-004	0.0639	3.9000e-004	0.0643	0.0169	3.6000e-004	0.0173		56.0727	56.0727	1.3300e-003		56.1061
Total	**0.0268**	**0.0198**	**0.1867**	**5.6000e-004**	**0.0639**	**3.9000e-004**	**0.0643**	**0.0169**	**3.6000e-004**	**0.0173**		**56.0727**	**56.0727**	**1.3300e-003**		**56.1061**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457		1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**	**0.7528**	**0.4672**	**1.2200**	**0.4138**	**0.4457**	**0.8595**		**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0395	0.3733	1.1300e-003	0.1277	7.8000e-004	0.1285	0.0339	7.2000e-004	0.0346		112.1455	112.1455	2.6700e-003		112.2122
Total	**0.0536**	**0.0395**	**0.3733**	**1.1300e-003**	**0.1277**	**7.8000e-004**	**0.1285**	**0.0339**	**7.2000e-004**	**0.0346**		**112.1455**	**112.1455**	**2.6700e-003**		**112.2122**

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					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.8674	7.8729	7.6226	0.0120		0.4672	0.4672		0.4457	0.4457	0.0000	1,147.2352	1,147.2352	0.2169		1,152.6578
Total	**0.8674**	**7.8729**	**7.6226**	**0.0120**	**0.7528**	**0.4672**	**1.2200**	**0.4138**	**0.4457**	**0.8595**	**0.0000**	**1,147.2352**	**1,147.2352**	**0.2169**		**1,152.6578**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0536	0.0395	0.3733	1.1300e-003	0.1277	7.8000e-004	0.1285	0.0339	7.2000e-004	0.0346		112.1455	112.1455	2.6700e-003		112.2122
Total	**0.0536**	**0.0395**	**0.3733**	**1.1300e-003**	**0.1277**	**7.8000e-004**	**0.1285**	**0.0339**	**7.2000e-004**	**0.0346**		**112.1455**	**112.1455**	**2.6700e-003**		**112.2122**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806		1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**		**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0181	0.5688	0.1246	1.3200e-003	0.0306	2.4100e-003	0.0331	8.8200e-003	2.3100e-003	0.0111		138.2927	138.2927	7.9000e-003		138.4901
Worker	0.0644	0.0474	0.4480	1.3500e-003	0.1533	9.3000e-004	0.1542	0.0407	8.6000e-004	0.0415		134.5746	134.5746	3.2000e-003		134.6546
Total	**0.0824**	**0.6162**	**0.5727**	**2.6700e-003**	**0.1839**	**3.3400e-003**	**0.1873**	**0.0495**	**3.1700e-003**	**0.0526**		**272.8673**	**272.8673**	**0.0111**		**273.1448**

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	0.8617	8.8523	7.3875	0.0114		0.5224	0.5224		0.4806	0.4806	0.0000	1,102.9781	1,102.9781	0.3567		1,111.8962
Total	**0.8617**	**8.8523**	**7.3875**	**0.0114**		**0.5224**	**0.5224**		**0.4806**	**0.4806**	**0.0000**	**1,102.9781**	**1,102.9781**	**0.3567**		**1,111.8962**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0181	0.5688	0.1246	1.3200e-003	0.0306	2.4100e-003	0.0331	8.8200e-003	2.3100e-003	0.0111		138.2927	138.2927	7.9000e-003		138.4901
Worker	0.0644	0.0474	0.4480	1.3500e-003	0.1533	9.3000e-004	0.1542	0.0407	8.6000e-004	0.0415		134.5746	134.5746	3.2000e-003		134.6546
Total	**0.0824**	**0.6162**	**0.5727**	**2.6700e-003**	**0.1839**	**3.3400e-003**	**0.1873**	**0.0495**	**3.1700e-003**	**0.0526**		**272.8673**	**272.8673**	**0.0111**		**273.1448**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669		1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.2358					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0074**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**		**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0965	0.0712	0.6720	2.0300e-003	0.2299	1.4000e-003	0.2313	0.0610	1.2900e-003	0.0623		201.8619	201.8619	4.8000e-003		201.9820
Total	**0.0965**	**0.0712**	**0.6720**	**2.0300e-003**	**0.2299**	**1.4000e-003**	**0.2313**	**0.0610**	**1.2900e-003**	**0.0623**		**201.8619**	**201.8619**	**4.8000e-003**		**201.9820**

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	0.7716	7.2266	7.1128	0.0113		0.3950	0.3950		0.3669	0.3669	0.0000	1,035.3926	1,035.3926	0.3016		1,042.9323
Paving	0.2358					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.0074**	**7.2266**	**7.1128**	**0.0113**		**0.3950**	**0.3950**		**0.3669**	**0.3669**	**0.0000**	**1,035.3926**	**1,035.3926**	**0.3016**		**1,042.9323**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0965	0.0712	0.6720	2.0300e-003	0.2299	1.4000e-003	0.2313	0.0610	1.2900e-003	0.0623		201.8619	201.8619	4.8000e-003		201.9820
Total	**0.0965**	**0.0712**	**0.6720**	**2.0300e-003**	**0.2299**	**1.4000e-003**	**0.2313**	**0.0610**	**1.2900e-003**	**0.0623**		**201.8619**	**201.8619**	**4.8000e-003**		**201.9820**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.1773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**9.4195**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0107	7.9100e-003	0.0747	2.3000e-004	0.0256	1.6000e-004	0.0257	6.7700e-003	1.4000e-004	6.9200e-003		22.4291	22.4291	5.3000e-004		22.4424
Total	**0.0107**	**7.9100e-003**	**0.0747**	**2.3000e-004**	**0.0256**	**1.6000e-004**	**0.0257**	**6.7700e-003**	**1.4000e-004**	**6.9200e-003**		**22.4291**	**22.4291**	**5.3000e-004**		**22.4424**

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	9.1773					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**9.4195**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0107	7.9100e-003	0.0747	2.3000e-004	0.0256	1.6000e-004	0.0257	6.7700e-003	1.4000e-004	6.9200e-003		22.4291	22.4291	5.3000e-004		22.4424
Total	**0.0107**	**7.9100e-003**	**0.0747**	**2.3000e-004**	**0.0256**	**1.6000e-004**	**0.0257**	**6.7700e-003**	**1.4000e-004**	**6.9200e-003**		**22.4291**	**22.4291**	**5.3000e-004**		**22.4424**

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	0.2605	1.8235	21.5503	0.1369	26.3645	0.0515	26.4160	6.9894	0.0474	7.0367		13,681.9806	13,681.9806	0.1041		13,684.5836
Unmitigated	0.2605	1.8235	21.5503	0.1369	26.3645	0.0515	26.4160	6.9894	0.0474	7.0367		13,681.9806	13,681.9806	0.1041		13,684.5836

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.19	2.28	1.67	3,881,503	3,881,503
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.19	2.28	1.67	3,881,503	3,881,503

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
City Park	63,300.00	6.60	6.60	33.00	48.00	19.00	66	28	6
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Single Family Housing	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.644000	0.085000	0.272000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
General Office Building	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Parking Lot	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Single Family Housing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.2200e-003	0.0198	0.0139	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003		24.2433	24.2433	4.6000e-004	4.4000e-004	24.3873
NaturalGas Unmitigated	2.2200e-003	0.0198	0.0139	1.2000e-004		1.5400e-003	1.5400e-003		1.5400e-003	1.5400e-003		24.2433	24.2433	4.6000e-004	4.4000e-004	24.3873

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					
City Park	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
General Office Building	135.288	1.4600e-003	0.0133	0.0111	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.9162	15.9162	3.1000e-004	2.9000e-004	16.0108
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
Single Family Housing	70.78	7.6000e-004	6.5200e-003	2.7800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.3271	8.3271	1.6000e-004	1.5000e-004	8.3765
Total		**2.2200e-003**	**0.0198**	**0.0139**	**1.2000e-004**		**1.5400e-003**	**1.5400e-003**		**1.5400e-003**	**1.5400e-003**		**24.2433**	**24.2433**	**4.7000e-004**	**4.4000e-004**	**24.3873**

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					
City Park	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
General Office Building	0.135288	1.4600e-003	0.0133	0.0111	8.0000e-005		1.0100e-003	1.0100e-003		1.0100e-003	1.0100e-003		15.9162	15.9162	3.1000e-004	2.9000e-004	16.0108
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
Single Family Housing	0.07078	7.6000e-004	6.5200e-003	2.7800e-003	4.0000e-005		5.3000e-004	5.3000e-004		5.3000e-004	5.3000e-004		8.3271	8.3271	1.6000e-004	1.5000e-004	8.3765
Total		**2.2200e-003**	**0.0198**	**0.0139**	**1.2000e-004**		**1.5400e-003**	**1.5400e-003**		**1.5400e-003**	**1.5400e-003**		**24.2433**	**24.2433**	**4.7000e-004**	**4.4000e-004**	**24.3873**

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	5.9920	0.0769	6.5799	0.0103		0.8900	0.8900		0.8900	0.8900	87.3381	11.8068	99.1449	3.9000e-004	7.9200e-003	101.5148
Unmitigated	5.9920	0.0769	6.5799	0.0103		0.8900	0.8900		0.8900	0.8900	87.3381	11.8068	99.1449	3.9000e-004	7.9200e-003	101.5148

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	0.0126					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0929					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	5.8835	0.0759	6.4926	0.0103		0.8895	0.8895		0.8895	0.8895	87.3381	11.6471	98.9851	2.2000e-004	7.9200e-003	101.3508
Landscaping	2.9300e-003	9.9000e-004	0.0873	0.0000		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.1597	0.1597	1.7000e-004		0.1640
Total	**5.9920**	**0.0769**	**6.5799**	**0.0103**		**0.8900**	**0.8900**		**0.8900**	**0.8900**	**87.3381**	**11.8068**	**99.1449**	**3.9000e-004**	**7.9200e-003**	**101.5148**

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	0.0126					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0929					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	5.8835	0.0759	6.4926	0.0103		0.8895	0.8895		0.8895	0.8895	87.3381	11.6471	98.9851	2.2000e-004	7.9200e-003	101.3508
Landscaping	2.9300e-003	9.9000e-004	0.0873	0.0000		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		0.1597	0.1597	1.7000e-004		0.1640
Total	**5.9920**	**0.0769**	**6.5799**	**0.0103**		**0.8900**	**0.8900**		**0.8900**	**0.8900**	**87.3381**	**11.8068**	**99.1449**	**3.9000e-004**	**7.9200e-003**	**101.5148**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

RME Alt

Placer-Mountain Counties County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	3,000.00	0
Parking Lot	50.00	Space	0.45	20,000.00	0
City Park	0.10	Acre	0.10	4,356.00	0
Single Family Housing	1.00	Dwelling Unit	0.32	1,000.00	1

1.2 Other Project Characteristics

Urbanization Rural **Wind Speed (m/s)** 2.2 **Precipitation Freq (Days)** 74

Climate Zone 2 **Operational Year** 2040

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 294 **CH4 Intensity (lb/MWhr)** 0.029 **N2O Intensity (lb/MWhr)** 0.006

1.3 User Entered Comments & Non-Default Data

RME Alt - Placer-Mountain Counties County, Annual

Project Characteristics - CO2 Intensity Factor for PG&E Adjusted - Source: The Climate Registry - Default Emissions Factors (2016)

Land Use - Residential land use in place to acount for wood burn at campfires from new campsites.

Construction Phase - No demolition would occur as part of the project.

Vehicle Trips - Trip rate adjusted to match project generated VMT based on project traffic study.

Woodstoves - Adjusted to account for campfire emissions.

Energy Use - Single family home modeled for alternative campsite (cabin). Cabin assumed only to have lighting demand.

Fleet Mix - Adjusted base on Regional Park land use

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceDayYear	82.00	365.00
tblFireplaces	FireplaceWoodMass	3,078.40	18,752.00
tblFireplaces	NumberNoFireplace	0.10	1.00
tblFireplaces	NumberWood	0.35	1.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	HHD	0.05	0.00
tblFleetMix	LDA	0.53	0.64
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.04	0.09
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.22	0.27
tblFleetMix	LDT2	0.22	0.00

tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LDT2	0.22	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	LHD2	4.3890e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MCY	5.0130e-003	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MDV	0.11	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MH	5.6900e-004	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	MHD	0.04	0.00
tblFleetMix	OBUS	1.2900e-003	0.00

tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	OBUS	1.2900e-003	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	SBUS	6.5800e-004	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblFleetMix	UBUS	1.0750e-003	0.00
tblLandUse	LandUseSquareFeet	1,000.00	3,000.00
tblLandUse	LandUseSquareFeet	1,800.00	1,000.00
tblLandUse	Population	3.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	294
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblVehicleTrips	CW_TL	14.70	134,250.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	9.91	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	8.62	0.00
tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	9.52	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1581	1.0950	0.9436	1.6600e-003	0.0224	0.0611	0.0834	6.3700e-003	0.0564	0.0628	0.0000	147.0610	147.0610	0.0375	0.0000	147.9982
Maximum	**0.1581**	**1.0950**	**0.9436**	**1.6600e-003**	**0.0224**	**0.0611**	**0.0834**	**6.3700e-003**	**0.0564**	**0.0628**	**0.0000**	**147.0610**	**147.0610**	**0.0375**	**0.0000**	**147.9982**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1581	1.0950	0.9436	1.6600e-003	0.0224	0.0611	0.0834	6.3700e-003	0.0564	0.0628	0.0000	147.0608	147.0608	0.0375	0.0000	147.9980
Maximum	**0.1581**	**1.0950**	**0.9436**	**1.6600e-003**	**0.0224**	**0.0611**	**0.0834**	**6.3700e-003**	**0.0564**	**0.0628**	**0.0000**	**147.0608**	**147.0608**	**0.0375**	**0.0000**	**147.9980**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	0.3183	0.3183
2	4-1-2020	6-30-2020	0.3379	0.3379
3	7-1-2020	9-30-2020	0.3416	0.3416
		Highest	0.3416	0.3416

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0933	0.0139	1.1928	1.8900e-003		0.1624	0.1624		0.1624	0.1624	14.4598	1.9413	16.4011	5.0000e-005	1.3100e-003	16.7932
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	10.0780	10.0780	6.8000e-004	2.0000e-004	10.1536
Mobile	0.0325	0.1958	2.6765	0.0166	2.9892	6.1000e-003	2.9953	0.7952	5.6100e-003	0.8008	0.0000	1,508.4730	1,508.4730	0.0118	0.0000	1,508.7673
Waste						0.0000	0.0000		0.0000	0.0000	0.2639	0.0000	0.2639	0.0156	0.0000	0.6538
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.3009	0.3780	7.9400e-003	1.9000e-004	0.6341
Total	**1.1262**	**0.2134**	**3.8718**	**0.0185**	**2.9892**	**0.1688**	**3.1579**	**0.7952**	**0.1683**	**0.9634**	**14.8008**	**1,520.7932**	**1,535.5939**	**0.0360**	**1.7000e-003**	**1,537.0019**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.0933	0.0139	1.1928	1.8900e-003		0.1624	0.1624		0.1624	0.1624	14.4598	1.9413	16.4011	5.0000e-005	1.3100e-003	16.7932
Energy	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	10.0780	10.0780	6.8000e-004	2.0000e-004	10.1536
Mobile	0.0325	0.1958	2.6765	0.0166	2.9892	6.1000e-003	2.9953	0.7952	5.6100e-003	0.8008	0.0000	1,508.4730	1,508.4730	0.0118	0.0000	1,508.7673
Waste						0.0000	0.0000		0.0000	0.0000	0.2639	0.0000	0.2639	0.0156	0.0000	0.6538
Water						0.0000	0.0000		0.0000	0.0000	0.0771	0.3009	0.3780	7.9400e-003	1.9000e-004	0.6341
Total	**1.1262**	**0.2134**	**3.8718**	**0.0185**	**2.9892**	**0.1688**	**3.1579**	**0.7952**	**0.1683**	**0.9634**	**14.8008**	**1,520.7932**	**1,535.5939**	**0.0360**	**1.7000e-003**	**1,537.0019**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	1/1/2020	1/28/2020	5	10	
2	Site Preparation	Site Preparation	1/29/2020	1/30/2020	5	1	
3	Grading	Grading	1/31/2020	2/5/2020	5	2	
4	Building Construction	Building Construction	2/6/2020	11/11/2020	5	100	
5	Paving	Paving	11/12/2020	11/25/2020	5	5	
6	Architectural Coating	Architectural Coating	11/26/2020	12/9/2020	5	5	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.45

Residential Indoor: 2,025; Residential Outdoor: 675; Non-Residential Indoor: 4,500; Non-Residential Outdoor: 1,500; Striped Parking Area: 1,200 (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	Rubber Tired Dozers	1	1.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
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	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	12.00	5.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.6700e-003	0.0787	0.0762	1.2000e-004		4.6700e-003	4.6700e-003		4.4600e-003	4.4600e-003	0.0000	10.4075	10.4075	1.9700e-003	0.0000	10.4567
Total	**8.6700e-003**	**0.0787**	**0.0762**	**1.2000e-004**		**4.6700e-003**	**4.6700e-003**		**4.4600e-003**	**4.4600e-003**	**0.0000**	**10.4075**	**10.4075**	**1.9700e-003**	**0.0000**	**10.4567**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	3.6000e-004	3.7400e-003	1.0000e-005	1.2200e-003	1.0000e-005	1.2300e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0431	1.0431	2.0000e-005	0.0000	1.0437
Total	**4.8000e-004**	**3.6000e-004**	**3.7400e-003**	**1.0000e-005**	**1.2200e-003**	**1.0000e-005**	**1.2300e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0431**	**1.0431**	**2.0000e-005**	**0.0000**	**1.0437**

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	8.6700e-003	0.0787	0.0762	1.2000e-004		4.6700e-003	4.6700e-003		4.4600e-003	4.4600e-003	0.0000	10.4075	10.4075	1.9700e-003	0.0000	10.4567
Total	**8.6700e-003**	**0.0787**	**0.0762**	**1.2000e-004**		**4.6700e-003**	**4.6700e-003**		**4.4600e-003**	**4.4600e-003**	**0.0000**	**10.4075**	**10.4075**	**1.9700e-003**	**0.0000**	**10.4567**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.8000e-004	3.6000e-004	3.7400e-003	1.0000e-005	1.2200e-003	1.0000e-005	1.2300e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0431	1.0431	2.0000e-005	0.0000	1.0437
Total	**4.8000e-004**	**3.6000e-004**	**3.7400e-003**	**1.0000e-005**	**1.2200e-003**	**1.0000e-005**	**1.2300e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0431**	**1.0431**	**2.0000e-005**	**0.0000**	**1.0437**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9000e-004	8.4300e-003	4.0900e-003	1.0000e-005		3.4000e-004	3.4000e-004		3.1000e-004	3.1000e-004	0.0000	0.8559	0.8559	2.8000e-004	0.0000	0.8628
Total	**6.9000e-004**	**8.4300e-003**	**4.0900e-003**	**1.0000e-005**	**5.3000e-004**	**3.4000e-004**	**8.7000e-004**	**6.0000e-005**	**3.1000e-004**	**3.7000e-004**	**0.0000**	**0.8559**	**0.8559**	**2.8000e-004**	**0.0000**	**0.8628**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0522	0.0522	0.0000	0.0000	0.0522
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0522**	**0.0522**	**0.0000**	**0.0000**	**0.0522**

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					5.3000e-004	0.0000	5.3000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.9000e-004	8.4300e-003	4.0900e-003	1.0000e-005		3.4000e-004	3.4000e-004		3.1000e-004	3.1000e-004	0.0000	0.8559	0.8559	2.8000e-004	0.0000	0.8628
Total	**6.9000e-004**	**8.4300e-003**	**4.0900e-003**	**1.0000e-005**	**5.3000e-004**	**3.4000e-004**	**8.7000e-004**	**6.0000e-005**	**3.1000e-004**	**3.7000e-004**	**0.0000**	**0.8559**	**0.8559**	**2.8000e-004**	**0.0000**	**0.8628**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.9000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0522	0.0522	0.0000	0.0000	0.0522
Total	**2.0000e-005**	**2.0000e-005**	**1.9000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0522**	**0.0522**	**0.0000**	**0.0000**	**0.0522**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5100e-003	0.0000	1.5100e-003	8.3000e-004	0.0000	8.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7300e-003	0.0158	0.0153	2.0000e-005		9.3000e-004	9.3000e-004		8.9000e-004	8.9000e-004	0.0000	2.0815	2.0815	3.9000e-004	0.0000	2.0914
Total	**1.7300e-003**	**0.0158**	**0.0153**	**2.0000e-005**	**1.5100e-003**	**9.3000e-004**	**2.4400e-003**	**8.3000e-004**	**8.9000e-004**	**1.7200e-003**	**0.0000**	**2.0815**	**2.0815**	**3.9000e-004**	**0.0000**	**2.0914**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	7.0000e-005	7.5000e-004	0.0000	2.4000e-004	0.0000	2.5000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2086	0.2086	0.0000	0.0000	0.2088
Total	**1.0000e-004**	**7.0000e-005**	**7.5000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.5000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2086**	**0.2086**	**0.0000**	**0.0000**	**0.2088**

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					1.5100e-003	0.0000	1.5100e-003	8.3000e-004	0.0000	8.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7300e-003	0.0158	0.0153	2.0000e-005		9.3000e-004	9.3000e-004		8.9000e-004	8.9000e-004	0.0000	2.0815	2.0815	3.9000e-004	0.0000	2.0913
Total	**1.7300e-003**	**0.0158**	**0.0153**	**2.0000e-005**	**1.5100e-003**	**9.3000e-004**	**2.4400e-003**	**8.3000e-004**	**8.9000e-004**	**1.7200e-003**	**0.0000**	**2.0815**	**2.0815**	**3.9000e-004**	**0.0000**	**2.0913**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	7.0000e-005	7.5000e-004	0.0000	2.4000e-004	0.0000	2.5000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.2086	0.2086	0.0000	0.0000	0.2088
Total	**1.0000e-004**	**7.0000e-005**	**7.5000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.5000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.2086**	**0.2086**	**0.0000**	**0.0000**	**0.2088**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0862	0.8852	0.7388	1.1400e-003		0.0522	0.0522		0.0481	0.0481	0.0000	100.0605	100.0605	0.0324	0.0000	100.8695
Total	**0.0862**	**0.8852**	**0.7388**	**1.1400e-003**		**0.0522**	**0.0522**		**0.0481**	**0.0481**	**0.0000**	**100.0605**	**100.0605**	**0.0324**	**0.0000**	**100.8695**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7500e-003	0.0572	0.0113	1.4000e-004	2.9500e-003	2.4000e-004	3.1900e-003	8.5000e-004	2.3000e-004	1.0800e-003	0.0000	12.8180	12.8180	6.7000e-004	0.0000	12.8347
Worker	5.8200e-003	4.3000e-003	0.0449	1.4000e-004	0.0147	9.0000e-005	0.0148	3.9000e-003	9.0000e-005	3.9800e-003	0.0000	12.5175	12.5175	3.0000e-004	0.0000	12.5248
Total	**7.5700e-003**	**0.0615**	**0.0562**	**2.8000e-004**	**0.0176**	**3.3000e-004**	**0.0179**	**4.7500e-003**	**3.2000e-004**	**5.0600e-003**	**0.0000**	**25.3354**	**25.3354**	**9.7000e-004**	**0.0000**	**25.3596**

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	0.0862	0.8852	0.7388	1.1400e-003		0.0522	0.0522		0.0481	0.0481	0.0000	100.0604	100.0604	0.0324	0.0000	100.8694
Total	**0.0862**	**0.8852**	**0.7388**	**1.1400e-003**		**0.0522**	**0.0522**		**0.0481**	**0.0481**	**0.0000**	**100.0604**	**100.0604**	**0.0324**	**0.0000**	**100.8694**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7500e-003	0.0572	0.0113	1.4000e-004	2.9500e-003	2.4000e-004	3.1900e-003	8.5000e-004	2.3000e-004	1.0800e-003	0.0000	12.8180	12.8180	6.7000e-004	0.0000	12.8347
Worker	5.8200e-003	4.3000e-003	0.0449	1.4000e-004	0.0147	9.0000e-005	0.0148	3.9000e-003	9.0000e-005	3.9800e-003	0.0000	12.5175	12.5175	3.0000e-004	0.0000	12.5248
Total	**7.5700e-003**	**0.0615**	**0.0562**	**2.8000e-004**	**0.0176**	**3.3000e-004**	**0.0179**	**4.7500e-003**	**3.2000e-004**	**5.0600e-003**	**0.0000**	**25.3354**	**25.3354**	**9.7000e-004**	**0.0000**	**25.3596**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.8600e-003	0.0361	0.0356	6.0000e-005		1.9800e-003	1.9800e-003		1.8300e-003	1.8300e-003	0.0000	4.6965	4.6965	1.3700e-003	0.0000	4.7307
Paving	1.1800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0400e-003**	**0.0361**	**0.0356**	**6.0000e-005**		**1.9800e-003**	**1.9800e-003**		**1.8300e-003**	**1.8300e-003**	**0.0000**	**4.6965**	**4.6965**	**1.3700e-003**	**0.0000**	**4.7307**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.2000e-004	3.3700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9388	0.9388	2.0000e-005	0.0000	0.9394
Total	**4.4000e-004**	**3.2000e-004**	**3.3700e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9388**	**0.9388**	**2.0000e-005**	**0.0000**	**0.9394**

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	3.8600e-003	0.0361	0.0356	6.0000e-005		1.9800e-003	1.9800e-003		1.8300e-003	1.8300e-003	0.0000	4.6965	4.6965	1.3700e-003	0.0000	4.7307
Paving	1.1800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.0400e-003**	**0.0361**	**0.0356**	**6.0000e-005**		**1.9800e-003**	**1.9800e-003**		**1.8300e-003**	**1.8300e-003**	**0.0000**	**4.6965**	**4.6965**	**1.3700e-003**	**0.0000**	**4.7307**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.2000e-004	3.3700e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9388	0.9388	2.0000e-005	0.0000	0.9394
Total	**4.4000e-004**	**3.2000e-004**	**3.3700e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9388**	**0.9388**	**2.0000e-005**	**0.0000**	**0.9394**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0459					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0471**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.7000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1043	0.1043	0.0000	0.0000	0.1044
Total	**5.0000e-005**	**4.0000e-005**	**3.7000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1043**	**0.1043**	**0.0000**	**0.0000**	**0.1044**

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	0.0459					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2100e-003	8.4200e-003	9.1600e-003	1.0000e-005		5.5000e-004	5.5000e-004		5.5000e-004	5.5000e-004	0.0000	1.2766	1.2766	1.0000e-004	0.0000	1.2791
Total	**0.0471**	**8.4200e-003**	**9.1600e-003**	**1.0000e-005**		**5.5000e-004**	**5.5000e-004**		**5.5000e-004**	**5.5000e-004**	**0.0000**	**1.2766**	**1.2766**	**1.0000e-004**	**0.0000**	**1.2791**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	4.0000e-005	3.7000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1043	0.1043	0.0000	0.0000	0.1044
Total	**5.0000e-005**	**4.0000e-005**	**3.7000e-004**	**0.0000**	**1.2000e-004**	**0.0000**	**1.2000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.1043**	**0.1043**	**0.0000**	**0.0000**	**0.1044**

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	0.0325	0.1958	2.6765	0.0166	2.9892	6.1000e-003	2.9953	0.7952	5.6100e-003	0.8008	0.0000	1,508.4730	1,508.4730	0.0118	0.0000	1,508.7673
Unmitigated	0.0325	0.1958	2.6765	0.0166	2.9892	6.1000e-003	2.9953	0.7952	5.6100e-003	0.8008	0.0000	1,508.4730	1,508.4730	0.0118	0.0000	1,508.7673

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.19	2.28	1.67	8,231,175	8,231,175
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Total	0.19	2.28	1.67	8,231,175	8,231,175

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
City Park	134,250.00	6.60	6.60	33.00	48.00	19.00	66	28	6
General Office Building	14.70	6.60	6.60	33.00	48.00	19.00	77	19	4
Parking Lot	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0
Single Family Housing	16.80	7.10	7.90	42.60	21.00	36.40	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.644000	0.085000	0.272000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
General Office Building	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Parking Lot	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Single Family Housing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.0642	6.0642	6.0000e-004	1.2000e-004	6.1160
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6.0642	6.0642	6.0000e-004	1.2000e-004	6.1160
NaturalGas Mitigated	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	4.0137	4.0137	8.0000e-005	7.0000e-005	4.0376
NaturalGas Unmitigated	4.1000e-004	3.6100e-003	2.5400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	4.0137	4.0137	8.0000e-005	7.0000e-005	4.0376

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					
City Park	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
General Office Building	49380	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6351	2.6351	5.0000e-005	5.0000e-005	2.6508
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
Single Family Housing	25834.7	1.4000e-004	1.1900e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3786	1.3786	3.0000e-005	3.0000e-005	1.3868
Total		**4.1000e-004**	**3.6100e-003**	**2.5400e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**4.0137**	**4.0137**	**8.0000e-005**	**8.0000e-005**	**4.0376**

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					
City Park	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
General Office Building	49380	2.7000e-004	2.4200e-003	2.0300e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	2.6351	2.6351	5.0000e-005	5.0000e-005	2.6508
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
Single Family Housing	25834.7	1.4000e-004	1.1900e-003	5.1000e-004	1.0000e-005		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	1.3786	1.3786	3.0000e-005	3.0000e-005	1.3868
Total		**4.1000e-004**	**3.6100e-003**	**2.5400e-003**	**2.0000e-005**		**2.8000e-004**	**2.8000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**4.0137**	**4.0137**	**8.0000e-005**	**8.0000e-005**	**4.0376**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30030	4.0047	4.0000e-004	8.0000e-005	4.0389
Parking Lot	7000	0.9335	9.0000e-005	2.0000e-005	0.9415
Single Family Housing	8443.78	1.1260	1.1000e-004	2.0000e-005	1.1357
Total		**6.0642**	**6.0000e-004**	**1.2000e-004**	**6.1160**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	30030	4.0047	4.0000e-004	8.0000e-005	4.0389
Parking Lot	7000	0.9335	9.0000e-005	2.0000e-005	0.9415
Single Family Housing	8443.78	1.1260	1.1000e-004	2.0000e-005	1.1357
Total		**6.0642**	**6.0000e-004**	**1.2000e-004**	**6.1160**

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	1.0933	0.0139	1.1928	1.8900e-003		0.1624	0.1624		0.1624	0.1624	14.4598	1.9413	16.4011	5.0000e-005	1.3100e-003	16.7932
Unmitigated	1.0933	0.0139	1.1928	1.8900e-003		0.1624	0.1624		0.1624	0.1624	14.4598	1.9413	16.4011	5.0000e-005	1.3100e-003	16.7932

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	2.2900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0170					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.0738	0.0139	1.1849	1.8900e-003		0.1623	0.1623		0.1623	0.1623	14.4598	1.9283	16.3881	4.0000e-005	1.3100e-003	16.7798
Landscaping	2.6000e-004	9.0000e-005	7.8600e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0130	0.0130	1.0000e-005	0.0000	0.0134
Total	**1.0933**	**0.0139**	**1.1928**	**1.8900e-003**		**0.1624**	**0.1624**		**0.1624**	**0.1624**	**14.4598**	**1.9413**	**16.4011**	**5.0000e-005**	**1.3100e-003**	**16.7932**

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	2.2900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0170					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	1.0738	0.0139	1.1849	1.8900e-003		0.1623	0.1623		0.1623	0.1623	14.4598	1.9283	16.3881	4.0000e-005	1.3100e-003	16.7798
Landscaping	2.6000e-004	9.0000e-005	7.8600e-003	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0130	0.0130	1.0000e-005	0.0000	0.0134
Total	**1.0933**	**0.0139**	**1.1928**	**1.8900e-003**		**0.1624**	**0.1624**		**0.1624**	**0.1624**	**14.4598**	**1.9413**	**16.4011**	**5.0000e-005**	**1.3100e-003**	**16.7932**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.3780	7.9400e-003	1.9000e-004	0.6341
Unmitigated	0.3780	7.9400e-003	1.9000e-004	0.6341

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.119148	0.0556	1.0000e-005	0.0000	0.0561
General Office Building	0.177734 / 0.108934	0.2355	5.8100e-003	1.4000e-004	0.4226
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.0869	2.1300e-003	5.0000e-005	0.1554
Total		**0.3780**	**7.9500e-003**	**1.9000e-004**	**0.6341**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.119148	0.0556	1.0000e-005	0.0000	0.0561
General Office Building	0.177734 / 0.108934	0.2355	5.8100e-003	1.4000e-004	0.4226
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.065154 / 0.0410754	0.0869	2.1300e-003	5.0000e-005	0.1554
Total		**0.3780**	**7.9500e-003**	**1.9000e-004**	**0.6341**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2639	0.0156	0.0000	0.6538
Unmitigated	0.2639	0.0156	0.0000	0.6538

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.01	2.0300e-003	1.2000e-004	0.0000	5.0300e-003
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.36	0.0731	4.3200e-003	0.0000	0.1810
Total		**0.2639**	**0.0156**	**0.0000**	**0.6538**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.01	2.0300e-003	1.2000e-004	0.0000	5.0300e-003
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0.36	0.0731	4.3200e-003	0.0000	0.1810
Total		**0.2639**	**0.0156**	**0.0000**	**0.6538**

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

Appendix C

Biological Resources

Table C-1 Special-Status Plant Species with Potential to Occur in and Adjacent to the Auburn State Recreation Area

Common Name Scientific Name	Federal[1]	State[2]	CRPR[3]	Habitat Associations	Potential for Occurrence in the Plan Area[4]
Jepson's onion *Allium jepsonii*	-	-	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. On serpentine soils in Sierra foothills, volcanic soil on Table Mountain. On slopes and flats; usually in an open area. 1,165 to 3,707 ft in elevation. Blooms April-August.	**Expected to Occur:** No known occurrences in ASRA. Limited suitable habitat (serpentine soils) present in ASRA. Recorded occurrences in the vicinity of ASRA (CNPS 2018).
Nissenan manzanita *Arctostaphylos nissenana*	-	-	1B.2	Closed-cone coniferous forest, chaparral. Usually on metamorphics, associated w/ other chaparral species. 1,526 to 5,282 ft in elevation. Blooms February-March.	**Known to Occur:** Documented in ASRA along Middle Fork of American River in chaparral.
Big-scale balsamroot *Balsamorhiza macrolepis* var. *macrolepis*	-	-	1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. 115 to 4,806 ft in elevation. Blooms March-June.	**Expected to Occur:** No known occurrences in ASRA. Known occurrence (historic) approximately 2 miles southwest of ASRA.
Stebbins's morning-glory *Calystegia stebbinsii*	FE	CE	1B.1	Chaparral, cismontane woodland. On red clay soils of the Pine Hill formation; gabbro or serpentine; open areas. 984 to 2,379 ft in elevation. Blooms April-July.	**Expected to Occur:** No known occurrences in ASRA. Suitable habitat present in ASRA. Recorded occurrences in the vicinity of ASRA.
Van Zuuk's morning-glory *Calystegia vanzuukiae*	-	-	1B.3	Chaparral, cismontane woodland. Gabbro, serpentinite. 1,640 to 3,871 ft in elevation. Blooms May-August.	**Expected to Occur:** No known occurrences in ASRA. Limited suitable habitat (serpentine soils) present in ASRA. Multiple known occurrences to the east of ASRA (CDFW 2018).
Sheldon's sedge *Carex sheldonii*	-	-	2B.2	Wetland Lower montane coniferous forest, marshes and swamps, riparian scrub. Mesic sites; along creeks and in wet meadows. 3,937 to 6,611 ft in elevation. Blooms May-August.	**Expected to Occur:** No known occurrences in ASRA. Suitable habitat present in ASRA. Recorded occurrences in the vicinity of ASRA (CNPS 2018).
Chaparral sedge *Carex xerophila*	-	-	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. Serpentinite, gabbroic. 902 to 2,526 ft in elevation. Blooms March-June.	**Expected to Occur:** No known occurrences in ASRA. Limited suitable habitat (serpentine and gabbroic soils) present in ASRA. Recorded occurrences in the vicinity of ASRA (CNPS 2018).
Pine Hill ceanothus *Ceanothus roderickii*	FE	CR	1B.1	Chaparral, cismontane woodland. Gabbroic or serpentine soils; often in "historically disturbed" areas with an ensemble of other rare plants. 853 to 2,067 ft in elevation. Blooms April-June.	**Expected to Occur:** No known occurrences in ASRA. Limited suitable habitat present (serpentine and gabbroic soils) in ASRA. Recorded occurrences in the vicinity of ASRA (CNPS 2018).

Table C-1 Special-Status Plant Species with Potential to Occur in and Adjacent to the Auburn State Recreation Area

Common Name Scientific Name	Federal[1]	State[2]	CRPR[3]	Habitat Associations	Potential for Occurrence in the Plan Area[4]
Red Hills soaproot *Chlorogalum grandiflorum*	-	-	1B.2	Cismontane woodland, chaparral, lower montane coniferous forest. Occurs frequently on serpentine or gabbro, but also on non-ultramafic substrates; often on "historically disturbed" sites. 804 to 4,068 ft in elevation. Blooms May-June.	**Known to Occur:** Documented in ASRA. This species was recorded in the Mammoth Bar area in 2000, but this occurrence record needs confirmation (Medeiros 2006). It is also recorded in the vicinity of ASRA at several locations (CDFW 2018).
Dwarf downingia *Downingia pusilla*	-	-	2B.2	Wetland. Valley and foothill grassland (mesic sites), vernal pools. Vernal lake and pool margins with a variety of associates. In several types of vernal pools. 3 to 1,608 ft in elevation. Blooms March-May.	**Not expected to occur:** No known occurrences in ASRA. No suitable habitat documented in ASRA (vernal pools). Known occurrences in the vicinity of ASRA (CNPS 2018).
Jepson's coyote thistle *Eryngium jepsonii*	-	-	1B.2	Vernal pools, valley and foothill grassland. Clay. 10 to 984 ft in elevation. Blooms April-August.	**Not expected to occur:** No known occurrences in ASRA. No suitable habitat documented in ASRA (vernal pools). Known occurrences in the vicinity of ASRA (CNPS 2018).
Pine Hill flannelbush *Fremontodendron decumbens*	FE	CR	1B.2	Chaparral, cismontane woodland. Rocky ridges; gabbro or serpentine endemic; often among rocks and boulders. 1,394 to 2,510 ft in elevation. Blooms April-July.	**Expected to Occur:** No known occurrences in ASRA. Limited suitable habitat present (serpentine and gabbroic soils) in ASRA. Recorded occurrences in the vicinity of ASRA (CNPS 2018).
El Dorado bedstraw *Galium californicum ssp. sierrae*	FE	CR	1B.2	Cismontane woodland, chaparral, lower montane coniferous forest. In pine-oak woodland or chaparral. Restricted to gabbroic or serpentine soils. 427 to 1,919 ft in elevation. Blooms May-June.	**Expected to Occur:** No known occurrences in ASRA. Limited suitable habitat present (serpentine and gabbroic soils) in ASRA. Recorded occurrences in the vicinity of ASRA (CNPS 2018).
Boggs Lake hedge-hyssop *Gratiola heterosepala*	-	CE	1B.2	Marshes and swamps (freshwater), vernal pools. Clay soils; usually in vernal pools, sometimes on lake margins. 33 to 7,792 ft in elevation. Blooms April-August.	**Expected to Occur:** No known occurrences in ASRA. Suitable lake margin habitat is present in ASRA. Known occurrences in the vicinity of ASRA (CNPS 2018).
Parry's horkelia *Horkelia parryi*	-	-	1B.2	Chaparral, cismontane woodland. Openings in chaparral or woodland; especially known from the Ione formation in Amador County. 279 to 3,658 ft in elevation. Blooms April-September.	**Expected to Occur:** No known occurrences in ASRA. Limited suitable habitat present in ASRA (no Ione formation in ASRA). Known occurrences 1.4 miles southeast of ASRA (CDFW 2018).

Table C-1 Special-Status Plant Species with Potential to Occur in and Adjacent to the Auburn State Recreation Area

Common Name Scientific Name	Federal[1]	State[2]	CRPR[3]	Habitat Associations	Potential for Occurrence in the Plan Area[4]
Finger rush *Juncus digitatus*	-	-	1B.1	Cismontane woodland (openings), lower montane coniferous forest (openings), vernal pools. In full sun, in the vernally damp ground of seeps, vernal pools and swales on gentle slopes over volcanic bedrock. 1,969 to 2,592 ft in elevation. Blooms (April), May-June.	**Not expected to occur:** No known occurrences in ASRA. No suitable habitat documented in ASRA (vernal pools). Known occurrences in the vicinity of ASRA (CNPS 2018).
Saw-toothed lewisia *Lewisia serrata*	-	-	1B.1	Broadleafed upland forest, lower montane coniferous forest, riparian forest. Shaded, north-facing moss-covered, metamorphic rock cliffs. 2,953 to 4,708 ft in elevation. Blooms May-June.	**Expected to Occur:** No known occurrences in ASRA. Potential habitat limited to higher elevations of ASRA. One known occurrence to the east of ASRA (CDFW 2018).
Follett's monardella *Monardella follettii*	-	-	1B.2	Lower montane coniferous forest. Open rocky serpentine slopes. 1,969 to 6,562 ft in elevation. Blooms June-September.	**Expected to Occur:** No known occurrences in ASRA. Limited suitable habitat present (serpentine soils) in ASRA. Recorded occurrences in the vicinity of ASRA (CNPS 2018).
Pincushion navarretia *Navarretia myersii ssp. myersii*	-	-	1B.1	Vernal pools, wetland. Clay soils within non-native grassland. 148 to 328 ft in elevation. Blooms April-May.	**Not expected to occur:** No known occurrences in ASRA. No suitable habitat documented in ASRA (vernal pools). Known occurrences in the vicinity of ASRA (CNPS 2018).
Sacramento Orcutt grass *Orcuttia viscida*	FE	CE	1B.1	Vernal pools, wetland. 49 to 279 ft in elevation. Blooms April-July (September).	**Not expected to occur:** No known occurrences in ASRA. No suitable habitat documented in ASRA (vernal pools). Known occurrences in the vicinity of ASRA (CNPS 2018).
Layne's ragwort (Layne's Butterweed) *Packera layneae*	FT	CR	1B.2	Chaparral, cismontane woodland. Ultramafic soil (serpentine or gabbro); occasionally along streams. 656 to 3,560 ft in elevation. Blooms April-August.	**Expected to Occur:** No known occurrences in ASRA. Limited suitable habitat present (serpentine and gabbroic soils) in ASRA. Recorded occurrences in the vicinity of ASRA (CNPS 2018).
Stebbin's phacelia *Phacelia stebbinsii*	-	-	1B.2	Lower montane coniferous forest, cismontane woodland, meadows and seeps. Among rocks and rubble on metamorphic rock benches. 2,001 to 6,594 ft in elevation. Blooms May-July.	**Expected to Occur:** No known occurrences in ASRA. Suitable habitat present in ASRA. Several occurrences of this species are documented to the east of ASRA in the El Dorado National Forest (CDFW 2018).

Table C-1 Special-Status Plant Species with Potential to Occur in and Adjacent to the Auburn State Recreation Area

Common Name Scientific Name	Federal[1]	State[2]	CRPR[3]	Habitat Associations	Potential for Occurrence in the Plan Area[4]
Sierra blue grass *Poa sierra*	-	-	1B.3	Lower montane coniferous forest. Shady, moist, rocky slopes. Often in canyons. 1,198 to 4,921 ft in elevation. Blooms April-July.	**Expected to Occur:** No known occurrences in ASRA. Suitable habitat is present in ASRA. Several known occurrences just upslope and within five miles of ASRA (CDFW 2018).
Brownish beaked-rush *Rhynchospora capitellata*	-	-	2B.2	Lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest. Mesic sites. 148 to 5,610 ft in elevation. Blooms July-August.	**Expected to Occur:** No known occurrences in ASRA. Suitable habitat is present in ASRA. Known occurrences in the vicinity of ASRA (CNPS 2018).
Sanford's arrowhead *Sagittaria sanfordii*	-	-	1B.2	In standing or slow-moving freshwater ponds, marshes, and ditches. 0 to 2,133 ft in elevation. Blooms May-October (November).	**Expected to Occur:** No known occurrences in ASRA. Suitable slow-moving freshwater habitat is present in ASRA. Known occurrences in the vicinity of ASRA (CNPS 2018).
Scadden flat checkerbloom *Sidalcea stipularis*	-	CE	1B.1	Marshes and swamps. Wet montane marshes fed by springs. 2,297 to 2,428 ft in elevation. Blooms July-August.	**Expected to Occur:** No known occurrences in ASRA. Suitable habitat is present in ASRA. Known occurrences in the vicinity of ASRA (CNPS 2018).
Oval-leaved viburnum *Viburnum ellipticum*	-	-	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. 705 to 4,593 ft in elevation. Blooms May-June.	**Known to Occur:** Documented in ASRA. Known occurrence in the plan area. Along Lake Clementine Road, North Fork American River (CDFW 2018).
El Dorado County mule ears *Wyethia reticulata*	-	-	1B.2	Chaparral, cismontane woodland, lower montane coniferous forest. Stony red clay and gabbroic soils; often in openings in gabbro chaparral. 607 to 2,067 ft in elevation. Blooms April-August.	**Expected to Occur:** No known occurrences in ASRA. Limited suitable habitat present (gabbroic soils) in ASRA. An occurrence of this species is documented at the Folsom ASRA.

Note: As defined in Section 5.2.3, Special-Status Plants are legally protected through ESA or CESA, or are considered under CEQA because CDFW has identified them as being extirpated, rare or endangered in California and assigned them a California Rare Plant Rank of 1A, 1B, 2A, or 2B. For more information about specific species and why they were determined to be a Special-Status Species, please see species accounts on CDFW's website (https://www.wildlife.ca.gov/Conservation/Plants/Endangered) or species reports provided by USFWS (http://ecos.fws.gov/tess_public/)

[1] Federal:

FE = Federally Endangered

FT = Federally Threatened

[3] California Rare Plant Rank (CRPR) classifications:

1B. Rare or Endangered in California and elsewhere

2A. Presumed extirpated in California, but more common elsewhere

2B. Rare or Endangered in California, but more common elsewhere

Table C-1 Special-Status Plant Species with Potential to Occur in and Adjacent to the Auburn State Recreation Area

Common Name Scientific Name	Federal[1]	State[2]	CRPR[3]	Habitat Associations	Potential for Occurrence in the Plan Area[4]

[2] State: .1- Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

CE = California Endangered .2- Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)

CR = California Rare .3- Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

[4] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present in the plan area due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

Could occur: Suitable habitat is available within the plan area; however, there are little to no other indicators that the species might be present.

Expected to occur: Habitat conditions, known occurrences in the vicinity of the plan area, or other factors indicate a relatively high likelihood that the species would occur in the plan area.

Known to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance surveys, or was reported by others.

Source: CDFW 2018; CNPS 2018; USFWS 2015a

Table C-2 Special-Status Animal Species with Potential to Occur in the Auburn State Recreation Area

Common Name *Scientific Name*	Federal[1]	State[2]	Habitat Associations	Potential for Occurrence in the Plan Area
Mammals				
Ringtail *Bassariscus astutus*	-	FP	Ringtails live in a variety of habitats within their range, but they have a decided preference for chaparral, rocky hillsides and riparian areas. Their denning areas include rock crevices, boulder piles, underground cavities, hollow trees or underground in hollow roots of trees. They are opportunistic feeders, relying on insects, fruits, and berries in addition to birds and mammals (Belluomini 1980).	**Known to occur:** Documented in ASRA. Ringtails are documented in the Middle Fork of the American River Canyon in ASRA (CSP 2002), and at the Cool Caves Limestone Quarry area. This species is likely widespread in ASRA because its preferred habitats are common in ASRA.
Townsend's big-eared bat *Corynorhinus townsendii*	-	CSC	Occurs throughout California in a wide variety of habitats; most common in mesic sites. Roosts in the open, hanging from walls & ceilings of caves, mines and abandoned buildings. Extremely sensitive to human disturbance.	**Known to occur:** Documented in ASRA. Historically known from lime caves south of Mammoth Bar in ASRA (Williams 2002; CDFW 2018).
Fisher – West Coast Distinct Population Segment *Pekania pennanti*	-	CT	Occurs in intermediate to large-tree stages of coniferous forests & deciduous-riparian areas w/ high percent canopy closure. Pacific fisher uses cavities, snags, logs & rocky areas for cover & denning. Need large areas of mature, dense forest.	**Not expected to occur:** No known occurrences in ASRA. Suitable habitat present in ASRA. One historic occurrence recorded at Iowa Hill approximately 1 mile north of the northern edge of ASRA (CDFW 2018). However, further review indicates that ASRA is outside of the current range of the species (CDFW2010).
Sierra Nevada red fox *Vulpes vulpes necator*	FC	CT	Rare in the Sierra Nevada this native subspecies historically occured from Lassen County to Tulare Co. May be found in a variety of habitats including montane chaparral, montane riparian, and ponderosa pine. Sightings range from 3,900-11,900 ft (CWHR 1990).	**Not expected to occur:** Four historic occurrences documented within and around ASRA in the vicinity of the Foresthill and Oxbow Lake areas (CDFW 2018). However, further review indicates that ASRA is outside of the current range of the species, which is limited to areas in the vicinity of Sonora Pass and Lassen (USFWS 2015b).
Fish				
Central valley steelhead *Oncorhynchus mykiss*	FT	-	Species is found in unimpeded, anadromous watercourses in the northern Central Valley of California.	**Not expected to occur:** No known occurrences. Nimbus and Folsom Dams prevent access to ASRA.
Central valley spring run Chinook salmon *Oncorhynchus tshawytscha*	FT	CT	Species is found in unimpeded, anadromous watercourses in the northern Central Valley of California.	**Not expected to occur:** No known occurrences in the upper forks of the American River. Nimbus and Folsom Dams prevent access to upper forks of the American River.
Delta smelt *Hypomesus transpacificus*	FT	CE	Species is found in euryhaline open waters of bays, tidal rivers, channels, and sloughs; rarely in water with salinity of more than 10-12 ppt; when not spawning, tends to concentrate where salt	**Not expected to occur:** No known occurrences in ASRA. Nimbus Dam prevents access to ASRA, and no suitable habitat present in ASRA.

Table C-2 Special-Status Animal Species with Potential to Occur in the Auburn State Recreation Area				
Common Name *Scientific Name*	Federal[1]	State[2]	Habitat Associations	Potential for Occurrence in the Plan Area
			water and freshwater mix (salinity about 2 ppt) and zooplankton populations are dense. Mainly concentrated in lower Delta and upper Suisun Bay after breeding. Adequate freshwater flows are needed to transport young to rearing habitat.	
Hardhead *Mylopharodon conocephalus*	-	CSC	Hardhead are typically found in undisturbed areas of larger middle- and low- elevation streams. Hardhead prefer clear, deep pools with sand-gravel-boulder substrates and slow water velocities. In streams, adult hardhead tend to remain in the lower half of the water column, rarely moving into the upper water column, while juveniles concentrate in shallow water close to the stream edges. Hardhead are always found in association with Sacramento squawfish and usually with Sacramento suckers. They tend to be absent from streams where introduced species are present or streams that have been severely altered by human activity (CDFW 1995).	**Known to occur:** Documented in ASRA. Recorded from habitats near the confluence of the North and Middle Forks of the American River (CSP 2002).
Birds				
Tricolored blackbird *Agelaius tricolor*	-	CC	Species is a (nesting colony) highly colonial species, most numerous in central valley & vicinity. It is largely endemic to California. Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony.	**Could occur:** No known occurrences in ASRA. Suitable habitat present in ASRA. One historic recorded occurrence south of ASRA (CDFW 2018).
Golden eagle *Aquila chrysaetos*	-	FP	Typically frequents rolling foothills, mountain areas, sage-juniper flats and desert. Breeds on cliffs or in large trees or electrical towers, forages in open areas.	**Known to occur:** Documented in ASRA. Observed in the Auburn Dam Confluence Management Unit (CSP 2006) and at Lime Rock (Robber's Roost), near Lake Clementine. Nesting status of this species in ASRA is unknown.
Vaux's swift *Chaetura vauxi*	-	CSC	This species is a summer resident of northern California, breeding commonly in the coast ranges from Sonoma County north, and very locally south to Santa Cruz County; in the Sierra Nevada and potentially the Cascade Range. Nests in redwood and Douglas fir habitats in large hollow trees and snags.	**Could to occur:** Suitable habitat present in the ASRA. Not expected to nest in ASRA.
Black swift *Cypseloides niger*	-	CSC	This species breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf. It forages over many types of habitats.	**Could occur:** No known occurrences in ASRA. Because the occurrence record is imprecise, it is unclear what the distance of this occurrence is to ASRA. One historic occurrence of the species adjacent to ASRA in Forest Hill (CDFW 2018)

Table C-2 Special-Status Animal Species with Potential to Occur in the Auburn State Recreation Area

Common Name *Scientific Name*	Federal[1]	State[2]	Habitat Associations	Potential for Occurrence in the Plan Area
Yellow warbler *Dendroica petechial*	-	CSC	Yellow Warblers generally occupy riparian vegetation in close proximity to water along streams and in wet meadows. In northern California, willow cover and Oregon ash *(Fraxinus latifolia)* are important predictors of high yellow warbler abundance.	**Known to occur:** Documented in ASRA. Nine adult warblers documented in breeding habitat in June of 2002 at Mammoth Bar, Texas Bar and Brown Bar (Williams 2002).
White-tailed kite *Elanus leucurus*	-	FP	Occurs in (nesting) rolling foothills/valley margins w/scattered oaks & river bottomlands or marshes next to deciduous woodland. Prefers open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Could occur:** No known occurrences in ASRA. Suitable habitat present in ASRA. No recorded occurrences in the vicinity of ASRA.
Willow Flycatcher *Empidonax traillii*	-	CE	Willow flycatcher breeds in wet meadows and moist brushy thickets from 600 to 2,500 meters in elevation (Bombay et al. 2003)	**Known to occur:** Documented in ASRA. A willow flycatcher was heard (unconfirmed) on the south side of the American River across from Mammoth Bar in June of 2002. Willow flycatchers area regular late spring migrants, and this bird was most likely a migrant. Nesting at the elevation of ASRA has no recent precedent (Williams 2002).
American peregrine falcon *Falco peregrinus anatum*	D	FP	This species lives mostly along mountain ranges, river valleys and coastlines. The nest is a scrape or depression dug in gravel on a cliff ledge. Rarely, peregrines will nest in a tree cavity or an old stick nest. Many peregrines readily nest on manmade structures, (CHWR 1990).	**Known to occur:** Documented in ASRA. Documented nesting in the Auburn Dam Confluence Management Unit (Limestone Quarry) (CSP 2006); also occurs at Lime Rock (Robber's Roost) near Lake Clementine.
Bald eagle *Haliaeetus leucocephalus*	D	CE, FP	This species build huge nests in the tops of large trees near rivers, lakes, marshes, or other wetland areas. Nests are often re-used year after year. The staple of most bald eagle diets is fish, but they will feed on almost anything they can catch, including ducks, rodents, snakes, and carrion. In winter, northern birds migrate south and gather in large numbers near open water areas where fish or other prey are plentiful.	**Known to occur:** Documented in ASRA. Observed within ASRA, including at Lime Rock (Robber's Roost) near Lake Clementine, although the nesting status of this species in ASRA is unknown (CSP 1992).
Yellow-breasted chat *Icteria virens*	-	CSC	In California, chats require dense riparian thickets, vine tangles, and dense brush associated with streams and other watercourses (CHWR 1990). They forage in dense vegetation, sometimes holding food with their feet; these birds eat insects and berries.	**Known to occur:** Documented in ASRA. Observed at Lake Clementine (Beard, pers. comm., 2015) and Mammoth Bar (Beard, pers. comm., 2015; Williams 2002) where riparian woodland vegetation provides suitable nesting and foraging habitat. Suitable riparian habitat is also located at Mineral Bar.

Table C-2 Special-Status Animal Species with Potential to Occur in the Auburn State Recreation Area				
Common Name *Scientific Name*	Federal[1]	State[2]	Habitat Associations	Potential for Occurrence in the Plan Area
California black rail *Laterallus jamaicensis coturniculus*	-	CT, FP	Mainly inhabits salt-marshes bordering larger bays. Occurs in tidal salt marsh heavily grown to pickleweed; also in fresh-water and brackish marshes, all at low elevation.	**Not expected to occur:** No known occurrences in ASRA. No suitable habitat present.
Amphibians				
Foothill yellow-legged frog *Rana boylii*	-	CC	High-quality habitat for this species includes rivers and creeks with shallow, slow moving water with extensive cobble bars where basking occurs. Shallow margin areas along streams are ideal rearing areas for tadpoles and the substrate provides extensive escape cover (Lehr 1998).	**Known to occur:** Documented in ASRA. This species has been found in Brushy Creek and the North Fork of the American River (Lehr 1998) and tributaries, Upper Lake Clementine, Paradise Canyon (Todd Creek) and Gas Canyon Creek, tributaries to the Middle Fork of the American River, and along Yankee Jim Road in 2000 (CDFW 2018). Several additional populations are recorded in lands adjacent to ASRA.
California red-legged frog *Rana aurora draytonii*	FT	CSC	Occurs in rivers, creeks and stock ponds; requires permanent aquatic habitat and prefers pools with overhanging vegetation.	**Expected to occur:** No known occurrences in ASRA. Not detected during amphibian surveys conducted in ASRA (Lehr 1998). Suitable habitat present in ASRA, particularly in wetland/pond habitat at Knickerbocker Flat. Known occurrences approximately 1.6 miles northeast of and south of ASRA (CDFW 2018).
Reptiles				
Western pond turtle *Emys marmorata*	-	CSC	Western pond turtle is a thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches with aquatic vegetation. This species requires basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg-laying.	**Known to occur:** Documented in ASRA. A single turtle was observed in 2002 on the Middle Fork of the American River at African Bar (Williams 2002). Due to the altered flow regime of the American River Canyons, it is believed that this species is uncommon in ASRA. Also an historic occurrence in Greenwood south of ASRA (CDFW 2018).
Coast horned lizard *Phrynosoma blainvillii*	-	CSC	This species frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Prefers open areas for sunning, bushes for cover, patches of loose soil for burial, & abundant supply of ants & other insects.	**Known to occur:** Documented in ASRA. While this is a very rare species in the Sierra Nevada foothills, and habitat is marginal in ASRA, it has been observed in the north fork of the American River Canyon and has also been found in chamise chaparral (Williams 2002). Two occurrences of this species are recorded east of ASRA in the town of Colfax. These populations were found associated with sandy soils of chaparral and yellow pine/black oak woodlands (CDFW 2018).

Table C-2 Special-Status Animal Species with Potential to Occur in the Auburn State Recreation Area

Common Name *Scientific Name*	Federal[1]	State[2]	Habitat Associations	Potential for Occurrence in the Plan Area
Invertebrates				
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	-	Endemic to the grasslands of the Central Valley, central and south coast mountains in astatic rain-filled pools. It inhabits small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**Not expected to occur:** No known occurrences in ASRA. No vernal pool habitat present in ASRA. No recorded occurrences in the vicinity of ASRA (CDFW 2018).
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	-	Occurs in the Central Valley of California, in association with blue elderberry (*Sambucus nigra L.* ssp. *caerulea*). Prefers to lay eggs in elderberrries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	**Expected to occur:** Host plant documented in ASRA. Elderberry shrubs found in various areas of the plan area, including Mammoth Bar and Mineral Bar (Beard, pers. comm., 2015; Williams 2002).

Note: As defined in Section 5.3.4, Special-Status Animals are legally protected through ESA, CESA, or the California Fish and Game Code, or meet the definition of rare, threatened or endangered under CEQA. Species consider by CDFW to be California Species of Special Concern (CSC) meet CEQA definition of special-status species. According CDFW, CSC are experiencing serious population declines or range retractions that could qualify it for listing under CESA in the future, or have naturally small populations exhibiting high susceptibility to risk from any factors, that if realized could lead to declines that would qualify it for listing under CESA. CSC tend to: (1) occur in small isolated populations or in fragmented habitat, and are threatened by further isolation and population reduction; (2) show marked population declines; or (3) depend on a habitat that has shown substantial historical or recent declines in size, quality, or integrity. For more information about specific species and why they were determined to be a Special-Status Species, please see species accounts on CDFW's website (http://www.dfg.ca.gov/wildlife/nongame/ssc/) or species reports provided by USFWS (http://ecos.fws.gov/tess_public/)

[1]Federal:

FC Candidate
FE Endangered (legally protected)
FT Threatened (legally protected)
FD Delisted

[2]State:

D Delisted
FP Fully protected (legally protected)
CSC Species of special concern (no formal protection other than CEQA consideration)
CE Endangered (legally protected)
CT Threatened (legally protected)
CC Candidate (legally protected)

[3] Potential for Occurrence Definitions
Not expected to occur: Species is unlikely to be present in the plan area due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.
Could occur: Suitable habitat is available within the plan area historic occurrences in the vicinity of the plan area; however, there are little to no other indicators that the species might be present.
Expected to occur: Habitat conditions, known occurrences in the vicinity of the plan area, or other factors indicate a relatively high likelihood that the species would occur in the plan area.
Known to occur: The species, or evidence of its presence, was observed at the project site during reconnaissance surveys, or was reported by others.

Source: CDFW 2018

References

Beard, Denali. 2015. California State Parks Wildlife Biologist. Personal communication.

Belluomini, L. 1980. *Status of the Ringtail in California. Investigations Report*. Prepared for the California Department of Fish and Game, Nongame Wildlife

Bombay, H.L., M.L. Morrison, and L.S. Hall. 2003. Scale Perspectives in Habitat Selection and Animal Performance for Willow Flycatchers (*Empidonax traillii*) in the Central Sierra Nevada, California. *Studies in Avian Biology* no. 26:60-72.

California Department of Fish and Wildlife. 1995. Fish Species of Special Concern in California, Hardhead.

_____. 2010. Report to the Fish and Game Commission, a Status Review of the Fisher (*Martes pennanti*) in California. February 2010. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=27900.

_____. 2018. California Natural Diversity Database. Rarefind 5. Commercial Version. An Online Subscription Database Application for the Use of the California Department of Fish and Wildlife's Natural Diversity Database. California Natural Heritage Division, California Department of Fish and Wildlife. Sacramento, CA. Accessed, July 2018.

California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Available: http://www.rareplants.cnps.org. Accessed, July 2018.

California State Parks. 1992. *Auburn State Recreation Area Interim Resource Management Plan*.

_____. 2002. *Mammoth Bar Off-Highway Vehicle Wildlife Habitat Protection Plan*.

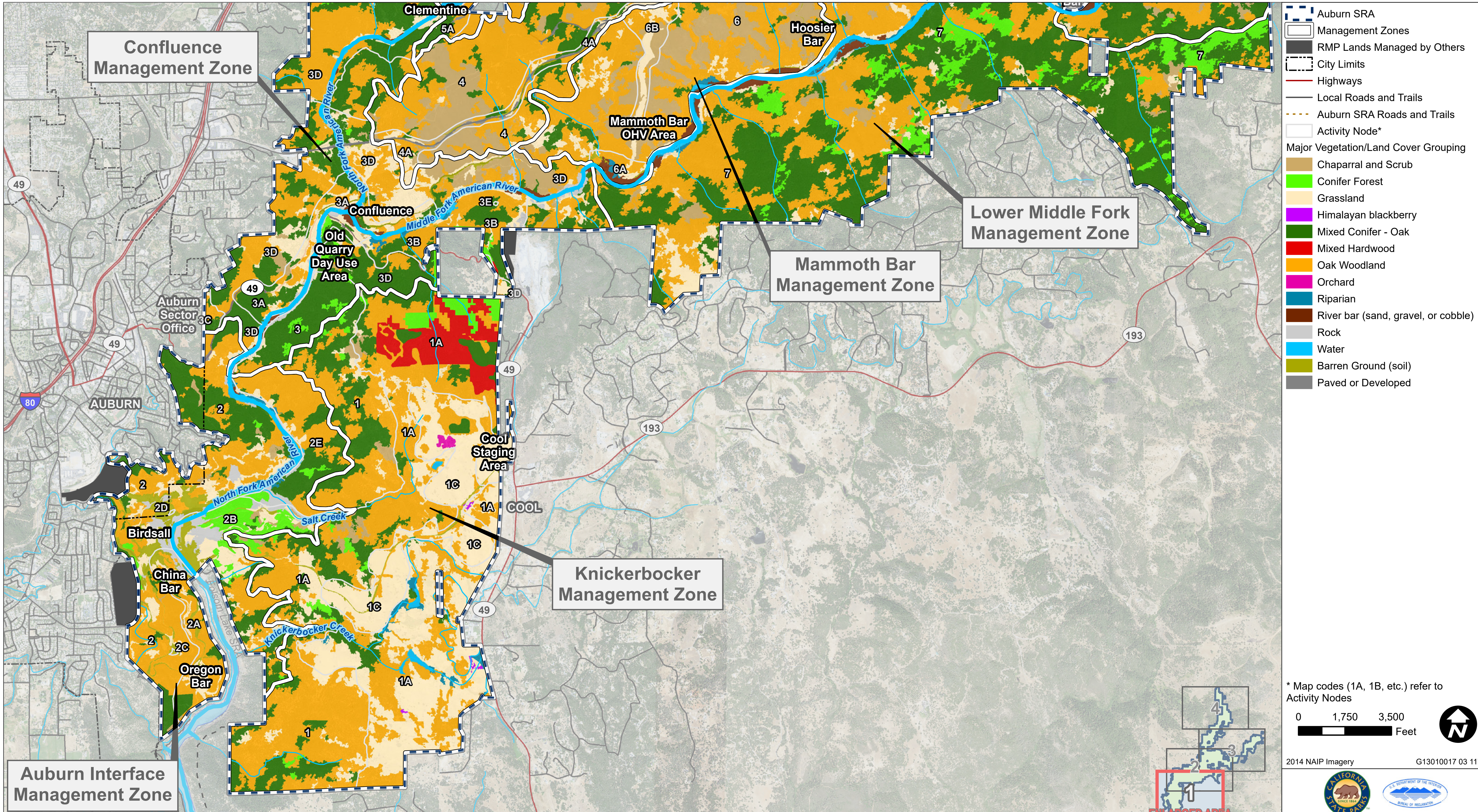
_____. 2006. Management Unit Datasheets.

California Wildlife Habitat Relationships. 1990. Range Maps and Life History Accounts. CWHR Staff Updated at multiple dates. Available: https://www.wildlife.ca.gov/Data/CWHR/Life-History-and-Range. Updated 1990-2017, Accessed July 2018.

U.S. Fish and Wildlife Service. 2015a (July 28). *Auburn State Recreation Area IPaC Trust Resource Report*. Sacramento Fish and Wildlife Office, Sacramento, CA

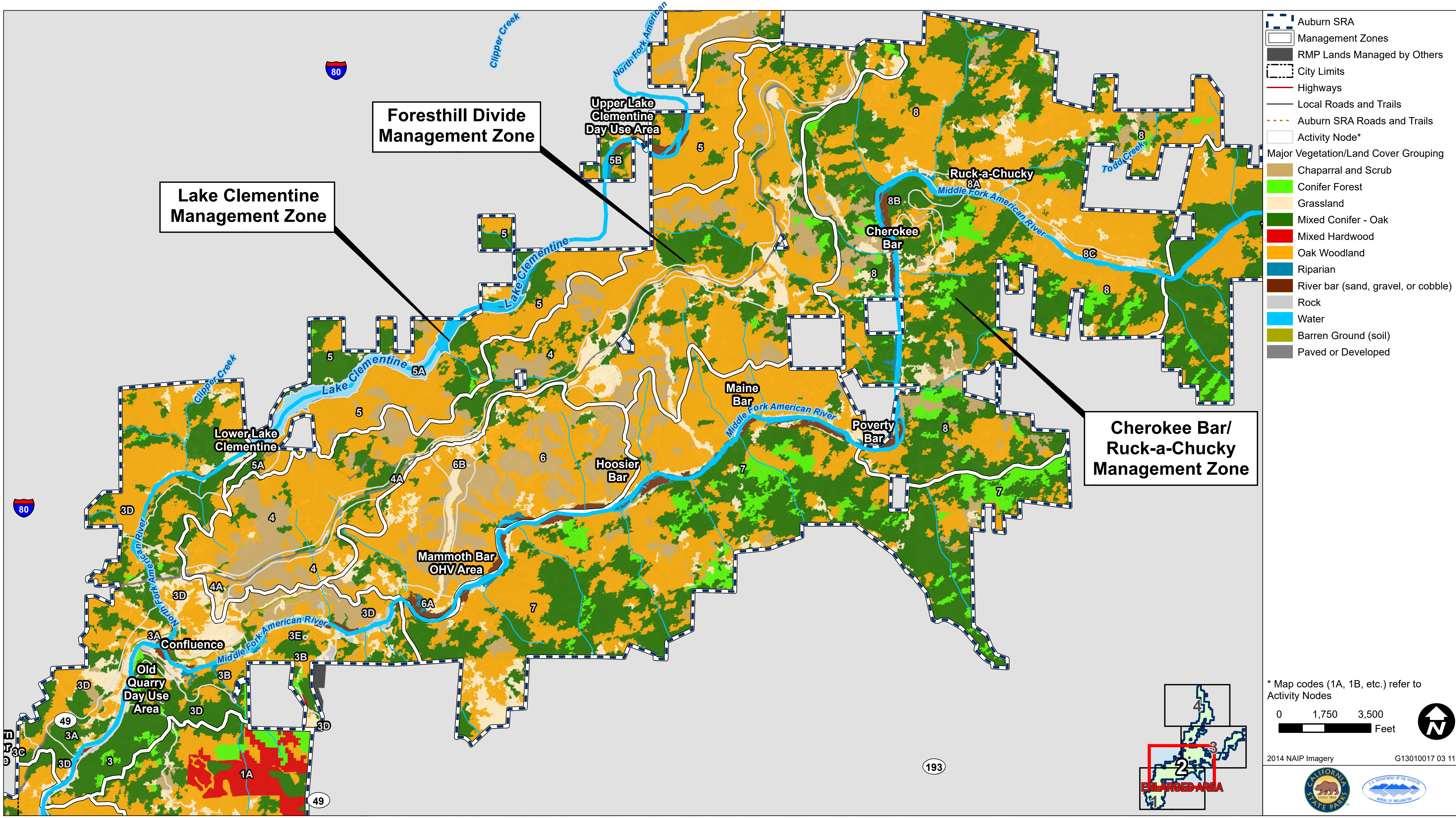
_____. 2015b. SPECIES REPORT Sierra Nevada Red Fox (Vulpes vulpes necator). August 14, 2015. Available: https://www.fws.gov/sacramento/outreach/2015/10-07/docs/20150814_SNRF_SpeciesReport.pdf

Williams, Brian D.C. 2002. Surveys for Special Status Species along the Middle Fork American River Adjacent to Mammoth Bar Off-Highway Vehicle Area (OHVA). Prepared by Williams Wildland Consulting, Inc. for California State Parks, Auburn State Recreation Area, Auburn, CA.



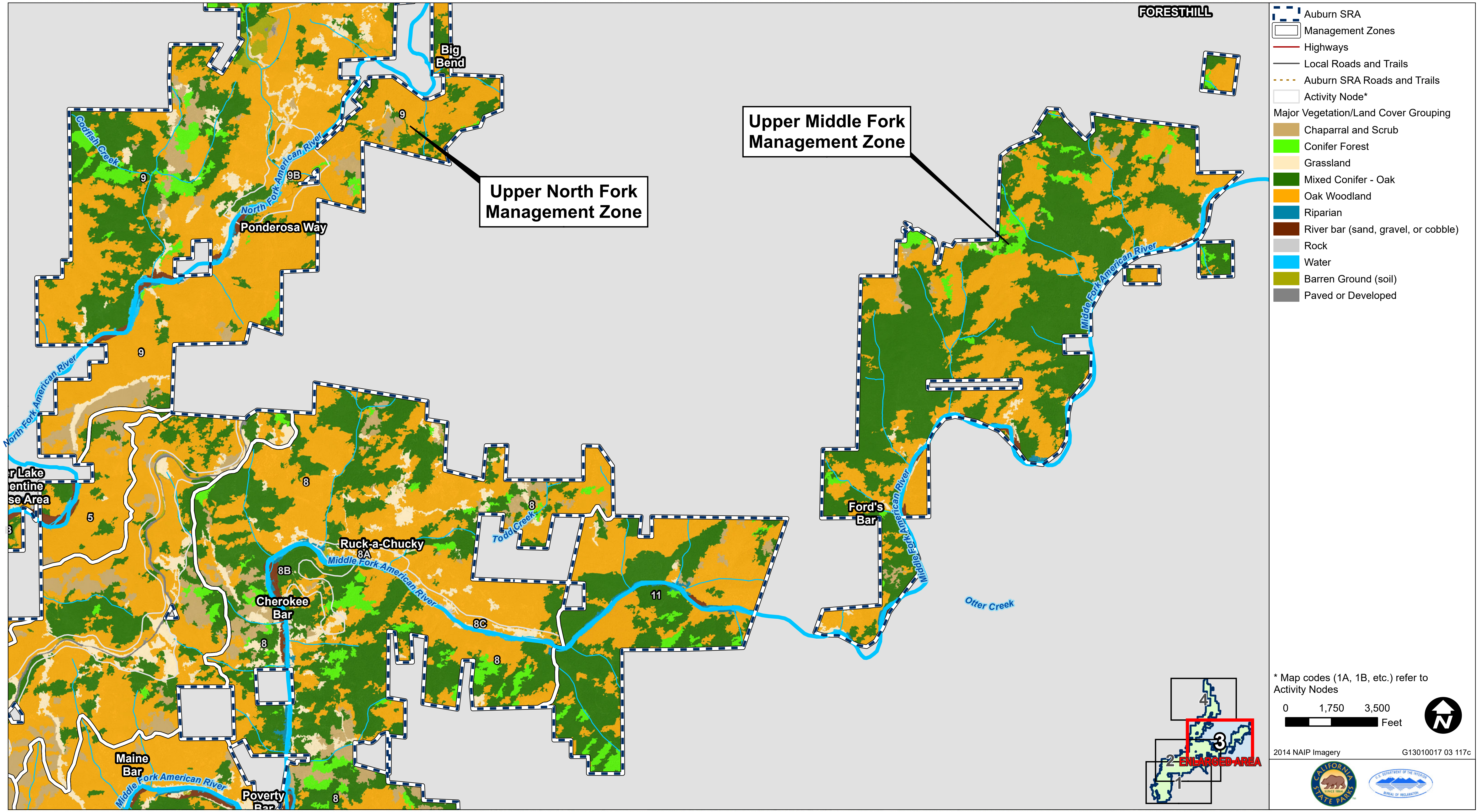
Source: data provided by CA State Parks in 2017; downloaded from NRCS in 2014

Vegetation/Land Cover – Map 1



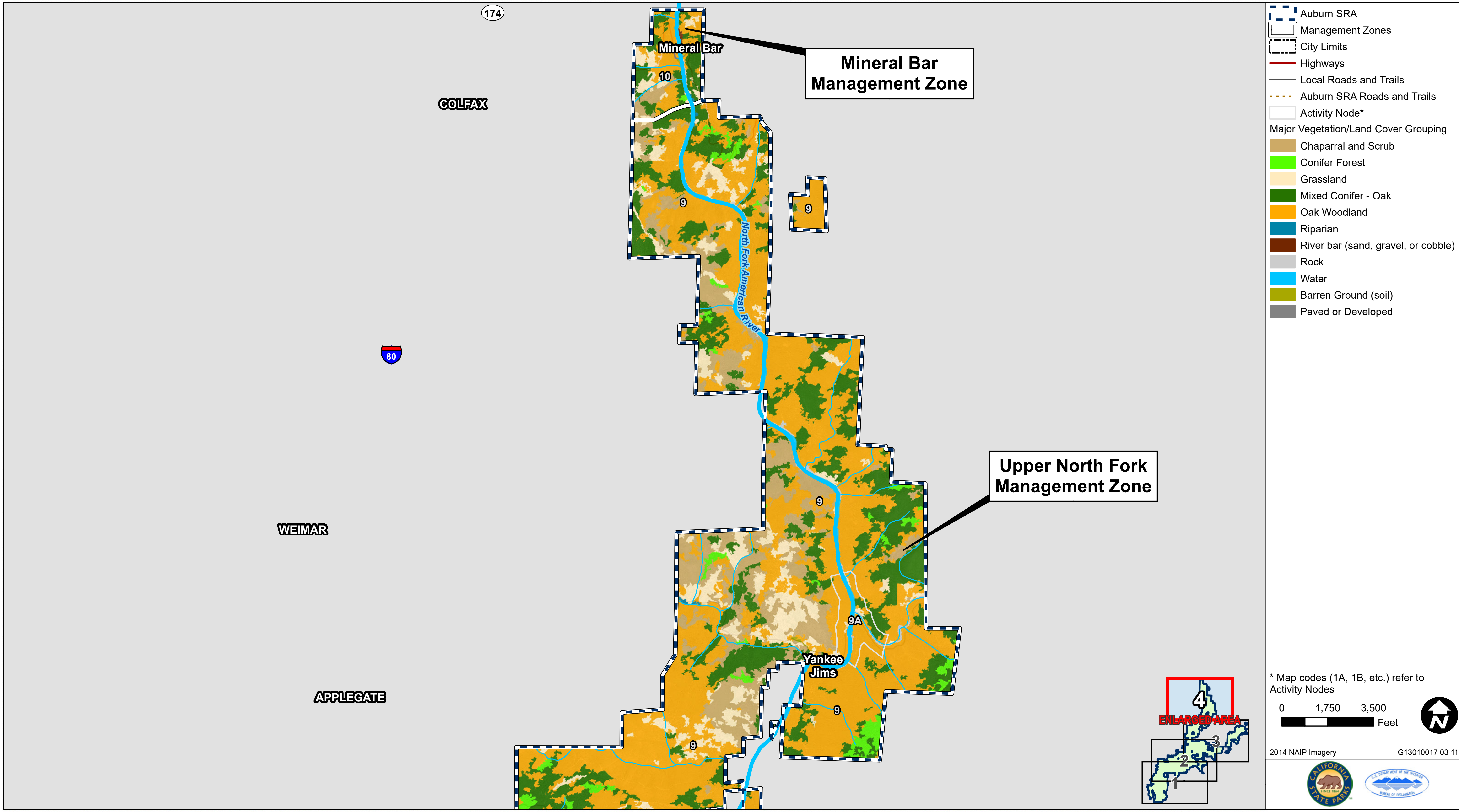
Source: data provided by CA State Parks in 2017; downloaded from NRCS in 2014

Vegetation/Landcover – Map 2



Source: data provided by CA State Parks in 2017; downloaded from NRCS in 2014

Vegetation/Land Cover – Map 3



Source: data provided by CA State Parks in 2017; downloaded from NRCS in 2014

Vegetation/Land Cover – Map 4

Appendix D

Existing Noise Conditions,
Noise Measurement Data, and
Noise Modeling Calculations

Construction Source Noise Prediction Model

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold		
Residence 1		

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Grader	85	0.4
Dozer	85	0.4

Ground Type	SOFT
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Grader	81.0
Dozer	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
84.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Construction Source Noise Prediction Model

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold		
Residence 1		

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Grader	85	1
Dozer	85	1

Ground Type	SOFT
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Grader	85.0
Dozer	85.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
88.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Construction Source Noise Prediction Model

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold		
Residence 1		

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Grader	85	0.4
Dozer	85	0.4
Paver	85	0.4

Ground Type	SOFT
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Grader	81.0
Dozer	81.0
Paver	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85.8

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Construction Source Noise Prediction Model

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold		
Residence 1		

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Grader	85	1
Dozer	85	1
Paver	85	1

Ground Type	SOFT
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Grader	85.0
Dozer	85.0
Paver	85.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
89.8

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Construction Source Noise Prediction Model

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold		
Residence 1		

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Grader	85	0.4
Dozer	85	0.4
Blasting	94	0.1

Ground Type	SOFT
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Grader	81.0
Dozer	81.0
Blasting	84.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
87.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Construction Source Noise Prediction Model

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold		
Residence 1		

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Grader	85	1
Dozer	85	1
Blasting	94	1

Ground Type	SOFT
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Grader	85.0
Dozer	85.0
Blasting	94.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
95.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Traffic Noise Spreadsheet Calculator

Project: ASRA GP EIR/EIS

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

Segment Description and Location				Input											Output				
						Distance to Directional Centerline, (feet)4		Traffic Distribution Characteristics								Distance to Contour, (feet)3			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)5,6,7	70 dBA	65 dBA	60 dBA	55 dBA
Existing Weekday																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	8,674	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	61.9	29	62	133	287
2	SR 49	Lincoln Way	Old Foresthill Road	10,053	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.1	16	35	75	162
3	Old Foresthill Road	SR 49	Foresthill Road	1,055	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	45.0	2	5	10	22
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	10,405	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.3	17	36	77	165
5	Skyridge Drive	Sacramento Street	Riverview Drive	975	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	44.7	2	4	10	21
6	Riverview Drive	Skyridge Drive	Maidu Drive	465	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	41.5	1	3	6	13
7	Maidu Drive	Auburn Folsom Road	China Bar Access	3,010	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	52.9	7	16	34	72
8	Sliger Mine Road	SR 193	San Martin Mine Road	833	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	47.3	3	7	14	31
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: ASRA GP EIR/EIS

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

				Input										Output				
	Segment Description and Location					Distance to Directional Centerline, (feet)4		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)3			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)5,6,7	70 dBA	65 dBA	60 dBA	55 dBA
Existing Weekend																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	7,946	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	61.5	27	58	126	271
2	SR 49	Lincoln Way	Old Foresthill Road	9,639	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	57.9	16	34	73	157
3	Old Foresthill Road	SR 49	Foresthill Road	1,728	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	47.2	3	6	14	30
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	9,479	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	57.9	16	33	72	155
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,046	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	45.0	2	5	10	22
6	Riverview Drive	Skyridge Drive	Maidu Drive	631	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	42.8	2	3	7	15
7	Maidu Drive	Auburn Folsom Road	China Bar Access	2,473	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	52.0	6	14	29	63
8	Sliger Mine Road	SR 193	San Martin Mine Road	697	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	46.5	3	6	13	27
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: ASRA GP EIR/EIS

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

Number	Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)4 Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)5,6,7	Distance to Contour, (feet)3 70 dBA	65 dBA	60 dBA	55 dBA
	Segment Description and Location			Input				Traffic Distribution Characteristics						Output				
Existing + Project Weekday																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	9,130	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	62.1	30	64	138	297
2	SR 49	Lincoln Way	Old Foresthill Road	11,570	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.7	18	38	82	177
3	Old Foresthill Road	SR 49	Foresthill Road	1,430	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	46.3	3	6	12	26
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	10,940	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.5	17	37	79	171
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,150	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	45.4	2	5	11	23
6	Riverview Drive	Skyridge Drive	Maidu Drive	640	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	42.9	2	3	7	15
7	Maidu Drive	Auburn Folsom Road	China Bar Access	3,190	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	53.1	8	16	35	75
8	Sliger Mine Road	SR 193	San Martin Mine Road	1,240	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	49.0	4	9	19	40
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: **ASRA GP EIR/EIS**

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

	Segment Description and Location			Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)[5,6,7]	70 dBA	65 dBA	60 dBA	55 dBA
Existing + Project Weekend																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	8,640	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	61.8	29	62	133	286
2	SR 49	Lincoln Way	Old Foresthill Road	12,020	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.9	18	39	84	182
3	Old Foresthill Road	SR 49	Foresthill Road	2,310	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	48.4	4	8	17	36
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	10,120	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.2	16	35	75	162
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,320	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	46.0	3	5	12	25
6	Riverview Drive	Skyridge Drive	Maidu Drive	900	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	44.3	2	4	9	19
7	Maidu Drive	Auburn Folsom Road	China Bar Access	2,740	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	52.5	7	15	32	68
8	Sliger Mine Road	SR 193	San Martin Mine Road	1,320	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	49.3	4	9	19	42
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: ASRA GP EIR/EIS

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

				Input										Output				
	Segment Description and Location				Speed	Distance to Directional Centerline, (feet)4		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)3			
Number	Name	From	To	ADT	(mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)5,6,7	70 dBA	65 dBA	60 dBA	55 dBA
Cumulative Weekday																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	12,500	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	63.5	37	79	170	366
2	SR 49	Lincoln Way	Old Foresthill Road	10,780	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.4	17	36	79	169
3	Old Foresthill Road	SR 49	Foresthill Road	1,100	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	45.2	2	5	10	22
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	11,180	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.6	17	37	80	173
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,110	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	45.2	2	5	10	22
6	Riverview Drive	Skyridge Drive	Maidu Drive	520	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	42.0	1	3	6	13
7	Maidu Drive	Auburn Folsom Road	China Bar Access	3,060	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	53.0	7	16	34	73
8	Sliger Mine Road	SR 193	San Martin Mine Road	1,630	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	50.2	5	10	22	48
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: **ASRA GP EIR/EIS**

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

	Segment Description and Location			Input										Output				
						Distance to Directional Centerline, (feet)$_4$		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)$_3$			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)$_{5,6,7}$	70 dBA	65 dBA	60 dBA	55 dBA
Cumulative Weekend																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	11,450	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	63.1	35	74	160	345
2	SR 49	Lincoln Way	Old Foresthill Road	10,330	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.2	16	35	76	165
3	Old Foresthill Road	SR 49	Foresthill Road	1,800	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	47.3	3	7	14	31
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	10,180	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.2	16	35	76	163
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,210	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	45.6	2	5	11	24
6	Riverview Drive	Skyridge Drive	Maidu Drive	700	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	43.2	2	4	8	16
7	Maidu Drive	Auburn Folsom Road	China Bar Access	2,720	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	52.4	7	15	31	68
8	Sliger Mine Road	SR 193	San Martin Mine Road	1,370	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	49.5	4	9	20	43
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: ASRA GP EIR/EIS

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

Segment Description and Location				Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)[5,6,7]	70 dBA	65 dBA	60 dBA	55 dBA
Cumulative + Project Weekday																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	12,960	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	63.6	37	81	174	375
2	SR 49	Lincoln Way	Old Foresthill Road	12,300	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.0	18	40	86	185
3	Old Foresthill Road	SR 49	Foresthill Road	1,480	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	46.5	3	6	13	27
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	11,720	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.8	18	39	83	179
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,280	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	45.9	2	5	11	25
6	Riverview Drive	Skyridge Drive	Maidu Drive	690	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	43.2	2	4	8	16
7	Maidu Drive	Auburn Folsom Road	China Bar Access	3,240	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	53.2	8	16	35	76
8	Sliger Mine Road	SR 193	San Martin Mine Road	2,040	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.2	6	12	26	56
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: ASRA GP EIR/EIS

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

		Segment Description and Location		Input											Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics								Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)[5,6,7]	70 dBA	65 dBA	60 dBA	55 dBA
Cumulative + Project Weekend																			
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	12,140	50	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	63.3	36	77	167	359
2	SR 49	Lincoln Way	Old Foresthill Road	12,710	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.1	19	41	88	189
3	Old Foresthill Road	SR 49	Foresthill Road	2,380	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	48.6	4	8	17	37
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	10,820	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.4	17	37	79	170
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,480	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	46.5	3	6	13	27
6	Riverview Drive	Skyridge Drive	Maidu Drive	970	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	44.7	2	4	9	20
7	Maidu Drive	Auburn Folsom Road	China Bar Access	2,990	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	52.9	7	16	33	72
8	Sliger Mine Road	SR 193	San Martin Mine Road	1,990	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.1	5	12	25	55

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: **ASRA GP EIR/EIS**

Noise Level Descriptor: CNEL
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

Number	Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)4 Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	CNEL, (dBA)5,6,7	Distance to Contour, (feet)3 70 dBA	65 dBA	60 dBA	55 dBA
	Segment Description and Location			Input				Traffic Distribution Characteristics						Output				
Existing Weekday																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	8,674	50	275	275	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.1	33	70	151	325
2	SR 49	Lincoln Way	Old Foresthill Road	10,053	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.9	18	39	85	183
3	Old Foresthill Road	SR 49	Foresthill Road	1,055	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	45.8	2	5	11	25
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	10,405	35	150	150	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.5	19	40	87	187
5	Skyridge Drive	Sacramento Street	Riverview Drive	975	25	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	50.0	2	5	11	23
6	Riverview Drive	Skyridge Drive	Maidu Drive	465	25	25	25	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.3	1	3	7	14
7	Maidu Drive	Auburn Folsom Road	China Bar Access	3,010	35	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.2	8	18	38	82
8	Sliger Mine Road	SR 193	San Martin Mine Road	833	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	48.1	3	7	16	35
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: ASRA GP EIR/EIS

Noise Level Descriptor: CNEL
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

Number	Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)[4] Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	CNEL, (dBA)[5,6,7]	Distance to Contour, (feet)[3] 70 dBA	65 dBA	60 dBA	55 dBA
	Segment Description and Location			**Input**				Traffic Distribution Characteristics						**Output**				
Existing Weekend																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	7,946	50	275	275	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	55.7	31	66	142	307
2	SR 49	Lincoln Way	Old Foresthill Road	9,639	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.8	18	38	83	178
3	Old Foresthill Road	SR 49	Foresthill Road	1,728	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	48.0	3	7	16	34
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	9,479	35	150	150	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.0	18	38	82	176
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,046	25	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	50.3	2	5	11	24
6	Riverview Drive	Skyridge Drive	Maidu Drive	631	25	25	25	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	52.6	2	4	8	17
7	Maidu Drive	Auburn Folsom Road	China Bar Access	2,473	35	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	57.4	7	15	33	72
8	Sliger Mine Road	SR 193	San Martin Mine Road	697	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	47.4	3	7	14	31
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: ASRA GP EIR/EIS

Noise Level Descriptor: CNEL
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

Segment Description and Location				Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	CNEL, (dBA)[5,6,7]	70 dBA	65 dBA	60 dBA	55 dBA
Existing + Project Weekday																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	9,130	50	275	275	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.3	34	72	156	337
2	SR 49	Lincoln Way	Old Foresthill Road	11,570	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.6	20	43	93	201
3	Old Foresthill Road	SR 49	Foresthill Road	1,430	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	47.2	3	6	14	30
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	10,940	35	150	150	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.7	19	42	90	194
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,150	25	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	50.7	3	6	12	26
6	Riverview Drive	Skyridge Drive	Maidu Drive	640	25	25	25	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	52.7	2	4	8	18
7	Maidu Drive	Auburn Folsom Road	China Bar Access	3,190	35	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.5	9	18	40	85
8	Sliger Mine Road	SR 193	San Martin Mine Road	1,240	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	49.9	5	10	21	45
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: ASRA GP EIR/EIS

Noise Level Descriptor: CNEL
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

Number	Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)4 Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	CNEL, (dBA)5,6,7	Distance to Contour, (feet)3 70 dBA	65 dBA	60 dBA	55 dBA
		Segment Description and Location		Input				Traffic Distribution Characteristics						Output				
Existing + Project Weekend																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	8,640	50	275	275	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.1	32	70	151	324
2	SR 49	Lincoln Way	Old Foresthill Road	12,020	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.7	21	44	96	206
3	Old Foresthill Road	SR 49	Foresthill Road	2,310	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	49.2	4	9	19	41
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	10,120	35	150	150	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.3	18	40	85	184
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,320	25	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.3	3	6	13	28
6	Riverview Drive	Skyridge Drive	Maidu Drive	900	25	25	25	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.2	2	5	10	22
7	Maidu Drive	Auburn Folsom Road	China Bar Access	2,740	35	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	57.8	8	17	36	77
8	Sliger Mine Road	SR 193	San Martin Mine Road	1,320	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	50.1	5	10	22	47
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: ASRA GP EIR/EIS

Noise Level Descriptor: CNEL
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

Number	Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)4 Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	CNEL, (dBA)5,6,7	Distance to Contour, (feet)3 70 dBA	65 dBA	60 dBA	55 dBA
	Segment Description and Location			Input										Output				
Cumulative Weekday																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	12,500	50	275	275	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	57.7	41	89	193	415
2	SR 49	Lincoln Way	Old Foresthill Road	10,780	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.2	19	41	89	192
3	Old Foresthill Road	SR 49	Foresthill Road	1,100	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	46.0	3	5	12	25
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	11,180	35	150	150	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.8	20	42	91	197
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,110	25	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	50.6	3	5	12	25
6	Riverview Drive	Skyridge Drive	Maidu Drive	520	25	25	25	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.8	2	3	7	15
7	Maidu Drive	Auburn Folsom Road	China Bar Access	3,060	35	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.3	8	18	38	83
8	Sliger Mine Road	SR 193	San Martin Mine Road	1,630	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.0	5	12	25	54
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: ASRA GP EIR/EIS

Noise Level Descriptor: CNEL
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

Number	Name	From	To	ADT	Speed (mph)	Distance to Directional Centerline, (feet)4 Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	CNEL, (dBA)5,6,7	Distance to Contour, (feet)3 70 dBA	65 dBA	60 dBA	55 dBA
	Segment Description and Location			Input				Traffic Distribution Characteristics						Output				
Cumulative Weekend																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	11,450	50	275	275	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	57.3	39	84	182	391
2	SR 49	Lincoln Way	Old Foresthill Road	10,330	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.1	19	40	87	186
3	Old Foresthill Road	SR 49	Foresthill Road	1,800	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	48.2	4	8	16	35
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	10,180	35	150	150	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.4	18	40	86	185
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,210	25	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.0	3	6	12	27
6	Riverview Drive	Skyridge Drive	Maidu Drive	700	25	25	25	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	53.1	2	4	9	19
7	Maidu Drive	Auburn Folsom Road	China Bar Access	2,720	35	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	57.8	8	17	36	77
8	Sliger Mine Road	SR 193	San Martin Mine Road	1,370	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	50.3	5	10	23	49
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: **ASRA GP EIR/EIS**

Noise Level Descriptor: CNEL
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

Segment Description and Location				Input										Output				
						Distance to Directional Centerline, (feet)4		Traffic Distribution Characteristics						CNEL,	Distance to Contour, (feet)3			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)5,6,7	70 dBA	65 dBA	60 dBA	55 dBA
Cumulative + Project Weekday																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	12,960	50	275	275	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	57.8	43	92	197	425
2	SR 49	Lincoln Way	Old Foresthill Road	12,300	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	59.8	21	45	97	210
3	Old Foresthill Road	SR 49	Foresthill Road	1,480	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	47.3	3	7	14	31
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	11,720	35	150	150	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	57.0	20	44	94	203
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,280	25	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.2	3	6	13	28
6	Riverview Drive	Skyridge Drive	Maidu Drive	690	25	25	25	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	53.0	2	4	9	18
7	Maidu Drive	Auburn Folsom Road	China Bar Access	3,240	35	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.5	9	19	40	86
8	Sliger Mine Road	SR 193	San Martin Mine Road	2,040	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	52.0	6	14	29	63
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project: ASRA GP EIR/EIS

Noise Level Descriptor: CNEL
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor:

	Segment Description and Location			Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						CNEL,	Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)[5,6,7]	70 dBA	65 dBA	60 dBA	55 dBA
Cumulative + Project Weekend																		
1	Foresthill Road	Lincoln Way	Old Auburn Foresthill Road	12,140	50	275	275	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	57.6	41	88	189	407
2	SR 49	Lincoln Way	Old Foresthill Road	12,710	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	60.0	21	46	99	214
3	Old Foresthill Road	SR 49	Foresthill Road	2,380	25	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	49.4	4	9	20	42
4	SR 49	Old Foresthill Road	Georgetown Road (SR 193)	10,820	35	150	150	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	56.6	19	41	89	192
5	Skyridge Drive	Sacramento Street	Riverview Drive	1,480	25	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.8	3	7	14	31
6	Riverview Drive	Skyridge Drive	Maidu Drive	970	25	25	25	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	54.5	2	5	11	23
7	Maidu Drive	Auburn Folsom Road	China Bar Access	2,990	35	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	58.2	8	18	38	82
8	Sliger Mine Road	SR 193	San Martin Mine Road	1,990	35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	51.9	6	13	29	62
					35	100	100	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%					

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Existing Noise Environment

Existing Noise- and Vibration-Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels, and because of the potential for nighttime noise to result in sleep disruption. Additional land uses such as schools, transient lodging, historic sites, cemeteries, and places of worship are also generally considered sensitive to increases in noise levels. These land use types are also considered vibration-sensitive land uses in addition to commercial and industrial buildings where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance.

Existing sensitive land uses exist throughout the project vicinity surrounding the ASRA. Because of the regional scale of this project and analysis, identification of individual receptors that might be affected by future, as yet unknown projects would not be possible. Noise levels and potential impacts are addressed generally because specific locations of future development are unknown.

Existing Noise Sources and Ambient Levels

The sound levels in most communities fluctuate, depending on the activity of nearby and distant noise sources, time of the day, or season of the year. Noise sources within and in the vicinity of the ASRA include roadway traffic, parking lot noise, aircraft flying overhead, and recreational activity (e.g., people talking, dogs barking). Other secondary noise influences include noise attributed to construction and natural events, such as thunderstorms.

The predominant noise source in the project area is vehicle traffic on the surrounding and internal roadway network (e.g., State Route [SR] 49, Forresthill Road, Old Forresthill Road, Sky Ridge Drive, Riverview Drive, Maidu Drive, Sliger Mine Road). Existing traffic noise levels on roadway segments in the project area modeled using calculation methods consistent with FHWA Traffic Noise Model, Version 2.5 (FHWA 2004) and using average daily traffic (ADT) volumes provided in the traffic analysis conducted by Fehr & Peers and summarized in Section 4.16, "Transportation and Circulation." Table 1 summarizes the modeled existing traffic noise levels at 100 feet from the centerline of each area roadway segments and lists distances from each roadway centerline to the 70, 65, and 60 CNEL traffic noise contours. For further details on traffic-noise modeling inputs and parameters, refer to Appendix X.

Table 1 Summary of Modeled Existing Traffic Noise Levels

Roadway Segment	CNEL at 100 feet from Roadway Centerline (dB)	Distance (feet) from Roadway Centerline to CNEL Contour		
		70	65	60
Foresthill Road (Lincoln Way to Old Auburn Foresthill Road)	61.9	29	62	133
SR 49 (Lincoln Way to Old Foresthill Road)	58.1	16	35	75
Old Foresthill Road (SR 49 to Foresthill Road)	45.0	2	5	10
SR 49 (Old Foresthill Road to Georgetown Road [SR 193])	58.3	17	36	77
Skyridge Drive (Sacramento Street to Riverview Drive)	44.7	2	4	10
Riverview Drive (Skyridge Drive to Maidu Drive)	41.5	1	3	6

Table 1 Summary of Modeled Existing Traffic Noise Levels

Roadway Segment	CNEL at 100 feet from Roadway Centerline (dB)	Distance (feet) from Roadway Centerline to CNEL Contour		
		70	65	60
Maidu Drive (Auburn Folsom Road to China Bar Access)	52.9	7	16	34
Slinger Mine Road (SR 193 to San Martin Mine Road)	47.3	3	7	14

Notes: CNEL = Community Noise Equivalent Level; dB = decibels; SR = State Route

All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow, and does not account for shielding of any type or finite roadway adjustments. For additional details, refer to Appendix X for detailed traffic data, and traffic-noise modeling input data and output results.

Source: Data modeled by Ascent Environmental in 2018.

Placer County General Plan

The Noise Element of the Placer County General Plan (2013) contains policies governing noise related to development within the respective counties, as identified below. The maximum allowable noise exposure limits for transportation noise sources in Placer County are summarized in Table 2.

Table 2 Placer County Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[1]	Interior Space	
	L_{dn}/CNEL	L_{dn}/CNEL	L_{eq}, dBA[2]
Residential	60[3]	45	
Transient Lodging	60[3]	45	
Hospitals, Nursing Homes	60[3]	45	
Theatres, Auditoriums, Music Halls			35
Churches, Meeting Halls	60[3]		40
Office Buildings			45
Schools, Libraries, Museums			45
Playgrounds, Neighborhood Parks	70		

Notes: CNEL = community noise equivalent level

[1] 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.

[2] As determined for a typical worst-case hour during periods of use.

[3] Where it is not possible to reduce noise in outdoor activity areas to 60 L_{dn}/CNEL or less using a practice applicable of the best-available noise reduction measures, and exterior noise level of up to 65 dBA 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.

Source: Placer County General Plan 2013.

Additionally, Policy 9.A.4 pf the Placer County General Plan states that single event impulsive noise levels produced by gunshots or blasting shall not exceed a peak linear overpressure of 122 dB, or a C-weighted Sound Exposure Level (SEL) of 98 dB_C. Additionally, it is stated within the Placer County General Plan that the cumulative noise level from impulsive sounds such as gunshots and blasting shall not exceed 60 dB L_{Cdn} or $CNEL_C$ on any given day, and that these standards shall be applied at the property line of a receiving land use.

Placer County Noise Ordinance

The Placer County Noise Ordinance (Article 9.36 of the Placer County Code) defines sound level performance standards for sensitive receptors (refer to Table 3). The ordinance states that it is unlawful for any person at any location to create any sound, or to allow the creation of any sound, on properly owned, leased, occupied, or otherwise controlled by such a person that causes the exterior sound level, when measured at the property line of any affected sensitive receptor, to exceed the ambient sound level by 5 dBA or exceed the sound level standards as set forth in Table 3, whichever is greater.

Table 3 Placer County Noise Ordinance Level Standards for Sensitive Receptors

Sound Level Descriptor (dBA)	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 p.m.)
Hourly L_{eq}	55	45
L_{max}	70	65

Notes: dBA = A-weighted decibels.

Source: Placer County Code.

Each of the sound level standards specified in Table 3 shall be reduced by 5 dBA for simple tone noises, consisting of speech and music. However, in no case shall the sound level standard be lower than the ambient sound level plus 5 dBA.

As described in Section 9.36.030, "Exemptions," some noise-generating activities are exempt from the above noise ordinance standards, including construction that is performed between 6:00 a.m. and 8:00 p.m., Monday through Friday, and between 8:00 a.m. and 8:00 p.m. Saturday and Sunday, provided that all construction equipment is fitted with factory-installed muffler devices and maintained in good working order.

El Dorado County General Plan

The Noise Element of the El Dorado County General Plan (2015) contains policies governing noise related to development within El Dorado County, as identified below. The maximum allowable noise exposure limits for transportation noise sources in El Dorado County are summarized in Table 4.

Table 4 El Dorado County Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[1]	Interior Space	
	L_{dn}/CNEL	L_{dn}/CNEL	L_{eq}, dBA[2]
Residential	60[3]	45	
Transient Lodging	60[3]	45	
Hospitals, Nursing Homes	60[3]	45	
Theatres, Auditoriums, Music Halls			35

Table 4 El Dorado County Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[1]	Interior Space	
	L_{dn}/CNEL	L_{dn}/CNEL	L_{eq}, dBA[2]
Churches, Meeting Halls	60[3]		40
Office Buildings			45
Schools, Libraries, Museums			45
Playgrounds, Neighborhood Parks	70		

Notes: CNEL = community noise equivalent level

[1] 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.

[2] As determined for a typical worst-case hour during periods of use.

[3] Where it is not possible to reduce noise in outdoor activity areas to 60 L_{dn}/CNEL or less using a practice applicable of the best-available noise reduction measures, and exterior noise level of up to 65 dBA 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.

Source: El Dorado County General Plan 2015.

The El Dorado County General Plan also includes standards for incremental noise increase standards from transportation noise sources and vary depending on existing ambient noise levels. See Table 5 below for standard

Table 5 Incremental Increase Threshold for Noise Exposure for Transportation Noise Sources

Ambient Noise Level Without Project	Increase Required for Significant Impact
<60 dB	5.0 dB, or greater
60–65 dB	3.0 dB, or greater
>65 dB	1.5 dB, or greater

Source: El Dorado County General Plan 2015.

In regard to construction noise, Policy 6.5.1.11 of the General Plan states that transportation and non-transportation noise source standards in the General Plan shall not apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends, and on federally-recognized holidays. The General Plan also includes maximum allowable noise exposure levels from construction activity if activity were to occur outside of the hours stated above. Table 6 below includes maximum allowable noise exposure levels from construction activity for various land uses in the county.

Table 6 Maximum Allowable Noise Exposure for Non-transportation Noise Sources in Rural Regions – Construction Noise

Land Use Designation	Time Period	Noise Level (dB)	
		L_{eq}	L_{max}
All Residential (LDR)	7 am–7 pm	55	75
	7 pm–10 pm	50	65
	10 pm–7 am	45	60
Commercial and Public Facilities (C, TR, PF)	7 am–7 pm	70	90
	7 pm–7 am	65	75
Rural Land, Natural Resources, Open Space, and Agricultural Lands (RR, NR, OS, AL)	7 am–7 pm 7 pm–7 am	55 50	75 65

El Dorado County Noise Ordinance

The El Dorado County Noise Ordinance (Chapter 130.37 of the El Dorado County Code) defines sound level performance standards for sensitive receptors (refer to Table 4.12-3). The code states that it is unlawful for any person at any location to create any sound, or to allow the creation of any sound, on properly owned, leased, occupied, or otherwise controlled by such a person that causes the exterior sound level, when measured at the property line of any affected sensitive receptor, to exceed the ambient sound level by 5 dBA or exceed the sound level standards as set forth in Table 7 whichever is greater.

Table 7 Noise Level Performance Protection Standards for Noise Sensitive Land Uses Affected by Non-Transportation Sources

Sound Level Descriptor (dBA)	Daytime (7:00 a.m. to 10:00 p.m.)		Evening (7 p.m. to 10 p.m.)		Nighttime (10:00 p.m. to 7:00 p.m.)	
	Community	Rural	Community	Rural	Community	Rural
Hourly L_{eq}	55	50	50	45	45	40
L_{max}	70	60	60	55	55	50

Notes: dBA = A-weighted decibels.

Each of the noise levels specified above shall be lowered by five dB 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).

The County can impose noise level standards which are up to 5 dB less than those specified above based upon determination of existing low ambient noise levels in the vicinity of the project site.

In Community areas the exterior noise level standard shall be applied to the property line of the receiving property. In Rural Areas the exterior noise level standard shall be applied at a point 100' away from the residence. The above standards shall be measured only on property containing a noise sensitive land use as defined in Objective 6.5.1. This measurement standard may be amended to provide for measurement at the boundary of a recorded noise easement between all effected property owners and approved by the County.

*Note: For the purposes of the Noise Element, transportation noise sources are defined as traffic on public roadways, railroad line operations and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Control of noise from facilities of regulated public facilities is preempted by California Public Utilities Commission (CPUC) regulations. All other noise sources are subject to local regulations. Non-transportation noise sources may include industrial operations, outdoor recreation facilities, HVAC units, schools, hospitals, commercial land uses, other outdoor land use, etc.

Source: El Dorado County General Plan 2015.

City of Auburn Noise Element

The General Plan for the City of Auburn (1993) contains policies governing noise related to development within the City of Auburn, as identified below. The maximum allowable noise exposure limits for transportation noise sources in the City of Auburn are summarized in Table 8.

Table 8 City of Auburn Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[1]	Interior Space	
	L_{dn}/CNEL	L_{dn}/CNEL	L_{eq}, dBA[2]
Residential	60[3]	45	
Transient Lodging	60[3]	45	
Hospitals, Nursing Homes	60[3]	45	
Theatres, Auditoriums, Music Halls			35
Churches, Meeting Halls	60[3]		40
Office Buildings	65		45
Schools, Libraries, Museums			45
Playgrounds, Neighborhood Parks	70		

Notes: CNEL = community noise equivalent level

1 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.

2 As determined for a typical worst-case hour during periods of use.

3 Where it is not possible to reduce noise in outdoor activity areas to 60 L_{dn}/CNEL or less using a practice applicable of the best-available noise reduction measures, and exterior noise level of up to 65 dBA 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.

Source: City of Auburn General Plan 1993.

Citations

Yellow = confusing (sequential lettering doesn't match, years don't match, misspellings, etc.)
Green = matched reference
Aqua = missing full reference
Pink = no citation in text

FHWA 2004
Placer County General Plan (2013)
El Dorado County General Plan (2015)
General Plan for the City of Auburn (1993)

References

Appendix E

Transportation Study

Transportation Study for the Auburn State Recreation Area General Plan and Auburn Project Lands Resource Management Plan

Prepared for:
California State Parks,
U.S. Bureau of Reclamation,
and Ascent Environmental

February 16, 2019

RS15-3331

FEHR PEERS

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Introduction

This study analyzes potential transportation impacts associated with the implementation of the Auburn State Recreation Area (ASRA) General Plan. The purpose of the ASRA is to preserve and make the outstanding recreational, scenic, natural, and cultural values of the North and Middle Forks of the American River, Lake Clementine, the steep river canyons, and associated upland areas available to the people for their enjoyment and inspiration, while recognizing that Congress may determine that an Auburn Dam and Reservoir may be constructed at some time in the future. The area's rugged and varied terrain provides for a wide variety of water-related and upland, backcountry, and close-in outdoor recreation with outstanding opportunities for appreciation of the recreation area and relaxation for visitors of all abilities.

This study evaluates the potential impacts of the proposed ASRA General Plan (Plan) upon the surrounding transportation system. The impact analysis conducted for this study evaluated the roadway, bicycle, pedestrian, and transit components of the overall transportation system under the following scenarios:

- Existing Conditions – represents the baseline condition, upon which plan impacts are measured. The baseline condition represents conditions in August 2018.
- Existing Plus Project Conditions – reflects changes in travel conditions associated with implementation of the Plan.
- Cumulative Conditions – represents the cumulative baseline condition, upon which cumulatively considerable impacts are measured. The cumulative scenario represents future conditions in 2036.
- Cumulative Plus Project Conditions – reflects changes in cumulative travel conditions associated with implementation of the Plan.

Project Description

The General Plan represents a long-term (approximately 20-year) vision for the future of the ASRA. The Preferred Alternative Plan includes numerous enhancements to existing components of the ASRA, in addition to new facilities, all of which are intended to improve the visitor experience. Components of the California State Parks Proposed Action, grouped by management zone (as shown in Figure 1), include the following:

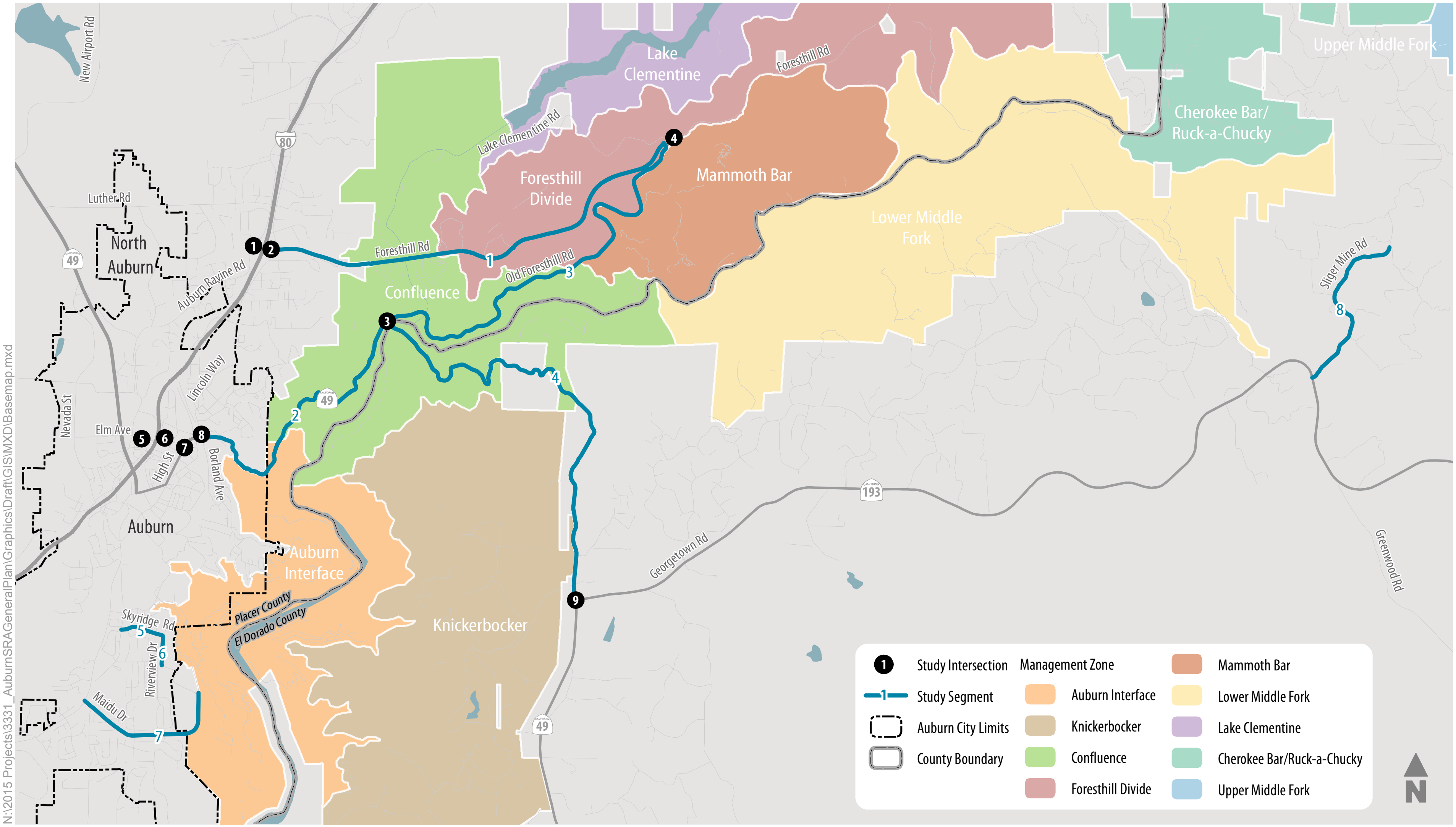

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Figure 1

Project Study Intersections and Roadway Segments

1. **Knickerbocker Management Zone**
   - Install interpretive elements to the existing trailhead and Cool Staging Area, to educate visitors about the natural and cultural resources of the area.
   - Construct additional day use facilities at the existing trailhead and Cool Staging Area within the developed and/or previously disturbed area. Add up to five shade ramadas, 10 picnic sites, restrooms and interpretive elements.
   - Expand and improve the Cool Staging Area and construct additional day use facilities. Add up to 50 parking stalls, 10 shade ramadas and 20 picnic sites, interpretive elements and restrooms.
   - Construct up to 50 individual campsites, including alternative camping options (cabins, yurts, etc.), and up to three group camps. Construct a small maintenance yard and equipment storage area of up to ¼ acre.
2. **Auburn Interface Management Zone**
   - Increase vehicle access through China Bar entrance station depending upon demand. Allow vehicle access without necessarily having China Bar entrance station staffed.
   - Construct a year-round multi-use trail bridge across the lower North Fork in the China Bar Area. The Upper Outlet Rapid location is identified as a preliminary preferred ACT bridge site.
   - Construct mountain bike technical trails.
   - Provide public vehicle access from Cool to the river at Rocky Point and add up to 100 parking spaces. Actions may include, but are not limited to, clearing, widening, grading, and the installation of paving, vehicle barriers, signage, fencing, drainage features, and trash receptacles.
   - Improve river access points in the China Bar area on the west side of the river, including up to 50 parking stalls and trails to river. Actions may include, but are not limited to, re-aligning, clearing, widening, grading, paving, striping, and the installation of vehicle barriers, signage, drainage features, and trash receptacles.
   - Construct one group and up to 50 individual developed campsites, including alternative camping facilities such as camp cabins.
   - Construct additional day use facilities on the west side of the river. Add up to 30 family and group picnic sites and 20 shade ramadas. Construct restrooms; trailhead and staging area facilities; and formalized gathering and use areas that support special events and programs. Provide recreation equipment rentals, such as bicycles, rafts, kayaks, etc.
   - Construct river and trail access on the east side of the river, formalized gathering and use areas that support special events and programs, and other day use facilities at the flat at Rocky Point. Add up to 20 shade ramadas, 20 picnic sites, and restrooms.

- Construct and install a wide array of recreation facilities to accommodate additional types and capacities of active recreational activities, including trail use and river access, within previously disturbed areas on the east side of the river.
- Increase boating concession opportunities below the Confluence, including rafting and inflatable kayak trips, canoeing and kayaking trips, and SUP trips.
- Institute or promote shuttle services for boaters, including between Confluence and China Bar, either through concession or partnership with local jurisdictions or other entities.
- Construct, renovate or modify river launching and landing facilities. Actions may include, but are not limited to, clearing, widening, grading, and the installation of vehicle barriers, signage, fencing, drainage features, and trash receptacles.

3. Confluence Management Zone

- To improve public safety and revenue generation, work with Caltrans, Placer County and El Dorado County, to formalize parking along SR 49 and install pedestrian safety improvements (e.g., pathways, crosswalks, signage, etc.) on the SR 49 Bridge, Old Auburn-Foresthill Road, and at roadside parking areas.
- Work with City of Auburn, Placer County, El Dorado County, and any relevant transit and transportation agencies to construct drop off areas and provide shuttle or transit stops at trailheads.
- Increase wayfinding near the Confluence, through improved mapping and signage. Utilize technology (e.g., smart phone, changeable message signs) to identify areas of parking availability.
- Construct a small canyon rim overlook and interpretive facility near Foresthill Bridge.
- Provide guided tours of the Mine.
- Expand climbing events at the Cool Cave Quarry area. Construct restrooms and install interpretive elements.
- Expand climbing to other areas within the Confluence Management Zone.
- Improve the Lake Clementine Trail as the first segment of a multi-use trail from the Confluence to Ponderosa Road Crossing. Actions may include, but are not limited to, re-aligning, clearing, widening, grading, and the installation of signage, drainage features, and trash receptacles.
- Improve boating put-in at Confluence to increase river access for boaters and to minimize conflicts with swimmers/sunbathers. Actions may include, but are not limited to, creating a new river access trail and/or road, re-aligning, clearing, widening, grading, paving, striping, and the installation of vehicle barriers, signage, drainage features, trash receptacles and toilets.
- Connect the Lake Clementine Trail to the North Fork Dam Overlook. Improve trail access to the river from the Lower Lake Clementine parking area. Actions may include, but are not limited to,

clearing, widening, grading, and the installation of signage, fencing, drainage features, and trash receptacles.

- Construct portage trail for paddlecraft users around Murderers Bar Rapid, including take-out and put-in locations. Actions may include, but are not limited to, clearing vegetation, constructing trail tread and drainage features, and the installation of signage.

4. **Foresthill Divide Management Zone**
   - Construct a small developed campground of up to 20 campsites, with a small maintenance yard and equipment storage area of about ¼ acre.
   - Improve trailhead and trail access facilities at various locations. Add up to 100 parking stalls, 10 shade ramadas and 20 picnic sites, and restrooms.
5. **Lake Clementine Management Zone**
   - Provide paddlecraft concession opportunities that include classes, trips, rentals and boat storage facilities at either Lower Lake Clementine or Upper Lake Clementine.
   - Provide concession opportunities for motorized and nonmotorized watercraft, including marina slips, rentals, trips, instruction, supplies and storage.
6. **Mammoth Bar Management Zone**
   - Potentially relocate the OHV tracks and staging area to an upland location, connected to existing OHV trail system, and with vehicle access along Foresthill Road. Investigate a potential site near Castle Rock.
   - If the OHV tracks are removed or relocated to an upland location, utilize the existing parking and staging area, trials biking area, and track areas for other recreation facilities including, but not limited to: up to 50 developed campground sites, up to 50 day use parking stalls, 10 shade ramadas and 20 picnic sites, restrooms and improved river access. Restore riparian habitat along the river.
   - Construct technical and downhill mountain biking trails and other active recreation opportunities.
7. **Lower Middle Fork Management Zone**
   - Construct more formalized public trailhead facilities and trail access. Actions may include, but are not limited to, re-aligning, clearing, widening, grading, and the installation of up to 20 parking stalls, vehicle barriers, signage, drainage features, and trash receptacles.
8. **Cherokee/Ruck-a-Chucky Management Zone**
   - Renovate existing campsites. Construct up to 10 additional campsites near Ruck-a-Chucky.
   - Construct a small campground at Cherokee Bar, with up to 20 individual, developed campsites and one group camp, outside the floodway. Coordinate with improvements to Sliger Mine Road.
   - Install up to five alternative camping facilities, such as camp cabins.

- Renovate existing campsites. Construct up to 10 additional campsites near Ruck-a-Chucky.
- Construct a small campground at Cherokee Bar, with up to 20 individual, developed campsites and one group camp, outside the floodway. Coordinate with improvements to Sliger Mine Road.
- Install up to five alternative camping facilities, such as camp cabins.
- Improve McKeon-Ponderosa Road and open the road for public vehicle access to the river. Actions may include, but are not limited to, re-aligning, clearing, widening, grading, and the installation of vehicle barriers, signage, drainage features, and trash receptacles.
- Construct day use facilities at Cherokee Bar. Add up to 40 parking stalls, 10 shade ramadas and 10 picnic sites, and restrooms. Coordinate development of new facilities with improvements to Sliger Mine Road.
- Construct a trail bridge over the river at the Greenwood Bridge site.

9. **Upper North Fork Management Zone**
   - Construct additional day use facilities at Yankee Jims and Ponderosa Road crossings. Add up to 40 parking stalls, 20 picnic sites, and restrooms.
10. **Mineral Bar Management Zone**
    - Renovate and expand campground. Add up to 20 individual campsites.
    - Improve boat launch area(s), river access and day use facilities to improve visitor experience and increase capacity. Actions may include, but are not limited to, re-aligning, clearing, widening, grading, and the installation of signage, drainage features, and trash receptacles. Add up to 20 parking stalls, 10 picnic sites, and restrooms.
11. **Upper Middle Fork Management Zone**
    - Construct river recreation facilities at lunch stop sites. Add up to 10 picnic sites, and toilets.

Project Study Area

The study area (Figure 1) was developed based on the Plan's expected changes to travel patterns; this included identification of primary travel routes to/from/through the ASRA, anticipated travel characteristics associated with the Plan (locations of new and expanded facilities and number of trips), as well as facilities susceptible to being impacted by the Plan.

In recognition of the size and diversity of conditions found within the study area, study facilities within this area include a mix of intersections and roadway segments. In urban and suburban environments, roadway capacity is typically governed by the operations of intersections; in rural settings, with longer distances between intersections, roadway capacity is typically governed by the characteristics of the roadway segment itself.

The following nine intersections and eight roadway segments were studied as part of the ASRA transportation analysis:

Study Intersections

1. Auburn Ravine Road/I-80 Westbound (WB) On-Ramp/Bowman Road

1a. Auburn Ravine Road/I-80 WB Off-Ramp

2. Auburn Ravine Road/I-80 Eastbound (EB) Ramps
3. Foresthill Road/Old Auburn Foresthill Road
4. State Route (SR) 49/Old Foresthill Road
5. Elm Avenue/I-80 WB Ramps
6. Elm Avenue/I-80 EB Ramps
7. Elm Avenue/High Street (SR 49)
8. El Dorado Street (SR 49)/Lincoln Way/Borland Avenue
9. Coloma Road (SR 49)/Georgetown Road (SR 193)

Study Roadway Segments

1. Foresthill Road: Lincoln Way to Old Auburn Foresthill Road
2. SR 49: Lincoln Way to Old Foresthill Road
3. Old Foresthill Road: SR 49 to Foresthill Road
4. SR 49: Old Foresthill Road to Georgetown Road (SR 193)
5. Skyridge Drive: Sacramento Street to Riverview Drive
6. Riverview Drive: Skyridge Drive to Maidu Drive
7. Maidu Drive: Auburn Folsom Road to China Bar Access
8. Sliger Mine Rd: SR 193 to San Martin Mine Rd

Data Collection

To provide a baseline for the intersection and roadway analysis, traffic counts were conducted at the nine study intersections and eight roadway segments. The intersection counts occurred on Thursday, August 9, 2018, from 7 AM to 9 AM and 4 PM to 6 PM, and Saturday, August 11, 2018, from 11 AM to 3 PM. August is within the peak season for recreational visits to ASRA, and these hours represent typical weekday and Saturday peak periods of the adjacent roadways and the ASRA. Pedestrians and bicyclists were also counted at each of the study intersections. Roadway segment counts were conducted for a 48-hour period over two days, Friday, August 10, 2018 and Saturday, August 11, 2018. During the counts, weather conditions were dry.

Each intersection's peak hour within the peak period was used for the analysis. The counts indicate that the overall AM peak hour is between 7:30 AM and 8:30 AM and the overall PM peak hour is between 4:30 PM and 5:30 PM on weekdays. The overall midday peak hour on Saturdays is 11:30 AM to 12:30 PM.

Regulatory Setting

This section summarizes the local transportation policies and regulations that are applied as part of this study. This information provides context for the impact discussion related to the proposed project's consistency with applicable regulatory conditions.

Caltrans

Several Caltrans documents are relative to this report:

- **Guide for the Preparation of Traffic Impact Studies:** Caltrans' Guide for the Preparation of Traffic Impact Studies (December 2002) provides guidance on the evaluation of traffic impacts to State highway facilities. The document outlines when a traffic impact study is needed and what should be included in the scope of the study.
- **Transportation Corridor Concept Report (Interstate 80):** The Interstate 80 Transportation Corridor Concept Report (Caltrans 2017) is a long-range planning document that identifies existing route conditions and future (20 years) needs, including existing and forecasted travel data and a concept level of service standard. Segment 10 includes the ramp intersections included in this study. The corridor's concept standard LOS is D for this segment.
- **Transportation Corridor Concept Report (State Route 49):** The State Route 49 Transportation Corridor Concept Report (Caltrans 2017) is a long-range planning document that identifies existing route conditions and future (20 years) needs, including existing and forecasted travel data and a concept level of service standard. Segments 7 and 8 include the roadway segments of SR 49 in the study area. The corridor's concept standard LOS is D in these segments.
- **Transportation Corridor Concept Report (State Route 193):** The State Route 193 Transportation Corridor Concept Report (Caltrans 2017) is a long-range planning document that identifies existing route conditions and future (20 years) needs, including existing and forecasted travel data and a concept level of service standard. Segment 4 includes the intersection of SR 49 and SR 193 in the study area. The corridor's concept standard LOS is D in this segment.

El Dorado County

The 2004 El Dorado General Plan Circulation Map (Figure TC-1 of the General Plan) depicts the proposed circulation system of existing, approved, and planned development in unincorporated El Dorado County through 2025. This circulation system is shown on the General Plan Circulation Map using a set of roadway width classifications developed to guide the County's long-range transportation planning and programming (El Dorado 2004).

The following general plan policy goals are applicable to the project:

Goal TC-X: To coordinate planning and implementation of roadway improvements with new development to maintain adequate levels of service on County roads.

Goal TC-2: To promote a safe and efficient transit system that provides service to all residents, including senior citizens, youths, the disabled, and those without access to automobiles that also helps to reduce congestion, and improves the environment.

Goal TC-4: To provide a safe, continuous, and easily accessible non-motorized transportation system that facilitates the use of the viable alternative transportation modes.

The following general plan policy is applicable to the project:

Policy TC-Xd: Level of Service (LOS) for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions except as specified in Table TC-2. The volume to capacity ratio of the roadway segments listed in Table TC-2 shall not exceed the ratio specified in that table. Level of Service will be as defined in the latest edition of the Highway Capacity Manual (Transportation Research Board, National Research Council) and calculated using the methodologies contained in that manual. Analysis periods shall be based on the professional judgment of the Department of Transportation which shall consider periods including, but not limited to, Weekday Average Daily Traffic (ADT), AM Peak Hour, and PM Peak hour traffic volumes.

Placer County

The *Placer County General Plan* (Placer County, 2013) provides long-range direction and policies for the use of land within Placer County. For the transportation and circulation system serving the project, the Placer County General Plan establishes an overall roadway system including a roadway functional classification system and designates a series of transit development corridors generally along I-80 and

SR 65. In addition, six modal goals are presented that are supported by numerous policies and implementation programs. For the purposes of this study, the goals and policies of the Placer County General Plan are used in developing the impact significance criteria.

The following transportation policies in the Placer County General Plan are relevant for this study:

Policy 3.A.7. The County shall develop and manage its roadway system to maintain the following minimum levels of service (LOS), or as otherwise specified in a community or specific plan.

a. LOS "C" on rural roadways, except within one-half mile of state highways where the standard shall be LOS "D".
b. LOS "C" on urban/suburban roadways except within one-half mile of state highways where the standard shall be LOS "D".
c. An LOS no worse than specified in the Placer County Congestion Management Program (CMP) for the state highway system.

Temporary slippage in LOS C may be acceptable at specific locations until adequate funding has been collected for the construction of programmed improvements.

The County may allow exceptions to the level of service standards where it finds that the improvements or other measures required to achieve the LOS standards are unacceptable based on established criteria. In allowing any exception to the standards, the County shall consider the following factors:

- The number of hours per day that the intersection or roadway segment would operate at conditions worse than the standard.
- The ability of the required improvement to significantly reduce peak hour delay and improve traffic operations.
- The right-of-way needs and the physical impacts on surrounding properties.
- The visual aesthetics of the required improvement and its impact on community identity and character.
- Environmental impacts including air quality and noise impacts.
- Construction and right-of-way acquisition costs.
- The impacts on general safety.
- The impacts of the required construction phasing and traffic maintenance.
- The impacts on quality of life as perceived by residents.
- Consideration of other environmental, social, or economic factors on which the County may base findings to allow an exceedance of the standards.

Exceptions to the standards will only be allowed after all feasible measures and options are explored, including alternative forms of transportation.

Policy 3.A.11. The County shall require an analysis of the effects of traffic from all land development projects. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project consistent with Policy 3.A.7. Such improvements may include a fair share of improvements that provide benefits to others.

City of Auburn

The current *City of Auburn General Plan* (November 1993) sets forth the goals and policies that will guide future growth in the Auburn area. The Plan is used by City staff and City decision makers to review new development in order to ensure that future development will contribute to retaining and improving the character of Auburn as a unique and readily identifiable foothill community. The following goals and policies are relevant to this study.

Policy 1.1 The City should maintain a peak hour level of service "D" at City-maintained Intersections and a peak hour/ daily level of service "D" on City-maintained roadways as measured by the most recent Highway Capacity Manual and adopted by the City Council.

(Note: One or both of the roadway level of service standards shall apply to roadways that are impacted by proposed development projects based on the level of impact associated with each project as determined by the City.)

Policy 1.2 Widen intersections and streets where additional capacity is required.

Goal 3 Encourage transportation alternatives to the single-occupant automobile.

The *City of Auburn General Plan EIR* (1993) also uses the Traffic Intrusion on Residential Environment (TIRE) index to determine the impact of traffic on residential streets, stating the following:

> Large increases in traffic on residential streets can influence safety, noise, aesthetics, air quality and other factors that combine to affect quality of life. The TIRE method is used in this EIR to characterize quality of life impacts relative to traffic volumes. TIRE is a numerical representation of a resident's perception of the effect of street traffic on activities such as walking, cycling and playing, and on daily tasks such as maneuvering an auto out of a residential driveway. An acronym for "Traffic Infusion on Residential Environment", TIRE is expressed by index values that range from zero, representing the least affect [sic] of traffic, to five, representing the severest affect [sic]….

Streets with TIRE levels above the mid range index of 3.0 are traffic-dominated while those with indexes below 3.0 are better suited for residential activities….

For this analysis, conversion of a residential street to a traffic-dominated street with the addition of the project is considered a significant impact.

Significance Criteria

The following thresholds of significance have been used to determine whether implementing the proposed project would result in a significant transportation impact. These thresholds of significance are derived from questions posed in Appendix G of the CEQA Guidelines, thresholds of significance from applicable general plans and previous environmental documents, and professional judgment. A description of the significance criteria for each jurisdiction is provided.

Roadway System

Caltrans

As noted above, the I-80, SR 49, and SR 193 TCRs identify a Concept LOS of LOS D for State highway segments within the study area. Concept LOS is the minimum acceptable LOS over the next 20 years. Per Caltrans's *Guide for the Preparation of Traffic Impact Studies*, where an existing state highway facility is operating at less than the Concept LOS, the existing measure of effectiveness (MOE) should be maintained. For intersection operations, the MOE is average control delay; and for roadway segments, the MOE is volume-to-capacity (v/c) ratio.

The project would have a significant impact if it would:

1. Cause an intersection or roadway under Caltrans jurisdiction to worsen from an acceptable LOS D or better to an unacceptable LOS E or F during the AM or PM peak hours.
2. Cause an intersection under Caltrans jurisdiction that is currently (or projected to be) operating at an unacceptable LOS E or F during the AM or PM peak hours to experience an increase in overall average intersection delay of 1 second or greater.
3. Cause a roadway under Caltrans jurisdiction that is currently (or projected to be) operating at an unacceptable LOS on a daily basis to experience an increase in v/c ratio of 0.01 or greater.

El Dorado County

As noted above, Policy TC-Xd in the El Dorado County General Plan (2004) establishes a minimum LOS E standard in the Community Regions or LOS D in the Rural Centers and Rural Regions except as specified in Table TC-2. The volume to capacity ratio of the roadway segments listed in Table TC-2 shall not exceed the ratio specified in that table. According to Table TC-2, SR 49 from SR 193 to Placer County line may operate at LOS F with maximum volume to capacity ratio of 1.51.

The El Dorado County Community Development Agency *Transportation Impact Study Guidelines* (November 2014) identifies the following significance criteria for determining impacts to roadway segments that already operate unacceptably:

- A two (2) percent increase in traffic during the AM peak hour, PM peak hour, or daily, or
- The addition of 100 or more daily trips, or
- The addition of 10 or more trips during the AM peak hour or the PM peak hour

The project would have a significant impact if it would:

1. Cause a county road or state highway in El Dorado County to worsen from an acceptable LOS or volume/capacity ration to an unacceptable LOS or volume/capacity ratio during the AM or PM peak hours.
2. Cause a roadway in El Dorado County that is currently (or projected to be) operating at an unacceptable LOS on a daily basis to experience a two (2) percent increase in traffic during the AM peak hour, PM peak hour, or daily.
3. Increase the average daily traffic (ADT) volume by 100 or more project generated trips on a roadway segment in El Dorado County that is currently (or projected to be) operating at an unacceptable LOS.
4. Increase the AM or PM peak hour traffic volume by 10 or more project generated trips on a roadway segment in El Dorado County that is currently (or projected to be) operating at an unacceptable LOS.

Placer County

As noted above, Policy 3.A.7 in the Placer County *General Plan* (May 2013) establishes a minimum LOS C standard for County roadways and intersections, except within one-half mile of state highways where the standard shall be LOS D.

The Placer County Department of Public Works *Impact Analysis Methodology of Assessment* memorandum (2015) identifies the use of a 0.05 increase in the volume-to-capacity (v/c) ratio or an increase in ADT of 100 or more project generated trips per lane as the threshold as the significance criteria for determining impacts to roadway segments that already operate unacceptably. Similarly, the *Impact Analysis Methodology of Assessment* memorandum identifies a four-second threshold for signalized intersections and 2.5-second threshold for unsignalized intersections as the significance criteria for determining impacts to intersections that already operate unacceptably.

The project would have a significant impact if it would:

1. Cause a signalized intersection or roadway in Placer County to worsen from an acceptable LOS to an unacceptable LOS during the AM or PM peak hours.
2. Cause an unsignalized intersection in Placer County to worsen from an acceptable LOS to an unacceptable LOS during the AM or PM peak hours and cause the intersection to meet the MUTCD peak hour traffic signal warrant.
3. Cause a roadway in Placer County that is currently (or projected to be) operating at an unacceptable LOS on a daily basis to experience an increase in v/c ratio of 0.05 or greater.
4. Increase the average daily traffic (ADT) volume by 100 or more project generated trips per lane on a roadway segment in Placer County that is currently (or projected to be) operating at an unacceptable LOS.
5. Cause a signalized intersection in Placer County that is currently (or projected to be) operating at an unacceptable LOS during the AM or PM peak hours to experience an increase in the overall average intersection delay of 4 seconds or greater.
6. Cause an unsignalized intersection in Placer County that is currently (or projected to be) operating at an unacceptable LOS during the AM or PM peak hours and meets the MUTCD peak hour traffic signal warrant to experience a 2.5-second or greater increase in delay.

City of Auburn

As noted above, Policy 1.1 in the City of Auburn *General Plan* (November) establishes a minimum LOS D standard for City roadways and intersections.

The project would have a significant impact if it would:

1. Cause an intersection or roadway in the City of Auburn to worsen from an acceptable LOS to an unacceptable LOS during the AM or PM peak hours.
2. Cause an increase in delay on roadway in the City of Auburn that is currently (or projected to be) operating at an unacceptable LOS.
3. Cause conversion of a residential street to a traffic-dominated TIRE index (greater than 3.0).

Bicycle & Pedestrian System

The project would have a significant impact on the bicycle and pedestrian system if it would:

- Not meet the policies related to bicycle or pedestrian travel outlined in the *El Dorado County General Plan*, *Placer County General Plan,* or *City of Auburn General Plan*

- Interfere with the operation of an existing bicycle facility or preclude the construction of a planned bicycle facility in the *El Dorado County General Plan*, *Placer County General Plan, City of Auburn General Plan. El Dorado County Bicycle Transportation Plan, Placer County Regional Bikeway Plan*, or *City of Auburn Bikeway Master Plan*

- Interfere with the operation of an existing pedestrian facility or preclude the construction of a planned pedestrian facility

Transit System

The project would have a significant impact on the transit system if it would:

- Not meet the policies related to transit travel outlined in the *El Dorado County General Plan, Placer County General Plan,* or *City of Auburn General Plan*

- Interfere with the operation of an existing transit facility or preclude the construction of a planned transit facility

- Have a negative impact on transit operations, travel times, and/or circulation

Analysis Methodology

This study analyzes traffic operations using level of service (LOS) as the primary measure of performance. Automobile LOS is a qualitative description of traffic flow from the perspective of motorists. The *Highway Capacity Manual* (HCM) *6th Edition* (Transportation Research Board, 2016) defines six levels of service from LOS A representing the least congested traffic conditions to LOS F representing the most congested traffic conditions. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving, as well as speed, travel time, traffic interruptions, and freedom to maneuver.

All intersections were analyzed using procedures and methodologies contained in the HCM 6th Edition. These methodologies were applied using Synchro (Version 10), a traffic operations analysis software package. This program considers traffic volumes, lane configurations, signal timings, signal coordination, and other pertinent parameters of intersection operations.

All analysis is based on a presumption that future travel behavior will be consistent with recent travel behavior. Disruptive trend changes including transportation networking companies (TNCs) such as Uber and Lyft, lower fuel prices, and public availability of autonomous vehicles (AVs) may change future travel behaviors, resulting in future travel patterns that differ from current forecasts.

Intersection Operations

Intersection LOS is based on the control delay experienced by motorists traveling through the intersection.

Signalized Intersections

This study analyzes traffic operations at signalized intersections using the procedures described in Chapter 19 of the HCM 6th Edition. Signalized intersection LOS is based on the weighted average control delay measured in seconds per vehicle for the overall intersection. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration. Table 1 presents the delay range for each LOS for signalized intersections. Note that in addition to these delay ranges, if an intersection experiences a volume-to-capacity ratio that exceeds 1.0, it represents failure (i.e., LOS F) from a capacity perspective regardless of the delay.

Table 1: Level of Service Definitions – Signalized Intersections

Level of Service	Description	Average Control Delay[1]
A	Volume-to-capacity ratio is low and either progression is exceptionally favorable or cycle length is very short. Most vehicles arrive during the green phase and travel through the intersection without stopping.	≤ 10
B	Volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	>10 to ≤ 20
C	Progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 to ≤ 35
D	Volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35 to ≤ 55
E	Volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	>55 to ≤ 80
F	Volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80

Notes:

1. Average control delay presented in seconds per vehicle.

Source: *Highway Capacity Manual 6th Edition*, Transportation Research Board, 2016.

Unsignalized Intersections

This study analyzes traffic operations at unsignalized intersections using the procedures described in Chapters 20, 21, and 22 of HCM 6th Edition. Similar to signalized intersections, the HCM methodology for unsignalized intersections reports the LOS based on the control delay experienced by motorists traveling through the intersection. For intersections under Caltrans jurisdiction, this study reports the weighted average control delay for all motorists traveling through the intersections, as prescribed by the HCM 6th Edition. For side-street stop-controlled intersections under Placer County jurisdiction, this study reports the weighted average control delay for movements that yield the right-of-way, as described in the Placer County Department of Public Works *Impact Analysis Methodology of Assessment* memorandum (2015).

The delay ranges and LOS criteria for unsignalized intersections differ somewhat from the criteria for signalized intersections, primarily because user perceptions differ between these facility types. Users expect that a signalized intersection is designed to carry higher traffic volumes and will present greater delay than an unsignalized intersection. Unsignalized intersections are also associated with more uncertainty for users as delays are less predictable than they are at signals. Table 2 presents the delay range for each LOS for unsignalized intersections.

Table 2: Level of Service Criteria – Unsignalized Intersections

Level of Service	Control Delay[1]
A	≤ 10
B	>10 to ≤ 15
C	>15 to ≤ 25
D	>25 to ≤ 35
E	>35 to ≤ 50
F	>50

Notes:

1. Control delay presented in seconds per vehicle. Delay values are rounded to the nearest second and evaluated for LOS based on the above thresholds (i.e., 10 seconds per vehicle = LOS A)

Source: *Highway Capacity Manual, 6th Edition*, Transportation Research Board, 2016.

Roadway Operations

This study analyzes roadway segments based on jurisdiction thresholds.

Caltrans roadway segments were analyzed with HCM 6th Edition methodology using HCS7 software.

Within El Dorado County, analysis was conducted in accordance with peak hour volume thresholds from the *El Dorado County Community Development Agency Transportation Impact Study Guidelines* (November 2014) and revised based on HCM 6th Edition methodologies in the *2018 Technical Traffic Impact Mitigation Fee Program Update* (Kimley Horn, April 2018) . Table 3 presents these peak hour LOS thresholds.

Table 3: Roadway Segment Level of Service Thresholds – El Dorado County

Roadway Type	Peak Hour Two-Way Volume Thresholds				
	LOS A	LOS B	LOS C	LOS D	LOS E
2-lane Arterial[1]	-	-	640	1,310	1,510

Notes:

1. LOS based on HCM 6th Edition, Exhibit16-16, Class II Rolling, K-factor of .09, D-factor of 0.6, and posted speed limit of 45 miles per hour.

Sources: El Dorado County Community Development Agency Transportation Impact Study Guidelines (November 2014), 2018 Technical TIM Fee Program Update (April 2018).

Within Placer County, analysis was conducted in accordance with daily traffic volume thresholds established in the *Placer County Countywide General Plan EIR, Transportation and Circulation* (1994). Table 4 presents these daily traffic volume LOS thresholds. All Placer County study roadway segments most closely match the definition of a "high access controlled" arterial (as opposed to a "low access controlled" or "moderate access controlled" arterial).

Table 4: Roadway Segment Level of Service Thresholds – Placer County

Roadway Type	Daily Two-Way Volume Thresholds				
	LOS A	LOS B	LOS C	LOS D	LOS E
2-lane Arterial – High Access Control[1]	12,000	14,000	16,000	18,000	20,000

Notes:

1. High access controlled arterials are defined in the Countywide General Plan Final EIR as roadways with 1-2 stops per mile, limited driveway access, and speeds of 35 to50 mph.

Source: Countywide General Plan Final Environmental Impact Report, Placer County, 1994.

Within the City of Auburn, analysis was conducted in accordance with daily traffic volume thresholds established in the *City of Auburn General Plan EIR* (1993). The Maidu Drive study segment is identified as a collector in the *General Plan EIR.* Table 5 presents these daily traffic volume LOS thresholds.

Table 5: Roadway Segment Level of Service Thresholds – City of Auburn

Roadway Type	Daily Two-Way Volume Thresholds				
	LOS A	LOS B	LOS C	LOS D	LOS E
2-lane Collector	-	11,610	16,6500	18,720	20,070

Source: City of Auburn General Plan Environmental Impact Report, 1993.

The City of Auburn General Plan EIR also uses the TIRE index to describe the relative effect of additional vehicular traffic on residential streets. Skyridge Drive and Riverview Drive are residential local street segments. TIRE is expressed by index values that range from zero, representing the least effect of traffic, to five, representing the severest effect. According to TIRE, a given change in street traffic volume will cause a greater impact on a street with low pre-existing traffic volumes than it will on a street with higher pre-existing traffic volumes. Streets with TIRE levels above the midrange of 3.0 are considered to be traffic-dominated, while those with indexes below 3.0 are considered to be better suited for residential activities. Conversion of a residential street index value (<3) to a traffic dominated street index value (>3) is considered a significant impact. TIRE analysis utilizes the TIRE index developed by the Goodrich Traffic Group (2011).

Existing Conditions

This chapter describes the physical and operational characteristics of the transportation system within the study area.

Regional Roadway Network

I-80 and SR 49 are the two main highways located in the vicinity of the ASRA. SR 193 also provides access to the ASRA.

Interstate 80 is a transcontinental highway that runs from San Francisco, California, to Teaneck, New Jersey. In the project vicinity, I-80 bisects the city of Auburn in a northeasterly-southwesterly direction and generally has three lanes in each direction.

State Route 49 is a north-south state highway that runs from Oakhurst to Vinton. In the project vicinity, SR 49 a two-lane highway, except for a four-lane section from Lincoln Way to Luther Road, a six-lane section from Luther Road to Bell Road, and a four-lane section from Dry Creek Road to Combie Road. SR 49 cuts through the southwest portion of the ASRA.

State Route 193 an east-west state highway that runs from Lincoln to Placerville. SR 193 is concurrent with I-80 from Newcastle to the interchange with SR 49 in Auburn. It continues concurrent with SR 49 from Auburn to Cool. SR 193 continues east of SR 49 until it intersects SR 49 again in Placerville. SR 193 provides access to portions of the ASRA along the south side of the Middle Fork of the American River. East of SR 49, SR 193 has one lane in each direction.

Many other smaller roads also provide connections to the ASRA, as discussed in the next section.

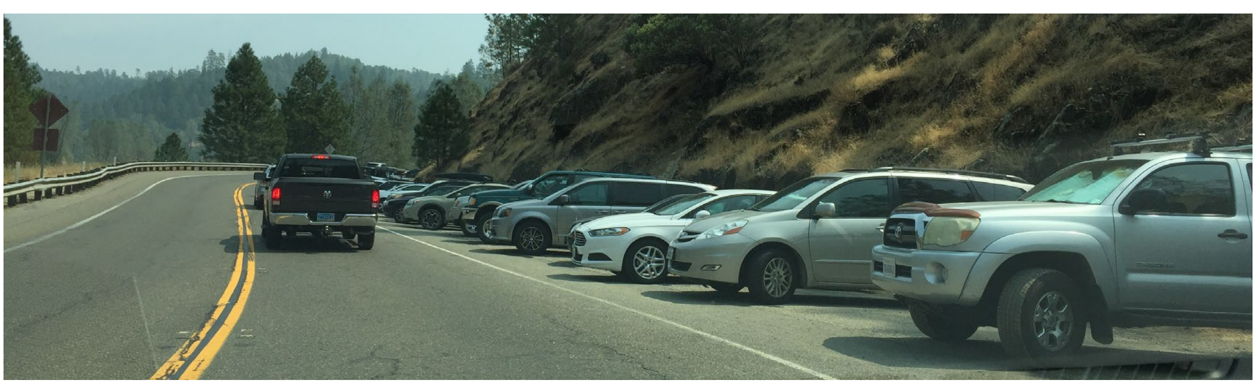
Study Area Roadway Network

Primary access to the ASRA is provided from the state highways discussed above and several other local/regional roadways. Various agencies, including California State Parks (CSP), are responsible for the maintenance of these roadways. The following list identifies the primary roadways to/within the ASRA, as well as the agency responsible for maintenance of each roadway.

- Primary paved, public roads
    - SR 49 (maintained by Caltrans)
    - SR 193 (maintained by Caltrans)
    - Foresthill Road (maintained by Placer County)

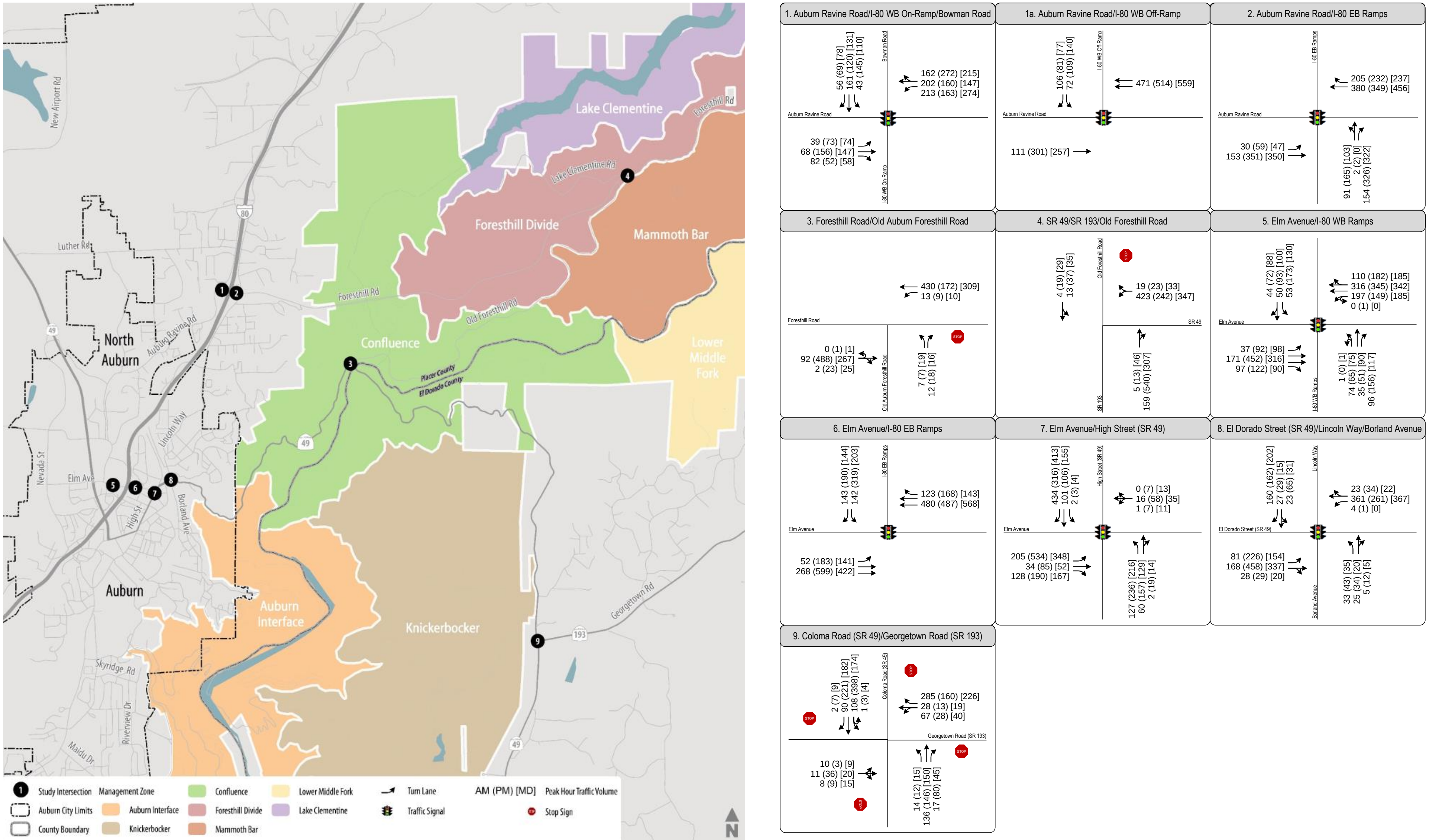
  - Iowa Hill Road (maintained by Placer County)
  - Lake Clementine Road (maintained by Placer County)
  - Maidu Drive (a 400-yard portion near China Bar is maintained by Reclamation; the remainder is maintained by City of Auburn)
  - Skyridge Drive (maintained by City of Auburn)
  - Riverview Drive (maintained by City of Auburn)
  - Pacific Avenue (maintained by City of Auburn)
  - Old Foresthill Road (portion maintained by City of Auburn; remainder maintained by Placer County)
  - Russell Road (portion maintained by City of Auburn; remainder maintained by Placer County)
  - Robie Drive (portion maintained by City of Auburn; remainder maintained by Placer County)
  - Mosquito Ridge Road (maintained by Placer County)
  - Sliger Mine Road, portions dirt/gravel (portion maintained by CSP; remainder maintained by El Dorado County)
- Primary dirt/gravel public roads
  - Ponderosa Way (maintained by CSP)
  - Yankee Jims Road (maintained by Placer County)
- Primary park roads maintained by CSP
  - China Bar Entrance Road (paved)
  - Oregon Bar River Access Road (dirt/gravel)
  - Birdsall River Access Road (dirt/gravel)
  - Mammoth Bar Entrance Road (paved)
  - Drivers Flat Road (dirt/gravel)
  - Upper Lake Clementine Road (dirt/gravel)

Many of these roadways are hilly and have narrow or no shoulders. Park visitors often park along shoulders then walk to park entrances, notably in the Confluence Management Zone.



Intersection Operations

Figure 2 displays the existing weekday AM and PM peak hour and Saturday peak hour traffic volumes and the current lane configurations and traffic controls present at each of the study intersections. Table 6 summarizes the existing peak hour intersection operations at the study intersections (refer to Appendix A for detailed calculations). As shown, all study intersections operate acceptably during all three peak hours.



AM and PM Peak Hour volumes represent conditions on typical weekdays. Midday peak hour volumes represent conditions on typical weekends

Figure 2
Peak Hour Traffic Volumes and Lane Configurations
Existing Conditions

Table 6: Intersection Operations Analysis – Existing Conditions

Intersection	Jurisdiction	Traffic Control[1]	LOS[2] / Delay[3] (s)		
			Weekday AM Peak Hour	Weekday PM Peak Hour	Weekend MD Peak Hour
1. Auburn Ravine Road/I-80 WB On-Ramp/Bowman Road	Caltrans	Signal[4]	B / 15	B / 19	B / 18
1a. Auburn Ravine Road/I-80 WB Off-Ramp	Caltrans	Signal[4]	B / 20	B / 15	B / 16
2. Auburn Ravine Road/I-80 EB Ramps	Caltrans	Signal	B / 20	C / 32	B / 18
3. Foresthill Road/Old Auburn Foresthill Road	Placer County	SSSC	A / 9	B / 12	B / 11
4. SR 49/SR 193/Old Foresthill Road	Caltrans	SSSC	B (B) / 10 (14) (WB LT / RT)	A (C) / 5 (17) (WB LT / RT)	A (C) / 9 (17) (WB LT / RT)
5. Elm Avenue/I-80 WB Ramps	Caltrans	Signal	C / 35	D / 37	D / 40
6. Elm Avenue/I-80 EB Ramps	Caltrans	Signal	A / 8	A / 10	A / 9
7. Elm Avenue/High Street (SR 49)	Caltrans	Signal	B / 16	C / 29	C / 26
8. El Dorado Street (SR 49)/Lincoln Way/Borland Avenue	Caltrans	Signal	B / 13	B / 16	B / 13
9. Coloma Road (SR 49)/Georgetown Road (SR 193)	Caltrans	AWSC	B / 11	C / 20	B / 12

Notes:

1. Signal = traffic signal-controlled intersection; SSSC = side-street stop-controlled intersection; AWSC = all-way stop control
2. LOS = level of service; calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
3. Average control delay (rounded to nearest second) for signalized intersections is the weighted average for all movements. Average control delay at Placer County SSSC intersections is the "overall weighted average delay for movements yielding the right-of-way." For Caltrans SSSC intersections, the delay and LOS for the highest delay movement is shown in parentheses.
4. Intersection LOS is calculated based on methodologies contained in the *Highway Capacity Manual 2000*. The phasing for these signals is clustered and does not following standard NEMA structure, and therefore the LOS cannot be calculated with methodologies from HCM 6 or HCM 2010.

All intersections were analyzed in Synchro 10.

Source: Fehr & Peers, 2018.

Roadway Operations

Table 7 to Table 10 present the results of operations analysis for study roadway segments under Existing Conditions. As discussed in the Analysis Methodology section, different jurisdictions have different analysis requirements, and thus results are presented separately for each method of analysis. As shown, all study roadway segments currently operate acceptably on both weekdays and weekends.

Table 7: Peak Hour Two-Lane Highway Operations – Existing Conditions

Segment	Peak Hour	Direction	Existing Conditions	
			V/C[1]	LOS
Caltrans				
SR 49: Lincoln Way to Old Foresthill Road	Weekday AM	NB	0.33	D
		SB	0.12	A
	Weekday PM	NB	0.22	C
		SB	0.34	D
	Weekend MD	NB	0.28	D
		SB	0.22	C
SR 49: Old Foresthill Road to 1.8 miles south of Old Foresthill Road[2]	Weekday AM	NB	0.31	D
		SB	0.14	B
	Weekday PM	NB	0.19	B
		SB	0.37	D
	Weekend MD	NB	0.23	C
		SB	0.26	C
SR 49: 1.8 miles south of Old Foresthill Road to SR 193[2]	Weekday AM	NB	0.31	D
		SB	0.13	B
	Weekday PM	NB	0.19	C
		SB	0.64	D
	Weekend MD	NB	0.23	C
		SB	0.24	C

Notes:

1. V/C = volume to capacity ratio
2. These segments were split into two segments because of differing terrain types. The segment to the north is analyzed with a specific grade of 8%, and the segment to the south is analyzed with "Rolling" terrain. These segments have the same peak hour volumes.

Source: Fehr & Peers.

Table 8: Peak Hour Roadway Operations – Existing Conditions

Segment	Classification[1]	Peak Hour	Existing Conditions		
			ADT[2]	V/C[3]	LOS[4]
El Dorado County					
Sliger Mine Road: SR 193 to San Martin Mine Road	2-lane Arterial	Weekday AM	47	0.03	C
		Weekday PM	76	0.05	C
		Weekend MD	54	0.04	C

Notes:

1. Classification based on El Dorado County criteria
2. ADT = average daily traffic
3. V/C = volume to capacity ratio
4. LOS C represents conditions that are "LOS C or better"

Source: Fehr & Peers.

Table 9: Daily Roadway Operations – Existing Conditions

Segment	Classification[1]	Day	Existing Conditions		
			ADT[2]	V/C[3]	LOS
Placer County					
Foresthill Road: Lincoln Way to Old Auburn Foresthill Road	2-lane Arterial – HAC	Weekday	8,674	0.43	A
		Weekend	7,946	0.40	A
Old Foresthill Road: SR 49 to Foresthill Road	2-lane Arterial – HAC	Weekday	1,055	0.05	A
		Weekend	1,728	0.09	A
City of Auburn[4]					
Maidu Drive: Auburn Folsom Road to China Bar Access	2-lane Collector	Weekday	3,010	0.15	B
		Weekend	2,473	0.12	B

Notes:

1. Classification based on Placer County and City of Auburn criteria. HAC = high access control
2. ADT = average daily traffic
3. V/C = volume to capacity ratio
4. LOS B represents conditions that are "LOS B or better"

Source: Fehr & Peers.

Table 10: TIRE Index Roadway Operations – Existing Conditions

Segment	Day	Existing Conditions		
		ADT[1]	TIRE Index[2]	Description / Purpose
City of Auburn				
Skyridge Drive: Sacramento Street to Riverview Drive	Weekday	975	3.0	High Residential
	Weekend	1,046	3.0	High Residential
Riverview Drive: Skyridge Drive to Maidu Drive	Weekday	465	2.7	Moderate Residential
	Weekend	631	2.8	Moderate Residential

Notes:

1. ADT = average daily traffic
2. Goodrich Traffic Group, 2011

Source: Fehr & Peers.

Bicycle and Pedestrian Facilities

The ASRA has an extensive trail system for hikers and off-road bicyclists (mountain bikers). However, there are no Class I bike paths (shared trails), Class II bike lanes, or other exclusive use facilities for bicyclists in the ASRA. As noted previously, sidewalks do not exist in the ASRA and pedestrians often walk along roadway shoulders.

Transit Facilities

Although Placer County Transit and Auburn Transit serve the City of Auburn and vicinity, the ASRA is not served by transit.

Existing Plus Project Conditions

This chapter discusses the operations of the of the transportation study facilities under Existing Plus Project conditions. As discussed in the Introduction, build-out of the proposed Plan would include development of additional camping facilities and facilities supporting a variety of day use activities, including hiking, mountain biking, and horseback riding trails; picnic sites; boating facilities; and off-highway vehicle (OHV) trails.

Trip Generation

Overall peak trip generation for the ASRA occurs during the Saturday midday peak period. The transportation system analysis also includes evaluation of weekday AM and PM peak periods, when peak demands on the transportation system occur.

The Institute of Transportation Engineers *Trip Generation Manual* (10th edition) provides weekday AM and PM peak hour trip generation rates for camping facilities. However, no such rates are provided for the day use activities that will be developed. The mixed nature of the day use activities conducted in the ASRA and widely dispersed access points for these activities also makes trip generation rates by activity difficult to measure and calculate individually. Consequently, for day use activities (activities other than camping), the analysis incorporates measured parking arrivals and departures to estimate trip generation.

Day Use Activities

The segment of Old Foresthill Road between State Route (SR) 49 and Foresthill Road was used to develop trip generation based on available parking spaces. As shown in Section 11.2.4 of the ASRA *Resources Inventory and Existing Conditions Report,* 198 parking spaces are available on this segment on summer weekdays and Saturdays. This parking primarily serves the Confluence Management Zone, the busiest area of the ASRA, where parking is heavily used. Thus, trip generation estimates resulting from this analysis are expected to be conservative.

Traffic counts were collected on Old Foresthill Road at SR 49 and at Foresthill Road on Friday, August 10, 2018, from 7 AM to 9 AM and 4 PM to 6 PM, and Saturday, August 11, 2018, from 11 AM to 3 PM. These hours represent typical weekday and Saturday peak periods of the adjacent roadways and the ASRA. The analysis uses the trips entering and exiting this segment by direction during 15-minute intervals to estimate the possible range of inbound and outbound trips to parking along this segment. This range was developed as follows:

1) Range minimum: the difference between the inbound and outbound trips represent patron trips of the ASRA; the rest of the trips are through trips on Old Foresthill Road;

2) Range maximum: each inbound trip represents an arrival trip to the ASRA and each outbound trip represents a departure trip from the ASRA.

For the Saturday peak period, we also calculated the trips that would be generated assuming 95% occupancy of the available parking on Old Foresthill Road with an average visit duration of 2.5 hours. These assumptions are conservative in comparison to a similar study conducted at Pinnacles National Park (*Pinnacles Eastside Transportation Study*, Fehr & Peers, August 2016) and were considered appropriate by State Parks staff. This calculation yielded 151 total trips, within the extremes of range based on count data. During the Saturday midday peak hour, there were 25 more inbound trips observed than outbound trips on Old Foresthill Road, so we split the total trips into 88 inbound and 63 outbound. For the weekday peak hour trips, we applied a similar methodology, but used 60% occupancy for the AM peak hour and 85% peak occupancy for the PM peak hour, based on discussions with State Parks staff. This yielded the trip rates shown in Table 11.

To estimate daily trip generation rates, we used the ratio of daily to peak hour vehicle volumes on Old Foresthill Road and applied the same ratio to the trip generation. This estimate is expected to be conservative, as the park is open for limited hours. These trip rates are also shown in Table 11.

Table 11: Day Use Activities Trip Generation Rates

Land Use	Quantity	ITE Land Use Code	Weekday Trip Rates							Saturday Trip Rates			
			Daily	AM Peak Hour			PM Peak Hour			Daily	Midday Peak Hour		
				In	Out	Total	In	Out	Total		In	Out	Total
Day Use Activities	Parking spaces	--	6.92	52%	48%	0.30	48%	52%	0.68	10.89	58%	42%	0.76

Source: Fehr & Peers.

Table 12 shows the additional trips generated for each management zone of the ASRA expansion project based on the proposed additional parking for each study period.

Table 12: Day Use Activities Trips Generated

Management Zone	Planned Additional Parking	Weekday Trips							Saturday Trips			
		Daily	AM Peak Hour			PM Peak Hour			Daily	Midday Peak Hour		
			In	Out	Total	In	Out	Total		In	Out	Total
Knickerbocker	50	344	8	7	15	16	18	34	548	23	16	39
Auburn Interface	150	1,033	24	21	45	49	53	102	1,616	67	48	115
Foresthill Divide	100	689	16	14	30	33	35	68	1,082	45	32	77
Mammoth Bar	50	344	8	7	15	16	18	34	548	23	16	39
Lower Middle Fork	20	141	3	3	6	7	7	14	225	9	7	16
Cherokee Bar / Ruck-a-Chucky	40	281	6	6	12	13	15	28	436	18	13	31
Upper North Fork	40	281	6	6	12	13	15	28	436	18	13	31
Mineral Bar	20	141	3	3	6	7	7	14	225	9	7	16
Total	**470**	**3,254**	**74**	**67**	**141**	**154**	**168**	**322**	**5,116**	**212**	**152**	**364**

Source: Fehr & Peers.

Campgrounds

The ITE *Trip Generation Manual* provides trip generation rates for the land use category "Campground / Recreational Vehicle Park" for weekday peak hours. However, the manual provides no rate for the Saturday peak hour. To estimate this rate, the ratio of the Saturday midday peak hour trip rate to the PM trip rate for day use activities was used to estimate the camping Saturday midday peak hour trip rate. The resulting trip rates are shown in Table 13. Note that trip rates in Table 13 are average trip rates and will vary depending on the number of campsites.

To estimate daily trip generation rates, the same methodology as for the day use activities was applied. These trip rates are also shown in Table 13.

Group campsites were evaluated as equivalent to five regular campsites.

Table 13: Camping Trip Generation Rates

Land Use	Quantity	ITE Land Use Code	Weekday Trip Rates							Saturday Trip Rates			
			Daily	AM Peak Hour			PM Peak Hour			Daily	Midday Peak Hour		
				In	Out	Total	In	Out	Total		In	Out	Total
Campgrounds[1]	Occupied camp sites	416	3.95	36%	64%	0.25	65%	35%	0.27	6.10	51%	49%	0.83

Notes:
1 Weekday peak hour trip rates for campground obtained from *Trip Generation 10th Edition* (ITE, 2017).
Source: Fehr & Peers.

Table 14 shows the additional trips generated for each management zone based on the proposed additional campsites. Table 15 shows the total additional trips generated for each management zone, including both day use activities and camping.

Table 14: Camping Trips Generated

Management Zone	Planned Campsites	Weekday Trips							Saturday Trips			
		Daily	AM Peak Hour			PM Peak Hour			Daily	Midday Peak Hour		
			In	Out	Total	In	Out	Total		In	Out	Total
Knickerbocker	50 regular 3 group	232	5	9	14	12	7	19	351	13	12	25
Auburn Interface	50 regular 1 group	204	4	8	12	11	6	17	323	12	11	23
Foresthill Divide	20 regular	105	3	4	7	5	3	8	155	6	5	11
Mammoth Bar	50 regular	190	4	7	11	10	6	16	295	11	10	21
Cherokee Bar / Ruck-a-Chucky	35 regular 1 group	155	5	8	13	9	5	14	126	11	10	21
Mineral Bar	20 regular	91	3	4	7	4	2	6	141	5	5	10
Total	**225 regular 5 group**	**977**	**24**	**40**	**64**	**51**	**29**	**80**	**1,391**	**58**	**53**	**111**

Source: Fehr & Peers.

Table 15: Total Trips Generated

Management Zone	Weekday Trips							Saturday Trips			
	Daily	AM Peak Hour			PM Peak Hour			Daily	Midday Peak Hour		
		In	Out	Total	In	Out	Total		In	Out	Total
Knickerbocker	576	13	16	29	28	25	53	899	36	28	64
Auburn Interface	1,237	28	29	57	60	59	119	1,939	79	59	138
Confluence	0	0	0	0	0	0	0	0	0	0	0
Foresthill Divide	794	19	18	37	38	38	19	1,237	51	37	88
Lake Clementine	0	0	0	0	0	0	0	0	0	0	0
Mammoth Bar	534	12	14	26	26	24	50	843	34	26	60
Lower Middle Fork	141	3	3	6	7	7	14	225	9	7	16
Cherokee Bar / Ruck-a-Chucky	436	11	14	25	22	20	42	562	29	23	52
Upper North Fork	281	6	6	12	13	15	28	436	18	13	31
Mineral Bar	232	6	7	13	11	9	20	140	14	12	26
Upper Middle Fork	0	0	0	0	0	0	0	0	0	0	0
Total	**4,231**	**98**	**107**	**205**	**205**	**197**	**402**	**6,507**	**270**	**205**	**475**

Source: Fehr & Peers.

Trip Distribution and Assignment

The distribution of project trips was estimated using the following sources and analytical techniques:

- Traffic assignment using the Sacramento Council of Governments (SACOG) Sacramento Regional Travel Demand Model (SACMET).
- Review of existing travel patterns within the study area using traffic counts collected in August 2018.
- State Parks staff observations of existing travel patterns.
- Relative travel time/speed comparisons between the project management zones and key travel corridors for various routes.

Table 16 displays the expected distribution of inbound and outbound project trips to and from the ASRA management zones estimated using the above sources and techniques. Project trips were assigned to the study intersections and roadway segments in accordance with the trip generation and distribution methodologies discussed in above. The Mineral Bar management zone is not included in Table 16 because, due to its location, trips from this management zone are not expected to traverse the study intersections or roadway segments.

Table 16: Project Trip Distribution by Management Zone

Management Zone	I-80 north of Foresthill Road	I-80 south of Elm Avenue	SR 49 south of SR 193	SR 193 east of SR 49	Foresthill Road east of Old Foresthill Road	Bowman Road north of Auburn Ravine Road	Elm Avenue west of I-80
Knickerbocker	14%	25%	10%	15%	3%	0%	12%
Auburn Interface	14%	25%	10%	15%	3%	0%	12%
Foresthill Divide	22%	37%	0%	0%	15%	13%	0%
Mammoth Bar	12%	29%	10%	15%	10%	3%	6%
Lower Middle Fork	12%	26%	11%	15%	0%	0%	20%
Cherokee Bar / Ruck-a-Chucky	12%	24%	0%	16%	0%	2%	9%

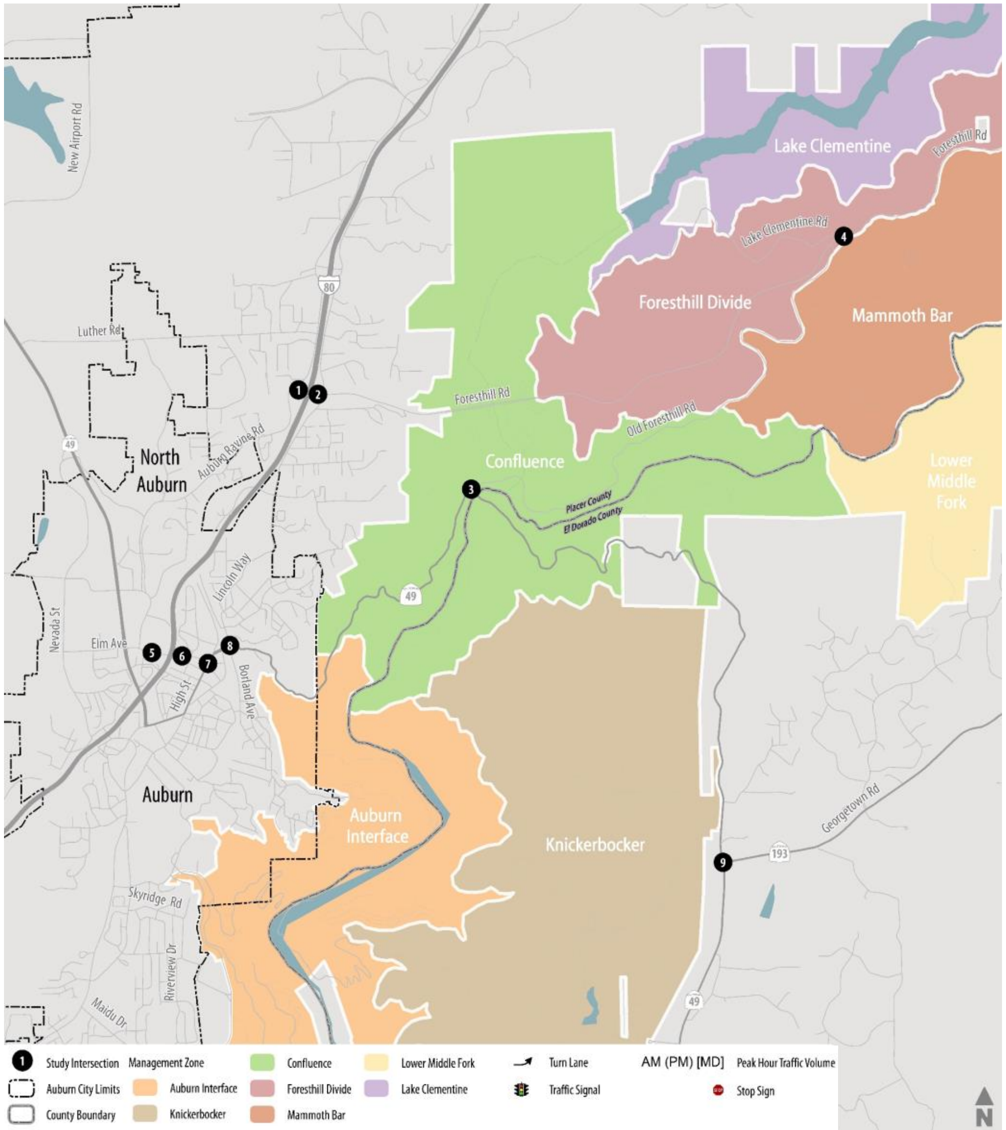
Notes:
Trip distribution percentages do not add up to 100% because some trips go to / come from minor roadways.

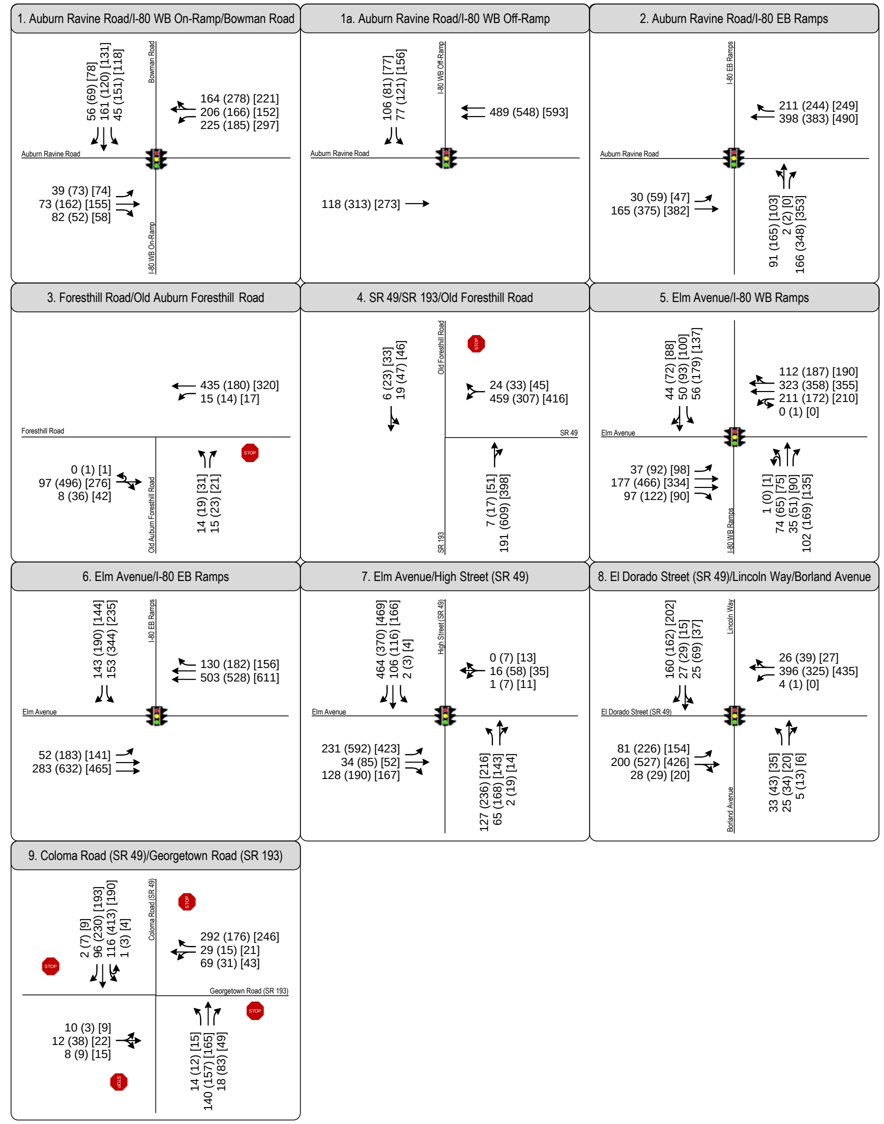
Source: Fehr & Peers.

Intersection Operations

The Existing Plus Project scenario assumes full build-out of the Preferred Plan and layers the additional trips generated by the ASRA on top of existing 2018 trip levels using the previously discussed trip distribution estimates. Figure 3 displays the Existing Plus Project traffic volumes, and Table 17 summarizes the results of the intersection analysis.

As shown in Table 17, with the addition of the traffic associated with the proposed project, all study intersections would continue to operate at an acceptable level of service (refer to separate Appendix B for detailed calculations). Therefore, all project specific impacts to the study intersections are considered **less than significant**.





AM and PM Peak Hour volumes represent conditions on typical weekdays. Midday peak hour volumes represent conditions on typical weekends

Figure 3
Peak Hour Traffic Volumes and Lane Configurations
Existing Plus Project Conditions

Table 17: Intersection Operations Analysis – Existing Plus Project Conditions

Intersection	Jurisdiction	Traffic Control[1]	Peak Hour	LOS[2] / Delay[3] (s)	
				Existing Conditions	Existing Plus Project Conditions
1. Auburn Ravine Road/I-80 WB On-Ramp/Bowman Road	Caltrans	Signal[4]	Weekday AM	B / 15	B / 15
			Weekday PM	B / 19	B / 19
			Weekend MD	B / 18	B / 18
1a. Auburn Ravine Road/I-80 WB Off-Ramp	Caltrans	Signal[4]	Weekday AM	B / 20	B / 16
			Weekday PM	B / 15	B / 15
			Weekend MD	B / 16	B / 16
2. I-80 EB Ramps / Auburn Ravine Road	Caltrans	Signal	Weekday AM	B / 20	C / 20
			Weekday PM	C / 32	D / 40
			Weekend MD	B / 18	B / 19
3. Foresthill Road/Old Auburn Foresthill Road	Placer County	SSSC	Weekday AM	A / 9	A / 10
			Weekday PM	B / 12	B / 13
			Weekend MD	B / 11	B / 12
4. SR 49/SR 193/Old Foresthill Road	Caltrans	SSSC	Weekday AM	B (B) / 10 (14) (WB LT / RT)	B (C) / 11 (16) (WB LT / RT)
			Weekday PM	A (C) / 5 (17) (WB LT / RT)	A (D) / 9 (25) (WB LT / RT)
			Weekend MD	A (C) / 9 (17) (WB LT / RT)	B (D) / 14 (29) (WB LT / RT)
5. Elm Avenue/I-80 WB Ramps	Caltrans	Signal	Weekday AM	C / 35	D / 35
			Weekday PM	D / 37	D / 38
			Weekend MD	D / 40	D / 40
6. Elm Avenue/I-80 EB Ramps	Caltrans	Signal	Weekday AM	A / 8	A / 8
			Weekday PM	A / 10	B / 10
			Weekend MD	A / 9	A / 10

Table 17: Intersection Operations Analysis – Existing Plus Project Conditions

Intersection	Jurisdiction	Traffic Control[1]	Peak Hour	LOS[2] / Delay[3] (s)	
				Existing Conditions	Existing Plus Project Conditions
7. Elm Avenue/High Street (SR 49)	Caltrans	Signal	Weekday AM	B / 16	C / 22
			Weekday PM	C / 29	C / 32
			Weekend MD	C / 26	C / 28
8. El Dorado Street (SR 49)/ Lincoln Way/Borland Avenue	Caltrans	Signal	Weekday AM	B / 13	B / 13
			Weekday PM	B / 16	B / 16
			Weekend MD	B / 13	B / 13
9. Coloma Road (SR 49)/ Georgetown Road (SR 193)	Caltrans	AWSC	Weekday AM	B / 11	B / 11
			Weekday PM	C / 20	C / 23
			Weekend MD	B / 12	B / 13

Notes:

1. Signal = traffic signal-controlled intersection; SSSC = side-street stop-controlled intersection; AWSC = all-way stop control
2. LOS = level of service; calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
3. Average control delay (rounded to nearest second) for signalized intersections is the weighted average for all movements. Average control delay at Placer County SSSC intersections is the "overall weighted average delay for movements yielding the right-of-way." For Caltrans SSSC intersections, the overall intersection delay and LOS is shown outside the parentheses, and the worst movement delay and LOS is shown inside the parentheses.
4. Intersection LOS is calculated based on methodologies contained in the *Highway Capacity Manual 2000*. The phasing for these signals is clustered and does not following standard NEMA structure, and therefore the LOS cannot be calculated with methodologies from HCM 6 or HCM 2010.

All intersections were analyzed in Synchro 10.

Source: Fehr & Peers, 2018.

Roadway Operations

Roadway segments were analyzed under Existing Plus Project conditions using the trip generation and distribution discussed above. Results are presented separately for each jurisdiction in Table 18 to Table 21. As shown in these tables, all roadway segments operated acceptably under Existing Plus Project conditions.

Table 18: Peak Hour Two-Lane Highway Operations – Existing Plus Project Conditions

Segment	Peak Hour	Direction	Existing Conditions		Existing Plus Project Conditions	
			V/C[1]	LOS	V/C[1]	LOS
Caltrans						
SR 49: Lincoln Way to Old Foresthill Road	Weekday AM	NB	0.33	D	0.36	D
		SB	0.12	A	0.14	B
	Weekday PM	NB	0.22	C	0.28	C
		SB	0.34	D	0.39	D
	Weekend MD	NB	0.28	D	0.33	D
		SB	0.22	C	0.28	C
SR 49: Old Foresthill Road to 1.8 miles south of Old Foresthill Road[2]	Weekday AM	NB	0.31	D	0.32	D
		SB	0.14	B	0.13	B
	Weekday PM	NB	0.19	B	0.21	C
		SB	0.37	D	0.39	D
	Weekend MD	NB	0.23	C	0.24	C
		SB	0.26	C	0.28	D
SR 49: 1.8 miles south of Old Foresthill Road to SR 193[2]	Weekday AM	NB	0.31	D	0.32	D
		SB	0.13	B	0.14	B
	Weekday PM	NB	0.20	B	0.21	C
		SB	0.34	D	0.35	D
	Weekend MD	NB	0.23	C	0.24	D
		SB	0.24	C	0.26	C

Notes:

1. V/C = volume to capacity ratio
2. These segments were split into two segments because of differing terrain types. The segment to the north is analyzed with a specific grade of 8%, and the segment to the south is analyzed with "Rolling" terrain. These segments have the same peak hour volumes.

Source: Fehr & Peers.

Table 19: Peak Hour Roadway Operations – Existing Plus Project Conditions

Segment	Classification[1]	Peak Hour	Existing Conditions			Existing Plus Project Conditions		
			ADT[2]	V/C[3]	LOS[4]	ADT[2]	V/C[3]	LOS[4]
El Dorado County								
Sliger Mine Road: SR 193 to San Martin Mine Road	2-lane Arterial	Weekday AM	47	0.03	C	67	0.04	C
		Weekday PM	76	0.05	C	113	0.07	C
		Weekend MD	54	0.04	C	96	0.06	C

Notes:

1. Classification based on El Dorado County criteria
2. ADT = average daily traffic
3. V/C = volume to capacity ratio
4. LOS C represents conditions that are "LOS C or better"

Source: Fehr & Peers.

Table 20: Daily Roadway Operations – Existing Plus Project Conditions

Segment	Classification[1]	Day	Existing Conditions			Existing Plus Project Conditions		
			ADT[2]	V/C[3]	LOS	ADT[2]	V/C[3]	LOS
Placer County								
Foresthill Road: Lincoln Way to Old Auburn Foresthill Road	2-lane Arterial – HAC	Weekday	8,674	0.43	A	9,130	0.46	A
		Weekend	7,946	0.40	A	8,640	0.43	A
Old Foresthill Road: SR 49 to Foresthill Road	2-lane Arterial – HAC	Weekday	1,055	0.05	A	1,430	0.07	A
		Weekend	1,728	0.12	A	2,310	0.12	A
City of Auburn[4]								
Maidu Drive: Auburn Folsom Road to China Bar Access	2-lane Collector	Weekday	3,010	0.15	B	3,190	0.15	B
		Weekend	2,473	0.12	B	3,680	0.18	B

Notes:

1. Classification based on Placer County and City of Auburn criteria. HAC = high access control
2. ADT = average daily traffic
3. V/C = volume to capacity ratio
4. LOS B represents conditions that are "LOS B or better"

Source: Fehr & Peers.

Table 21: TIRE Index Roadway Operations – Existing Plus Project Conditions

Segment	Day	Existing Conditions			Existing Plus Project Conditions		
		ADT[1]	TIRE Index[2]	Description / Purpose	ADT[1]	TIRE Index[2]	Description / Purpose
City of Auburn							
Skyridge Drive: Sacramento Street to Riverview Drive	Weekday	975	3.0	High Residential	1,150	3.1	High Residential
	Weekend	1,046	3.0	High Residential	1,180	3.1	High Residential
Riverview Drive: Skyridge Drive to Maidu Drive	Weekday	465	2.7	Moderate Residential	640	2.8	Moderate Residential
	Weekend	631	2.8	Moderate Residential	760	2.9	Moderate Residential

Notes:

1. ADT = average daily traffic
2. Goodrich Traffic Group, 2011

Bold text indicates unacceptable operations.

Source: Fehr & Peers.

Bicycle and Pedestrian Facilities

Implementation of the proposed project would not eliminate or adversely affect existing bicycle or pedestrian facilities. The project includes various improvements to bicycle and pedestrian facilities, including the construction of new multi-use trails for hiking and off-road bicycling. The project Preferred Alternative Plan also notes that the ASRA would work with Caltrans, Placer County and El Dorado County to formalize parking along SR 49 and install pedestrian safety improvements (e.g., pathways, crosswalks, signage, etc.)on the SR 49 Bridge, Old Auburn-Foresthill Road, and at roadside parking areas in the Confluence Management Zone. Therefore, project-specific impacts to bicycle or pedestrian facilities are considered **less than significant**.

Transit Facilities

Implementation of the proposed project would not eliminate or adversely affect existing transit operations or facilities. The project Preferred Alternative Plan also notes that the ASRA would work with City of Auburn, Placer County, El Dorado County, and any relevant transit and transportation agencies to construct drop off areas and provide shuttle or transit stops at trailheads in the Confluence Management Zone. Therefore, project-specific impacts to transit facilities are considered **less than significant**.

Cumulative Conditions

This chapter discusses the cumulative conditions of the transportation system with and without implementation of the proposed project. The cumulative conditions analysis considers future planned developments and transportation improvements within the vicinity of the ASRA.

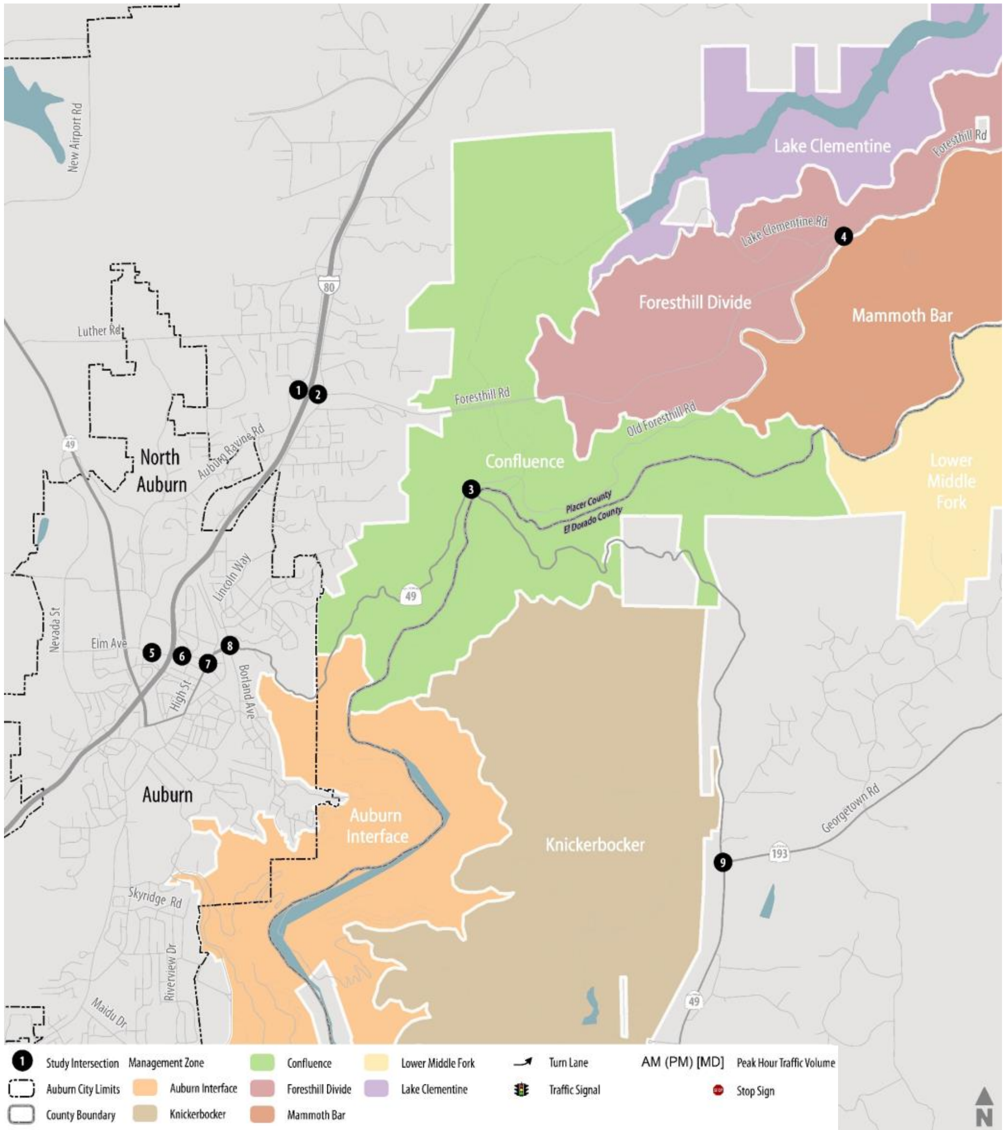
SACMET was used to forecast cumulative (year 2036) traffic volumes. The cumulative version of this model reflects planned land use growth within the surrounding region. The model also incorporates planned improvements to the surrounding transportation system.

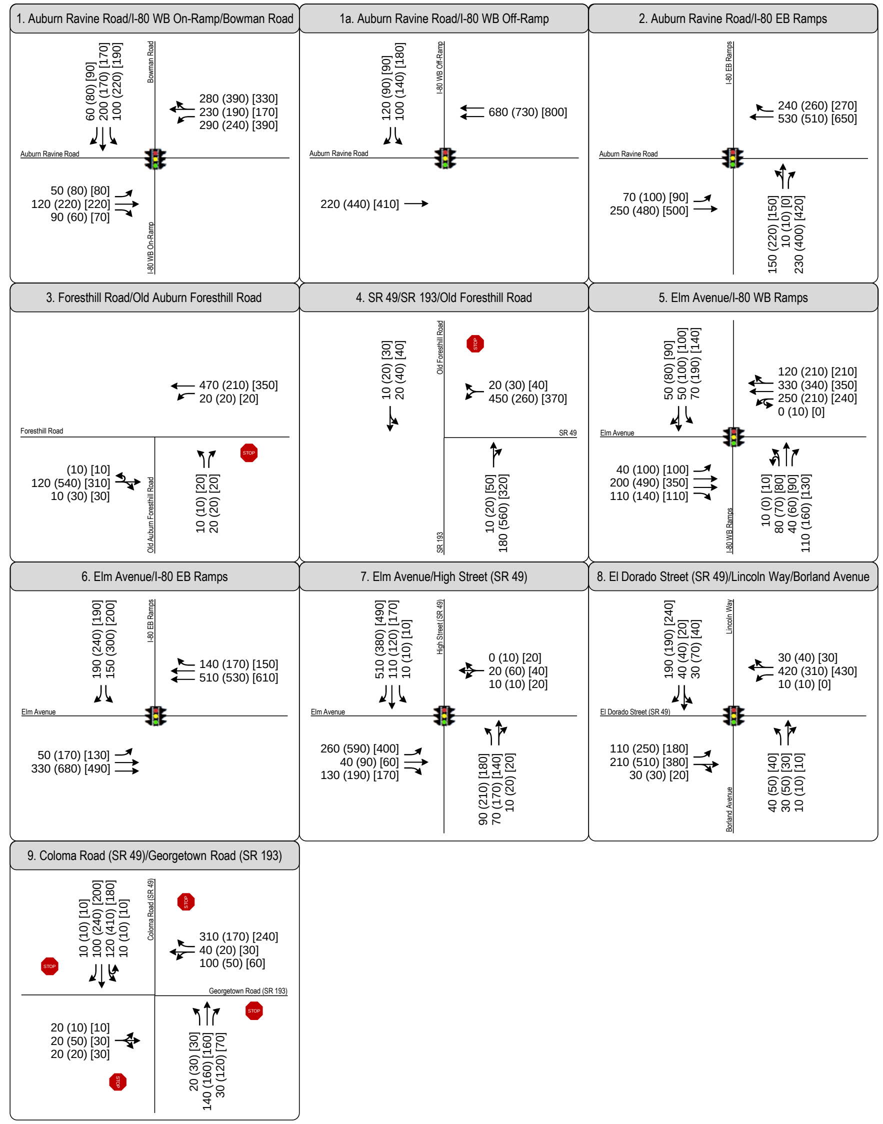
Because SACMET does not contain sufficient detail to accurately model the Skyridge Drive, Riverview Drive, and Maidu Drive segments, cumulative year forecasts were developed for these segments by adding project trips from the *Traffic Impact Assessment for Canyon Creek Subdivision, Auburn* (April 23, 2003), and *Draft Environmental Assessment/Initial Study, Maidu Bike Park Project* (June 2017) to existing traffic counts.

As discussed in the Introduction, build-out of the proposed action would include development of additional camping facilities and facilities supporting a variety of day use activities, including hiking, mountain biking, and horseback riding trails; picnic sites; boating facilities; and off-highway vehicle (OHV) trails. Trip generation and trip distribution were discussed in the Existing Plus Project Conditions chapter.

Intersection Operations

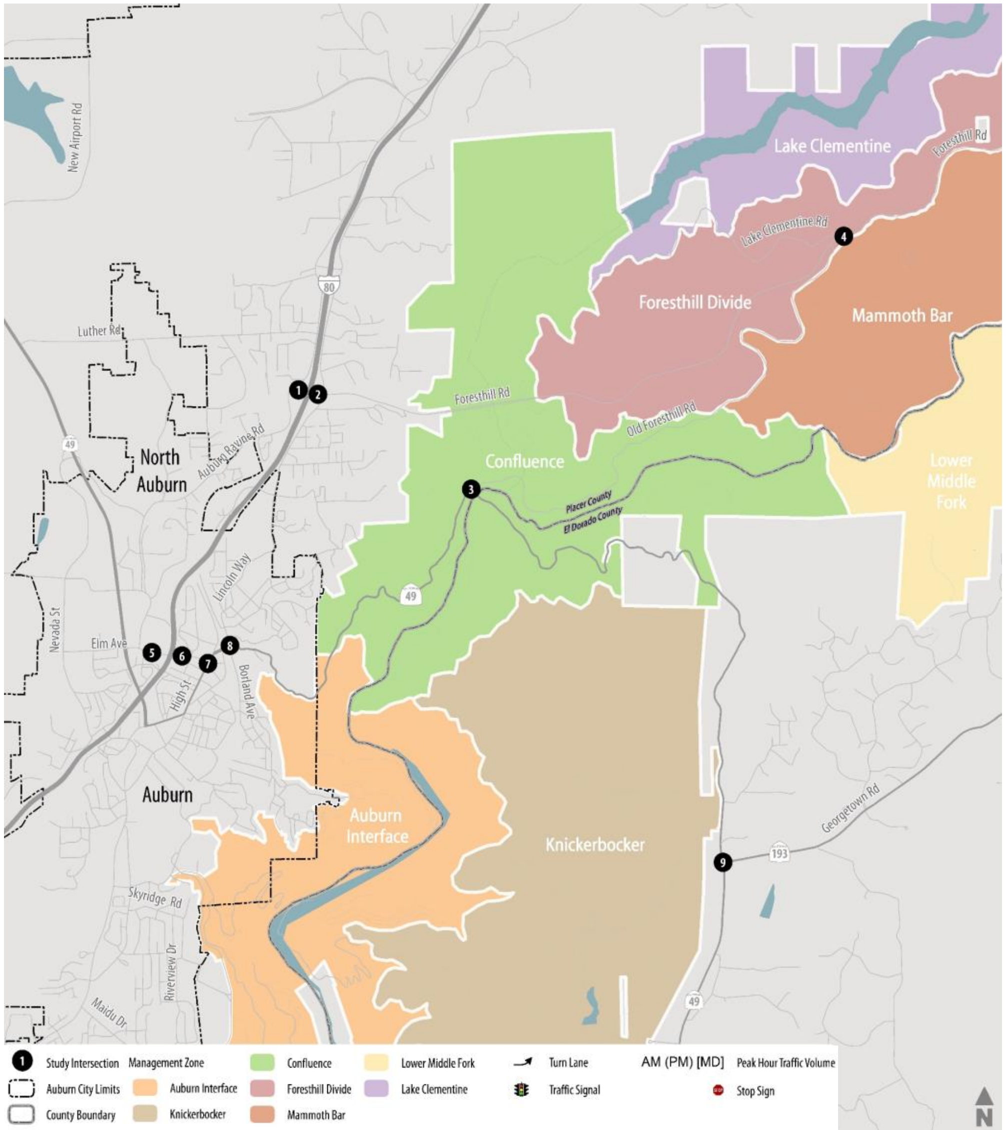
Figure 4 displays the Cumulative No Project lane configurations and traffic volumes at each of the study intersections. Figure 5 displays the Cumulative Plus Project lane configurations and traffic volumes at each of the study intersections. Table 7 summarizes traffic operations at each of study intersections under Cumulative No Project and Cumulative Plus Project conditions (refer to Appendix C and Appendix D for detailed calculations). As shown in Table 7, the addition of traffic associated with the proposed project would not degrade the level of service from an acceptable level to an unacceptable level at any study location from Cumulative No Project conditions except for the SR 49/SR 193/Old Foresthill Road intersection, where the westbound approach operations changed from LOS C to LOS E under weekend midday peak hour conditions. This impact is considered **significant**.

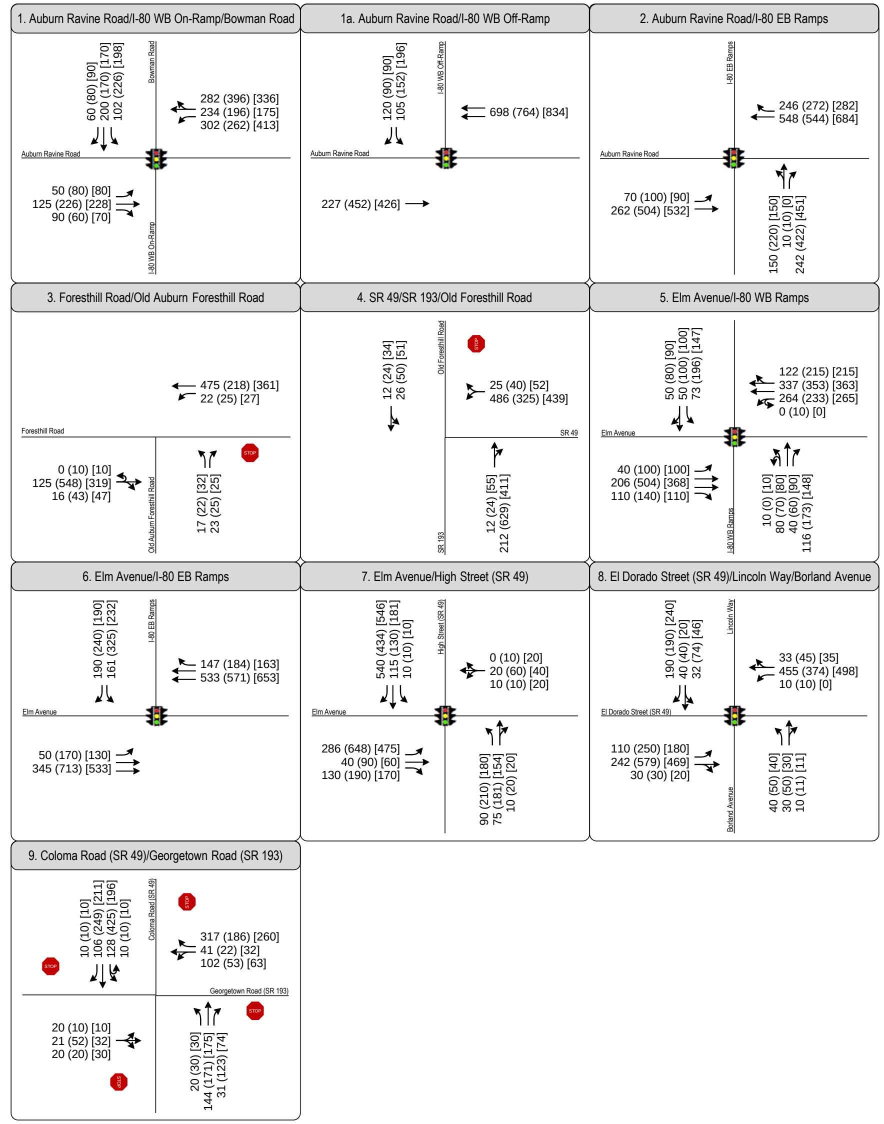




AM and PM Peak Hour volumes represent conditions on typical weekdays. Midday peak hour volumes represent conditions on typical weekends

Figure 4
Peak Hour Traffic Volumes and Lane Configurations
Cumulative No Project Conditions





AM and PM Peak Hour volumes represent conditions on typical weekdays. Midday peak hour volumes represent conditions on typical weekends

Figure 5
Peak Hour Traffic Volumes and Lane Configurations
Cumulative Plus Project Conditions

Table 22: Intersection Operations Analysis – Cumulative Conditions

Intersection	Jurisdiction	Traffic Control[1]	Peak Hour	LOS[2] / Delay[3] (s)	
				Cumulative No Project Conditions	Cumulative Plus Project Conditions
1. Auburn Ravine Road/I-80 WB On-Ramp/Bowman Road	Caltrans	Signal[4]	Weekday AM	B / 16	B / 16
			Weekday PM	C / 20	C / 20
			Weekend MD	C / 20	C / 21
1a. Auburn Ravine Road/I-80 WB Off-Ramp	Caltrans	Signal[4]	Weekday AM	B / 17	B / 17
			Weekday PM	B / 16	B / 17
			Weekend MD	B / 18	B / 19
2. I-80 EB Ramps / Auburn Ravine Road	Caltrans	Signal	Weekday AM	C / 25	C / 26
			Weekday PM	B / 19	B / 19
			Weekend MD	C / 31	D / 36
3. Foresthill Road/Old Auburn Foresthill Road	Placer County	SSSC	Weekday AM	A / 10	B / 10
			Weekday PM	B / 12	B / 14
			Weekend MD	B / 11	B / 12
4. SR 49/SR 193/Old Foresthill Road	Caltrans	SSSC	Weekday AM	B (C) / 11 (16) (WB LT / RT)	B (C) / 13 (20) (WB LT / RT)
			Weekday PM	A (C) / 6 (19) (WB LT / RT)	B (D) / 11 (31) (WB LT / RT)
			Weekend MD	A (C) / 10 (20) (WB LT / RT)	C (**E**) / 18 (**39**) (WB LT / RT)
5. Elm Avenue/I-80 WB Ramps	Caltrans	Signal	Weekday AM	D / 38	D / 38
			Weekday PM	D / 42	D / 44
			Weekend MD	D / 42	D / 42
6. Elm Avenue/I-80 EB Ramps	Caltrans	Signal	Weekday AM	A / 8	A / 8
			Weekday PM	A / 10	B / 10
			Weekend MD	A / 9	A / 9

Table 22: Intersection Operations Analysis – Cumulative Conditions

Intersection	Jurisdiction	Traffic Control[1]	Peak Hour	LOS[2] / Delay[3] (s)	
				Cumulative No Project Conditions	Cumulative Plus Project Conditions
7. Elm Avenue/High Street (SR 49)	Caltrans	Signal	Weekday AM	C / 22	C / 22
			Weekday PM	C / 31	C / 35
			Weekend MD	C / 26	C / 29
8. El Dorado Street (SR 49)/ Lincoln Way/Borland Avenue	Caltrans	Signal	Weekday AM	B / 15	B / 15
			Weekday PM	B / 18	B / 19
			Weekend MD	B / 15	B / 16
9. Coloma Road (SR 49)/ Georgetown Road (SR 193)	Caltrans	AWSC	Weekday AM	B / 12	B / 13
			Weekday PM	D / 28	D / 33
			Weekend MD	B / 13	B / 14

Notes:

1. Signal = traffic signal-controlled intersection; SSSC = side-street stop-controlled intersection; AWSC = all-way stop control
2. LOS = level of service; calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
3. Average control delay (rounded to nearest second) for signalized intersections is the weighted average for all movements. Average control delay at Placer County SSSC intersections is the "overall weighted average delay for movements yielding the right-of-way." For Caltrans SSSC intersections, the overall intersection delay and LOS is shown outside the parentheses, and the worst movement delay and LOS is shown inside the parentheses.
4. Intersection LOS is calculated based on methodologies contained in the *Highway Capacity Manual 2000*. The phasing for these signals is clustered and does not following standard NEMA structure, and therefore the LOS cannot be calculated with methodologies from HCM 6 or HCM 2010.

Bold text indicates unacceptable operations.

All intersections were analyzed in Synchro 10.

Source: Fehr & Peers, 2018.

Roadway Operations

Roadway segments were analyzed under Cumulative Plus Project conditions using the trip generation and distribution discussed above. Results are presented separately for each jurisdiction in Table 23 to Table 26. As shown in these tables, all roadway segments operated acceptably under Cumulative Plus Project conditions.

Table 23: Peak Hour Two-Lane Highway Operations – Cumulative Conditions

Segment	Peak Hour	Direction	Cumulative No Project Conditions		Cumulative Plus Project Conditions	
			V/C[1]	LOS	V/C[1]	LOS
Caltrans						
SR 49: Lincoln Way to Old Foresthill Road	Weekday AM	NB	0.35	D	0.38	D
		SB	0.13	A	0.15	B
	Weekday PM	NB	0.24	C	0.29	C
		SB	0.35	D	0.40	D
	Weekend MD	NB	0.30	D	0.34	D
		SB	0.23	C	0.29	C
SR 49: Old Foresthill Road to 1.8 miles south of Old Foresthill Road[2]	Weekday AM	NB	0.33	D	0.34	D
		SB	0.15	B	0.16	B
	Weekday PM	NB	0.21	C	0.22	C
		SB	0.38	D	0.40	D
	Weekend MD	NB	0.24	C	0.25	C
		SB	0.28	C	0.30	D
SR 49: 1.8 miles south of Old Foresthill Road to SR 193[2]	Weekday AM	NB	0.33	D	0.34	D
		SB	0.14	B	0.15	B
	Weekday PM	NB	0.21	C	0.22	C
		SB	0.35	D	0.36	D
	Weekend MD	NB	0.25	C	0.25	C
		SB	0.26	C	0.27	C

Notes:

1. V/C = volume to capacity ratio
2. These segments were split into two segments because of differing terrain types. The segment to the north is analyzed with a specific grade of 8%, and the segment to the south is analyzed with "Rolling" terrain. These segments have the same peak hour volumes.

Source: Fehr & Peers.

Table 24: Peak Hour Roadway Operations – Cumulative Conditions

Segment	Classification[1]	Peak Hour	Cumulative No Project Conditions			Cumulative Plus Project Conditions		
			ADT[2]	V/C[3]	LOS[4]	ADT[2]	V/C[3]	LOS[4]
El Dorado County								
Sliger Mine Road: SR 193 to San Martin Mine Road	2-lane Arterial	Weekday AM	110	0.07	C	130	0.09	C
		Weekday PM	140	0.09	C	180	0.12	C
		Weekend MD	100	0.07	C	150	0.10	C

Notes:

1. Classification based on El Dorado County criteria
2. ADT = average daily traffic
3. V/C = volume to capacity ratio
4. LOS C represents conditions that are "LOS C or better"

Source: Fehr & Peers.

Table 25: Daily Roadway Operations – Cumulative Conditions

Segment	Classification[1]	Day	Cumulative No Project Conditions			Cumulative Plus Project Conditions		
			ADT[2]	V/C[3]	LOS	ADT[2]	V/C[3]	LOS
Placer County								
Foresthill Road: Lincoln Way to Old Auburn Foresthill Road	2-lane Arterial – HAC	Weekday	12,500	0.63	B	12,960	0.65	B
		Weekend	11,450	0.57	A	12,140	0.61	B
Old Foresthill Road: SR 49 to Foresthill Road	2-lane Arterial – HAC	Weekday	1,100	0.06	A	1,480	0.07	A
		Weekend	1,800	0.09	A	2,380	0.12	A
City of Auburn[4]								
Maidu Drive: Auburn Folsom Road to China Bar Access	2-lane Collector	Weekday	3,060	0.15	B	3,240	0.16	B
		Weekend	2,720	0.14	B	3,130	0.16	B

Notes:

1. Classification based on Placer County and City of Auburn criteria. HAC = high access control
2. ADT = average daily traffic
3. V/C = volume to capacity ratio
4. LOS B represents conditions that are "LOS B or better" for City of Auburn roadway segments

Source: Fehr & Peers.

Table 26: TIRE Index Roadway Operations – Cumulative Conditions

Segment	Day	Cumulative No Project Conditions			Cumulative Plus Project Conditions		
		ADT[1]	TIRE Index[2]	Description / Purpose	ADT[1]	TIRE Index[2]	Description / Purpose
City of Auburn							
Skyridge Drive: Sacramento Street to Riverview Drive	Weekday	1,110	3.0	High Residential	1,280	3.1	High Residential
	Weekend	1,210	3.1	High Residential	1,340	3.1	High Residential
Riverview Drive: Skyridge Drive to Maidu Drive	Weekday	520	2.7	Moderate Residential	690	2.8	Moderate Residential
	Weekend	700	2.8	Moderate Residential	830	2.9	Moderate Residential

Notes:

1. ADT = average daily traffic
2. Goodrich Traffic Group, 2011

Bold text indicates unacceptable operations.

Source: Fehr & Peers.

Bicycle and Pedestrian Facilities

Implementation of the proposed project would not eliminate or adversely affect existing bicycle or pedestrian facilities. The project includes various improvements to bicycle and pedestrian facilities, including the construction of new multi-use trails for hiking and off-road bicycling. The project Preferred Alternative Plan also notes that the ASRA would work with Caltrans, Placer County and El Dorado County to formalize parking along SR 49 and install pedestrian safety improvements (e.g., pathways, crosswalks, signage, etc.) on the SR 49 Bridge, Old Auburn-Foresthill Road, and at roadside parking areas in the Confluence Management Zone. Therefore, cumulative impacts to bicycle or pedestrian facilities are considered **less than significant**.

Transit Facilities

Implementation of the proposed project would not eliminate or adversely affect existing transit operations or facilities. The project Preferred Alternative Plan also notes that the ASRA would work with City of Auburn, Placer County, El Dorado County, and any relevant transit and transportation agencies to construct drop off areas and provide shuttle or transit stops at trailheads in the Confluence Management Zone. Therefore, cumulative impacts to transit facilities are considered **less than significant**.

Impacts and Mitigation Measures

Project impacts were determined by comparing conditions with the project to conditions without the project in accordance with the established significance criteria presented in the Introduction. These impacts are summarized below.

Existing Plus Project Conditions

There are no impacts under Existing Plus Project conditions.

Cumulative Plus Project Conditions

Impact 1 The westbound movement of the SR 49/SR 193/Old Foresthill Road intersection currently operates at LOS C under weekend midday peak hour conditions. With the addition of project trips, this movement would change to LOS E. **This is a significant impact.**

Mitigation 1 Peak hour signal warrants were analyzed for this intersection using the criteria described in Section 4C.04 of the California Manual on Uniform Traffic Control Devices (MUTCD). The intersection met Warrant 3B for weekend midday peak hour conditions. Implementation of a signal at this intersection would reduce the impact to **less than significant,** as shown in Table 27.

Table 27: Intersection Operations Analysis – Cumulative Plus Project (Mitigated) Conditions

Intersection	Jurisdiction	Traffic Control[1]	Peak Hour	LOS[2] / Delay (s)		
				Cumulative No Project Conditions	Cumulative Plus Project Conditions	Cumulative Plus Project Conditions (Mitigated)
4. SR 49/SR 193/ Old Foresthill Road	Caltrans	SSSC[3] / Signal	Weekday AM	B (C) / 11 (16) (WB LT / RT)	B (C) / 13 (20) (WB LT / RT)	B / 16
			Weekday PM	A (C) / 6 (19) (WB LT / RT)	B (D) / 11 (31) (WB LT / RT)	B / 15
			Weekend MD	A (C) / 10 (20) (WB LT / RT)	C (**E**) / 18 (**39**) (WB LT / RT)	A / 8

Notes:

1. Signal = traffic signal-controlled intersection; SSSC = side-street stop-controlled intersection
2. LOS = level of service; calculated based on methodologies contained in the *Highway Capacity Manual* (HCM) *6th Edition*.
3. For SSSC intersections, the overall intersection delay and LOS is shown outside the parentheses, and the worst movement delay and LOS is shown inside the parentheses.

Bold text indicates unacceptable operations.

All intersections were analyzed in Synchro 10.

Source: Fehr & Peers, 2018.

As stated in the MUTCD, the satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal. For purposes of this study, the peak hour signal warrant is used as an indicator of whether peak hour traffic conditions may warrant a signal. However, a full engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of a specific intersection would be necessary to fully determine if a traffic signal is justified.

Special Events

Large special events are sometimes permitted in the ASRA, attracting 100 to 300 vehicles. These events are most likely to occur in the Knickerbocker Management Zone. Special event traffic is short-term, temporary, and only occurs a few times throughout the year. However, these events may result in temporary traffic congestion within the ASRA and on access routes. For such events, a traffic management plan should be required as a permit condition. The traffic management plan should include a description of expected traffic patterns and proposes traffic control measures (such as signs, traffic control officers, or temporary changes to intersection controls) appropriate to the size, location, and timing of the event.

Appendix A:

Existing Conditions Level of Service Calculations

Prepared by National Data & Surveying Services

I-80 WB Ramps/Bowman Rd & Auburn Ravine Rd

Peak Hour Turning Movement Count

ID: 18-07261-001
City: Auburn

Day: Thursday
Date: 08/09/2018

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

I-80 WB Ramps/Bowman Rd — SOUTHBOUND

	Right	Thru	Left	U-Turn	Departing
AM	56	161	43	0	176
NOON	0	0	0	0	0
PM	77	141	145	0	319
Lanes	1	1	1	0	

Auburn Ravine Rd — EASTBOUND

	AM	NOON	PM	Lanes
Departing	177	0	197	
U-Turn	0	0	0	0
Left	39	0	74	1
Thru	68	0	162	1
Right	82	0	54	1

Auburn Ravine Rd — WESTBOUND

	Lanes	PM	NOON	AM
Right	0	245	0	137
Thru	2	120	0	121
Left	0	154	0	213
U-Turn	0	0	0	0
Departing		307	0	111

I-80 WB Ramps/Bowman Rd — NORTHBOUND

	Departing	U-Turn	Left	Thru	Right
Lanes		0	0	0	0
PM	349	0	0	0	0
NOON	0	0	0	0	0
AM	456	0	0	0	0

CONTROL

Signalized

	AM	NOON	PM
TEV	920	0	1172
PHF	0.95		0.97

Total Vehicles (AM)

Approach	Left	Thru	Right
Southbound	43	161	56
Eastbound	39	68	82
Westbound	213	121	137
Northbound	0	0	0

Total Vehicles (Noon)

All movements: N/A

Total Vehicles (PM)

Approach	Left	Thru	Right
Southbound	145	141	77
Eastbound	74	162	54
Westbound	154	120	245
Northbound	0	0	0

Bikes (AM)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	1
Northbound	0	0	0

Bikes (NOON)

All movements: N/A

Bikes (PM)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North leg	Eastbound	0	0	0
North leg	Westbound	0	0	0
West leg	Southbound	3	0	1
West leg	Northbound	2	0	0
East leg	Southbound	0	0	0
East leg	Northbound	0	0	0
South leg	Eastbound	2	0	0
South leg	Westbound	1	0	0
Corners (diagonal)	all	0	0	0

Prepared by National Data & Surveying Services

I-80 WB Ramps/Bowman Rd & Auburn Ravine Rd

Peak Hour Turning Movement Count

ID: 18-07261-001
City: Auburn

Day: Saturday
Date: 08/11/2018

PEAK HOURS		COUNT PERIODS
AM	NONE	NONE
NOON	11:15 AM - 12:15 PM	11:00 AM - 03:00 PM
PM	NONE	NONE

I-80 WB Ramps/Bowman Rd – SOUTHBOUND

	Right	Thru	Left	U-Turn	Approach (↑ departing)
AM	0	0	0	0	0
NOON	77	148	137	0	250
PM	0	0	0	0	0
Lanes	1	1	1	0	

Auburn Ravine Rd – EASTBOUND

	AM	NOON	PM	Lanes
Departing (⇦)	0	202	0	
U-Turn	0	0	0	0
Left	0	77	0	1
Thru	0	136	0	1
Right	0	50	0	1

Auburn Ravine Rd – WESTBOUND

	PM	NOON	AM	Lanes
Right	0	173	0	0
Thru	0	125	0	2
Left	0	272	0	0
U-Turn	0	0	0	0
Departing (⇨)	0	273	0	

I-80 WB Ramps/Bowman Rd – NORTHBOUND

	Departing (⇩)	U-Turn	Left	Thru	Right
Lanes		0	0	0	0
PM	0	0	0	0	0
NOON	470	0	0	0	0
AM	0	0	0	0	0

CONTROL

Signalized

	AM	NOON	PM
TEV	0	1195	0
PHF		0.98	

Total Vehicles (AM)

All movements: N/A

Total Vehicles (Noon)

Approach	Right	Thru	Left
Southbound	77	148	137
Eastbound	50	136	77
Westbound	173	125	272
Northbound	0	0	0

Total Vehicles (PM)

All movements: N/A

Bikes (AM)

All movements: N/A

Bikes (NOON)

Approach	Right	Thru	Left
Southbound	1	0	0
Eastbound	0	0	0
Westbound	2	0	0
Northbound	0	0	0

Bikes (PM)

All movements: N/A

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (→)	0	0	0
North leg (←)	0	0	0
West leg (↓)	0	0	0
West leg (↑)	0	1	0
East leg (↓)	0	1	0
East leg (↑)	0	1	0
South leg (→)	0	0	0
South leg (←)	0	0	0
NW diagonal	0	0	0
NE diagonal	0	0	0
SW diagonal	0	0	0
SE diagonal	0	0	0

Prepared by National Data & Surveying Services

I-80 EB Ramps & Auburn Ravine Rd

Peak Hour Turning Movement Count

ID: 18-07261-002
City: Auburn

Day: Thursday
Date: 08/09/2018

PEAK HOURS		COUNT PERIODS
07:15 AM - 08:15 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:00 PM - 05:00 PM	PM	04:00 PM - 06:00 PM

I-80 EB Ramps — SOUTHBOUND

	Right	Thru	Left	U-Turn	Departing
AM	0	0	0	0	243
NOON	0	0	0	0	0
PM	0	0	0	0	302
Lanes	0	0	0	0	

Auburn Ravine Rd — EASTBOUND

	AM	NOON	PM	Lanes
Departing	462	0	534	
U-Turn	0	0	0	0
Left	22	0	56	1
Thru	151	0	326	1
Right	0	0	0	0

Auburn Ravine Rd — WESTBOUND

	Lanes	PM	NOON	AM
Left	1	244	0	219
Thru	1	352	0	382
Right	0	0	0	0
U-Turn	0	0	0	0
Departing		656	0	305

CONTROL

Signalized

	AM	NOON	PM
TEV	1010	0	1492
PHF	0.92		0.94

I-80 EB Ramps — NORTHBOUND

	Departing	U-Turn	Left	Thru	Right
Lanes		0	0.5	0.5	1
PM	0	0	182	2	330
NOON	0	0	0	0	0
AM	0	0	80	2	154

Total Vehicles (AM)

Approach	U-Turn	Left	Thru	Right
Southbound	0	0	0	0
Eastbound	0	22	151	0
Westbound	0	219	382	0
Northbound	0	80	2	154

Total Vehicles (Noon)

Approach	U-Turn	Left	Thru	Right
Southbound	N/A	N/A	N/A	N/A
Eastbound		N/A	N/A	N/A
Westbound		N/A	N/A	N/A
Northbound		N/A	N/A	N/A

Total Vehicles (PM)

Approach	U-Turn	Left	Thru	Right
Southbound	0	0	0	0
Eastbound	0	56	326	0
Westbound	0	244	352	0
Northbound	0	182	2	330

Bikes (AM)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	1	0
Northbound	0	0	0

Bikes (NOON)

Approach	Left	Thru	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Bikes (PM)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	Eastbound	0	0	0
North	Westbound	0	0	0
West	Southbound	0	0	0
West	Northbound	0	0	0
East	Southbound	0	0	0
East	Northbound	0	0	0
South	Eastbound	1	0	1
South	Westbound	2	0	0
NW diagonal		0	0	0
NE diagonal		0	0	0
SW diagonal		0	0	0
SE diagonal		0	0	0

Prepared by National Data & Surveying Services

I-80 EB Ramps & Auburn Ravine Rd

Peak Hour Turning Movement Count

ID: 18-07261-002
City: Auburn

Day: Saturday
Date: 08/11/2018

PEAK HOURS		COUNT PERIODS
AM	NONE	NONE
NOON	12:00 PM - 01:00 PM	11:00 AM - 03:00 PM
PM	NONE	NONE

I-80 EB Ramps — SOUTHBOUND

	U-turn	Left	Through	Right	Leg total
AM	0	0	0	0	0
NOON	0	0	0	0	272
PM	0	0	0	0	0
Lanes	0	0	0	0	

Auburn Ravine Rd — EASTBOUND

Movement	AM	NOON	PM	Lanes
Leg total	0	590	0	
U-turn	0	0	0	0
Left	0	49	0	1
Through	0	350	0	1
Right	0	0	0	0

Auburn Ravine Rd — WESTBOUND

Movement	PM	NOON	AM	Lanes
Right	0	223	0	1
Through	0	490	0	1
Left	0	0	0	0
U-turn	0	0	0	0
Leg total	0	674	0	

I-80 EB Ramps — NORTHBOUND

	Leg total	U-turn	Left	Through	Right
Lanes		0	0.5	0.5	1
PM	0	0	0	0	0
NOON	0	0	100	0	324
AM	0	0	0	0	0

CONTROL

Signalized

	AM	NOON	PM
TEV	0	1536	0
PHF		0.98	

Total Vehicles (AM)

SB: N/A N/A N/A; EB: N/A N/A N/A; WB: N/A N/A N/A; NB: N/A N/A N/A

Total Vehicles (Noon)

SB: 0 0 0
EB: 49 (Left), 350 (Through), 0 (Right)
WB: 223, 490, 0
NB: 100, 0, 324

Total Vehicles (PM)

SB: N/A N/A N/A; EB: N/A N/A N/A; WB: N/A N/A N/A; NB: N/A N/A N/A

Bikes (AM)

SB: N/A N/A N/A; EB: N/A N/A N/A; WB: N/A N/A N/A; NB: N/A N/A N/A

Bikes (NOON)

SB: 0 0 0
EB: 0, 0, 0
WB: 0, 2, 0
NB: 0 0 0

Bikes (PM)

SB: N/A N/A N/A; EB: N/A N/A N/A; WB: N/A N/A N/A; NB: N/A N/A N/A

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (westward)	0	0	0
North leg (eastward)	0	0	0
South leg (eastward)	0	2	0
South leg (westward)	0	1	0
West leg (southward)	0	0	0
West leg (northward)	0	0	0
East leg (southward)	0	0	0
East leg (northward)	0	0	0
NW diagonal	0	0	0
NE diagonal	0	0	0
SW diagonal	0	0	0
SE diagonal	0	0	0

Prepared by National Data & Surveying Services

Old Auburn Foresthill Rd & Foresthill Rd

Peak Hour Turning Movement Count

ID: 18-07261-003
City: Auburn

Day: Thursday
Date: 08/09/2018

	PEAK HOURS	COUNT PERIODS
AM	07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

Old Auburn Foresthill Rd — SOUTHBOUND

	Right	Through	Left	U-Turn	Departing
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0
	0	0	0	0	

Foresthill Rd — EASTBOUND

	AM	NOON	PM	
Departing	437	0	180	
U-Turn	0	0	1	0
Left	0	0	0	0
Through	92	0	488	1
Right	2	0	23	0

Foresthill Rd — WESTBOUND

		PM	NOON	AM
Right	0	0	0	0
Through	2	172	0	430
Left	1	9	0	13
U-Turn	0	0	0	0
Departing		506	0	104

Old Auburn Foresthill Rd — NORTHBOUND

	Departing	U-Turn	Left	Through	Right
		0	0	0.5	0.5
PM	32	0	7	0	18
NOON	0	0	0	0	0
AM	15	0	7	0	12

CONTROL

1-Way Stop(NB)

	AM	NOON	PM
TEV	556	0	718
PHF	0.88		0.87

Total Vehicles (AM)

Approach	Movements
Southbound	0, 0, 0
Eastbound	0 (left), 92 (through), 2 (right)
Westbound	0 (right), 430 (through), 13 (left)
Northbound	7 (left), 0 (through), 12 (right)

Total Vehicles (Noon)

Approach	Movements
Southbound	N/A, N/A, N/A
Eastbound	N/A, N/A, N/A
Westbound	N/A, N/A, N/A
Northbound	N/A, N/A, N/A

Total Vehicles (PM)

Approach	Movements
Southbound	0, 0, 0
Eastbound	0 (left), 488 (through), 23 (right)
Westbound	0 (right), 172 (through), 9 (left)
Northbound	7 (left), 0 (through), 18 (right)

Bikes (AM)

Approach	Movements
Southbound	0, 0, 0
Eastbound	0, 0, 0
Westbound	0, 0, 0
Northbound	0, 0, 0

Bikes (NOON)

Approach	Movements
Southbound	N/A, N/A, N/A
Eastbound	N/A, N/A, N/A
Westbound	N/A, N/A, N/A
Northbound	N/A, N/A, N/A

Bikes (PM)

Approach	Movements
Southbound	0, 0, 0
Eastbound	0, 0, 0
Westbound	0, 0, 0
Northbound	0, 0, 0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg	0	0	0
South leg	0	0	0
East leg	0	0	0
West leg	0	0	0
Diagonals	0	0	0

Prepared by National Data & Surveying Services

Old Auburn Foresthill Rd & Foresthill Rd

Peak Hour Turning Movement Count

ID: 18-07261-003
City: Auburn

Day: Saturday
Date: 08/11/2018

	PEAK HOURS	COUNT PERIODS
AM	NONE	NONE
NOON	11:30 AM - 12:30 PM	11:00 AM - 03:00 PM
PM	NONE	NONE

Old Auburn Foresthill Rd — SOUTHBOUND

	Right	Through	Left	U-Turn	Departing
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0
	0	0	0	0	

Foresthill Rd — EASTBOUND

	AM	NOON	PM	
Departing	0	329	0	
U-Turn	0	1	0	0
Left	0	0	0	0
Through	0	267	0	1
Right	0	25	0	0

Foresthill Rd — WESTBOUND

		PM	NOON	AM
Right	0	0	0	0
Through	2	0	309	0
Left	1	0	10	0
U-Turn	0	0	0	0
Departing		0	283	0

CONTROL

1-Way Stop(NB)

	AM	NOON	PM
TEV	0	647	0
PHF		0.95	

Old Auburn Foresthill Rd — NORTHBOUND

	Departing	U-Turn	Left	Through	Right
		0	0	0.5	0.5
PM	0	0	0	0	0
NOON	35	0	19	0	16
AM	0	0	0	0	0

Total Vehicles (AM)

Approach	Left	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Total Vehicles (Noon)

Approach	Left	Through	Right
Southbound	0	0	0
Eastbound	0	267	25
Westbound	10	309	0
Northbound	19	0	16

Total Vehicles (PM)

Approach	Left	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Bikes (AM)

Approach	Left	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Bikes (NOON)

Approach	Left	Through	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	2	0
Northbound	0	0	0

Bikes (PM)

Approach	Left	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (eastbound)	0	0	0
North leg (westbound)	0	0	0
South leg (eastbound)	0	0	0
South leg (westbound)	0	0	0
West leg (southbound)	0	0	0
West leg (northbound)	0	0	0
East leg (southbound)	0	0	0
East leg (northbound)	0	0	0
NW corner (diagonal)	0	0	0
NE corner (diagonal)	0	0	0
SW corner (diagonal)	0	0	0
SE corner (diagonal)	0	0	0

Prepared by National Data & Surveying Services

Old Foresthill Rd & SR 49

Peak Hour Turning Movement Count

ID: 18-07261-004
City: Auburn

Day: Thursday
Date: 08/09/2018

	PEAK HOURS	COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Old Foresthill Rd – SOUTHBOUND

	Right	Through	Left	U-Turn	Departing
AM	0	4	13	0	24
NOON	0	0	0	0	0
PM	0	19	37	0	36
	0	1	0	0	

SR 49 – EASTBOUND

	AM	NOON	PM	
Departing	0	0	0	
U-Turn	0	0	0	0
Left	0	0	0	0
Through	0	0	0	0
Right	0	0	0	0

SR 49 – WESTBOUND

		PM	NOON	AM
Right	0.5	23	0	19
Through	0.5	0	0	0
Left	0	242	0	423
U-Turn	0	0	0	0
Departing		577	0	172

Old Foresthill Rd – NORTHBOUND

	Departing	U-Turn	Left	Through	Right
		0	0	1	0
PM	261	0	0	13	540
NOON	0	0	0	0	0
AM	427	0	0	5	159

CONTROL

1-Way Stop(WB)

	AM	NOON	PM
TEV	623	0	874
PHF	0.93		0.93

Total Vehicles (AM)

SB: U 0, Through 4, Left 13; EB: Left 0, Through 0, Right 0; WB: Right 19, Through 0, Left 423; NB: U 0, Through 5, Right 159

Total Vehicles (Noon)

All movements: N/A

Total Vehicles (PM)

SB: U 0, Through 19, Left 37; EB: Left 0, Through 0, Right 0; WB: Right 23, Through 0, Left 242; NB: U 0, Through 13, Right 540

Bikes (AM)

All movements: 0

Bikes (NOON)

All movements: N/A

Bikes (PM)

All movements: 0

Pedestrians (Crosswalks)

All crosswalks, AM / NOON / PM: 0

Prepared by National Data & Surveying Services

Old Foresthill Rd & SR 49

Peak Hour Turning Movement Count

ID: 18-07261-004
City: Auburn

Day: Saturday
Date: 08/11/2018

	PEAK HOURS	COUNT PERIODS
AM	NONE	NONE
NOON	11:45 AM - 12:45 PM	11:00 AM - 03:00 PM
PM	NONE	NONE

Old Foresthill Rd — SOUTHBOUND

	↲	↓	↳	U	⇧
AM	0	0	0	0	0
NOON	0	29	35	0	79
PM	0	0	0	0	0
Lanes	0	1	0	0	

SR 49 — EASTBOUND

	AM	NOON	PM	Lanes
⇦	0	0	0	
U-turn	0	0	0	0
Left	0	0	0	0
Through	0	0	0	0
Right	0	0	0	0

SR 49 — WESTBOUND

	PM	NOON	AM	Lanes
Right	0	33	0	0.5
Through	0	0	0	0.5
Left	0	347	0	0
U-turn	0	0	0	0
⇨	0	342	0	

Old Foresthill Rd — NORTHBOUND

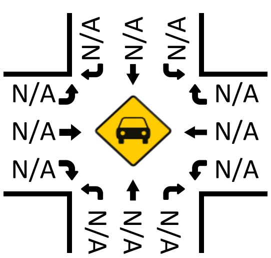
	⇩	U-turn	Left	Through	Right
Lanes		0	0	1	0
PM	0	0	0	0	0
NOON	376	0	0	46	307
AM	0	0	0	0	0

CONTROL

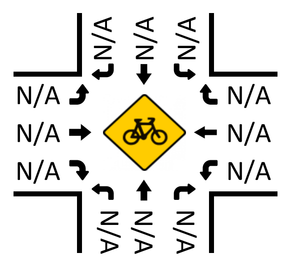
1-Way Stop(WB)

	AM	NOON	PM
TEV	0	797	0
PHF		0.97	

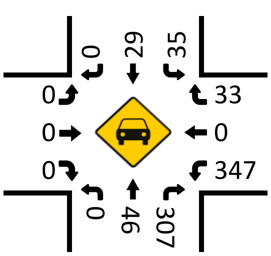
Total Vehicles (AM)



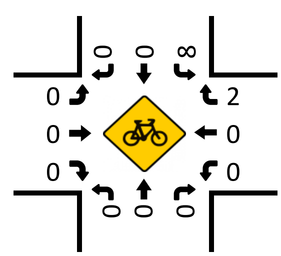
Bikes (AM)



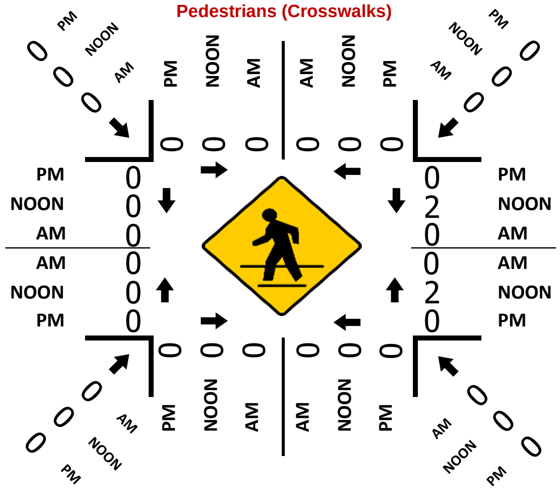
Total Vehicles (Noon)



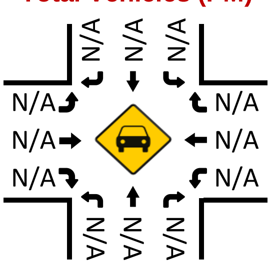
Bikes (NOON)



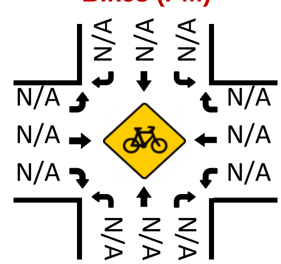
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

I-80 WB Ramps & Elm Ave

Peak Hour Turning Movement Count

ID: 18-07261-005
City: Auburn

Day: Thursday
Date: 08/09/2018

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

I-80 WB Ramps — SOUTHBOUND

	Right	Thru	Left	U-Turn	Departing
AM	45	45	52	0	177
NOON	0	0	0	0	0
PM	72	93	171	0	325
Lanes	0.5	0.5	1	0	

Elm Ave — EASTBOUND

	AM	NOON	PM	Lanes
Departing	440	0	482	
U-Turn	0	0	0	0
Left	36	0	92	1
Thru	164	0	449	1.5
Right	109	0	122	0.5

Elm Ave — WESTBOUND

	Lanes	PM	NOON	AM
Right	0	182	0	112
Thru	2	345	0	328
Left	1	149	0	212
U-Turn	0	1	0	0
Departing		775	0	308

I-80 WB Ramps — NORTHBOUND

	Departing	U-Turn	Left	Thru	Right
Lanes		0	1	1	1
PM	364	0	65	51	154
NOON	0	0	0	0	0
AM	367	1	67	29	92

CONTROL

Signalized

	AM	NOON	PM
TEV	1292	0	1946
PHF	0.94		0.96

Total Vehicles (AM)

Approach	Left	Thru	Right
Southbound	52	45	45
Eastbound	36	164	109
Westbound	212	328	112
Northbound	67	29	92

Total Vehicles (Noon)

Approach	Left	Thru	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Total Vehicles (PM)

Approach	Left	Thru	Right
Southbound	171	93	72
Eastbound	92	449	122
Westbound	149	345	182
Northbound	65	51	154

Bikes (AM)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	1
Northbound	0	0	0

Bikes (NOON)

Approach	Left	Thru	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Bikes (PM)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North (westward)	0	0	0
North (eastward)	0	0	0
South (westward)	0	0	0
South (eastward)	0	0	0
West (southward)	0	0	0
West (northward)	0	0	0
East (southward)	0	0	0
East (northward)	0	0	0
NW corner (diagonal)	0	0	0
NE corner (diagonal)	0	0	0
SW corner (diagonal)	0	0	0
SE corner (diagonal)	0	0	0

Prepared by National Data & Surveying Services

I-80 WB Ramps & Elm Ave

Peak Hour Turning Movement Count

ID: 18-07261-005
City: Auburn

Day: Saturday
Date: 08/11/2018

	PEAK HOURS	COUNT PERIODS
AM	NONE	NONE
NOON	11:00 AM - 12:00 PM	11:00 AM - 03:00 PM
PM	NONE	NONE

I-80 WB Ramps — SOUTHBOUND

	↲	↓	↳	U-turn	⇧
AM	0	0	0	0	0
NOON	91	93	144	0	342
PM	0	0	0	0	0
Lanes	0.5	0.5	1	0	

Elm Ave — EASTBOUND

	Lanes	AM	NOON	PM
⇦		0	492	0
U-turn	0	0	0	0
Left	1	0	105	0
→	1.5	0	302	0
Right	0.5	0	100	0

Elm Ave — WESTBOUND

	Lanes	PM	NOON	AM
Right	0	0	165	0
←	2	0	323	0
Left	1	0	194	0
U-turn	0	0	1	0
⇨		0	581	0

I-80 WB Ramps — NORTHBOUND

	⇩	U-turn	Left	↑	Right
Lanes		0	1	1	1
PM	0	0	0	0	0
NOON	388	1	78	72	134
AM	0	0	0	0	0

CONTROL

Signalized

	AM	NOON	PM
TEV	0	1803	0
PHF		0.96	

Total Vehicles (AM)

Approach	Left	Thru	Right
SB	N/A	N/A	N/A
EB	N/A	N/A	N/A
WB	N/A	N/A	N/A
NB	N/A	N/A	N/A

Total Vehicles (Noon)

Approach	Left	Thru	Right
SB	144	93	91
EB	105	302	100
WB	194	323	165
NB	78	72	134

Total Vehicles (PM)

Approach	Left	Thru	Right
SB	N/A	N/A	N/A
EB	N/A	N/A	N/A
WB	N/A	N/A	N/A
NB	N/A	N/A	N/A

Bikes (AM)

Approach	Left	Thru	Right
SB	N/A	N/A	N/A
EB	N/A	N/A	N/A
WB	N/A	N/A	N/A
NB	N/A	N/A	N/A

Bikes (NOON)

Approach	Left	Thru	Right
SB	0	0	0
EB	0	1	0
WB	0	1	0
NB	0	0	0

Bikes (PM)

Approach	Left	Thru	Right
SB	N/A	N/A	N/A
EB	N/A	N/A	N/A
WB	N/A	N/A	N/A
NB	N/A	N/A	N/A

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	→	0	1	0
North	←	0	0	0
West	↓	0	0	0
West	↑	0	1	0
East	↓	0	0	0
East	↑	0	0	0
South	→	0	0	0
South	←	0	1	0
NW diagonal		0	0	0
NE diagonal		0	0	0
SW diagonal		0	0	0
SE diagonal		0	0	0

Prepared by National Data & Surveying Services

I-80 EB Ramps & Elm Ave

Peak Hour Turning Movement Count

ID: 18-07261-006
City: Auburn

Day: Thursday
Date: 08/09/2018

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

I-80 EB Ramps — SOUTHBOUND

	Right	Thru	Left	U-Turn	Exit
AM	158	0	127	0	182
NOON	0	0	0	0	0
PM	188	0	319	0	351
Lanes	1	1	0	0	

Elm Ave — EASTBOUND

	AM	NOON	PM	Lanes
Exit	645	0	671	
U-Turn	0	0	0	0
Left	56	0	183	1
Thru	253	0	599	2
Right	0	0	0	0

Elm Ave — WESTBOUND

	PM	NOON	AM	Lanes
Right	168	0	126	0.5
Thru	483	0	487	1.5
Left	0	0	0	0
U-Turn	0	0	0	0
Exit	918	0	380	

I-80 EB Ramps — NORTHBOUND

	Exit	U-Turn	Left	Thru	Right
Lanes		0	0	0	0
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

CONTROL

Signalized

	AM	NOON	PM
TEV	1207	0	1940
PHF	0.93		0.95

Total Vehicles (AM)

SB: 158 (right), 0 (thru), 127 (left)
EB: 56 (left), 253 (thru), 0 (right)
WB: 126 (right), 487 (thru), 0 (left)
NB: 0, 0, 0

Total Vehicles (Noon)

SB: N/A, N/A, N/A
EB: N/A, N/A, N/A
WB: N/A, N/A, N/A
NB: N/A, N/A, N/A

Total Vehicles (PM)

SB: 188 (right), 0 (thru), 319 (left)
EB: 183 (left), 599 (thru), 0 (right)
WB: 168 (right), 483 (thru), 0 (left)
NB: 0, 0, 0

Bikes (AM)

SB: 0, 0, 0
EB: 0, 0, 0
WB: 0, 1, 0
NB: 0, 0, 0

Bikes (NOON)

SB: N/A, N/A, N/A
EB: N/A, N/A, N/A
WB: N/A, N/A, N/A
NB: N/A, N/A, N/A

Bikes (PM)

SB: 0, 0, 0
EB: 0, 0, 0
WB: 0, 0, 0
NB: 0, 0, 0

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	Eastbound	1	0	2
North	Westbound	2	0	2
West	Southbound	0	0	1
West	Northbound	0	0	0
East	Southbound	0	0	0
East	Northbound	0	0	0
South	Eastbound	0	0	0
South	Westbound	0	0	0
NW diagonal		0	0	0
NE diagonal		0	0	0
SW diagonal		0	0	0
SE diagonal		0	0	0

Prepared by National Data & Surveying Services

I-80 EB Ramps & Elm Ave

Peak Hour Turning Movement Count

ID: 18-07261-006
City: Auburn

Day: Saturday
Date: 08/11/2018

	PEAK HOURS	COUNT PERIODS
AM	NONE	NONE
NOON	11:45 AM - 12:45 PM	11:00 AM - 03:00 PM
PM	NONE	NONE

I-80 EB Ramps — SOUTHBOUND

	Right	Thru	Left	U-Turn	Out
AM	0	0	0	0	0
NOON	144	0	200	0	295
PM	0	0	0	0	0
Lanes	1	1	0	0	

Elm Ave — EASTBOUND

	AM	NOON	PM	Lanes
Out	0	736	0	
U-Turn	0	0	0	0
Left	0	141	0	1
Thru	0	429	0	2
Right	0	0	0	0

Elm Ave — WESTBOUND

	Lanes	PM	NOON	AM
Right	0.5	0	154	0
Thru	1.5	0	592	0
Left	0	0	0	0
U-Turn	0	0	0	0
Out		0	629	0

I-80 EB Ramps — NORTHBOUND

	Out	U-Turn	Left	Thru	Right
Lanes		0	0	0	0
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

CONTROL

Signalized

	AM	NOON	PM
TEV	0	1660	0
PHF		0.97	

Total Vehicles (AM)

SB: N/A N/A N/A; EB: N/A N/A N/A; WB: N/A N/A N/A; NB: N/A N/A N/A

Total Vehicles (Noon)

SB: Right 144, Thru 0, Left 200; EB: Left 141, Thru 429, Right 0; WB: Right 154, Thru 592, Left 0; NB: 0 0 0

Total Vehicles (PM)

SB: N/A N/A N/A; EB: N/A N/A N/A; WB: N/A N/A N/A; NB: N/A N/A N/A

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North (west half)	0	2	0
North (east half)	0	1	0
West (north half)	0	0	0
West (south half)	0	0	0
East (north half)	0	0	0
East (south half)	0	0	0
South (west half)	0	0	0
South (east half)	0	0	0
NW corner	0	0	0
NE corner	0	0	0
SW corner	0	0	0
SE corner	0	0	0

Bikes (AM)

SB: N/A N/A N/A; EB: N/A N/A N/A; WB: N/A N/A N/A; NB: N/A N/A N/A

Bikes (NOON)

SB: 0 0 0; EB: 0 0 0; WB: Right 0, Thru 1, Left 0; NB: 0 0 0

Bikes (PM)

SB: N/A N/A N/A; EB: N/A N/A N/A; WB: N/A N/A N/A; NB: N/A N/A N/A

Prepared by National Data & Surveying Services

High St & Elm Ave

Peak Hour Turning Movement Count

ID: 18-07261-007
City: Auburn

Day: Thursday
Date: 08/09/2018

	PEAK HOURS	COUNT PERIODS
AM	08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

High St SOUTHBOUND

	Right	Thru	Left	U-Turn	Exit
AM	431	118	2	0	281
NOON	0	0	0	0	0
PM	316	106	3	0	698
Lanes	1	1	1	0	

Elm Ave EASTBOUND

	Lanes	AM	NOON	PM
Exit		575	0	610
U-Turn	0	0	0	0
Left	1	218	0	534
Thru	1	31	0	85
Right	1	129	0	190

Elm Ave WESTBOUND

	Lanes	PM	NOON	AM
Right	0	7	0	0
Thru	1	58	0	15
Left	0	7	0	0
U-Turn	0	0	0	0
Exit		107	0	36

High St NORTHBOUND

	Exit	U-Turn	Left	Thru	Right
Lanes		0	1	1	0
PM	303	0	236	157	19
NOON	0	0	0	0	0
AM	247	0	129	63	3

CONTROL

Signalized

	AM	NOON	PM
TEV	1139	0	1718
PHF	0.90		0.97

Total Vehicles (AM)

SB: 431, 118, 2 (U 0); EB: 218, 31, 129; WB: 0, 15, 0; NB: 129, 63, 3

Total Vehicles (Noon)

N/A

Total Vehicles (PM)

SB: 316, 106, 3; EB: 534, 85, 190; WB: 7, 58, 7; NB: 236, 157, 19

Bikes (AM)

All movements: 0 (SB 0, 1, 0; EB 0, 0, 0; WB 0, 0, 0; NB 0, 0, 0)

Bikes (NOON)

N/A

Bikes (PM)

All movements: 0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (west side)	2	0	0
North leg (east side)	0	0	0
West leg (north side)	5	0	5
West leg (south side)	1	0	3
East leg (north side)	1	0	0
East leg (south side)	1	0	0
South leg (west side)	0	0	0
South leg (east side)	0	0	0
Diagonals (each corner)	0	0	0

Prepared by National Data & Surveying Services

High St & Elm Ave

Peak Hour Turning Movement Count

ID: 18-07261-007
City: Auburn

Day: Saturday
Date: 08/11/2018

PEAK HOURS		COUNT PERIODS
AM	NONE	NONE
NOON	11:45 AM - 12:45 PM	11:00 AM - 03:00 PM
PM	NONE	NONE

High St — SOUTHBOUND

	↲	↓	↳	U	⇧
AM	0	0	0	0	0
NOON	426	161	6	0	488
PM	0	0	0	0	0
Lanes	1	1	1	0	

Elm Ave — EASTBOUND

	AM	NOON	PM	Lanes
⇦	0	698	0	
U	0	0	0	0
↱ (left)	0	337	0	1
→	0	51	0	1
↴ (right)	0	165	0	1

Elm Ave — WESTBOUND

	PM	NOON	AM	Lanes
↰	0	14	0	0
←	0	39	0	1
↲	0	13	0	0
U	0	0	0	0
⇨	0	74	0	

High St — NORTHBOUND

	⇩	U	↰	↑	↱
Lanes		0	1	1	0
PM	0	0	0	0	0
NOON	339	0	233	137	17
AM	0	0	0	0	0

CONTROL

Signalized

	AM	NOON	PM
TEV	0	1599	0
PHF		0.95	

Total Vehicles (AM)

SB: N/A N/A N/A; EB: N/A N/A N/A; WB: N/A N/A N/A; NB: N/A N/A N/A

Total Vehicles (Noon)

SB: 426 161 6; EB: 337 51 165; WB: 14 39 13; NB: 233 137 17

Total Vehicles (PM)

SB: N/A N/A N/A; EB: N/A N/A N/A; WB: N/A N/A N/A; NB: N/A N/A N/A

Bikes (AM)

SB: N/A N/A N/A; EB: N/A N/A N/A; WB: N/A N/A N/A; NB: N/A N/A N/A

Bikes (NOON)

SB: 0 1 0; EB: 0 0 0; WB: 0 0 0; NB: 1 0 0

Bikes (PM)

SB: N/A N/A N/A; EB: N/A N/A N/A; WB: N/A N/A N/A; NB: N/A N/A N/A

Pedestrians (Crosswalks)

Crosswalk		AM	NOON	PM
North	→	0	1	0
North	←	0	2	0
South	→	0	1	0
South	←	0	0	0
West	↓	0	2	0
West	↑	0	5	0
East	↓	0	2	0
East	↑	0	3	0
NW diagonal		0	0	0
NE diagonal		0	0	0
SW diagonal		0	0	0
SE diagonal		0	0	0

Prepared by National Data & Surveying Services

Lincoln Way/Borland Ave & El Dorado St/SR 49

Peak Hour Turning Movement Count

ID: 18-07261-008
City: Auburn

Day: Thursday
Date: 08/09/2018

PEAK HOURS		COUNT PERIODS
AM	08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Lincoln Way/Borland Ave — SOUTHBOUND

	Right	Thru	Left	U-Turn	Outbound
AM	160	27	23	0	129
NOON	0	0	0	0	0
PM	162	29	65	0	294
Lanes	1	0.5	0.5	0	

El Dorado St/SR 49 — EASTBOUND

	AM	NOON	PM	Lanes
Outbound	554	0	466	
U-Turn	0	0	0	0
Left	81	0	226	1
Thru	168	0	458	0.5
Right	28	0	29	0.5

El Dorado St/SR 49 — WESTBOUND

	PM	NOON	AM	Lanes
Right	34	0	23	0.5
Thru	261	0	361	0.5
Left	1	0	4	1
U-Turn	0	0	0	0
Outbound	535	0	196	

Lincoln Way/Borland Ave — NORTHBOUND

	Outbound	U-Turn	Left	Thru	Right
Lanes		0	1	0.5	0.5
PM	59	0	43	34	12
NOON	0	0	0	0	0
AM	59	0	33	25	5

CONTROL

Signalized

	AM	NOON	PM
TEV	938	0	1354
PHF	0.95		0.94

Total Vehicles (AM)

Approach	Left	Thru	Right
Southbound	23	27	160
Eastbound	81	168	28
Westbound	4	361	23
Northbound	33	25	5

Total Vehicles (Noon)

All movements: N/A

Total Vehicles (PM)

Approach	Left	Thru	Right
Southbound	65	29	162
Eastbound	226	458	29
Westbound	1	261	34
Northbound	43	34	12

Bikes (AM)

Approach	Left	Thru	Right
Southbound	0	1	2
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

Bikes (NOON)

All movements: N/A

Bikes (PM)

Approach	Left	Thru	Right
Southbound	0	0	1
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (west half)	0	0	0
North leg (east half)	0	0	0
West leg (north half)	0	0	1
West leg (south half)	0	0	0
East leg (north half)	0	0	0
East leg (south half)	0	0	0
South leg (west half)	0	0	0
South leg (east half)	0	0	0
NW diagonal	0	0	0
NE diagonal	0	0	0
SW diagonal	0	0	0
SE diagonal	0	0	0

Prepared by National Data & Surveying Services

Lincoln Way/Borland Ave & El Dorado St/SR 49

Peak Hour Turning Movement Count

ID: 18-07261-008
City: Auburn

Day: Saturday
Date: 08/11/2018

	PEAK HOURS	COUNT PERIODS
AM	NONE	NONE
NOON	11:45 AM - 12:45 PM	11:00 AM - 03:00 PM
PM	NONE	NONE

Lincoln Way/Borland Ave – SOUTHBOUND

	Right	Through	Left	U-Turn	⇧
AM	0	0	0	0	0
NOON	202	15	31	0	196
PM	0	0	0	0	0
Lanes	1	0.5	0.5	0	

El Dorado St/SR 49 – EASTBOUND

	AM	NOON	PM	Lanes
⇦	0	604	0	
U-Turn	0	0	0	0
Left	0	154	0	1
Through	0	337	0	0.5
Right	0	20	0	0.5

El Dorado St/SR 49 – WESTBOUND

	Lanes	PM	NOON	AM
Right	0.5	0	22	0
Through	0.5	0	367	0
Left	1	0	0	0
U-Turn	0	0	0	0
⇨		0	373	0

Lincoln Way/Borland Ave – NORTHBOUND

	⇩	U-Turn	Left	Through	Right
Lanes		0	1	0.5	0.5
PM	0	0	0	0	0
NOON	35	0	35	20	5
AM	0	0	0	0	0

CONTROL

Signalized

	AM	NOON	PM
TEV	0	1208	0
PHF		0.96	

Total Vehicles (AM)

	Left	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Total Vehicles (Noon)

	Left	Through	Right
Southbound	31	15	202
Eastbound	154	337	20
Westbound	0	367	22
Northbound	35	20	5

Total Vehicles (PM)

	Left	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Bikes (AM)

	Left	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Bikes (NOON)

	Left	Through	Right
Southbound	0	0	6
Eastbound	2	0	0
Westbound	0	0	0
Northbound	0	3	0

Bikes (PM)

	Left	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (→)	0	0	0
North leg (←)	0	0	0
West leg (↓)	0	0	0
West leg (↑)	0	2	0
East leg (↓)	0	0	0
East leg (↑)	0	0	0
South leg (→)	0	0	0
South leg (←)	0	0	0
Northwest corner	0	0	0
Northeast corner	0	0	0
Southwest corner	0	0	0
Southeast corner	0	0	0

Prepared by National Data & Surveying Services

Coloma Rd/SR 49 & Georgetown Rd/SR 193

Peak Hour Turning Movement Count

ID: 18-07261-009
City: Auburn

Day: Thursday
Date: 08/09/2018

	PEAK HOURS	COUNT PERIODS
AM	08:00 AM - 09:00 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

Coloma Rd/SR 49 — SOUTHBOUND

	Right	Through	Left	U-Turn	Departing
AM	2	90	108	1	432
NOON	0	0	0	0	0
PM	7	221	398	3	312
Lanes	1	1	1	0	

Georgetown Rd/SR 193 — EASTBOUND

	AM	NOON	PM	Lanes
Departing	44	0	32	
U-Turn	0	0	0	0
Left	10	0	3	0
Through	11	0	36	1
Right	8	0	9	0

Georgetown Rd/SR 193 — WESTBOUND

	PM	NOON	AM	Lanes
Right	160	0	285	0
Through	13	0	28	1
Left	28	0	67	0
U-Turn	0	0	0	0
Departing	514	0	136	

Coloma Rd/SR 49 — NORTHBOUND

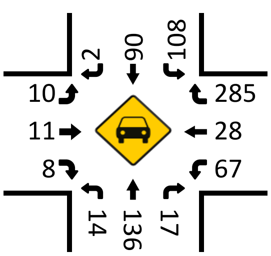
	Departing	U-Turn	Left	Through	Right
Lanes		0	1	1	0
PM	258	0	12	146	80
NOON	0	0	0	0	0
AM	165	0	14	136	17

CONTROL

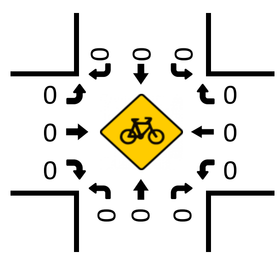
4-Way Stop

	AM	NOON	PM
TEV	777	0	1116
PHF	0.95		0.93

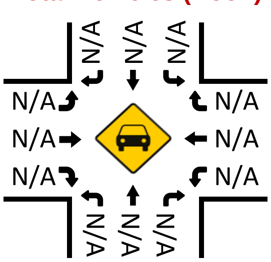
Total Vehicles (AM)



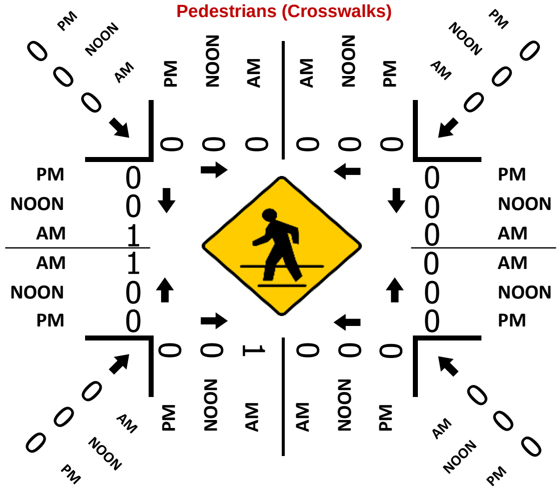
Bikes (AM)



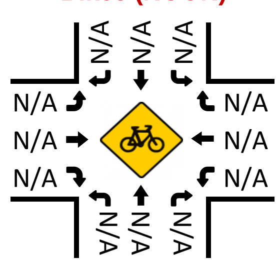
Total Vehicles (Noon)



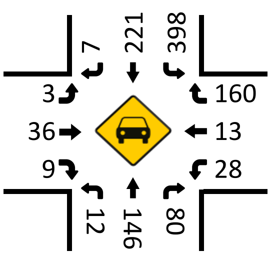
Pedestrians (Crosswalks)



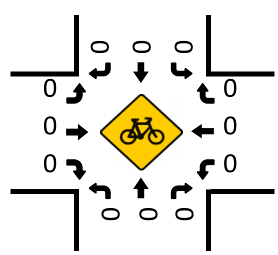
Bikes (NOON)



Total Vehicles (PM)



Bikes (PM)



Prepared by National Data & Surveying Services

Coloma Rd/SR 49 & Georgetown Rd/SR 193

Peak Hour Turning Movement Count

ID: 18-07261-009
City: Auburn

Day: Saturday
Date: 08/11/2018

	PEAK HOURS	COUNT PERIODS
AM	NONE	NONE
NOON	11:00 AM - 12:00 PM	11:00 AM - 03:00 PM
PM	NONE	NONE

Coloma Rd/SR 49 SOUTHBOUND

	↲	↓	↳	U-turn	⇧
AM	0	0	0	0	0
NOON	9	182	174	4	389
PM	0	0	0	0	0
Lanes	1	1	1	0	

Georgetown Rd/SR 193 EASTBOUND

	AM	NOON	PM	Lanes
⇦	0	43	0	
U-turn	0	0	0	0
↱	0	9	0	0
→	0	20	0	1
↴	0	15	0	0

Georgetown Rd/SR 193 WESTBOUND

	Lanes	PM	NOON	AM
↰	0	0	226	0
←	1	0	19	0
↙	0	0	40	0
U-turn	0	0	0	0
⇨		0	239	0

Coloma Rd/SR 49 NORTHBOUND

	⇩	U-turn	↰	↑	↱
Lanes		0	1	1	0
PM	0	0	0	0	0
NOON	237	0	15	150	45
AM	0	0	0	0	0

CONTROL

4-Way Stop

	AM	NOON	PM
TEV	0	908	0
PHF		0.97	

Total Vehicles (AM)

	Right	Thru	Left
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Total Vehicles (Noon)

	Right	Thru	Left
Southbound	9	182	174
Eastbound	15	20	9
Westbound	40	19	226
Northbound	45	150	15

Total Vehicles (PM)

	Right	Thru	Left
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Bikes (AM)

	Right	Thru	Left
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Bikes (NOON)

	Right	Thru	Left
Southbound	0	0	0
Eastbound	0	2	0
Westbound	0	0	0
Northbound	0	0	1

Bikes (PM)

	Right	Thru	Left
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Pedestrians (Crosswalks)

Crosswalk	Direction	AM	NOON	PM
North	→	0	0	0
North	←	0	0	0
West	↓	0	2	0
West	↑	0	6	0
East	↓	0	0	0
East	↑	0	0	0
South	→	0	1	0
South	←	0	1	0
Northwest diagonal	↘	0	0	0
Northeast diagonal	↙	0	0	0
Southwest diagonal	↗	0	0	0
Southeast diagonal	↖	0	0	0

Prepared by NDS/ATD

VOLUME

Foresthill Rd Bet. Lincoln Way & Foresthill Bridge to East

Day: Friday
Date: 8/10/2018

City: Auburn
Project #: CA18_7262_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,410	4,264	8,674

AM Period	NB	SB	EB		WB		TOTAL	
00:00			3		4		7	
00:15			10		3		13	
00:30			7		1		8	
00:45			6	26	2	10	8	36
01:00			8		2		10	
01:15			3		3		6	
01:30			8		7		15	
01:45			4	23	2	14	6	37
02:00			4		0		4	
02:15			2		5		7	
02:30			0		3		3	
02:45			1	7	3	11	4	18
03:00			2		4		6	
03:15			6		7		13	
03:30			5		4		9	
03:45			1	14	8	23	9	37
04:00			2		15		17	
04:15			2		18		20	
04:30			3		12		15	
04:45			2	9	21	66	23	75
05:00			4		20		24	
05:15			9		56		65	
05:30			1		47		48	
05:45			7	21	57	180	64	201
06:00			7		55		62	
06:15			13		90		103	
06:30			33		84		117	
06:45			12	65	88	317	100	382
07:00			31		95		126	
07:15			19		126		145	
07:30			33		107		140	
07:45			22	105	113	441	135	546
08:00			24		77		101	
08:15			28		67		95	
08:30			34		79		113	
08:45			40	126	77	300	117	426
09:00			35		89		124	
09:15			23		56		79	
09:30			36		81		117	
09:45			35	129	63	289	98	418
10:00			35		64		99	
10:15			33		74		107	
10:30			52		60		112	
10:45			51	171	80	278	131	449
11:00			59		90		149	
11:15			56		83		139	
11:30			55		73		128	
11:45			77	247	75	321	152	568
TOTALS				943		2250		**3193**
SPLIT %				29.5%		70.5%		**36.8%**

PM Period	NB	SB	EB		WB		TOTAL	
12:00			64		62		126	
12:15			77		61		138	
12:30			72		79		151	
12:45			72	285	62	264	134	549
13:00			53		73		126	
13:15			74		65		139	
13:30			76		59		135	
13:45			106	309	66	263	172	572
14:00			78		57		135	
14:15			83		54		137	
14:30			93		61		154	
14:45			101	355	54	226	155	581
15:00			92		49		141	
15:15			93		59		152	
15:30			104		51		155	
15:45			136	425	71	230	207	655
16:00			112		56		168	
16:15			119		81		200	
16:30			115		63		178	
16:45			134	480	56	256	190	736
17:00			118		50		168	
17:15			105		59		164	
17:30			113		50		163	
17:45			83	419	56	215	139	634
18:00			108		45		153	
18:15			89		52		141	
18:30			88		43		131	
18:45			78	363	40	180	118	543
19:00			64		50		114	
19:15			68		33		101	
19:30			62		30		92	
19:45			56	250	36	149	92	399
20:00			49		22		71	
20:15			42		39		81	
20:30			56		31		87	
20:45			40	187	17	109	57	296
21:00			39		14		53	
21:15			34		16		50	
21:30			37		18		55	
21:45			42	152	16	64	58	216
22:00			39		9		48	
22:15			35		7		42	
22:30			40		7		47	
22:45			41	155	10	33	51	188
23:00			40		3		43	
23:15			17		6		23	
23:30			15		6		21	
23:45			15	87	10	25	25	112
TOTALS				3467		2014		**5481**
SPLIT %				63.3%		36.7%		**63.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,410	4,264	8,674

	NB	SB	EB	WB	Total
AM Peak Hour			11:45	07:00	**11:00**
AM Pk Volume			290	441	**568**
Pk Hr Factor			0.942	0.875	**0.934**
7 - 9 Volume	0	0	231	741	**972**
7 - 9 Peak Hour			08:00	07:00	**07:00**
7 - 9 Pk Volume	0	0	126	441	**546**
Pk Hr Factor	0.000	0.000	0.788	0.875	**0.941**

	NB	SB	EB	WB	Total
PM Peak Hour			16:15	12:30	**15:45**
PM Pk Volume			486	279	**753**
Pk Hr Factor			0.907	0.883	**0.909**
4 - 6 Volume	0	0	899	471	**1370**
4 - 6 Peak Hour			16:15	16:00	**16:00**
4 - 6 Pk Volume	0	0	486	256	**736**
Pk Hr Factor	0.000	0.000	0.907	0.790	**0.920**

Prepared by NDS/ATD

VOLUME

Foresthill Rd Bet. Lincoln Way & Foresthill Bridge to East

Day: Saturday
Date: 8/11/2018

City: Auburn
Project #: CA18_7262_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,997	3,949	7,946

AM Period	NB		SB		EB		WB		TOTAL	
00:00					12		5		17	
00:15					11		5		16	
00:30					8		0		8	
00:45					11	42	3	13	14	55
01:00					8		3		11	
01:15					5		3		8	
01:30					7		1		8	
01:45					5	25	3	10	8	35
02:00					6		3		9	
02:15					3		3		6	
02:30					5		1		6	
02:45					3	17	3	10	6	27
03:00					3		4		7	
03:15					4		4		8	
03:30					1		2		3	
03:45					3	11	5	15	8	26
04:00					1		10		11	
04:15					0		6		6	
04:30					1		7		8	
04:45					1	3	8	31	9	34
05:00					2		8		10	
05:15					7		8		15	
05:30					6		10		16	
05:45					5	20	20	46	25	66
06:00					6		21		27	
06:15					9		32		41	
06:30					21		33		54	
06:45					24	60	21	107	45	167
07:00					29		37		66	
07:15					36		36		72	
07:30					37		36		73	
07:45					34	136	47	156	81	292
08:00					39		34		73	
08:15					34		39		73	
08:30					45		75		120	
08:45					43	161	71	219	114	380
09:00					54		67		121	
09:15					59		92		151	
09:30					46		63		109	
09:45					54	213	76	298	130	511
10:00					58		86		144	
10:15					78		100		178	
10:30					66		64		130	
10:45					76	278	71	321	147	599
11:00					72		70		142	
11:15					82		58		140	
11:30					80		71		151	
11:45					70	304	95	294	165	598
TOTALS						1270		1520		**2790**
SPLIT %						45.5%		54.5%		**35.1%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00					80		84		164	
12:15					67		91		158	
12:30					61		74		135	
12:45					79	287	70	319	149	606
13:00					88		75		163	
13:15					80		84		164	
13:30					74		64		138	
13:45					78	320	64	287	142	607
14:00					88		62		150	
14:15					87		57		144	
14:30					77		70		147	
14:45					75	327	52	241	127	568
15:00					86		55		141	
15:15					90		62		152	
15:30					97		51		148	
15:45					85	358	66	234	151	592
16:00					87		53		140	
16:15					88		85		173	
16:30					64		71		135	
16:45					70	309	66	275	136	584
17:00					59		69		128	
17:15					53		58		111	
17:30					53		72		125	
17:45					51	216	70	269	121	485
18:00					47		70		117	
18:15					52		56		108	
18:30					54		66		120	
18:45					45	198	73	265	118	463
19:00					36		82		118	
19:15					47		33		80	
19:30					45		29		74	
19:45					41	169	42	186	83	355
20:00					46		29		75	
20:15					32		47		79	
20:30					38		28		66	
20:45					37	153	36	140	73	293
21:00					42		25		67	
21:15					35		26		61	
21:30					38		20		58	
21:45					48	163	24	95	72	258
22:00					35		17		52	
22:15					51		28		79	
22:30					28		17		45	
22:45					20	134	7	69	27	203
23:00					28		21		49	
23:15					22		9		31	
23:30					20		7		27	
23:45					23	93	12	49	35	142
TOTALS						2727		2429		**5156**
SPLIT %						52.9%		47.1%		**64.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	3,997	3,949	7,946

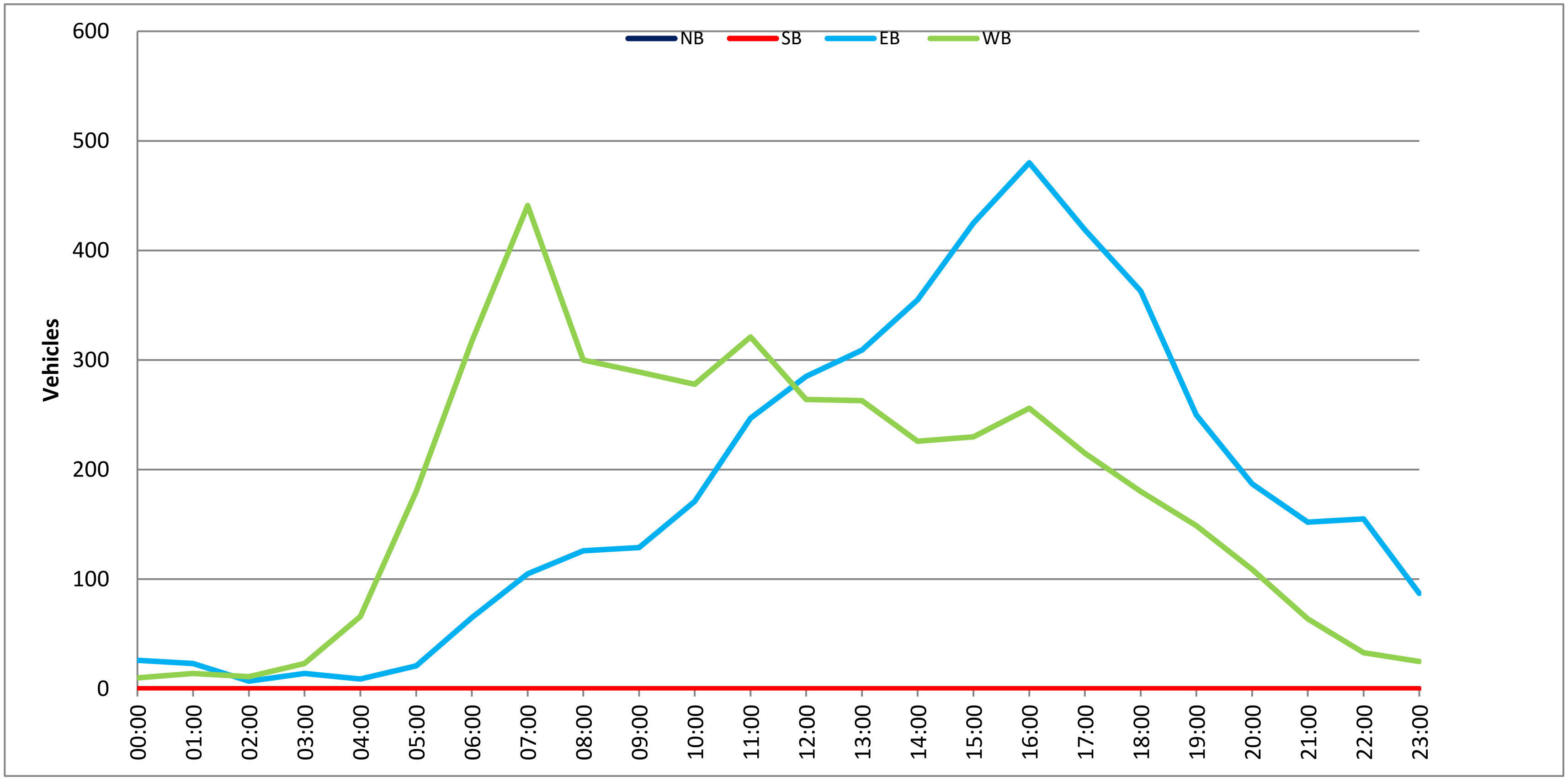
	NB	SB	EB	WB	Total
AM Peak Hour			11:15	11:45	**11:30**
AM Pk Volume			312	344	**638**
Pk Hr Factor			0.951	0.905	**0.967**
7 - 9 Volume	0	0	297	375	**672**
7 - 9 Peak Hour			08:00	08:00	**08:00**
7 - 9 Pk Volume	0	0	161	219	**380**
Pk Hr Factor	0.000	0.000	0.894	0.730	**0.792**

	NB	SB	EB	WB	Total
PM Peak Hour			15:15	12:00	**12:45**
PM Pk Volume			359	319	**614**
Pk Hr Factor			0.925	0.876	**0.936**
4 - 6 Volume	0	0	525	544	**1069**
4 - 6 Peak Hour			16:00	16:15	**16:00**
4 - 6 Pk Volume	0	0	309	291	**584**
Pk Hr Factor	0.000	0.000	0.878	0.856	**0.844**

Prepared by NDS/ATD

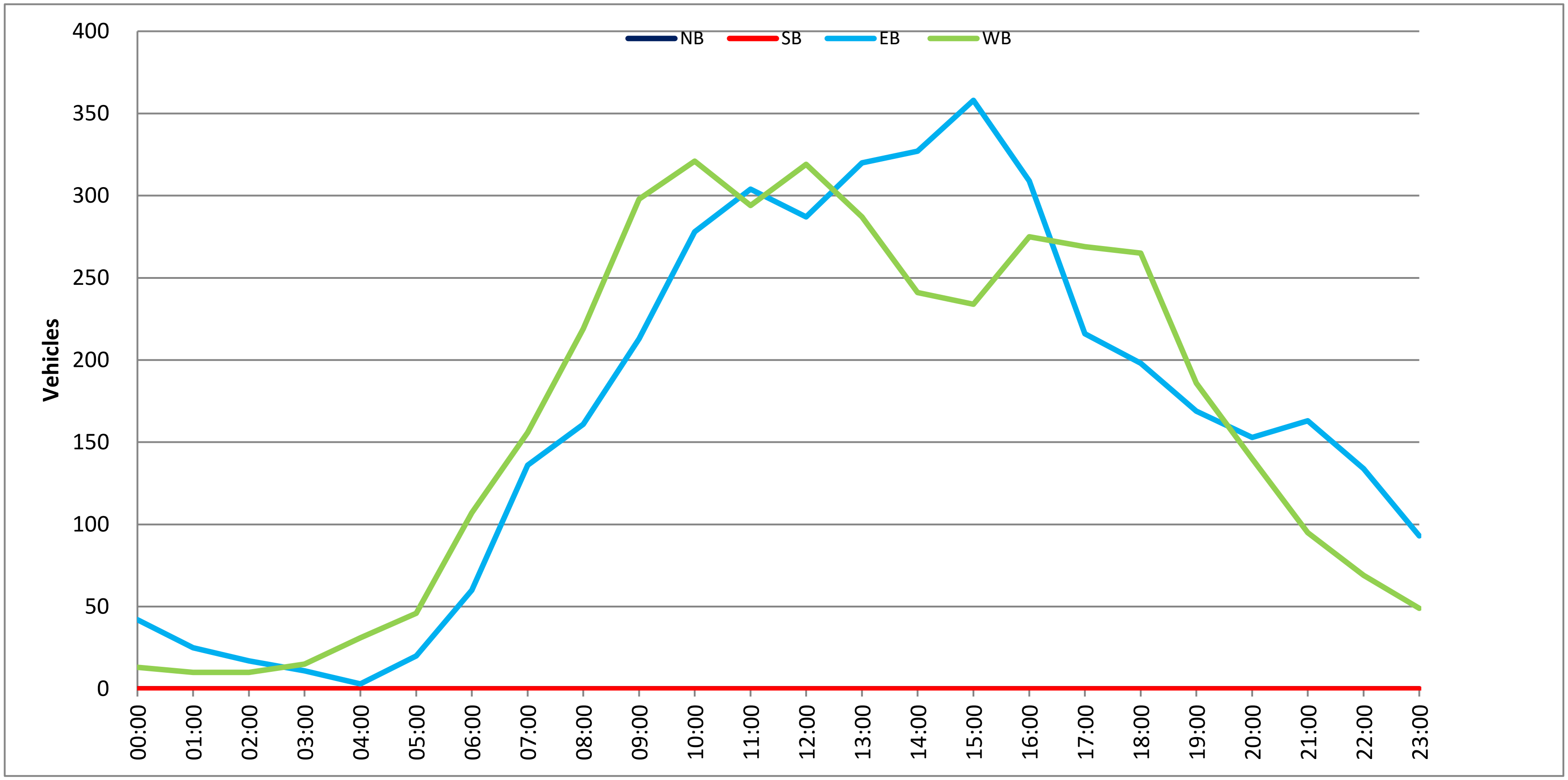
Project #: CA18_7262_001 **City:** Auburn

Location: Foresthill Rd Bet. Lincoln Way & Foresthill **Date:** 8/10/2018



Prepared by NDS/ATD

Project #:	CA18_7262_001	**City:**	Auburn
Location:	Foresthill Rd Bet. Lincoln Way & Foresthill	**Date:**	8/11/2018



Prepared by NDS/ATD

VOLUME

SR 49 S/o Old Foresthill Road

Day: Friday
Date: 8/10/2018

City: Auburn
Project #: CA18_7263_001

DAILY TOTALS	NB	SB	EB	WB	Total
	5,108	4,945	0	0	10,053

AM Period	NB		SB		EB	WB	TOTAL	
0:00	18		1				19	
0:15	7		4				11	
0:30	11		2				13	
0:45	9	45	1	8			10	53
1:00	5		4				9	
1:15	7		5				12	
1:30	6		1				7	
1:45	2	20	3	13			5	33
2:00	6		2				8	
2:15	4		2				6	
2:30	3		1				4	
2:45	6	19	2	7			8	26
3:00	3		6				9	
3:15	7		8				15	
3:30	2		4				6	
3:45	1	13	6	24			7	37
4:00	3		6				9	
4:15	6		10				16	
4:30	12		23				35	
4:45	14	35	22	61			36	96
5:00	28		30				58	
5:15	24		48				72	
5:30	16		41				57	
5:45	29	97	52	171			81	268
6:00	22		55				77	
6:15	20		81				101	
6:30	25		88				113	
6:45	23	90	88	312			111	402
7:00	24		94				118	
7:15	31		115				146	
7:30	50		120				170	
7:45	47	152	93	422			140	574
8:00	44		93				137	
8:15	37		93				130	
8:30	52		93				145	
8:45	31	164	84	363			115	527
9:00	40		104				144	
9:15	60		76				136	
9:30	60		98				158	
9:45	52	212	67	345			119	557
10:00	65		69				134	
10:15	54		83				137	
10:30	69		88				157	
10:45	66	254	83	323			149	577
11:00	58		89				147	
11:15	60		77				137	
11:30	75		88				163	
11:45	65	258	97	351			162	609
TOTALS		1359		2400				**3759**
SPLIT %		36.2%		63.8%				**37.4%**

PM Period	NB		SB		EB	WB	TOTAL	
12:00	85		84				169	
12:15	79		70				149	
12:30	89		90				179	
12:45	81	334	92	336			173	670
13:00	64		73				137	
13:15	73		103				176	
13:30	92		90				182	
13:45	88	317	75	341			163	658
14:00	78		79				157	
14:15	70		90				160	
14:30	94		86				180	
14:45	88	330	90	345			178	675
15:00	86		79				165	
15:15	102		58				160	
15:30	130		63				193	
15:45	124	442	71	271			195	713
16:00	128		73				201	
16:15	123		78				201	
16:30	128		66				194	
16:45	127	506	67	284			194	790
17:00	117		65				182	
17:15	142		79				221	
17:30	116		74				190	
17:45	114	489	57	275			171	764
18:00	113		55				168	
18:15	123		67				190	
18:30	80		63				143	
18:45	86	402	57	242			143	644
19:00	81		56				137	
19:15	73		48				121	
19:30	72		47				119	
19:45	64	290	23	174			87	464
20:00	55		30				85	
20:15	50		33				83	
20:30	53		36				89	
20:45	53	211	21	120			74	331
21:00	57		27				84	
21:15	40		27				67	
21:30	37		15				52	
21:45	41	175	15	84			56	259
22:00	45		19				64	
22:15	29		11				40	
22:30	35		12				47	
22:45	47	156	4	46			51	202
23:00	23		10				33	
23:15	25		6				31	
23:30	28		6				34	
23:45	21	97	5	27			26	124
TOTALS		3749		2545				**6294**
SPLIT %		59.6%		40.4%				**62.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	5,108	4,945	0	0	10,053

	NB	SB	EB	WB	Total
AM Peak Hour	11:45	7:00			**11:45**
AM Pk Volume	318	422			**659**
Pk Hr Factor	0.893	0.879			**0.920**
7 - 9 Volume	316	785	0	0	**1101**
7 - 9 Peak Hour	7:45	7:00			**7:15**
7 - 9 Pk Volume	180	422	0	0	**593**
Pk Hr Factor	0.865	0.879	0.000	0.000	**0.872**

	NB	SB	EB	WB	Total
PM Peak Hour	16:30	12:30			**15:45**
PM Pk Volume	514	358			**791**
Pk Hr Factor	0.905	0.869			**0.984**
4 - 6 Volume	995	559	0	0	**1554**
4 - 6 Peak Hour	16:30	16:45			**16:30**
4 - 6 Pk Volume	514	285	0	0	**791**
Pk Hr Factor	0.905	0.902	0.000	0.000	**0.895**

Prepared by NDS/ATD

VOLUME

SR 49 S/o Old Foresthill Road

Day: Saturday
Date: 8/11/2018

City: Auburn
Project #: CA18_7263_001

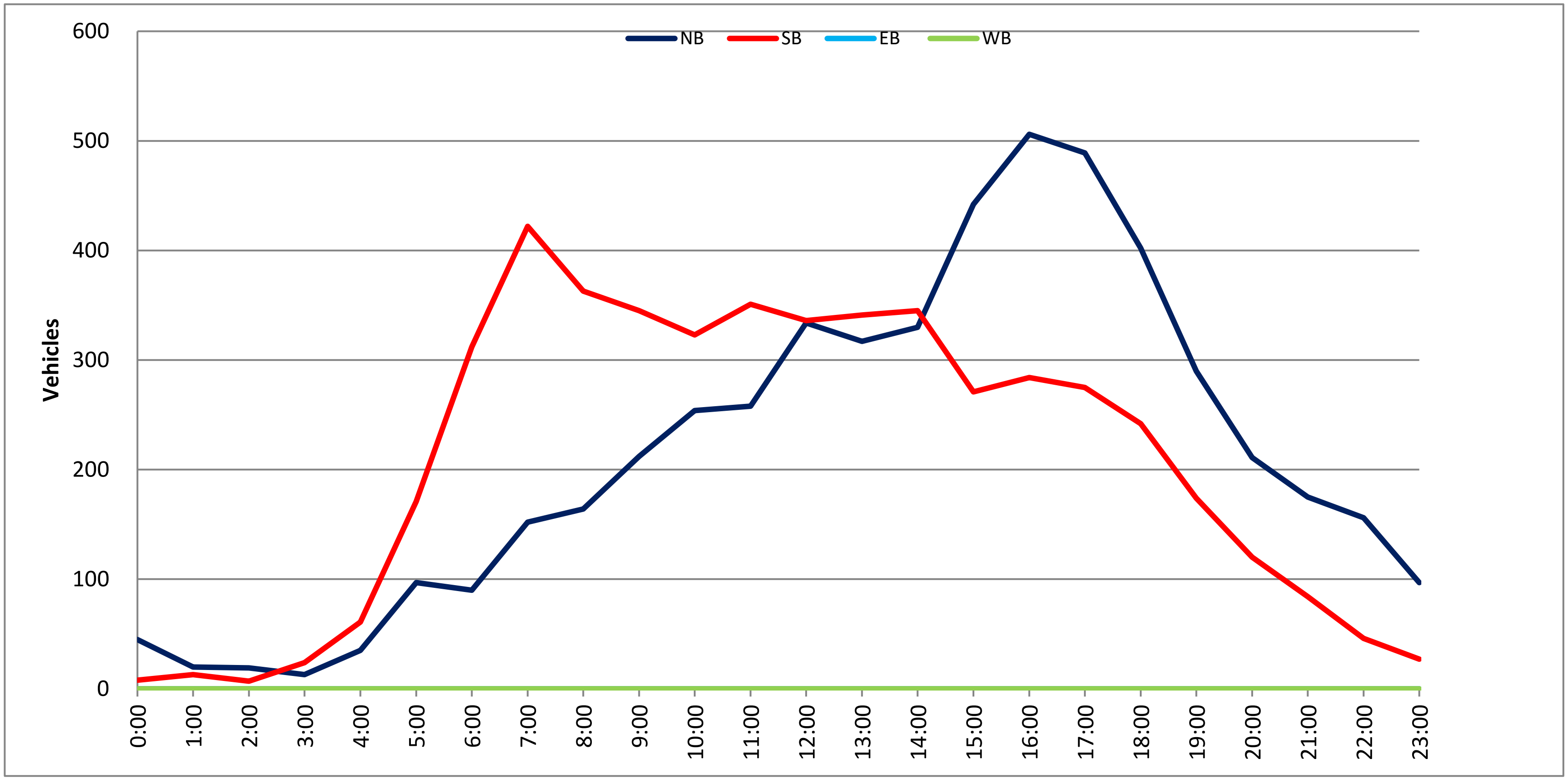
DAILY TOTALS	NB	SB	EB	WB	Total
	4,948	4,691	0	0	9,639

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
0:00	18		4				22		12:00	87		100				187	
0:15	14		3				17		12:15	92		81				173	
0:30	13		0				13		12:30	89		102				191	
0:45	6	51	2	9			8	60	12:45	83	351	80	363			163	714
1:00	6		4				10		13:00	94		87				181	
1:15	9		0				9		13:15	77		99				176	
1:30	8		4				12		13:30	90		80				170	
1:45	8	31	1	9			9	40	13:45	69	330	65	331			134	661
2:00	7		3				10		14:00	92		72				164	
2:15	6		0				6		14:15	115		84				199	
2:30	4		2				6		14:30	102		68				170	
2:45	2	19	1	6			3	25	14:45	96	405	89	313			185	718
3:00	4		5				9		15:00	104		79				183	
3:15	6		4				10		15:15	96		86				182	
3:30	5		1				6		15:30	94		62				156	
3:45	7	22	3	13			10	35	15:45	79	373	71	298			150	671
4:00	4		4				8		16:00	105		84				189	
4:15	8		8				16		16:15	98		76				174	
4:30	4		12				16		16:30	73		74				147	
4:45	7	23	12	36			19	59	16:45	90	366	97	331			187	697
5:00	10		14				24		17:00	95		70				165	
5:15	10		22				32		17:15	79		64				143	
5:30	14		18				32		17:30	97		91				188	
5:45	29	63	19	73			48	136	17:45	90	361	77	302			167	663
6:00	26		13				39		18:00	84		79				163	
6:15	41		26				67		18:15	87		74				161	
6:30	21		28				49		18:30	83		63				146	
6:45	33	121	41	108			74	229	18:45	58	312	51	267			109	579
7:00	35		29				64		19:00	69		48				117	
7:15	46		46				92		19:15	65		80				145	
7:30	48		57				105		19:30	51		51				102	
7:45	53	182	54	186			107	368	19:45	55	240	34	213			89	453
8:00	38		71				109		20:00	56		37				93	
8:15	33		87				120		20:15	46		45				91	
8:30	59		91				150		20:30	39		33				72	
8:45	57	187	85	334			142	521	20:45	45	186	41	156			86	342
9:00	56		83				139		21:00	50		20				70	
9:15	74		83				157		21:15	46		33				79	
9:30	71		83				154		21:30	33		20				53	
9:45	67	268	96	345			163	613	21:45	43	172	26	99			69	271
10:00	93		88				181		22:00	39		25				64	
10:15	66		100				166		22:15	32		18				50	
10:30	59		98				157		22:30	32		28				60	
10:45	90	308	97	383			187	691	22:45	37	140	16	87			53	227
11:00	72		97				169		23:00	24		16				40	
11:15	98		82				180		23:15	34		20				54	
11:30	77		87				164		23:30	24		19				43	
11:45	85	332	93	359			178	691	23:45	23	105	15	70			38	175
TOTALS		1607		1861				**3468**	**TOTALS**		3341		2830				**6171**
SPLIT %		46.3%		53.7%				**36.0%**	**SPLIT %**		54.1%		45.9%				**64.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,948	4,691	0	0	9,639

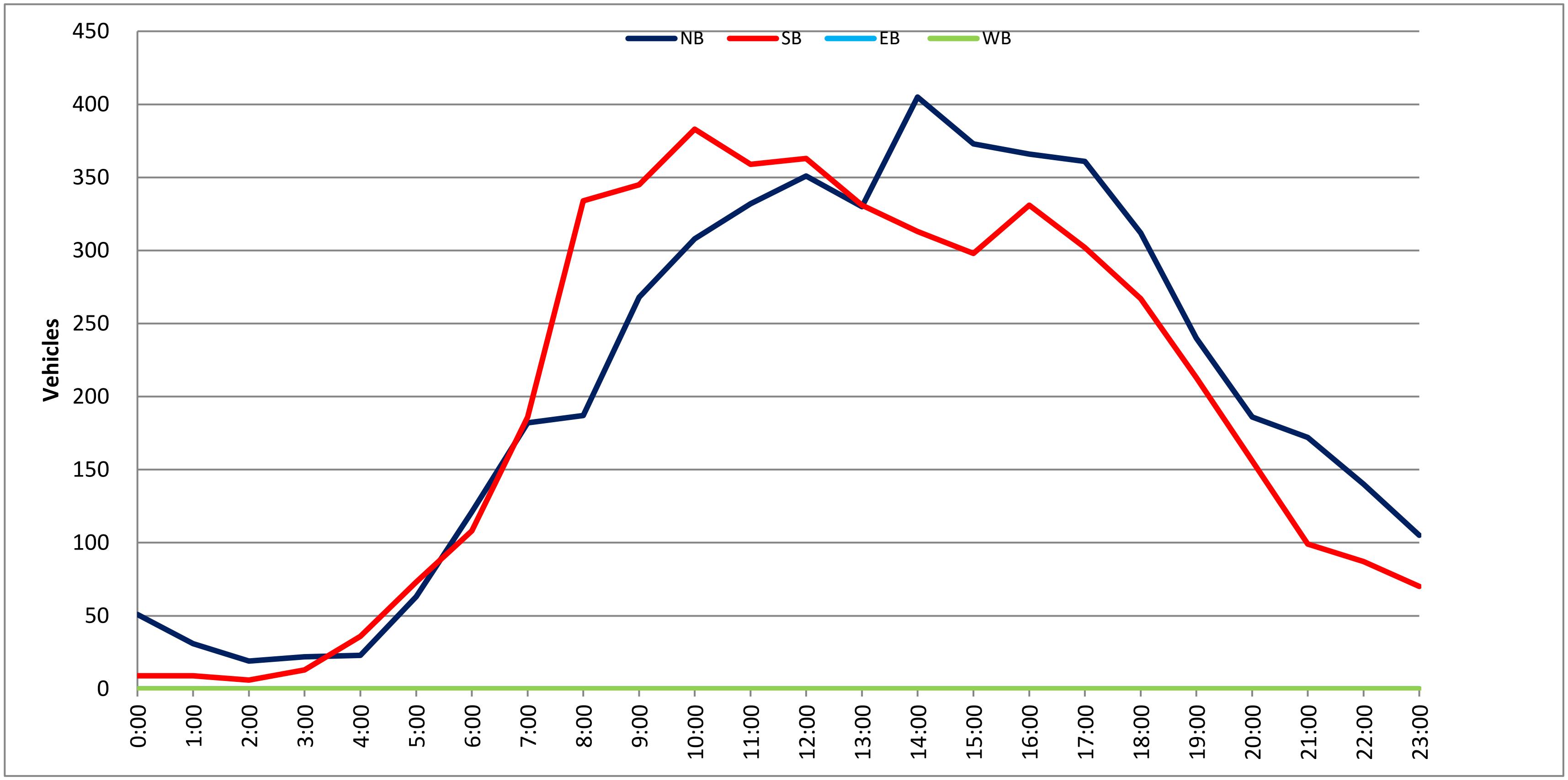
	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	11:45	10:15			**11:45**	**PM Peak Hour**	14:15	12:30			**14:15**
AM Pk Volume	353	392			**729**	**PM Pk Volume**	417	368			**737**
Pk Hr Factor	0.959	0.980			**0.954**	**Pk Hr Factor**	0.907	0.902			**0.926**
7 - 9 Volume	369	520	0	0	**889**	**4 - 6 Volume**	727	633	0	0	**1360**
7 - 9 Peak Hour	8:00	8:00			**8:00**	**4 - 6 Peak Hour**	16:00	16:00			**16:00**
7 - 9 Pk Volume	187	334	0	0	**521**	**4 - 6 Pk Volume**	366	331	0	0	**697**
Pk Hr Factor	0.792	0.918	0.000	0.000	**0.868**	**Pk Hr Factor**	0.871	0.853	0.000	0.000	**0.922**

Prepared by NDS/ATD			
Project #:	CA18_7263_001	**City:**	Auburn
Location:	SR 49 S/o Old Foresthill Road	**Date:**	8/10/2018



Prepared by NDS/ATD

Project #:	CA18_7263_001	**City:**	Auburn
Location:	SR 49 S/o Old Foresthill Road	**Date:**	8/11/2018



Prepared by NDS/ATD

VOLUME

Old Foresthill Road N/o SR 49

Day: Friday
Date: 8/10/2018

City: Auburn
Project #: CA18_7263_002

DAILY TOTALS	NB	SB	EB	WB	Total
	521	534	0	0	1,055

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
0:00	3		0				3		12:00	11		10				21	
0:15	0		0				0		12:15	7		10				17	
0:30	2		0				2		12:30	9		10				19	
0:45	0	5	1	1			1	6	12:45	5	32	11	41			16	73
1:00	0		2				2		13:00	11		13				24	
1:15	0		0				0		13:15	17		9				26	
1:30	0		1				1		13:30	9		12				21	
1:45	0		0	3			0	3	13:45	11	48	8	42			19	90
2:00	0		0				0		14:00	8		4				12	
2:15	1		0				1		14:15	11		13				24	
2:30	0		0				0		14:30	6		8				14	
2:45	1	2	0				1	2	14:45	6	31	9	34			15	65
3:00	0		0				0		15:00	11		11				22	
3:15	1		0				1		15:15	11		9				20	
3:30	0		0				0		15:30	15		8				23	
3:45	0	1	0				0	1	15:45	8	45	12	40			20	85
4:00	0		0				0		16:00	4		15				19	
4:15	1		1				2		16:15	10		15				25	
4:30	0		0				0		16:30	4		9				13	
4:45	1	2	0	1			1	3	16:45	5	23	10	49			15	72
5:00	1		1				2		17:00	8		14				22	
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5:45	2	5	5	8			7	13	17:45	4	38	13	47			17	85
6:00	2		2				4		18:00	16		8				24	
6:15	5		2				7		18:15	5		13				18	
6:30	6		3				9		18:30	6		10				16	
6:45	2	15	2	9			4	24	18:45	15	42	21	52			36	94
7:00	5		4				9		19:00	6		16				22	
7:15	7		4				11		19:15	8		9				17	
7:30	14		7				21		19:30	1		5				6	
7:45	11	37	1	16			12	53	19:45	4	19	5	35			9	54
8:00	6		5				11		20:00	5		9				14	
8:15	6		2				8		20:15	1		8				9	
8:30	11		5				16		20:30	6		4				10	
8:45	9	32	5	17			14	49	20:45	0	12	1	22			1	34
9:00	5		4				9		21:00	6		2				8	
9:15	8		9				17		21:15	3		3				6	
9:30	9		6				15		21:30	1		3				4	
9:45	7	29	8	27			15	56	21:45	2	12	2	10			4	22
10:00	9		5				14		22:00	4		1				5	
10:15	8		5				13		22:15	1		5				6	
10:30	12		7				19		22:30	0		1				1	
10:45	9	38	4	21			13	59	22:45	4	9	2	9			6	18
11:00	8		13				21		23:00	1		1				2	
11:15	8		9				17		23:15	1		1				2	
11:30	10		9				19		23:30	3		1				4	
11:45	13	39	14	45			27	84	23:45	0	5	2	5			2	10
TOTALS		205		148				353	TOTALS		316		386				702
SPLIT %		58.1%		41.9%				33.5%	SPLIT %		45.0%		55.0%				66.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	521	534	0	0	1,055

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	11:15	11:00			11:00	PM Peak Hour	13:00	18:15			18:00
AM Pk Volume	42	45			84	PM Pk Volume	48	60			94
Pk Hr Factor	0.808	0.804			0.778	Pk Hr Factor	0.706	0.714			0.653
7 - 9 Volume	69	33	0	0	102	4 - 6 Volume	61	96	0	0	157
7 - 9 Peak Hour	7:15	7:15			7:15	4 - 6 Peak Hour	16:45	16:00			17:00
7 - 9 Pk Volume	38	17	0	0	55	4 - 6 Pk Volume	39	49	0	0	85
Pk Hr Factor	0.679	0.607	0.000	0.000	0.655	Pk Hr Factor	0.609	0.817	0.000	0.000	0.817

Prepared by NDS/ATD

VOLUME

Old Foresthill Road N/o SR 49

Day: Saturday
Date: 8/11/2018

City: Auburn
Project #: CA18_7263_002

DAILY TOTALS	NB	SB	EB	WB	Total
	882	846	0	0	1,728

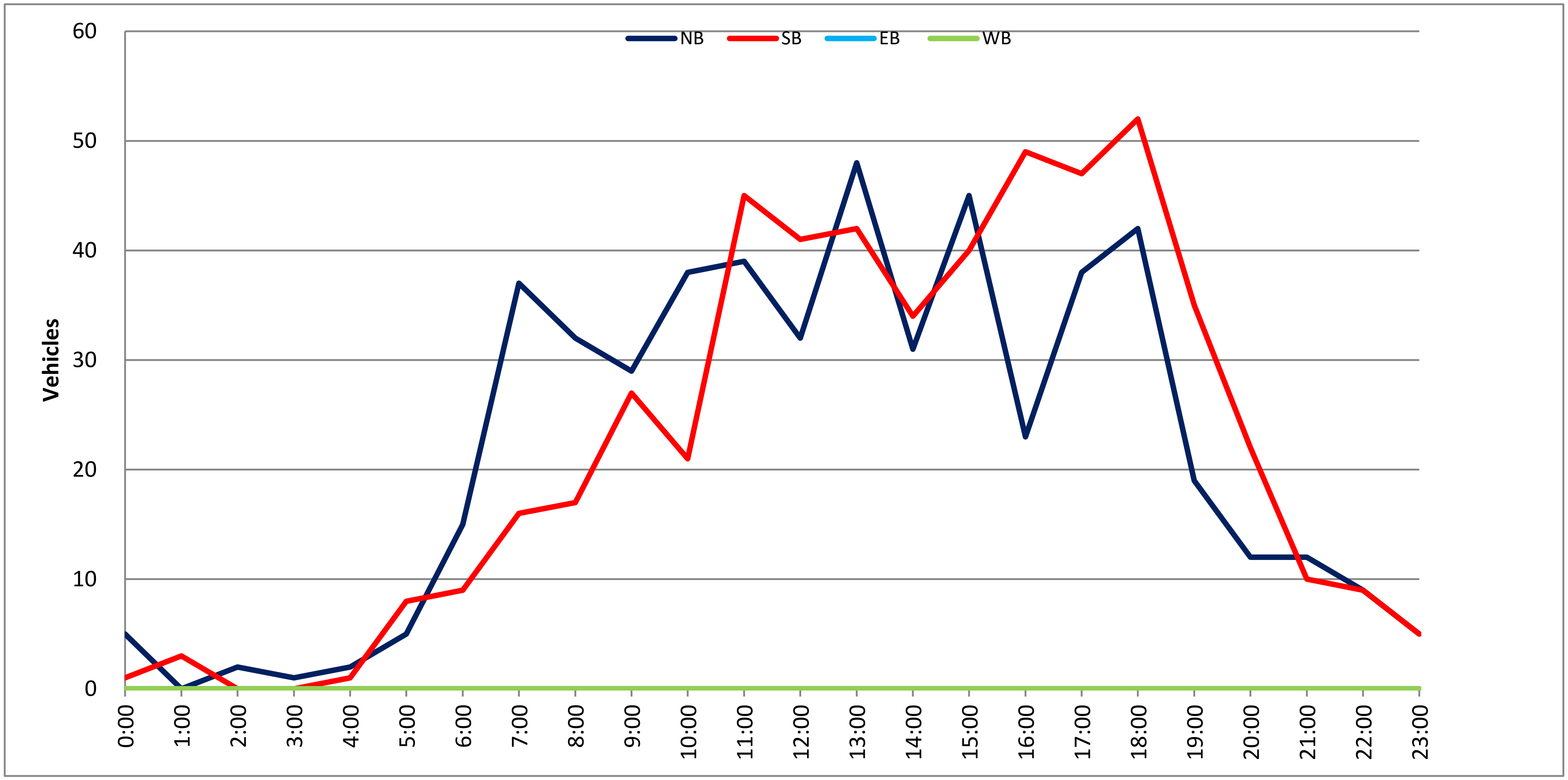
AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
0:00	1		0				1		12:00	20		17				37	
0:15	0		0				0		12:15	21		16				37	
0:30	0		0				0		12:30	18		14				32	
0:45	0	1	1	1			1	2	12:45	19	78	17	64			36	142
1:00	1		0				1		13:00	15		21				36	
1:15	0		0				0		13:15	14		23				37	
1:30	1		0				1		13:30	19		10				29	
1:45	1	3	0				1	3	13:45	11	59	6	60			17	119
2:00	1		0				1		14:00	21		21				42	
2:15	0		0				0		14:15	16		19				35	
2:30	1		0				1		14:30	19		5				24	
2:45	0	2	0				0	2	14:45	25	81	22	67			47	148
3:00	1		1				2		15:00	28		21				49	
3:15	0		0				0		15:15	19		18				37	
3:30	0		0				0		15:30	11		13				24	
3:45	0	1	0	1			0	2	15:45	10	68	24	76			34	144
4:00	0		0				0		16:00	14		18				32	
4:15	0		0				0		16:15	18		15				33	
4:30	0		0				0		16:30	12		20				32	
4:45	1	1	0				1	1	16:45	15	59	18	71			33	130
5:00	3		2				5		17:00	14		12				26	
5:15	2		2				4		17:15	19		9				28	
5:30	8		1				9		17:30	13		24				37	
5:45	1	14	1	6			2	20	17:45	7	53	19	64			26	117
6:00	4		0				4		18:00	14		27				41	
6:15	4		0				4		18:15	11		24				35	
6:30	6		1				7		18:30	12		18				30	
6:45	6	20	10	11			16	31	18:45	10	47	13	82			23	129
7:00	15		4				19		19:00	12		18				30	
7:15	8		4				12		19:15	10		20				30	
7:30	14		3				17		19:30	9		11				20	
7:45	13	50	5	16			18	66	19:45	12	43	6	55			18	98
8:00	19		6				25		20:00	3		13				16	
8:15	9		4				13		20:15	3		18				21	
8:30	13		17				30		20:30	1		8				9	
8:45	5	46	11	38			16	84	20:45	4	11	4	43			8	54
9:00	15		8				23		21:00	4		8				12	
9:15	19		12				31		21:15	4		2				6	
9:30	18		7				25		21:30	1		1				2	
9:45	20	72	11	38			31	110	21:45	3	12	0	11			3	23
10:00	22		15				37		22:00	2		1				3	
10:15	21		16				37		22:15	4		2				6	
10:30	9		15				24		22:30	3		4				7	
10:45	22	74	14	60			36	134	22:45	4	13	2	9			6	22
11:00	11		20				31		23:00	5		2				7	
11:15	20		9				29		23:15	2		5				7	
11:30	10		16				26		23:30	3		2				5	
11:45	20	61	17	62			37	123	23:45	3	13	2	11			5	24
TOTALS		345		233				**578**	**TOTALS**		537		613				**1150**
SPLIT %		59.7%		40.3%				**33.4%**	**SPLIT %**		46.7%		53.3%				**66.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	882	846	0	0	1,728

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	9:30	11:30			**11:45**	**PM Peak Hour**	14:30	17:30			**14:30**
AM Pk Volume	81	66			**143**	**PM Pk Volume**	91	94			**157**
Pk Hr Factor	0.920	0.971			**0.966**	**Pk Hr Factor**	0.813	0.870			**0.801**
7 - 9 Volume	96	54	0	0	**150**	**4 - 6 Volume**	112	135	0	0	**247**
7 - 9 Peak Hour	7:30	8:00			**7:45**	**4 - 6 Peak Hour**	16:45	16:00			**16:00**
7 - 9 Pk Volume	55	38	0	0	**86**	**4 - 6 Pk Volume**	61	71	0	0	**130**
Pk Hr Factor	0.724	0.559	0.000	0.000	**0.717**	**Pk Hr Factor**	0.803	0.888	0.000	0.000	**0.985**

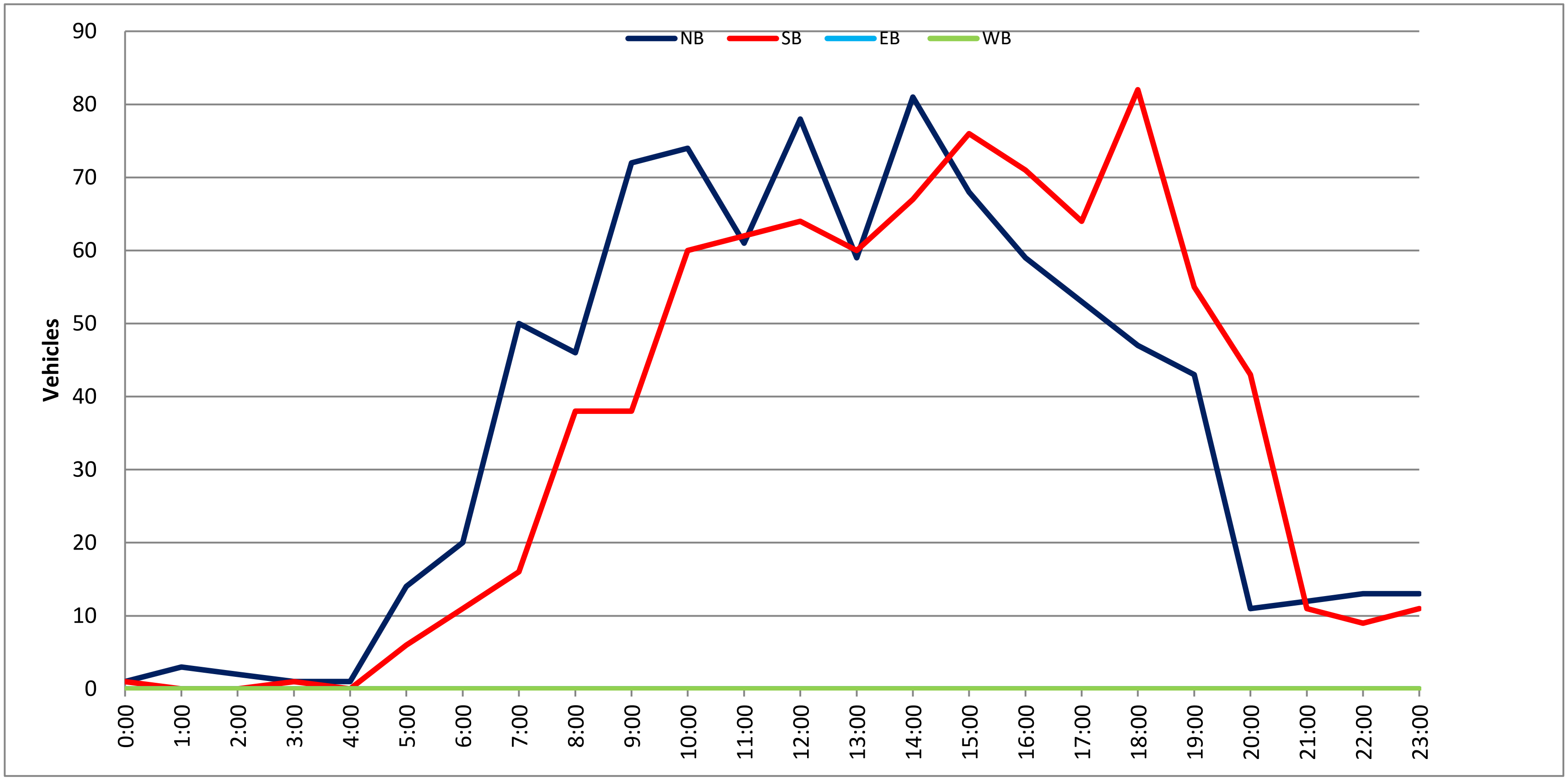
Prepared by NDS/ATD

Project #:	CA18_7263_002	**City:**	Auburn
Location:	Old Foresthill Road N/o SR 49	**Date:**	8/10/2018



Prepared by NDS/ATD

Project #:	CA18_7263_002	**City:**	Auburn
Location:	Old Foresthill Road N/o SR 49	**Date:**	8/11/2018



Prepared by NDS/ATD

VOLUME

SR 49 E/o Old Foresthill Road

Day: Friday
Date: 8/10/2018

City: Auburn
Project #: CA18_7263_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,290	5,115	10,405

AM Period	NB	SB	EB		WB		TOTAL	
0:00			15		2		17	
0:15			7		4		11	
0:30			9		2		11	
0:45			10	41	1	9	11	50
1:00			7		4		11	
1:15			7		5		12	
1:30			7		1		8	
1:45			2	23	3	13	5	36
2:00			6		2		8	
2:15			4		3		7	
2:30			3		1		4	
2:45			6	19	3	9	9	28
3:00			3		6		9	
3:15			7		9		16	
3:30			2		4		6	
3:45			1	13	6	25	7	38
4:00			3		6		9	
4:15			6		10		16	
4:30			12		23		35	
4:45			14	35	23	62	37	97
5:00			28		30		58	
5:15			26		49		75	
5:30			16		42		58	
5:45			34	104	54	175	88	279
6:00			24		57		81	
6:15			22		86		108	
6:30			25		91		116	
6:45			24	95	89	323	113	418
7:00			28		99		127	
7:15			33		120		153	
7:30			54		131		185	
7:45			46	161	102	452	148	613
8:00			48		98		146	
8:15			39		99		138	
8:30			54		101		155	
8:45			34	175	91	389	125	564
9:00			38		103		141	
9:15			66		81		147	
9:30			60		101		161	
9:45			58	222	72	357	130	579
10:00			65		73		138	
10:15			51		83		134	
10:30			70		94		164	
10:45			67	253	89	339	156	592
11:00			64		90		154	
11:15			64		80		144	
11:30			79		93		172	
11:45			65	272	96	359	161	631
TOTALS			1413		2512		**3925**	
SPLIT %			36.0%		64.0%		**37.7%**	

PM Period	NB	SB	EB		WB		TOTAL	
12:00			91		91		182	
12:15			84		72		156	
12:30			87		87		174	
12:45			87	349	92	342	179	691
13:00			70		77		147	
13:15			71		109		180	
13:30			93		88		181	
13:45			87	321	77	351	164	672
14:00			80		85		165	
14:15			73		91		164	
14:30			99		89		188	
14:45			93	345	92	357	185	702
15:00			90		83		173	
15:15			105		63		168	
15:30			129		69		198	
15:45			127	451	70	285	197	736
16:00			137		71		208	
16:15			126		76		202	
16:30			133		66		199	
16:45			135	531	70	283	205	814
17:00			125		67		192	
17:15			144		81		225	
17:30			118		82		200	
17:45			123	510	57	287	180	797
18:00			113		63		176	
18:15			125		61		186	
18:30			84		63		147	
18:45			96	418	61	248	157	666
19:00			87		52		139	
19:15			75		49		124	
19:30			73		44		117	
19:45			66	301	24	169	90	470
20:00			57		28		85	
20:15			55		31		86	
20:30			51		36		87	
20:45			54	217	21	116	75	333
21:00			53		27		80	
21:15			40		27		67	
21:30			39		15		54	
21:45			42	174	16	85	58	259
22:00			45		22		67	
22:15			31		9		40	
22:30			36		12		48	
22:45			48	160	7	50	55	210
23:00			23		10		33	
23:15			26		7		33	
23:30			29		9		38	
23:45			22	100	4	30	26	130
TOTALS			3877		2603		**6480**	
SPLIT %			59.8%		40.2%		**62.3%**	

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	5,290	5,115	10,405

	NB	SB	EB	WB	Total
AM Peak Hour			11:45	7:00	**11:45**
AM Pk Volume			327	452	**673**
Pk Hr Factor			0.898	0.863	**0.924**
7 - 9 Volume	0	0	336	841	**1177**
7 - 9 Peak Hour			7:30	7:00	**7:15**
7 - 9 Pk Volume	0	0	187	452	**632**
Pk Hr Factor	0.000	0.000	0.866	0.863	**0.854**

	NB	SB	EB	WB	Total
PM Peak Hour			16:30	12:45	**16:45**
PM Pk Volume			537	366	**822**
Pk Hr Factor			0.932	0.839	**0.913**
4 - 6 Volume	0	0	1041	570	**1611**
4 - 6 Peak Hour			16:30	16:45	**16:45**
4 - 6 Pk Volume	0	0	537	300	**822**
Pk Hr Factor	0.000	0.000	0.932	0.915	**0.913**

Prepared by NDS/ATD

VOLUME

SR 49 E/o Old Foresthill Road

Day: Saturday
Date: 8/11/2018

City: Auburn
Project #: CA18_7263_003

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,850	4,629	9,479

AM Period	NB	SB	EB		WB		TOTAL	
0:00			17		4		21	
0:15			14		3		17	
0:30			13		0		13	
0:45			7	51	2	9	9	60
1:00			6		5		11	
1:15			9		0		9	
1:30			8		5		13	
1:45			8	31	2	12	10	43
2:00			7		4		11	
2:15			6		0		6	
2:30			4		3		7	
2:45			2	19	1	8	3	27
3:00			4		5		9	
3:15			6		4		10	
3:30			5		1		6	
3:45			7	22	3	13	10	35
4:00			4		4		8	
4:15			8		8		16	
4:30			4		12		16	
4:45			6	22	12	36	18	58
5:00			7		12		19	
5:15			10		22		32	
5:30			10		21		31	
5:45			29	56	19	74	48	130
6:00			25		16		41	
6:15			38		27		65	
6:30			21		33		54	
6:45			38	122	42	118	80	240
7:00			27		32		59	
7:15			46		50		96	
7:30			46		66		112	
7:45			47	166	56	204	103	370
8:00			26		72		98	
8:15			32		91		123	
8:30			64		92		156	
8:45			59	181	81	336	140	517
9:00			56		90		146	
9:15			69		85		154	
9:30			63		86		149	
9:45			58	246	96	357	154	603
10:00			88		90		178	
10:15			60		99		159	
10:30			63		96		159	
10:45			89	300	104	389	193	689
11:00			81		97		178	
11:15			88		83		171	
11:30			80		84		164	
11:45			87	336	98	362	185	698
TOTALS				1552		1918		**3470**
SPLIT %				44.7%		55.3%		**36.6%**

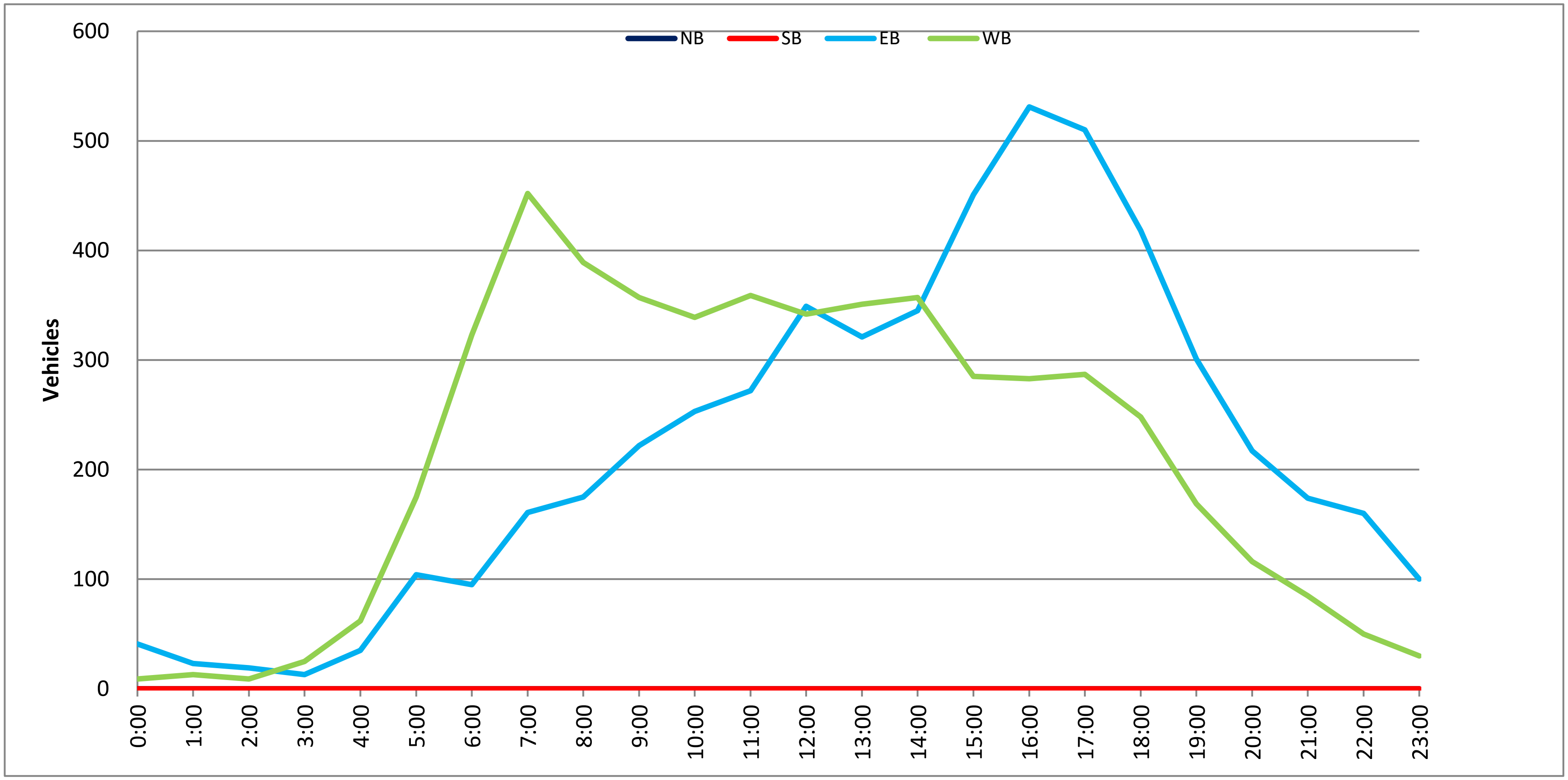
PM Period	NB	SB	EB		WB		TOTAL	
12:00			81		97		178	
12:15			89		83		172	
12:30			85		102		187	
12:45			78	333	77	359	155	692
13:00			94		81		175	
13:15			85		98		183	
13:30			80		79		159	
13:45			66	325	67	325	133	650
14:00			90		70		160	
14:15			114		80		194	
14:30			92		72		164	
14:45			96	392	92	314	188	706
15:00			98		80		178	
15:15			93		84		177	
15:30			96		62		158	
15:45			89	376	67	293	156	669
16:00			99		74		173	
16:15			92		73		165	
16:30			76		69		145	
16:45			88	355	92	308	180	663
17:00			90		67		157	
17:15			73		68		141	
17:30			93		76		169	
17:45			91	347	66	277	157	624
18:00			88		70		158	
18:15			90		64		154	
18:30			86		60		146	
18:45			61	325	51	245	112	570
19:00			71		44		115	
19:15			67		72		139	
19:30			48		46		94	
19:45			52	238	37	199	89	437
20:00			61		32		93	
20:15			50		34		84	
20:30			40		27		67	
20:45			45	196	41	134	86	330
21:00			52		18		70	
21:15			45		34		79	
21:30			33		20		53	
21:45			41	171	27	99	68	270
22:00			40		27		67	
22:15			32		20		52	
22:30			35		30		65	
22:45			34	141	15	92	49	233
23:00			22		17		39	
23:15			35		18		53	
23:30			21		17		38	
23:45			21	99	14	66	35	165
TOTALS				3298		2711		**6009**
SPLIT %				54.9%		45.1%		**63.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,850	4,629	9,479

	NB	SB	EB	WB	Total
AM Peak Hour			11:45	10:15	**11:45**
AM Pk Volume			342	396	**722**
Pk Hr Factor			0.961	0.952	**0.965**
7 - 9 Volume	0	0	347	540	**887**
7 - 9 Peak Hour			8:00	8:00	**8:00**
7 - 9 Pk Volume	0	0	181	336	**517**
Pk Hr Factor	0.000	0.000	0.707	0.913	**0.829**

	NB	SB	EB	WB	Total
PM Peak Hour			14:15	12:00	**14:15**
PM Pk Volume			400	359	**724**
Pk Hr Factor			0.877	0.880	**0.933**
4 - 6 Volume	0	0	702	585	**1287**
4 - 6 Peak Hour			16:00	16:00	**16:00**
4 - 6 Pk Volume	0	0	355	308	**663**
Pk Hr Factor	0.000	0.000	0.896	0.837	**0.921**

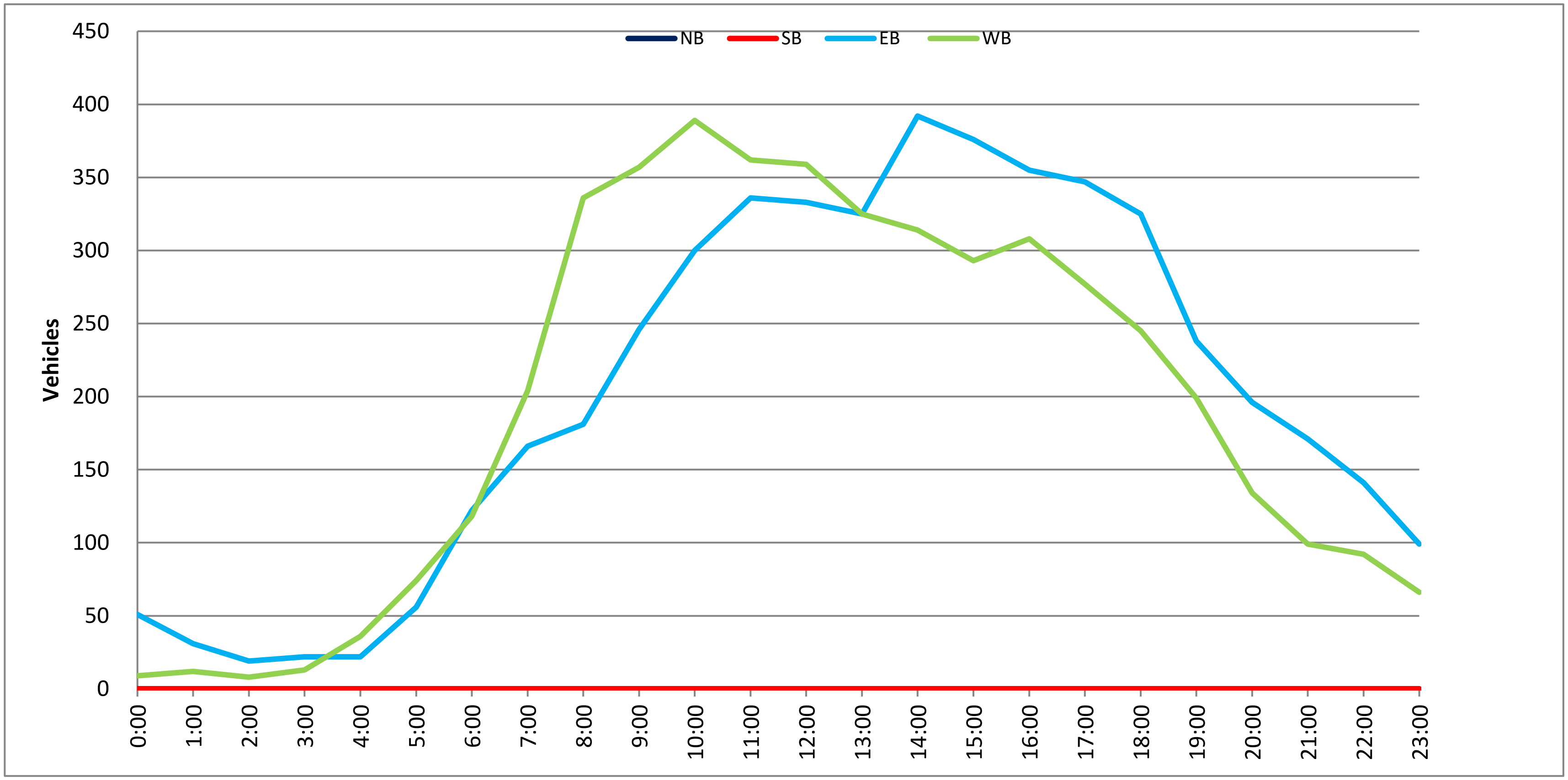
	Prepared by NDS/ATD		
Project #:	CA18_7263_003	**City:**	Auburn
Location:	SR 49 E/o Old Foresthill Road	**Date:**	8/10/2018



Prepared by NDS/ATD

Project #: CA18_7263_003 **City:** Auburn

Location: SR 49 E/o Old Foresthill Road **Date:** 8/11/2018



Prepared by NDS/ATD

VOLUME

Skyridge Dr Bet. Valley View Dr & Dale Way

Day: Friday
Date: 8/10/2018

City: Auburn
Project #: CA18_7262_005

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	486	489	975

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			1		1		2		12:00			9		11		20	
00:15			1		0		1		12:15			4		12		16	
00:30			1		2		3		12:30			14		12		26	
00:45			0	3	0	3	0	6	12:45			11	38	13	48	24	86
01:00			1		0		1		13:00			8		8		16	
01:15			0		0		0		13:15			14		10		24	
01:30			0		0		0		13:30			9		8		17	
01:45			0	1	1	1	1	2	13:45			6	37	7	33	13	70
02:00			0		0		0		14:00			9		3		12	
02:15			0		0		0		14:15			7		9		16	
02:30			0		1		1		14:30			7		7		14	
02:45			0		0	1	0	1	14:45			5	28	11	30	16	58
03:00			0		0		0		15:00			10		20		30	
03:15			1		0		1		15:15			10		7		17	
03:30			1		0		1		15:30			8		8		16	
03:45			0	2	0		0	2	15:45			11	39	12	47	23	86
04:00			0		0		0		16:00			6		8		14	
04:15			0		0		0		16:15			9		10		19	
04:30			0		0		0		16:30			8		5		13	
04:45			0		0		0		16:45			8	31	5	28	13	59
05:00			0		0		0		17:00			13		11		24	
05:15			1		1		2		17:15			11		3		14	
05:30			0		1		1		17:30			12		12		24	
05:45			2	3	1	3	3	6	17:45			9	45	9	35	18	80
06:00			1		3		4		18:00			18		4		22	
06:15			1		0		1		18:15			4		6		10	
06:30			2		7		9		18:30			4		7		11	
06:45			3	7	3	13	6	20	18:45			6	32	6	23	12	55
07:00			3		6		9		19:00			7		3		10	
07:15			6		6		12		19:15			9		5		14	
07:30			7		10		17		19:30			4		8		12	
07:45			5	21	15	37	20	58	19:45			3	23	2	18	5	41
08:00			4		6		10		20:00			7		6		13	
08:15			7		6		13		20:15			8		2		10	
08:30			9		5		14		20:30			4		7		11	
08:45			7	27	10	27	17	54	20:45			3	22	4	19	7	41
09:00			5		8		13		21:00			3		3		6	
09:15			9		9		18		21:15			3		0		3	
09:30			7		8		15		21:30			5		3		8	
09:45			10	31	11	36	21	67	21:45			4	15	0	6	4	21
10:00			7		9		16		22:00			2		0		2	
10:15			11		4		15		22:15			2		0		2	
10:30			12		9		21		22:30			2		1		3	
10:45			10	40	9	31	19	71	22:45			1	7	2	3	3	10
11:00			3		10		13		23:00			1		1		2	
11:15			6		10		16		23:15			1		2		3	
11:30			13		11		24		23:30			1		0		1	
11:45			9	31	13	44	22	75	23:45			0	3	0	3	0	6
TOTALS				166		196		**362**	**TOTALS**				320		293		**613**
SPLIT %				45.9%		54.1%		**37.1%**	**SPLIT %**				52.2%		47.8%		**62.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	486	489	975

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			09:45	11:45	**11:45**	**PM Peak Hour**			17:15	12:00	**12:30**
AM Pk Volume			40	48	**84**	**PM Pk Volume**			50	48	**90**
Pk Hr Factor			0.833	0.923	**0.808**	**Pk Hr Factor**			0.694	0.923	**0.865**
7 - 9 Volume	0	0	48	64	**112**	**4 - 6 Volume**	0	0	76	63	**139**
7 - 9 Peak Hour			08:00	07:00	**07:30**	**4 - 6 Peak Hour**			17:00	17:00	**17:00**
7 - 9 Pk Volume	0	0	27	37	**60**	**4 - 6 Pk Volume**	0	0	45	35	**80**
Pk Hr Factor	0.000	0.000	0.750	0.617	**0.750**	**Pk Hr Factor**	0.000	0.000	0.865	0.729	**0.833**

Prepared by NDS/ATD

VOLUME

Skyridge Dr Bet. Valley View Dr & Dale Way

Day: Saturday **City:** Auburn

Date: 8/11/2018 **Project #:** CA18_7262_005

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	530	516	1,046

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			0		0		0		12:00			15		7		22	
00:15			0		0		0		12:15			7		10		17	
00:30			0		0		0		12:30			11		7		18	
00:45			3	3	1	1	4	4	12:45			9	42	9	33	18	75
01:00			0		1		1		13:00			8		10		18	
01:15			0		0		0		13:15			8		2		10	
01:30			0		0		0		13:30			7		11		18	
01:45			1	1	0	1	1	2	13:45			9	32	6	29	15	61
02:00			0		0		0		14:00			3		5		8	
02:15			0		0		0		14:15			5		5		10	
02:30			1		0		1		14:30			7		15		22	
02:45			1	2	0		1	2	14:45			9	24	12	37	21	61
03:00			1		0		1		15:00			7		7		14	
03:15			0		0		0		15:15			7		9		16	
03:30			1		1		2		15:30			5		8		13	
03:45			0	2	0	1	0	3	15:45			8	27	25	49	33	76
04:00			1		0		1		16:00			5		29		34	
04:15			0		0		0		16:15			9		11		20	
04:30			0		0		0		16:30			7		9		16	
04:45			0	1	1	1	1	2	16:45			5	26	9	58	14	84
05:00			0		0		0		17:00			5		2		7	
05:15			1		0		1		17:15			4		7		11	
05:30			0		0		0		17:30			7		6		13	
05:45			0	1	1	1	1	2	17:45			6	22	10	25	16	47
06:00			0		2		2		18:00			7		4		11	
06:15			2		3		5		18:15			0		3		3	
06:30			2		1		3		18:30			2		10		12	
06:45			3	7	6	12	9	19	18:45			2	11	3	20	5	31
07:00			8		6		14		19:00			4		4		8	
07:15			7		5		12		19:15			6		6		12	
07:30			9		10		19		19:30			6		3		9	
07:45			11	35	13	34	24	69	19:45			3	19	5	18	8	37
08:00			17		13		30		20:00			4		2		6	
08:15			17		7		24		20:15			4		2		6	
08:30			18		10		28		20:30			3		2		5	
08:45			22	74	12	42	34	116	20:45			4	15	3	9	7	24
09:00			28		10		38		21:00			4		3		7	
09:15			18		6		24		21:15			6		5		11	
09:30			22		18		40		21:30			8		3		11	
09:45			12	80	14	48	26	128	21:45			0	18	2	13	2	31
10:00			14		8		22		22:00			2		2		4	
10:15			9		11		20		22:15			1		0		1	
10:30			8		14		22		22:30			3		2		5	
10:45			5	36	10	43	15	79	22:45			1	7	1	5	2	12
11:00			9		10		19		23:00			3		0		3	
11:15			11		10		21		23:15			2		0		2	
11:30			12		6		18		23:30			0		0		0	
11:45			8	40	8	34	16	74	23:45			0	5	2	2	2	7
TOTALS				282		218		500	TOTALS				248		298		546
SPLIT %				56.4%		43.6%		47.8%	SPLIT %				45.4%		54.6%		52.2%

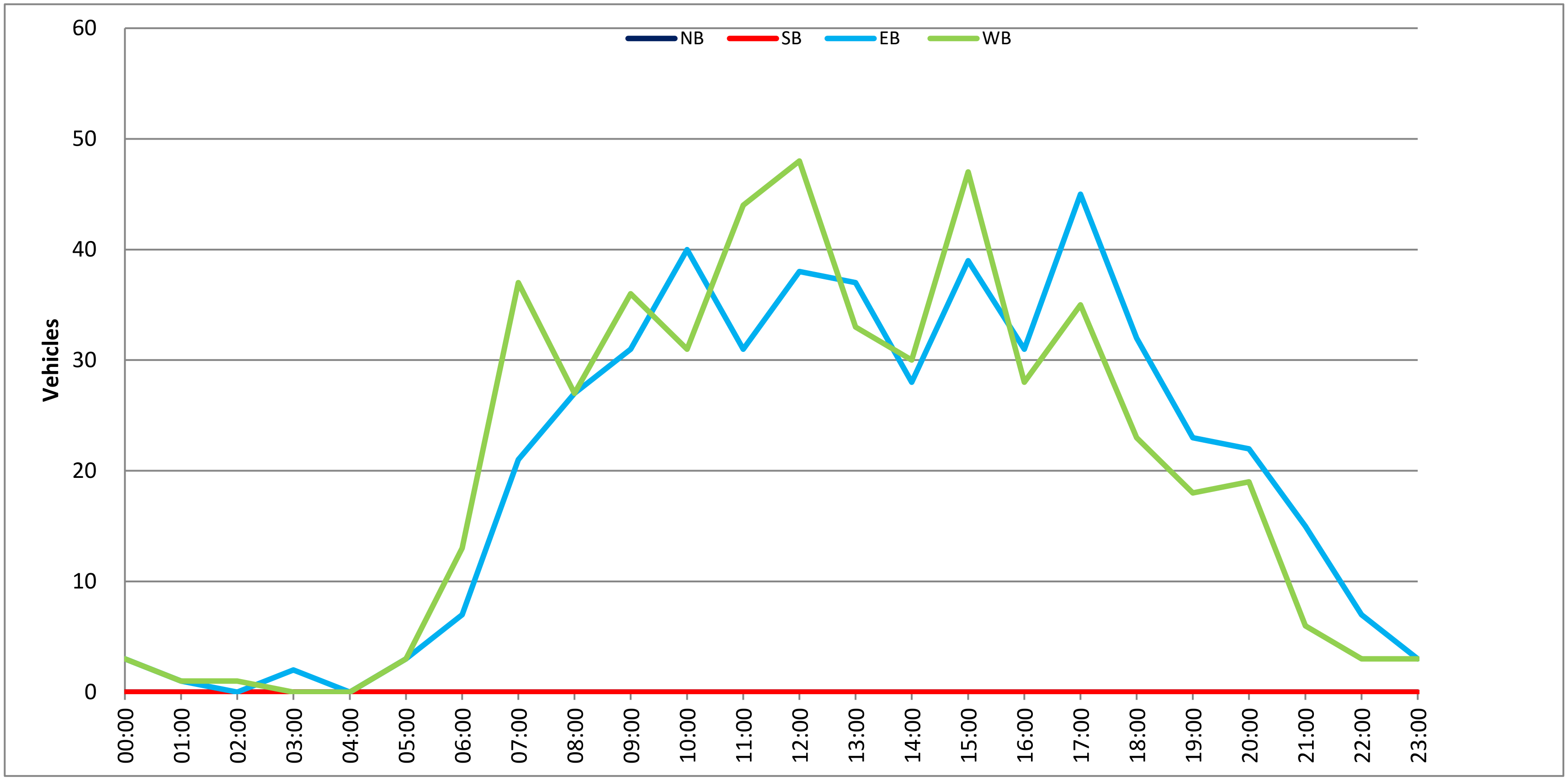
DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	530	516	1,046

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			08:45	09:30	08:45	PM Peak Hour			12:00	15:45	15:45
AM Pk Volume			90	51	136	PM Pk Volume			42	74	103
Pk Hr Factor			0.804	0.708	0.850	Pk Hr Factor			0.700	0.638	0.757
7 - 9 Volume	0	0	109	76	185	4 - 6 Volume	0	0	48	83	131
7 - 9 Peak Hour			08:00	07:30	08:00	4 - 6 Peak Hour			16:00	16:00	16:00
7 - 9 Pk Volume	0	0	74	43	116	4 - 6 Pk Volume	0	0	26	58	84
Pk Hr Factor	0.000	0.000	0.841	0.827	0.853	Pk Hr Factor	0.000	0.000	0.722	0.500	0.618

Prepared by NDS/ATD

Project #: CA18_7262_005 **City:** Auburn

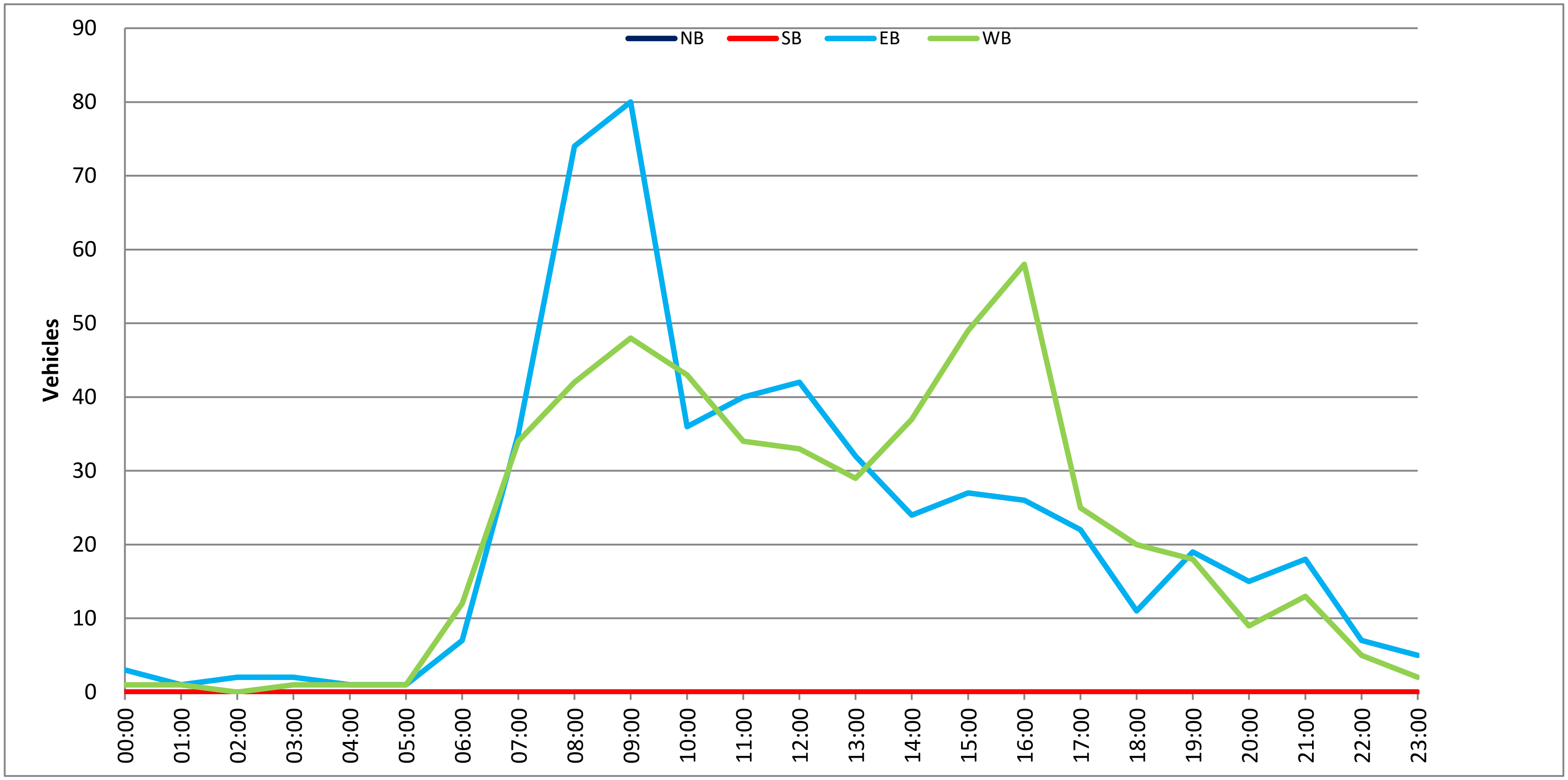
Location: Skyridge Dr Bet. Valley View Dr & Dale Way **Date:** 8/10/2018



Prepared by NDS/ATD

Project #: CA18_7262_005 **City:** Auburn

Location: Skyridge Dr Bet. Valley View Dr & Dale Way **Date:** 8/11/2018



Prepared by NDS/ATD

VOLUME

Riverview Dr Bet. Skyridge Dr & Maidu Dr

Day: Friday
Date: 8/10/2018

City: Auburn
Project #: CA18_7262_006

DAILY TOTALS	NB	SB	EB	WB	Total
	228	237	0	0	465

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	5		4				9	
00:15	0		0				0		12:15	7		6				13	
00:30	2		1				3		12:30	7		8				15	
00:45	0	2	0	1			0	3	12:45	8	27	7	25			15	52
01:00	0		1				1		13:00	2		0				2	
01:15	0		0				0		13:15	6		9				15	
01:30	0		0				0		13:30	4		6				10	
01:45	2	2	1	2			3	4	13:45	1	13	3	18			4	31
02:00	0		0				0		14:00	2		0				2	
02:15	0		0				0		14:15	3		4				7	
02:30	0		0				0		14:30	4		3				7	
02:45	0		0				0		14:45	3	12	2	9			5	21
03:00	0		0				0		15:00	15		6				21	
03:15	0		1				1		15:15	5		6				11	
03:30	0		1				1		15:30	5		5				10	
03:45	0		0	2			0	2	15:45	7	32	8	25			15	57
04:00	0		0				0		16:00	3		2				5	
04:15	0		0				0		16:15	7		2				9	
04:30	0		0				0		16:30	4		7				11	
04:45	0		0				0		16:45	2	16	1	12			3	28
05:00	0		0				0		17:00	5		6				11	
05:15	0		1				1		17:15	2		3				5	
05:30	1		0				1		17:30	6		4				10	
05:45	1	2	2	3			3	5	17:45	2	15	1	14			3	29
06:00	1		1				2		18:00	2		7				9	
06:15	0		1				1		18:15	4		2				6	
06:30	2		3				5		18:30	2		0				2	
06:45	2	5	2	7			4	12	18:45	2	10	1	10			3	20
07:00	1		1				2		19:00	2		2				4	
07:15	2		4				6		19:15	1		3				4	
07:30	5		3				8		19:30	1		7				8	
07:45	5	13	2	10			7	23	19:45	0	4	0	12			0	16
08:00	2		1				3		20:00	1		3				4	
08:15	1		4				5		20:15	1		3				4	
08:30	4		3				7		20:30	4		2				6	
08:45	4	11	5	13			9	24	20:45	3	9	1	9			4	18
09:00	3		2				5		21:00	2		1				3	
09:15	4		6				10		21:15	0		2				2	
09:30	4		5				9		21:30	1		1				2	
09:45	3	14	4	17			7	31	21:45	0	3	1	5			1	8
10:00	5		5				10		22:00	0		0				0	
10:15	7		6				13		22:15	0		0				0	
10:30	2		3				5		22:30	0		0				0	
10:45	1	15	3	17			4	32	22:45	2	2	0				2	2
11:00	3		2				5		23:00	1		1				2	
11:15	2		5				7		23:15	2		1				3	
11:30	4		8				12		23:30	0		1				1	
11:45	9	18	8	23			17	41	23:45	0	3	0	3			0	6
TOTALS		82		95				**177**	**TOTALS**		146		142				**288**
SPLIT %		46.3%		53.7%				**38.1%**	**SPLIT %**		50.7%		49.3%				**61.9%**

DAILY TOTALS	NB	SB	EB	WB	Total
	228	237	0	0	465

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	11:45	11:30			**11:45**	**PM Peak Hour**	15:00	12:00			**15:00**
AM Pk Volume	28	26			**54**	**PM Pk Volume**	32	25			**57**
Pk Hr Factor	0.778	0.813			**0.794**	**Pk Hr Factor**	0.533	0.781			**0.679**
7 - 9 Volume	24	23	0	0	**47**	**4 - 6 Volume**	31	26	0	0	**57**
7 - 9 Peak Hour	07:15	08:00			**07:15**	**4 - 6 Peak Hour**	16:15	16:30			**16:15**
7 - 9 Pk Volume	14	13	0	0	**24**	**4 - 6 Pk Volume**	18	17	0	0	**34**
Pk Hr Factor	0.700	0.650	0.000	0.000	**0.750**	**Pk Hr Factor**	0.643	0.607	0.000	0.000	**0.773**

Prepared by NDS/ATD

VOLUME

Riverview Dr Bet. Skyridge Dr & Maidu Dr

Day: Saturday
Date: 8/11/2018

City: Auburn
Project #: CA18_7262_006

DAILY TOTALS	NB	SB	EB	WB	Total
	301	330	0	0	631

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	2		4				6	
00:15	0		0				0		12:15	8		3				11	
00:30	0		0				0		12:30	2		5				7	
00:45	0		0				0		12:45	6	18	6	18			12	36
01:00	1		0				1		13:00	5		6				11	
01:15	0		0				0		13:15	0		4				4	
01:30	0		0				0		13:30	4		4				8	
01:45	0	1	0				0	1	13:45	4	13	5	19			9	32
02:00	0		0				0		14:00	1		1				2	
02:15	0		0				0		14:15	2		2				4	
02:30	0		0				0		14:30	16		4				20	
02:45	0		0				0		14:45	7	26	6	13			13	39
03:00	0		1				1		15:00	2		3				5	
03:15	0		0				0		15:15	2		4				6	
03:30	0		0				0		15:30	7		6				13	
03:45	0		0	1			0	1	15:45	25	36	3	16			28	52
04:00	0		1				1		16:00	26		3				29	
04:15	0		0				0		16:15	9		3				12	
04:30	0		0				0		16:30	7		4				11	
04:45	0		0	1			0	1	16:45	6	48	2	12			8	60
05:00	0		0				0		17:00	3		1				4	
05:15	0		0				0		17:15	3		0				3	
05:30	0		0				0		17:30	2		4				6	
05:45	0		0				0		17:45	4	12	2	7			6	19
06:00	1		1				2		18:00	3		3				6	
06:15	3		1				4		18:15	3		1				4	
06:30	0		1				1		18:30	2		1				3	
06:45	4	8	3	6			7	14	18:45	1	9	0	5			1	14
07:00	2		5				7		19:00	1		3				4	
07:15	6		9				15		19:15	2		0				2	
07:30	4		7				11		19:30	3		2				5	
07:45	4	16	8	29			12	45	19:45	1	7	1	6			2	13
08:00	9		8				17		20:00	2		1				3	
08:15	4		17				21		20:15	3		2				5	
08:30	7		15				22		20:30	0		1				1	
08:45	2	22	21	61			23	83	20:45	1	6	2	6			3	12
09:00	5		27				32		21:00	3		0				3	
09:15	5		15				20		21:15	1		1				2	
09:30	5		16				21		21:30	1		3				4	
09:45	9	24	10	68			19	92	21:45	1	6	0	4			1	10
10:00	6		8				14		22:00	0		0				0	
10:15	9		6				15		22:15	0		1				1	
10:30	7		7				14		22:30	1		1				2	
10:45	6	28	4	25			10	53	22:45	0	1	1	3			1	4
11:00	5		6				11		23:00	0		1				1	
11:15	5		7				12		23:15	0		1				1	
11:30	5		8				13		23:30	0		0				0	
11:45	3	18	7	28			10	46	23:45	2	2	0	2			2	4
TOTALS	117		219				336		TOTALS	184		111				295	
SPLIT %	34.8%		65.2%				53.2%		SPLIT %	62.4%		37.6%				46.8%	

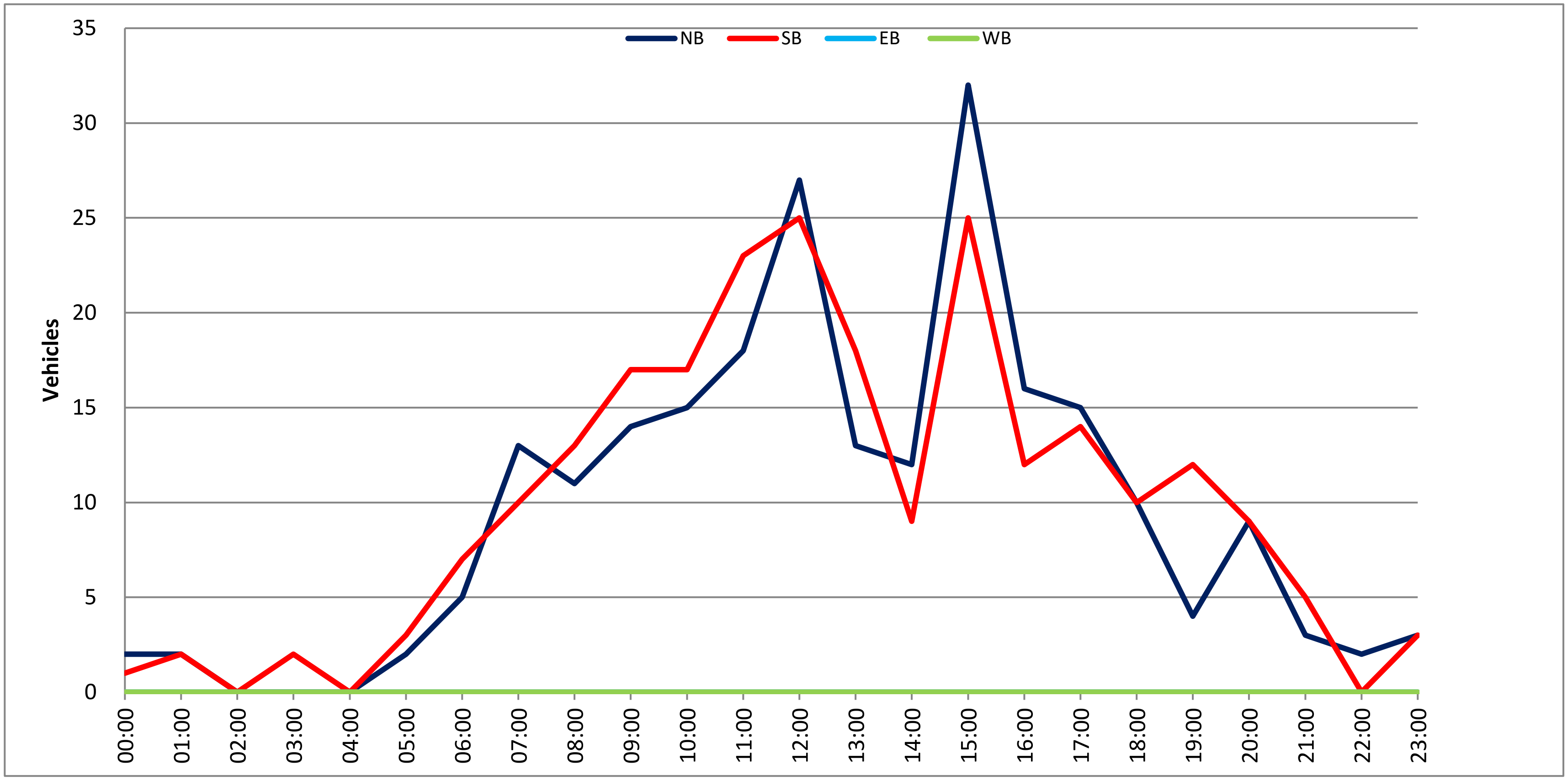
DAILY TOTALS	NB	SB	EB	WB	Total
	301	330	0	0	631

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	09:45	08:15			08:15	PM Peak Hour	15:30	12:30			15:30
AM Pk Volume	31	80			98	PM Pk Volume	67	21			82
Pk Hr Factor	0.861	0.741			0.766	Pk Hr Factor	0.644	0.875			0.707
7 - 9 Volume	38	90	0	0	128	4 - 6 Volume	60	19	0	0	79
7 - 9 Peak Hour	07:45	08:00			08:00	4 - 6 Peak Hour	16:00	16:00			16:00
7 - 9 Pk Volume	24	61	0	0	83	4 - 6 Pk Volume	48	12	0	0	60
Pk Hr Factor	0.667	0.726	0.000	0.000	0.902	Pk Hr Factor	0.462	0.750	0.000	0.000	0.517

Prepared by NDS/ATD

Project #: CA18_7262_006 **City:** Auburn

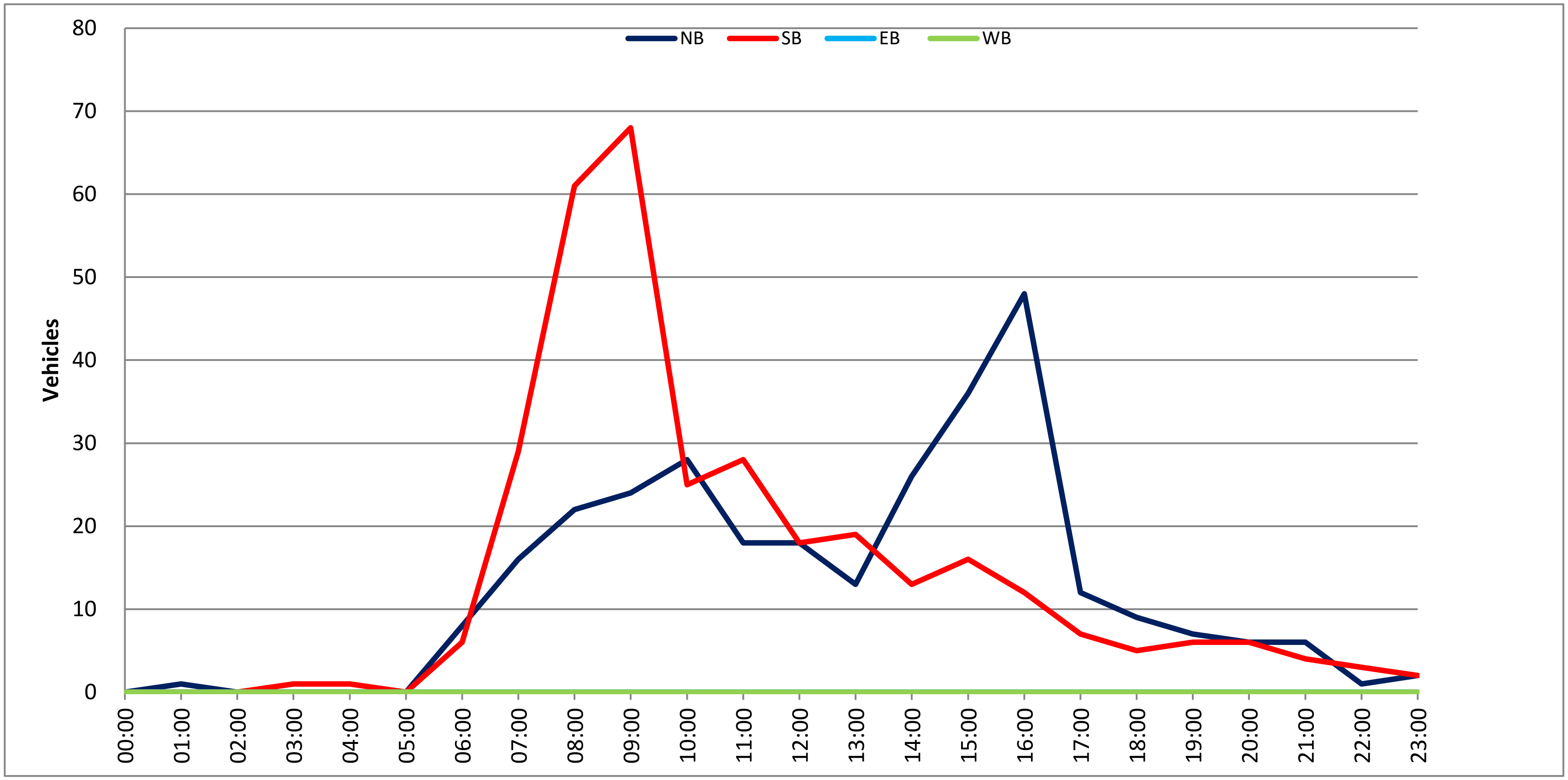
Location: Riverview Dr Bet. Skyridge Dr & Maidu Dr **Date:** 8/10/2018



Prepared by NDS/ATD

Project #: CA18_7262_006 **City:** Auburn

Location: Riverview Dr Bet. Skyridge Dr & Maidu Dr **Date:** 8/11/2018



Prepared by NDS/ATD

VOLUME

Maidu Dr Bet. Shirland Tract Rd & Montana Dr

Day: Friday
Date: 8/10/2018

City: Auburn
Project #: CA18_7262_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,509	1,501	3,010

AM Period	NB		SB		EB		WB		TOTAL	
00:00					0		2		2	
00:15					0		0		0	
00:30					1		2		3	
00:45					1	2	0	4	1	6
01:00					3		0		3	
01:15					2		1		3	
01:30					2		0		2	
01:45					1	8	0	1	1	9
02:00					0		0		0	
02:15					1		1		2	
02:30					1		1		2	
02:45					0	2	0	2	0	4
03:00					0		2		2	
03:15					0		2		2	
03:30					0		0		0	
03:45					0		0	4	0	4
04:00					0		2		2	
04:15					0		4		4	
04:30					1		2		3	
04:45					0	1	3	11	3	12
05:00					1		3		4	
05:15					0		9		9	
05:30					7		7		14	
05:45					14	22	12	31	26	53
06:00					9		8		17	
06:15					4		13		17	
06:30					9		25		34	
06:45					17	39	18	64	35	103
07:00					9		22		31	
07:15					12		27		39	
07:30					11		28		39	
07:45					24	56	41	118	65	174
08:00					13		35		48	
08:15					21		24		45	
08:30					13		33		46	
08:45					17	64	35	127	52	191
09:00					17		27		44	
09:15					22		21		43	
09:30					23		25		48	
09:45					17	79	21	94	38	173
10:00					22		28		50	
10:15					20		29		49	
10:30					19		29		48	
10:45					20	81	24	110	44	191
11:00					16		29		45	
11:15					21		38		59	
11:30					20		30		50	
11:45					23	80	27	124	50	204
TOTALS						434		690		**1124**
SPLIT %						38.6%		61.4%		**37.3%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00					19		24		43	
12:15					18		17		35	
12:30					33		12		45	
12:45					33	103	19	72	52	175
13:00					23		27		50	
13:15					29		26		55	
13:30					30		20		50	
13:45					25	107	34	107	59	214
14:00					27		30		57	
14:15					34		23		57	
14:30					30		28		58	
14:45					28	119	21	102	49	221
15:00					26		25		51	
15:15					33		25		58	
15:30					24		18		42	
15:45					28	111	27	95	55	206
16:00					34		26		60	
16:15					48		27		75	
16:30					31		40		71	
16:45					37	150	28	121	65	271
17:00					35		23		58	
17:15					30		27		57	
17:30					41		14		55	
17:45					35	141	28	92	63	233
18:00					28		24		52	
18:15					31		27		58	
18:30					28		22		50	
18:45					21	108	20	93	41	201
19:00					19		13		32	
19:15					17		8		25	
19:30					11		17		28	
19:45					18	65	17	55	35	120
20:00					13		7		20	
20:15					18		7		25	
20:30					14		10		24	
20:45					17	62	5	29	22	91
21:00					20		7		27	
21:15					19		5		24	
21:30					12		5		17	
21:45					9	60	5	22	14	82
22:00					6		3		9	
22:15					10		8		18	
22:30					9		1		10	
22:45					4	29	4	16	8	45
23:00					2		2		4	
23:15					5		1		6	
23:30					5		3		8	
23:45					8	20	1	7	9	27
TOTALS						1075		811		**1886**
SPLIT %						57.0%		43.0%		**62.7%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,509	1,501	3,010

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			11:45	07:45	**07:45**	**PM Peak Hour**			16:15	16:00	**16:00**
AM Pk Volume			93	133	**204**	**PM Pk Volume**			151	121	**271**
Pk Hr Factor			0.705	0.811	**0.785**	**Pk Hr Factor**			0.786	0.756	**0.903**
7 - 9 Volume	0	0	120	245	**365**	**4 - 6 Volume**	0	0	291	213	**504**
7 - 9 Peak Hour			07:45	07:45	**07:45**	**4 - 6 Peak Hour**			16:15	16:00	**16:00**
7 - 9 Pk Volume	0	0	71	133	**204**	**4 - 6 Pk Volume**	0	0	151	121	**271**
Pk Hr Factor	0.000	0.000	0.740	0.811	**0.785**	**Pk Hr Factor**	0.000	0.000	0.786	0.756	**0.903**

Prepared by NDS/ATD

VOLUME

Maidu Dr Bet. Shirland Tract Rd & Montana Dr

Day: Saturday **City:** Auburn
Date: 8/11/2018 **Project #:** CA18_7262_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,237	1,236	2,473

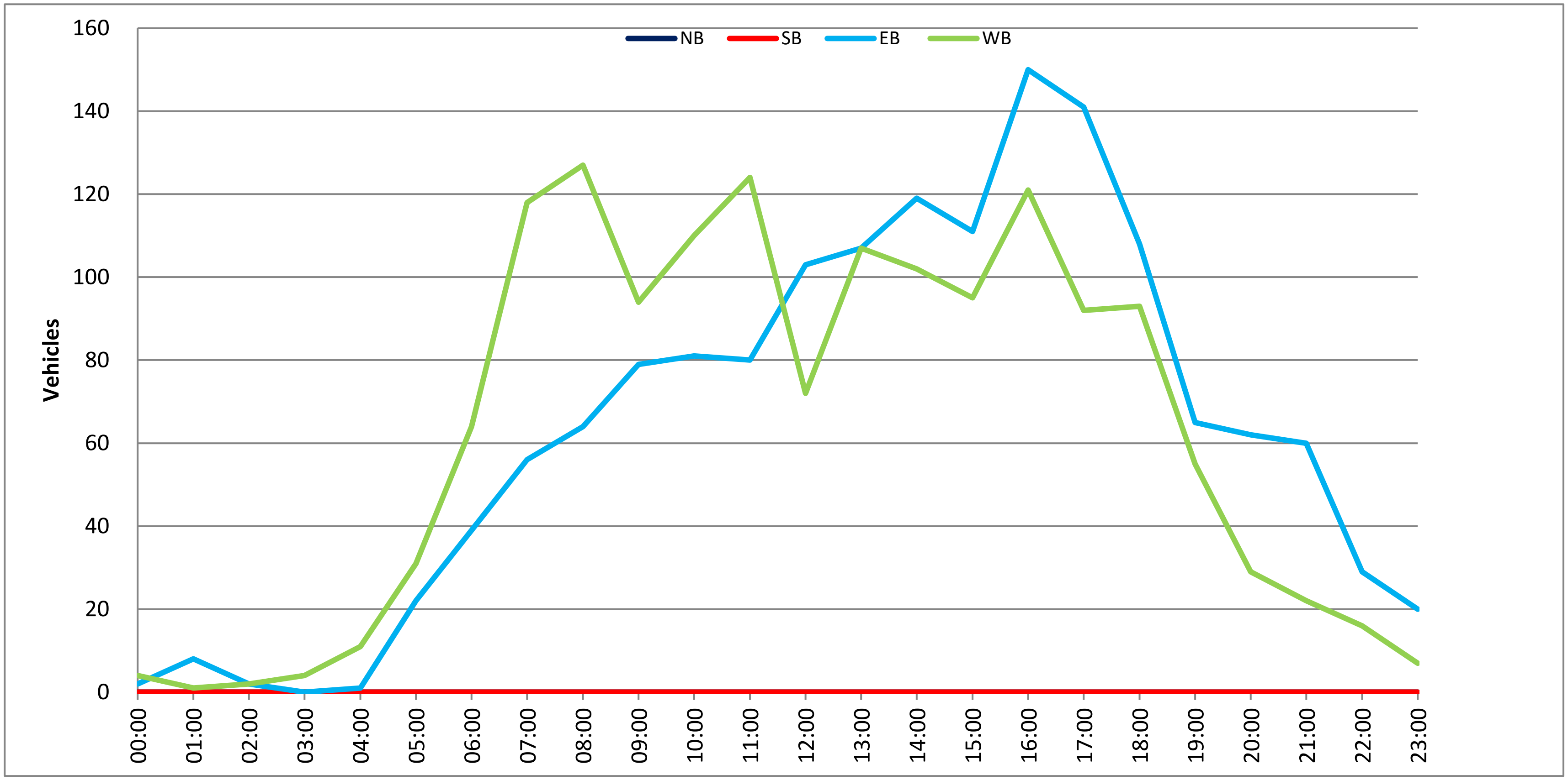
AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00			3		1		4		12:00			28		22		50	
00:15			1		0		1		12:15			24		26		50	
00:30			1		1		2		12:30			18		33		51	
00:45			1	6	1	3	2	9	12:45			26	96	11	92	37	188
01:00			2		0		2		13:00			22		22		44	
01:15			1		1		2		13:15			22		17		39	
01:30			2		1		3		13:30			12		25		37	
01:45			0	5	0	2	0	7	13:45			19	75	22	86	41	161
02:00			2		1		3		14:00			19		21		40	
02:15			1		0		1		14:15			26		29		55	
02:30			1		1		2		14:30			16		34		50	
02:45			1	5	0	2	1	7	14:45			30	91	18	102	48	193
03:00			0		0		0		15:00			27		22		49	
03:15			0		0		0		15:15			30		18		48	
03:30			0		0		0		15:30			19		22		41	
03:45			0		1	1	1	1	15:45			21	97	40	102	61	199
04:00			0		1		1		16:00			24		22		46	
04:15			0		0		0		16:15			15		28		43	
04:30			0		2		2		16:30			22		19		41	
04:45			1	1	1	4	2	5	16:45			25	86	22	91	47	177
05:00			1		0		1		17:00			28		17		45	
05:15			1		6		7		17:15			15		18		33	
05:30			2		2		4		17:30			18		12		30	
05:45			2	6	6	14	8	20	17:45			15	76	22	69	37	145
06:00			2		4		6		18:00			11		16		27	
06:15			0		5		5		18:15			15		20		35	
06:30			5		13		18		18:30			23		15		38	
06:45			4	11	5	27	9	38	18:45			14	63	18	69	32	132
07:00			6		13		19		19:00			15		5		20	
07:15			8		10		18		19:15			18		7		25	
07:30			12		15		27		19:30			14		7		21	
07:45			15	41	22	60	37	101	19:45			14	61	7	26	21	87
08:00			14		22		36		20:00			5		4		9	
08:15			21		19		40		20:15			13		5		18	
08:30			37		29		66		20:30			12		5		17	
08:45			24	96	27	97	51	193	20:45			7	37	5	19	12	56
09:00			19		21		40		21:00			19		4		23	
09:15			16		22		38		21:15			12		5		17	
09:30			23		31		54		21:30			10		4		14	
09:45			17	75	28	102	45	177	21:45			4	45	5	18	9	63
10:00			24		18		42		22:00			11		3		14	
10:15			25		26		51		22:15			17		7		24	
10:30			26		43		69		22:30			9		5		14	
10:45			28	103	24	111	52	214	22:45			9	46	2	17	11	63
11:00			20		28		48		23:00			4		3		7	
11:15			22		34		56		23:15			5		0		5	
11:30			26		20		46		23:30			3		4		7	
11:45			28	96	30	112	58	208	23:45			7	19	3	10	10	29
TOTALS				445		535		980	TOTALS				792		701		1493
SPLIT %				45.4%		54.6%		39.6%	SPLIT %				53.0%		47.0%		60.4%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,237	1,236	2,473

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour			11:30	10:30	10:30	PM Peak Hour			14:45	15:30	14:15
AM Pk Volume			106	129	225	PM Pk Volume			106	112	202
Pk Hr Factor			0.946	0.750	0.815	Pk Hr Factor			0.883	0.700	0.918
7 - 9 Volume	0	0	137	157	294	4 - 6 Volume	0	0	162	160	322
7 - 9 Peak Hour			08:00	08:00	08:00	4 - 6 Peak Hour			16:15	16:00	16:00
7 - 9 Pk Volume	0	0	96	97	193	4 - 6 Pk Volume	0	0	90	91	177
Pk Hr Factor	0.000	0.000	0.649	0.836	0.731	Pk Hr Factor	0.000	0.000	0.804	0.813	0.941

Prepared by NDS/ATD

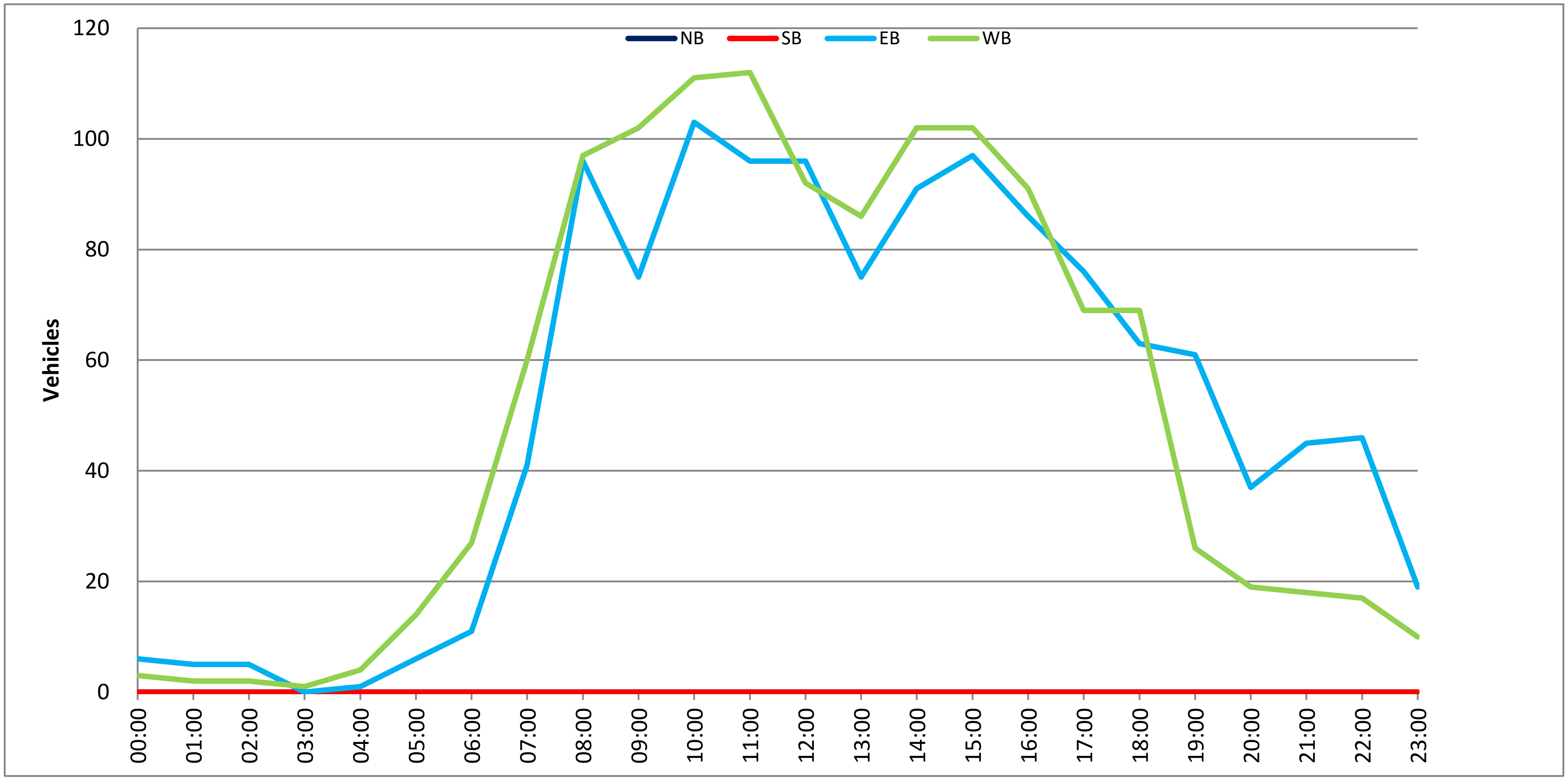
Project #:	CA18_7262_007	**City:**	Auburn
Location:	Maidu Dr Bet. Shirland Tract Rd & Montana	**Date:**	8/10/2018



Prepared by NDS/ATD

Project #: CA18_7262_007 **City:** Auburn

Location: Maidu Dr Bet. Shirland Tract Rd & Montana **Date:** 8/11/2018



Prepared by NDS/ATD

VOLUME

Sliger Mine Rd Bet. SR 193 & San Martin Mine Rd

Day: Friday
Date: 8/10/2018

City: Auburn
Project #: CA18_7262_008

DAILY TOTALS	NB	SB	EB	WB	Total
	417	416	0	0	833

AM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0	
00:15	2		0				2	
00:30	1		0				1	
00:45	0	3	0				0	3
01:00	2		0				2	
01:15	0		0				0	
01:30	1		0				1	
01:45	1	4	0				1	4
02:00	0		0				0	
02:15	0		0				0	
02:30	0		0				0	
02:45	0		0				0	
03:00	0		0				0	
03:15	0		1				1	
03:30	0		0				0	
03:45	0		1	2			1	2
04:00	0		0				0	
04:15	0		2				2	
04:30	0		0				0	
04:45	0		5	7			5	7
05:00	0		2				2	
05:15	0		5				5	
05:30	1		2				3	
05:45	0	1	3	12			3	13
06:00	0		6				6	
06:15	2		8				10	
06:30	2		9				11	
06:45	1	5	5	28			6	33
07:00	1		10				11	
07:15	3		10				13	
07:30	0		10				10	
07:45	1	5	10	40			11	45
08:00	2		11				13	
08:15	3		9				12	
08:30	0		5				5	
08:45	6	11	8	33			14	44
09:00	5		9				14	
09:15	3		4				7	
09:30	4		7				11	
09:45	1	13	5	25			6	38
10:00	8		6				14	
10:15	2		10				12	
10:30	5		7				12	
10:45	4	19	10	33			14	52
11:00	6		5				11	
11:15	5		7				12	
11:30	5		7				12	
11:45	11	27	11	30			22	57
TOTALS		88		210				298
SPLIT %		29.5%		70.5%				35.8%

PM Period	NB		SB		EB	WB	TOTAL	
12:00	6		7				13	
12:15	4		5				9	
12:30	9		4				13	
12:45	7	26	5	21			12	47
13:00	5		9				14	
13:15	6		8				14	
13:30	8		5				13	
13:45	9	28	2	24			11	52
14:00	8		9				17	
14:15	8		6				14	
14:30	3		3				6	
14:45	5	24	5	23			10	47
15:00	7		7				14	
15:15	4		4				8	
15:30	12		5				17	
15:45	4	27	9	25			13	52
16:00	10		8				18	
16:15	9		4				13	
16:30	15		6				21	
16:45	10	44	11	29			21	73
17:00	4		7				11	
17:15	13		10				23	
17:30	6		5				11	
17:45	5	28	7	29			12	57
18:00	6		5				11	
18:15	15		5				20	
18:30	9		4				13	
18:45	11	41	4	18			15	59
19:00	13		2				15	
19:15	11		5				16	
19:30	11		3				14	
19:45	10	45	2	12			12	57
20:00	6		4				10	
20:15	4		2				6	
20:30	5		3				8	
20:45	5	20	1	10			6	30
21:00	8		1				9	
21:15	2		1				3	
21:30	3		1				4	
21:45	4	17	0	3			4	20
22:00	5		5				10	
22:15	3		0				3	
22:30	2		4				6	
22:45	2	12	2	11			4	23
23:00	3		0				3	
23:15	4		1				5	
23:30	5		0				5	
23:45	5	17	0	1			5	18
TOTALS		329		206				535
SPLIT %		61.5%		38.5%				64.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	417	416	0	0	833

	NB	SB	EB	WB	Total
AM Peak Hour	11:45	07:15			11:15
AM Pk Volume	30	41			59
Pk Hr Factor	0.682	0.932			0.670
7 - 9 Volume	16	73	0	0	89
7 - 9 Peak Hour	08:00	07:15			07:15
7 - 9 Pk Volume	11	41	0	0	47
Pk Hr Factor	0.458	0.932	0.000	0.000	0.904

	NB	SB	EB	WB	Total
PM Peak Hour	18:15	16:30			16:30
PM Pk Volume	48	34			76
Pk Hr Factor	0.800	0.773			0.826
4 - 6 Volume	72	58	0	0	130
4 - 6 Peak Hour	16:00	16:30			16:30
4 - 6 Pk Volume	44	34	0	0	76
Pk Hr Factor	0.733	0.773	0.000	0.000	0.826

Prepared by NDS/ATD

VOLUME

Sliger Mine Rd Bet. SR 193 & San Martin Mine Rd

Day: Saturday
Date: 8/11/2018

City: Auburn
Project #: CA18_7262_008

DAILY TOTALS	NB	SB	EB	WB	Total
	344	353	0	0	697

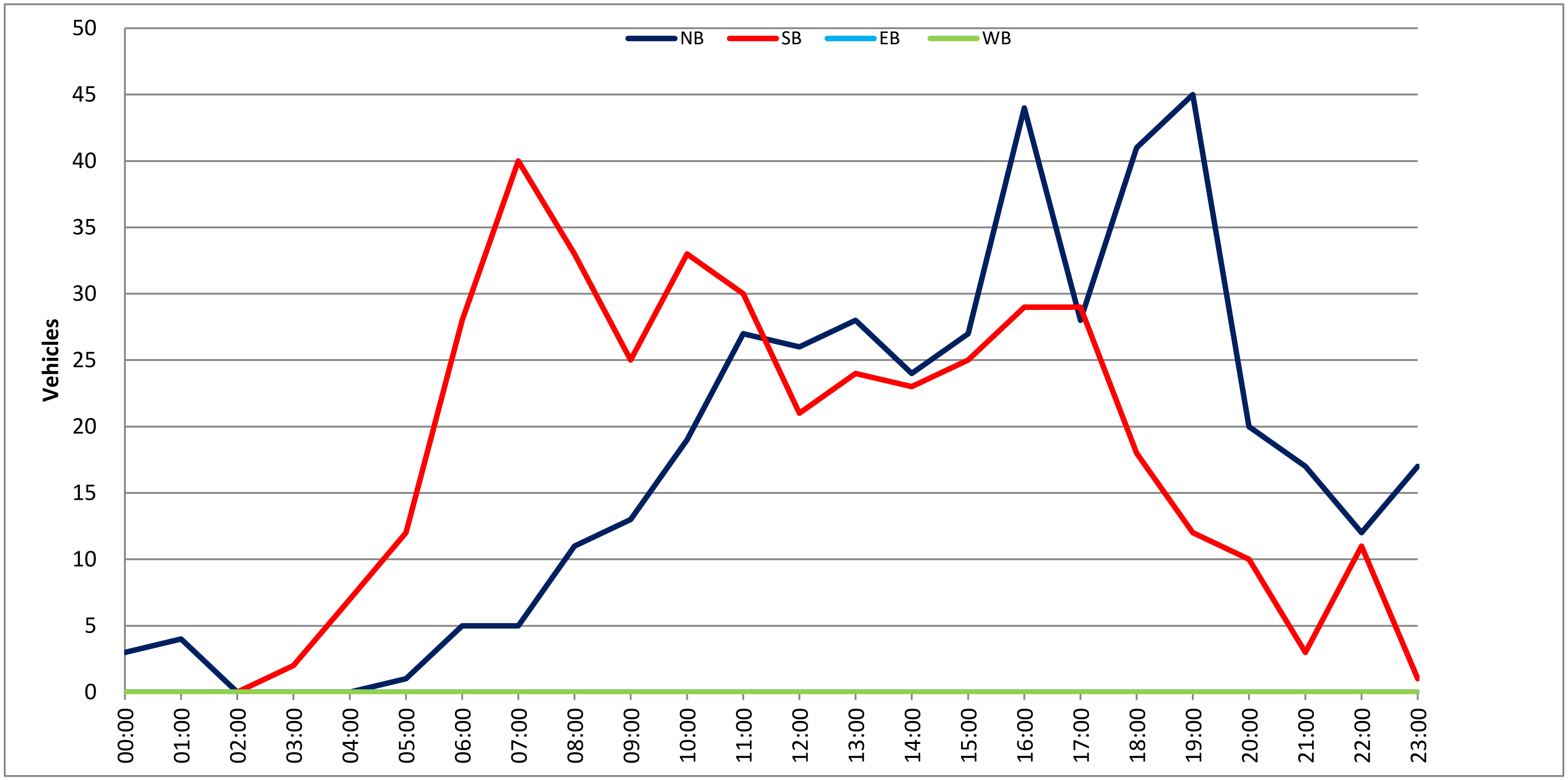
AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	0		0				0		12:00	5		7				12	
00:15	0		1				1		12:15	5		6				11	
00:30	2		0				2		12:30	5		2				7	
00:45	2	4	0	1			2	5	12:45	8	23	5	20			13	43
01:00	1		0				1		13:00	5		7				12	
01:15	0		0				0		13:15	10		7				17	
01:30	0		0				0		13:30	3		6				9	
01:45	0	1	0				0	1	13:45	8	26	6	26			14	52
02:00	0		0				0		14:00	5		5				10	
02:15	2		0				2		14:15	5		4				9	
02:30	0		0				0		14:30	2		6				8	
02:45	0	2	0				0	2	14:45	11	23	4	19			15	42
03:00	0		3				3		15:00	7		5				12	
03:15	0		0				0		15:15	6		7				13	
03:30	0		1				1		15:30	5		7				12	
03:45	0		0	4			0	4	15:45	5	23	6	25			11	48
04:00	0		0				0		16:00	4		7				11	
04:15	0		0				0		16:15	4		9				13	
04:30	0		0				0		16:30	7		5				12	
04:45	0		1	1			1	1	16:45	5	20	6	27			11	47
05:00	0		1				1		17:00	4		3				7	
05:15	0		0				0		17:15	7		5				12	
05:30	0		1				1		17:30	6		3				9	
05:45	0		1	3			1	3	17:45	9	26	4	15			13	41
06:00	0		3				3		18:00	8		6				14	
06:15	0		0				0		18:15	6		1				7	
06:30	2		3				5		18:30	8		2				10	
06:45	0	2	4	10			4	12	18:45	3	25	3	12			6	37
07:00	1		5				6		19:00	4		4				8	
07:15	2		3				5		19:15	4		3				7	
07:30	4		9				13		19:30	8		2				10	
07:45	1	8	7	24			8	32	19:45	3	19	3	12			6	31
08:00	5		6				11		20:00	6		6				12	
08:15	4		9				13		20:15	4		1				5	
08:30	4		6				10		20:30	10		6				16	
08:45	5	18	5	26			10	44	20:45	4	24	3	16			7	40
09:00	9		8				17		21:00	3		4				7	
09:15	4		6				10		21:15	4		1				5	
09:30	5		5				10		21:30	4		4				8	
09:45	5	23	11	30			16	53	21:45	4	15	2	11			6	26
10:00	6		6				12		22:00	3		1				4	
10:15	6		7				13		22:15	3		0				3	
10:30	6		12				18		22:30	0		0				0	
10:45	4	22	13	38			17	60	22:45	3	9	1	2			4	11
11:00	3		7				10		23:00	5		0				5	
11:15	10		5				15		23:15	0		0				0	
11:30	4		8				12		23:30	2		1				3	
11:45	5	22	10	30			15	52	23:45	2	9	0	1			2	10
TOTALS	102		167				**269**		**TOTALS**	242		186				**428**	
SPLIT %	37.9%		62.1%				**38.6%**		**SPLIT %**	56.5%		43.5%				**61.4%**	

DAILY TOTALS	NB	SB	EB	WB	Total
	344	353	0	0	697

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	11:15	10:15			**10:00**	**PM Peak Hour**	17:45	15:30			**13:00**
AM Pk Volume	24	39			**60**	**PM Pk Volume**	31	29			**52**
Pk Hr Factor	0.600	0.750			**0.833**	**Pk Hr Factor**	0.861	0.806			**0.765**
7 - 9 Volume	26	50	0	0	**76**	**4 - 6 Volume**	46	42	0	0	**88**
7 - 9 Peak Hour	08:00	07:30			**07:30**	**4 - 6 Peak Hour**	17:00	16:00			**16:00**
7 - 9 Pk Volume	18	31	0	0	**45**	**4 - 6 Pk Volume**	26	27	0	0	**47**
Pk Hr Factor	0.900	0.861	0.000	0.000	**0.865**	**Pk Hr Factor**	0.722	0.750	0.000	0.000	**0.904**

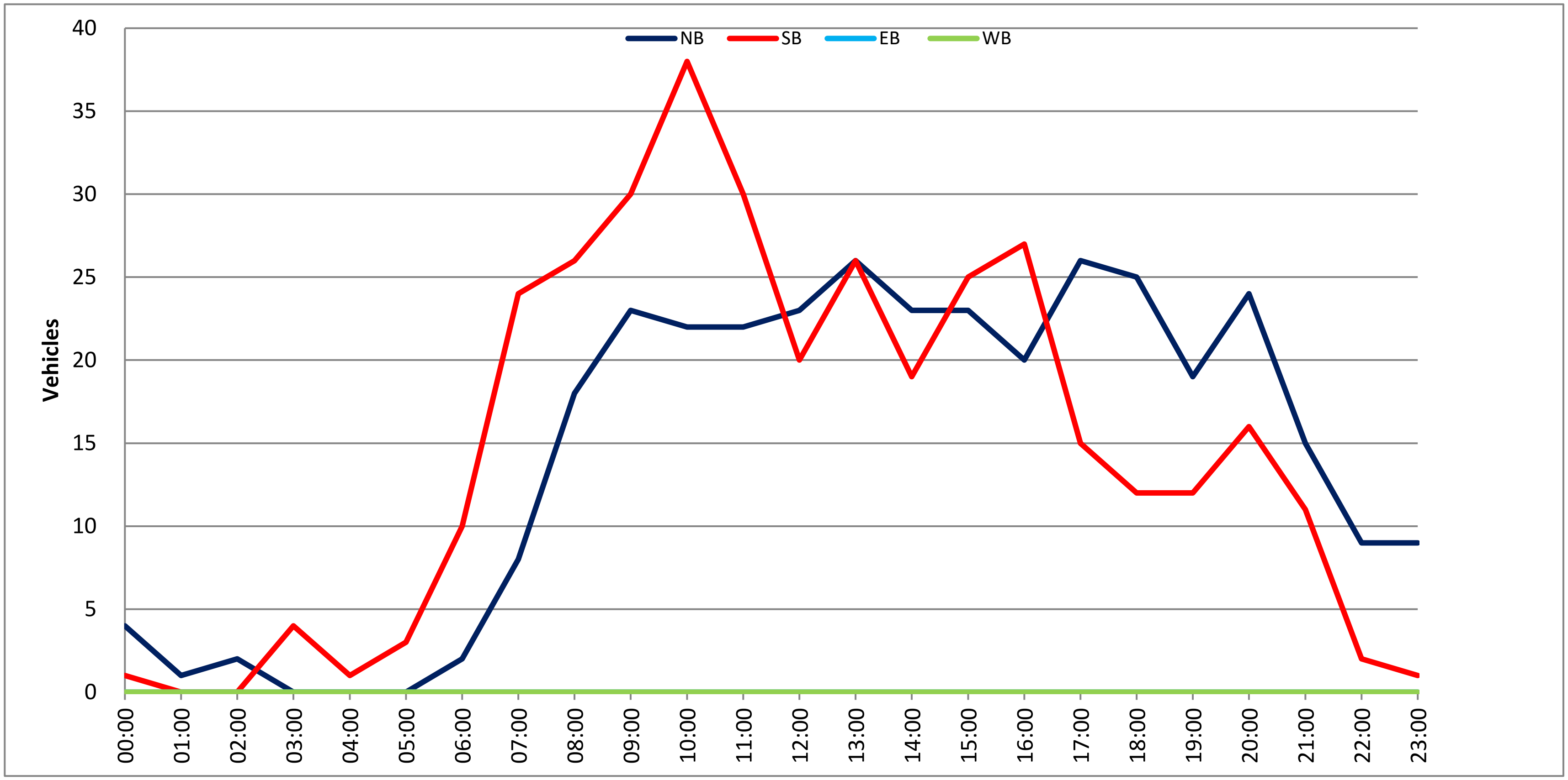
Prepared by NDS/ATD

Project #:	CA18_7262_008	**City:**	Auburn
Location:	Sliger Mine Rd Bet. SR 193 & San Martin	**Date:**	8/10/2018



Prepared by NDS/ATD

Project #:	CA18_7262_008	**City:**	Auburn
Location:	Sliger Mine Rd Bet. SR 193 & San Martin	**Date:**	8/11/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	68	82	213	202	162	0	0	0	43	161	56
Future Volume (vph)	39	68	82	213	202	162	0	0	0	43	161	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93					1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1738					1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1738					1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	72	86	224	213	171	0	0	0	45	169	59
RTOR Reduction (vph)	0	0	76	0	26	0	0	0	0	0	0	50
Lane Group Flow (vph)	41	72	10	224	358	0	0	0	0	45	169	9
Turn Type	Prot	NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases	1	6		5 7	2 7					8	8	
Permitted Phases			6									8
Actuated Green, G (s)	5.2	9.4	9.4	45.9	50.6					12.2	12.2	12.2
Effective Green, g (s)	5.2	9.4	9.4	45.9	50.6					12.2	12.2	12.2
Actuated g/C Ratio	0.07	0.12	0.12	0.58	0.64					0.15	0.15	0.15
Clearance Time (s)	3.5	4.0	4.0							4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0							1.0	1.0	1.0
Lane Grp Cap (vph)	115	220	187	1021	1106					271	285	242
v/s Ratio Prot	0.02	c0.04		0.13	c0.21					0.03	c0.09	
v/s Ratio Perm			0.01									0.01
v/c Ratio	0.36	0.33	0.05	0.22	0.32					0.17	0.59	0.04
Uniform Delay, d1	35.5	32.1	31.1	8.1	6.6					29.2	31.3	28.7
Progression Factor	1.00	1.00	1.00	0.47	0.17					1.00	1.00	1.00
Incremental Delay, d2	0.7	0.3	0.0	0.0	0.1					0.1	2.2	0.0
Delay (s)	36.2	32.5	31.1	3.9	1.2					29.3	33.5	28.7
Level of Service	D	C	C	A	A					C	C	C
Approach Delay (s)		32.7			2.2			0.0			31.8	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑↑					↰		↱
Traffic Volume (vph)	0	111	0	0	471	0	0	0	0	72	0	106
Future Volume (vph)	0	111	0	0	471	0	0	0	0	72	0	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			4.0					4.0		4.0
Lane Util. Factor		1.00			0.95					1.00		1.00
Frt		1.00			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		1863			3539					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		1863			3539					1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	117	0	0	496	0	0	0	0	76	0	112
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	99
Lane Group Flow (vph)	0	117	0	0	496	0	0	0	0	76	0	13
Turn Type		NA			NA					Prot		Perm
Protected Phases		1 2 6 8			2					7		
Permitted Phases												7
Actuated Green, G (s)		62.3			37.4					9.2		9.2
Effective Green, g (s)		58.3			37.4					9.2		9.2
Actuated g/C Ratio		0.73			0.47					0.12		0.12
Clearance Time (s)					4.0					4.0		4.0
Vehicle Extension (s)					1.0					1.0		1.0
Lane Grp Cap (vph)		1366			1664					204		183
v/s Ratio Prot		c0.06			c0.14					c0.04		
v/s Ratio Perm												0.01
v/c Ratio		0.09			0.30					0.37		0.07
Uniform Delay, d1		3.0			13.0					32.5		31.3
Progression Factor		0.04			1.00					1.00		1.00
Incremental Delay, d2		0.0			0.5					0.4		0.1
Delay (s)		0.1			13.4					32.9		31.4
Level of Service		A			B					C		C
Approach Delay (s)		0.1			13.4			0.0			32.0	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	153	0	0	380	205	91	2	154	0	0	0
Future Volume (veh/h)	30	153	0	0	380	205	91	2	154	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	33	166	0	0	413	138	99	2	6			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	693	1500	0	0	678	563	159	3	144			
Arrive On Green	0.78	1.00	0.00	0.00	0.36	0.36	0.09	0.09	0.09			
Sat Flow, veh/h	1781	1870	0	0	1870	1552	1748	35	1585			
Grp Volume(v), veh/h	33	166	0	0	413	138	101	0	6			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1870	1552	1783	0	1585			
Q Serve(g_s), s	0.3	0.0	0.0	0.0	14.5	5.0	4.4	0.0	0.3			
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.0	14.5	5.0	4.4	0.0	0.3			
Prop In Lane	1.00		0.00	0.00		1.00	0.98		1.00			
Lane Grp Cap(c), veh/h	693	1500	0	0	678	563	162	0	144			
V/C Ratio(X)	0.05	0.11	0.00	0.00	0.61	0.25	0.62	0.00	0.04			
Avail Cap(c_a), veh/h	693	1500	0	0	678	563	490	0	436			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.99	0.99	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	5.4	0.0	0.0	0.0	20.9	17.8	35.1	0.0	33.2			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	4.0	1.0	1.5	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.0	0.0	6.1	1.7	1.9	0.0	0.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	0.1	0.0	0.0	24.9	18.9	36.5	0.0	33.2			
LnGrp LOS	A	A	A	A	C	B	D	A	C			
Approach Vol, veh/h		199			551			107				
Approach Delay, s/veh		1.0			23.4			36.3				
Approach LOS		A			C			D				
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	35.1	33.0				68.1		11.9				
Change Period (Y+Rc), s	4.0	* 4				4.0		4.6				
Max Green Setting (Gmax), s	15.0	* 29				49.0		22.0				
Max Q Clear Time (g_c+I1), s	2.3	16.5				2.0		6.4				
Green Ext Time (p_c), s	0.0	0.6				0.2		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			19.8									
HCM 6th LOS			B									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	92	2	13	430	7	12
Future Vol, veh/h	92	2	13	430	7	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	110	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	2	15	489	8	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	107	0	625	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	519	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1484	-	449	948
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	597	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1484	-	445	948
Mov Cap-2 Maneuver	-	-	-	-	445	-
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	597	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	445	948	-	-	1484	-
HCM Lane V/C Ratio	0.018	0.014	-	-	0.01	-
HCM Control Delay (s)	13.2	8.9	-	-	7.5	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-

Intersection	
Int Delay, s/veh	10.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	423	19	5	159	13	4
Future Vol, veh/h	423	19	5	159	13	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	455	20	5	171	14	4

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	123	91	0	0	176	0
Stage 1	91	-	-	-	-	-
Stage 2	32	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	872	967	-	-	1400	-
Stage 1	933	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	863	967	-	-	1400	-
Mov Cap-2 Maneuver	863	-	-	-	-	-
Stage 1	924	-	-	-	-	-
Stage 2	991	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	14.1		0		5.8	
HCM LOS	B					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	867	1400	-
HCM Lane V/C Ratio	-	-	0.548	0.01	-
HCM Control Delay (s)	-	-	14.1	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	3.4	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	171	97	197	316	110	75	35	96	53	50	44
Future Volume (veh/h)	37	171	97	197	316	110	75	35	96	53	50	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	182	0	210	336	98	80	37	0	56	53	18
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	2176		240	1887	542	102	137		73	76	26
Arrive On Green	0.03	0.61	0.00	0.13	0.69	0.69	0.06	0.07	0.00	0.04	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	1781	2724	782	1781	1870	1585	1781	1335	453
Grp Volume(v), veh/h	39	182	0	210	217	217	80	37	0	56	0	71
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1730	1781	1870	1585	1781	0	1789
Q Serve(g_s), s	2.8	2.7	0.0	15.0	5.6	5.7	5.8	2.4	0.0	4.0	0.0	5.1
Cycle Q Clear(g_c), s	2.8	2.7	0.0	15.0	5.6	5.7	5.8	2.4	0.0	4.0	0.0	5.1
Prop In Lane	1.00		1.00	1.00		0.45	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	62	2176		240	1231	1198	102	137		73	0	102
V/C Ratio(X)	0.63	0.08		0.88	0.18	0.18	0.79	0.27		0.77	0.00	0.70
Avail Cap(c_a), veh/h	206	2176		411	1231	1198	206	360		206	0	344
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.93	0.93	0.93	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	61.9	10.3	0.0	55.2	7.0	7.0	60.5	57.0	0.0	61.8	0.0	60.2
Incr Delay (d2), s/veh	10.0	0.1	0.0	9.7	0.3	0.3	12.6	1.1	0.0	15.7	0.0	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.1	0.0	7.5	2.2	2.2	3.0	1.2	0.0	2.2	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.9	10.4	0.0	64.9	7.3	7.3	73.1	58.0	0.0	77.5	0.0	68.6
LnGrp LOS	E	B		E	A	A	E	E		E	A	E
Approach Vol, veh/h		221	A		644			117	A		127	
Approach Delay, s/veh		21.2			26.1			68.3			72.5	
Approach LOS		C			C			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.0	84.2	13.4	11.4	10.5	94.7	11.3	13.5				
Change Period (Y+Rc), s	3.5	4.6	6.0	4.0	6.0	4.6	6.0	4.0				
Max Green Setting (Gmax), s	30.0	41.9	15.0	25.0	15.0	54.4	15.0	25.0				
Max Q Clear Time (g_c+I1), s	17.0	4.7	7.8	7.1	4.8	7.7	6.0	4.4				
Green Ext Time (p_c), s	0.5	1.2	0.1	0.3	0.0	3.1	0.1	0.1				
Intersection Summary												
HCM 6th Ctrl Delay			34.9									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	52	268	480	123	142	143
Future Volume (veh/h)	52	268	480	123	142	143
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	57	291	522	0	154	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	136	1776	1010		351	
Arrive On Green	0.08	0.50	0.28	0.00	0.20	0.00
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	57	291	522	0	154	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.9	1.3	3.5	0.0	2.2	0.0
Cycle Q Clear(g_c), s	0.9	1.3	3.5	0.0	2.2	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	136	1776	1010		351	
V/C Ratio(X)	0.42	0.16	0.52		0.44	
Avail Cap(c_a), veh/h	1551	6190	6190		2172	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	12.6	3.9	8.6	0.0	10.1	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.2	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	0.9	0.0	0.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.4	3.9	8.8	0.0	10.4	0.0
LnGrp LOS	B	A	A		B	
Approach Vol, veh/h		348	522	A	154	A
Approach Delay, s/veh		5.5	8.8		10.4	
Approach LOS		A	A		B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		18.9		9.8	6.2	12.8
Change Period (Y+Rc), s		4.6		4.1	4.0	4.6
Max Green Setting (Gmax), s		50.0		35.0	25.0	50.0
Max Q Clear Time (g_c+I1), s		3.3		4.2	2.9	5.5
Green Ext Time (p_c), s		0.8		0.1	0.0	1.6
Intersection Summary						
HCM 6th Ctrl Delay			7.9			
HCM 6th LOS			A			

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	34	128	1	16	0	127	60	2	2	101	434
Future Volume (veh/h)	205	34	128	1	16	0	127	60	2	2	101	434
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	0.89	1.00	1.00	1.00	0.89	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	211	35	30	1	16	0	131	62	1	2	104	99
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	346	293	3	56	0	201	499	8	6	366	303
Arrive On Green	0.19	0.19	0.19	0.04	0.04	0.00	0.11	0.31	0.31	0.00	0.20	0.20
Sat Flow, veh/h	1781	1870	1585	98	1562	0	1781	1633	26	1781	1870	1546
Grp Volume(v), veh/h	211	35	30	17	0	0	131	0	63	2	104	99
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1660	0	0	1781	0	1660	1781	1870	1546
Q Serve(g_s), s	4.5	0.6	0.7	0.4	0.0	0.0	2.9	0.0	1.1	0.0	2.0	2.3
Cycle Q Clear(g_c), s	4.5	0.6	0.7	0.4	0.0	0.0	2.9	0.0	1.1	0.0	2.0	2.3
Prop In Lane	1.00		1.00	0.06		0.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	330	346	293	59	0	0	201	0	507	6	366	303
V/C Ratio(X)	0.64	0.10	0.10	0.29	0.00	0.00	0.65	0.00	0.12	0.34	0.28	0.33
Avail Cap(c_a), veh/h	1935	2031	1722	481	0	0	1505	0	1202	645	1354	1120
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.6	14.0	14.0	19.5	0.0	0.0	17.6	0.0	10.4	20.6	14.2	14.3
Incr Delay (d2), s/veh	0.8	0.0	0.1	1.0	0.0	0.0	1.3	0.0	0.0	12.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.2	0.2	0.2	0.0	0.0	1.1	0.0	0.4	0.0	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	14.1	14.1	20.4	0.0	0.0	18.9	0.0	10.4	32.8	14.3	14.5
LnGrp LOS	B	B	B	C	A	A	B	A	B	C	B	B
Approach Vol, veh/h		276			17			194			205	
Approach Delay, s/veh		15.8			20.4			16.2			14.6	
Approach LOS		B			C			B			B	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	3.6	18.1	7.0	8.2	13.6	12.7
Change Period (Y+Rc), s	3.5	5.5	5.5	3.5	5.5	5.0
Max Green Setting (Gmax), s	15.0	30.0	12.0	35.0	30.0	45.0
Max Q Clear Time (g_c+I1), s	2.0	3.1	2.4	4.9	4.3	6.5
Green Ext Time (p_c), s	0.0	0.1	0.0	0.1	0.3	0.2

Intersection Summary	
HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	168	28	4	361	23	33	25	5	23	27	160
Future Volume (veh/h)	81	168	28	4	361	23	33	25	5	23	27	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	177	26	4	380	22	35	26	0	24	28	45
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	584	86	6	513	30	178	187	0	114	133	305
Arrive On Green	0.06	0.37	0.37	0.00	0.29	0.29	0.10	0.10	0.00	0.14	0.14	0.14
Sat Flow, veh/h	1781	1594	234	1781	1751	101	1781	1870	0	844	984	1551
Grp Volume(v), veh/h	85	0	203	4	0	402	35	26	0	52	0	45
Grp Sat Flow(s),veh/h/ln	1781	0	1828	1781	0	1852	1781	1870	0	1828	0	1551
Q Serve(g_s), s	1.8	0.0	3.0	0.1	0.0	7.4	0.7	0.5	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	1.8	0.0	3.0	0.1	0.0	7.4	0.7	0.5	0.0	1.0	0.0	0.0
Prop In Lane	1.00		0.13	1.00		0.05	1.00		0.00	0.46		1.00
Lane Grp Cap(c), veh/h	108	0	669	6	0	543	178	187	0	247	0	305
V/C Ratio(X)	0.79	0.00	0.30	0.69	0.00	0.74	0.20	0.14	0.00	0.21	0.00	0.15
Avail Cap(c_a), veh/h	1174	0	1446	705	0	1465	940	986	0	964	0	914
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.6	0.0	8.6	18.9	0.0	12.1	15.7	15.6	0.0	14.6	0.0	12.6
Incr Delay (d2), s/veh	4.8	0.0	0.1	42.1	0.0	0.8	0.2	0.1	0.0	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.9	0.1	0.0	2.6	0.3	0.2	0.0	0.4	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	0.0	8.7	61.0	0.0	12.9	15.9	15.7	0.0	14.8	0.0	12.7
LnGrp LOS	C	A	A	E	A	B	B	B	A	B	A	B
Approach Vol, veh/h		288			406			61			97	
Approach Delay, s/veh		12.7			13.3			15.8			13.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	15.3		7.4	3.7	18.1		8.7
Change Period (Y+Rc), s	* 4.2	* 4.2		3.6	3.6	* 4.2		3.6
Max Green Setting (Gmax), s	* 25	* 30		20.0	15.0	* 30		20.0
Max Q Clear Time (g_c+I1), s	3.8	9.4		2.7	2.1	5.0		3.0
Green Ext Time (p_c), s	0.1	1.7		0.1	0.0	0.8		0.2

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	11	8	67	28	285	14	136	17	109	90	2
Future Vol, veh/h	10	11	8	67	28	285	14	136	17	109	90	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	12	8	71	29	300	15	143	18	115	95	2
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	1
HCM Control Delay	9.8	11.4	10.9	10.9
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	34%	71%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	38%	29%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	28%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	14	136	17	29	95	285	109	90	2
LT Vol	14	0	0	10	67	0	109	0	0
Through Vol	0	136	0	11	28	0	0	90	0
RT Vol	0	0	17	8	0	285	0	0	2
Lane Flow Rate	15	143	18	31	100	300	115	95	2
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.028	0.254	0.028	0.056	0.173	0.431	0.216	0.165	0.003
Departure Headway (Hd)	6.886	6.379	5.667	6.621	6.218	5.167	6.791	6.283	5.572
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	520	563	631	540	578	696	529	571	642
Service Time	4.625	4.117	3.406	4.369	3.949	2.897	4.529	4.021	3.31
HCM Lane V/C Ratio	0.029	0.254	0.029	0.057	0.173	0.431	0.217	0.166	0.003
HCM Control Delay	9.8	11.3	8.6	9.8	10.3	11.8	11.4	10.3	8.3
HCM Lane LOS	A	B	A	A	B	B	B	B	A
HCM 95th-tile Q	0.1	1	0.1	0.2	0.6	2.2	0.8	0.6	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	156	52	163	160	272	0	0	0	145	120	69
Future Volume (vph)	73	156	52	163	160	272	0	0	0	145	120	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.91					1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1687					1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1687					1770	1863	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	75	161	54	168	165	280	0	0	0	149	124	71
RTOR Reduction (vph)	0	0	31	0	50	0	0	0	0	0	0	61
Lane Group Flow (vph)	75	161	23	168	395	0	0	0	0	149	124	10
Turn Type	Prot	NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases	1	6		5 7	2 7					8	8	
Permitted Phases			6									8
Actuated Green, G (s)	7.7	38.3	38.3	27.1	58.2					12.6	12.6	12.6
Effective Green, g (s)	7.7	38.3	38.3	27.1	58.2					12.6	12.6	12.6
Actuated g/C Ratio	0.09	0.43	0.43	0.30	0.65					0.14	0.14	0.14
Clearance Time (s)	3.5	4.0	4.0							4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0							1.0	1.0	1.0
Lane Grp Cap (vph)	151	792	673	532	1090					247	260	221
v/s Ratio Prot	c0.04	0.09		0.09	c0.23					c0.08	0.07	
v/s Ratio Perm			0.01									0.01
v/c Ratio	0.50	0.20	0.03	0.32	0.36					0.60	0.48	0.04
Uniform Delay, d1	39.3	16.3	15.1	24.3	7.3					36.4	35.7	33.5
Progression Factor	1.00	1.00	1.00	0.81	0.34					1.00	1.00	1.00
Incremental Delay, d2	0.9	0.6	0.1	0.1	0.1					2.8	0.5	0.0
Delay (s)	40.2	16.8	15.2	19.8	2.6					39.2	36.2	33.5
Level of Service	D	B	B	B	A					D	D	C
Approach Delay (s)		22.6			7.3			0.0			36.9	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑↑					↰		↱
Traffic Volume (vph)	0	301	0	0	514	0	0	0	0	109	0	81
Future Volume (vph)	0	301	0	0	514	0	0	0	0	109	0	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			4.0					4.0		4.0
Lane Util. Factor		1.00			0.95					1.00		1.00
Frt		1.00			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		1863			3539					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		1863			3539					1770		1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	310	0	0	530	0	0	0	0	112	0	84
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	75
Lane Group Flow (vph)	0	310	0	0	530	0	0	0	0	112	0	9
Turn Type		NA			NA					Prot		Perm
Protected Phases		1 2 6 8			2					7		
Permitted Phases												7
Actuated Green, G (s)		71.9			44.1					10.1		10.1
Effective Green, g (s)		67.9			44.1					10.1		10.1
Actuated g/C Ratio		0.75			0.49					0.11		0.11
Clearance Time (s)					4.0					4.0		4.0
Vehicle Extension (s)					1.0					1.0		1.0
Lane Grp Cap (vph)		1405			1734					198		177
v/s Ratio Prot		c0.17			c0.15					c0.06		
v/s Ratio Perm												0.01
v/c Ratio		0.22			0.31					0.57		0.05
Uniform Delay, d1		3.3			13.8					37.9		35.7
Progression Factor		0.03			1.00					1.00		1.00
Incremental Delay, d2		0.0			0.5					2.2		0.0
Delay (s)		0.1			14.2					40.1		35.7
Level of Service		A			B					D		D
Approach Delay (s)		0.1			14.2			0.0			38.2	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	28.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	351	0	0	349	232	165	2	326	0	0	0
Future Volume (veh/h)	59	351	0	0	349	232	165	2	326	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	63	377	0	0	375	119	177	2	31			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	898	1434	0	0	397	337	222	3	199			
Arrive On Green	0.50	0.77	0.00	0.00	0.21	0.21	0.13	0.13	0.13			
Sat Flow, veh/h	1781	1870	0	0	1870	1585	1762	20	1585			
Grp Volume(v), veh/h	63	377	0	0	375	119	179	0	31			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1870	1585	1782	0	1585			
Q Serve(g_s), s	1.5	4.7	0.0	0.0	15.8	5.1	7.8	0.0	1.4			
Cycle Q Clear(g_c), s	1.5	4.7	0.0	0.0	15.8	5.1	7.8	0.0	1.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	898	1434	0	0	397	337	224	0	199			
V/C Ratio(X)	0.07	0.26	0.00	0.00	0.94	0.35	0.80	0.00	0.16			
Avail Cap(c_a), veh/h	898	1434	0	0	397	337	668	0	594			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.96	0.96	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.2	2.7	0.0	0.0	31.0	26.8	34.0	0.0	31.2			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	32.9	2.9	2.5	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.5	0.7	0.0	0.0	9.9	2.0	3.4	0.0	0.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.2	3.2	0.0	0.0	64.0	29.7	36.4	0.0	31.3			
LnGrp LOS	B	A	A	A	E	C	D	A	C			
Approach Vol, veh/h		440			494			210				
Approach Delay, s/veh		4.2			55.7			35.7				
Approach LOS		A			E			D				
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	44.3	21.0				65.3		14.7				
Change Period (Y+Rc), s	4.0	* 4				4.0		4.6				
Max Green Setting (Gmax), s	19.0	* 17				41.0		30.0				
Max Q Clear Time (g_c+I1), s	3.5	17.8				6.7		9.8				
Green Ext Time (p_c), s	0.0	0.0				0.5		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	32.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	489	23	9	172	7	18
Future Vol, veh/h	489	23	9	172	7	18
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	110	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	562	26	10	198	8	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	588	0	794	575
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	219	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	987	-	357	518
Stage 1	-	-	-	-	563	-
Stage 2	-	-	-	-	817	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	987	-	353	518
Mov Cap-2 Maneuver	-	-	-	-	353	-
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	816	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	353	518	-	-	987	-
HCM Lane V/C Ratio	0.023	0.04	-	-	0.01	-
HCM Control Delay (s)	15.4	12.2	-	-	8.7	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	5.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	242	23	13	540	37	19
Future Vol, veh/h	242	23	13	540	37	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	260	25	14	581	40	20

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	405	305	0	0	595	0
Stage 1	305	-	-	-	-	-
Stage 2	100	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	602	735	-	-	981	-
Stage 1	748	-	-	-	-	-
Stage 2	924	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	577	735	-	-	981	-
Mov Cap-2 Maneuver	577	-	-	-	-	-
Stage 1	717	-	-	-	-	-
Stage 2	924	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.7	0	5.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	588	981	-
HCM Lane V/C Ratio	-	-	0.485	0.041	-
HCM Control Delay (s)	-	-	16.7	8.8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.6	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	452	122	150	345	182	65	51	156	173	93	72
Future Volume (veh/h)	92	452	122	150	345	182	65	51	156	173	93	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	471	0	156	359	146	68	53	0	180	97	51
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	2096		185	1504	602	87	98		204	136	72
Arrive On Green	0.07	0.59	0.00	0.10	0.61	0.61	0.05	0.05	0.00	0.11	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	2477	992	1781	1870	1585	1781	1154	607
Grp Volume(v), veh/h	96	471	0	156	256	249	68	53	0	180	0	148
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1692	1781	1870	1585	1781	0	1761
Q Serve(g_s), s	6.9	8.1	0.0	11.2	8.6	8.8	4.9	3.6	0.0	12.9	0.0	10.5
Cycle Q Clear(g_c), s	6.9	8.1	0.0	11.2	8.6	8.8	4.9	3.6	0.0	12.9	0.0	10.5
Prop In Lane	1.00		1.00	1.00		0.59	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	119	2096		185	1079	1027	87	98		204	0	208
V/C Ratio(X)	0.80	0.22		0.84	0.24	0.24	0.78	0.54		0.88	0.00	0.71
Avail Cap(c_a), veh/h	206	2096		411	1079	1027	206	360		206	0	339
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.86	0.86	0.86	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.8	12.6	0.0	57.2	11.7	11.8	61.1	60.1	0.0	56.7	0.0	55.2
Incr Delay (d2), s/veh	11.7	0.2	0.0	8.7	0.4	0.5	13.7	4.6	0.0	32.6	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	3.3	0.0	5.5	3.6	3.5	2.6	1.8	0.0	7.7	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.5	12.9	0.0	65.9	12.2	12.2	74.8	64.6	0.0	89.2	0.0	59.6
LnGrp LOS	E	B		E	B	B	E	E		F	A	E
Approach Vol, veh/h		567	A		661			121	A		328	
Approach Delay, s/veh		22.8			24.9			70.4			75.9	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	81.3	12.4	19.4	14.7	83.5	20.9	10.8
Change Period (Y+Rc), s	3.5	4.6	6.0	4.0	6.0	4.6	6.0	4.0
Max Green Setting (Gmax), s	30.0	41.9	15.0	25.0	15.0	54.4	15.0	25.0
Max Q Clear Time (g_c+I1), s	13.2	10.1	6.9	12.5	8.9	10.8	14.9	5.6
Green Ext Time (p_c), s	0.4	3.4	0.1	0.6	0.1	3.7	0.0	0.2

Intersection Summary			
HCM 6th Ctrl Delay			37.4
HCM 6th LOS			D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	183	599	487	168	319	190
Future Volume (veh/h)	183	599	487	168	319	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	193	631	513	0	336	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	265	1816	867		413	
Arrive On Green	0.15	0.51	0.24	0.00	0.23	0.00
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	193	631	513	0	336	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	3.5	3.6	4.3	0.0	6.0	0.0
Cycle Q Clear(g_c), s	3.5	3.6	4.3	0.0	6.0	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	265	1816	867		413	
V/C Ratio(X)	0.73	0.35	0.59		0.81	
Avail Cap(c_a), veh/h	1318	5258	5258		1845	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	13.7	4.9	11.3	0.0	12.3	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.2	0.0	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.7	1.4	0.0	2.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.2	5.0	11.5	0.0	13.8	0.0
LnGrp LOS	B	A	B		B	
Approach Vol, veh/h		824	513	A	336	A
Approach Delay, s/veh		7.4	11.5		13.8	
Approach LOS		A	B		B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		21.9		11.9	9.0	12.8
Change Period (Y+Rc), s		4.6		4.1	4.0	4.6
Max Green Setting (Gmax), s		50.0		35.0	25.0	50.0
Max Q Clear Time (g_c+I1), s		5.6		8.0	5.5	6.3
Green Ext Time (p_c), s		1.8		0.1	0.1	1.5
Intersection Summary						
HCM 6th Ctrl Delay			9.9			
HCM 6th LOS			A			

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	534	85	190	7	58	7	236	157	19	3	106	316
Future Volume (veh/h)	534	85	190	7	58	7	236	157	19	3	106	316
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	551	88	98	7	60	5	243	162	16	3	109	32
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	590	619	777	25	211	18	284	384	38	9	193	164
Arrive On Green	0.33	0.33	0.33	0.15	0.15	0.15	0.16	0.26	0.26	0.00	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	159	1363	114	1781	1489	147	1781	1870	1585
Grp Volume(v), veh/h	551	88	98	72	0	0	243	0	178	3	109	32
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1636	0	0	1781	0	1637	1781	1870	1585
Q Serve(g_s), s	23.2	2.6	2.6	3.0	0.0	0.0	10.3	0.0	7.0	0.1	4.3	1.4
Cycle Q Clear(g_c), s	23.2	2.6	2.6	3.0	0.0	0.0	10.3	0.0	7.0	0.1	4.3	1.4
Prop In Lane	1.00		1.00	0.10		0.07	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	590	619	777	253	0	0	284	0	422	9	193	164
V/C Ratio(X)	0.93	0.14	0.13	0.28	0.00	0.00	0.86	0.00	0.42	0.35	0.56	0.20
Avail Cap(c_a), veh/h	1035	1086	1173	253	0	0	805	0	634	345	724	614
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	18.2	10.7	28.9	0.0	0.0	31.7	0.0	24.0	38.4	33.1	31.8
Incr Delay (d2), s/veh	5.2	0.0	0.0	2.8	0.0	0.0	2.9	0.0	0.2	8.6	1.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	1.1	0.8	1.4	0.0	0.0	4.6	0.0	2.7	0.1	2.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	18.2	10.8	31.7	0.0	0.0	34.6	0.0	24.2	47.1	34.0	32.0
LnGrp LOS	C	B	B	C	A	A	C	A	C	D	C	C
Approach Vol, veh/h		737			72			421			144	
Approach Delay, s/veh		26.3			31.7			30.2			33.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	3.9	25.5		17.5	15.8	13.5		30.6
Change Period (Y+Rc), s	3.5	5.5		5.5	3.5	5.5		5.0
Max Green Setting (Gmax), s	15.0	30.0		12.0	35.0	30.0		45.0
Max Q Clear Time (g_c+I1), s	2.1	9.0		5.0	12.3	6.3		25.2
Green Ext Time (p_c), s	0.0	0.4		0.1	0.1	0.2		0.4

Intersection Summary	
HCM 6th Ctrl Delay	28.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	458	29	1	261	34	43	34	12	65	29	162
Future Volume (veh/h)	226	458	29	1	261	34	43	34	12	65	29	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	240	487	30	1	278	32	46	36	0	69	31	66
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	715	44	4	374	43	201	211	0	190	85	513
Arrive On Green	0.17	0.41	0.41	0.00	0.23	0.23	0.11	0.11	0.00	0.15	0.15	0.15
Sat Flow, veh/h	1781	1744	107	1781	1647	190	1781	1870	0	1248	560	1585
Grp Volume(v), veh/h	240	0	517	1	0	310	46	36	0	100	0	66
Grp Sat Flow(s),veh/h/ln	1781	0	1851	1781	0	1836	1781	1870	0	1808	0	1585
Q Serve(g_s), s	6.0	0.0	10.6	0.0	0.0	7.3	1.1	0.8	0.0	2.3	0.0	0.0
Cycle Q Clear(g_c), s	6.0	0.0	10.6	0.0	0.0	7.3	1.1	0.8	0.0	2.3	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.10	1.00		0.00	0.69		1.00
Lane Grp Cap(c), veh/h	305	0	759	4	0	417	201	211	0	276	0	513
V/C Ratio(X)	0.79	0.00	0.68	0.26	0.00	0.74	0.23	0.17	0.00	0.36	0.00	0.13
Avail Cap(c_a), veh/h	962	0	1200	577	0	1190	770	808	0	781	0	956
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	0.0	11.2	23.1	0.0	16.6	18.7	18.6	0.0	17.6	0.0	11.1
Incr Delay (d2), s/veh	1.7	0.0	0.4	12.7	0.0	1.0	0.2	0.1	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	3.6	0.0	0.0	2.8	0.4	0.3	0.0	0.9	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	0.0	11.6	35.8	0.0	17.6	18.9	18.7	0.0	17.9	0.0	11.1
LnGrp LOS	C	A	B	D	A	B	B	B	A	B	A	B
Approach Vol, veh/h		757			311			82			166	
Approach Delay, s/veh		14.3			17.7			18.8			15.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.1	14.7		8.8	3.6	23.2		10.7
Change Period (Y+Rc), s	* 4.2	* 4.2		3.6	3.6	* 4.2		3.6
Max Green Setting (Gmax), s	* 25	* 30		20.0	15.0	* 30		20.0
Max Q Clear Time (g_c+I1), s	8.0	9.3		3.1	2.0	12.6		4.3
Green Ext Time (p_c), s	0.3	1.2		0.1	0.0	2.2		0.4

Intersection Summary	
HCM 6th Ctrl Delay	15.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	19.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	3	36	9	28	13	160	12	146	80	3	398	221	7
Future Vol, veh/h	3	36	9	28	13	160	12	146	80	3	398	221	7
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	39	10	30	14	172	13	157	86	3	428	238	8
Number of Lanes	0	1	0	0	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	1
HCM Control Delay	11.6	12.4	12.2	25.6
HCM LOS	B	B	B	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	6%	68%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	75%	32%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	19%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	146	80	48	41	160	401	221	7
LT Vol	12	0	0	3	28	0	401	0	0
Through Vol	0	146	0	36	13	0	0	221	0
RT Vol	0	0	80	9	0	160	0	0	7
Lane Flow Rate	13	157	86	52	44	172	431	238	8
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.028	0.316	0.156	0.113	0.096	0.325	0.81	0.413	0.012
Departure Headway (Hd)	7.76	7.251	6.538	7.859	7.838	6.791	6.764	6.357	5.548
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	463	498	551	458	459	532	530	570	638
Service Time	5.473	4.963	4.25	5.579	5.548	4.501	4.564	4.057	3.347
HCM Lane V/C Ratio	0.028	0.315	0.156	0.114	0.096	0.323	0.813	0.418	0.013
HCM Control Delay	10.7	13.3	10.5	11.6	11.4	12.7	32.6	13.5	8.4
HCM Lane LOS	B	B	B	B	B	B	D	B	A
HCM 95th-tile Q	0.1	1.3	0.5	0.4	0.3	1.4	7.8	2	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	147	58	274	147	215	0	0	0	110	131	78
Future Volume (vph)	74	147	58	274	147	215	0	0	0	110	131	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.91					1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1697					1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1697					1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	77	153	60	285	153	224	0	0	0	115	136	81
RTOR Reduction (vph)	0	0	33	0	49	0	0	0	0	0	0	69
Lane Group Flow (vph)	77	153	27	285	328	0	0	0	0	115	136	12
Turn Type	Prot	NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases	1	6		5 7	2 7					8	8	
Permitted Phases			6									8
Actuated Green, G (s)	7.0	35.2	35.2	20.7	49.4					11.6	11.6	11.6
Effective Green, g (s)	7.0	35.2	35.2	20.7	49.4					11.6	11.6	11.6
Actuated g/C Ratio	0.09	0.44	0.44	0.26	0.62					0.15	0.15	0.15
Clearance Time (s)	3.5	4.0	4.0							4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0							1.0	1.0	1.0
Lane Grp Cap (vph)	155	824	700	460	1054					258	271	230
v/s Ratio Prot	c0.04	0.08		c0.16	c0.19					0.06	c0.07	
v/s Ratio Perm			0.02									0.01
v/c Ratio	0.50	0.19	0.04	0.62	0.31					0.45	0.50	0.05
Uniform Delay, d1	34.6	13.4	12.6	25.9	7.1					31.0	31.3	29.2
Progression Factor	1.00	1.00	1.00	0.85	0.19					1.00	1.00	1.00
Incremental Delay, d2	0.9	0.5	0.1	1.7	0.1					0.4	0.5	0.0
Delay (s)	35.5	13.9	12.7	23.7	1.4					31.5	31.8	29.2
Level of Service	D	B	B	C	A					C	C	C
Approach Delay (s)		19.4			11.0			0.0			31.1	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	257	0	0	559	0	0	0	0	140	0	77
Future Volume (vph)	0	257	0	0	559	0	0	0	0	140	0	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			4.0					4.0		4.0
Lane Util. Factor		1.00			0.95					1.00		1.00
Frt		1.00			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		1863			3539					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		1863			3539					1770		1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	268	0	0	582	0	0	0	0	146	0	80
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	70
Lane Group Flow (vph)	0	268	0	0	582	0	0	0	0	146	0	10
Turn Type		NA			NA					Prot		Perm
Protected Phases		1 2 6 8			2					7		
Permitted Phases												7
Actuated Green, G (s)		61.3			35.2					10.2		10.2
Effective Green, g (s)		57.3			35.2					10.2		10.2
Actuated g/C Ratio		0.72			0.44					0.13		0.13
Clearance Time (s)					4.0					4.0		4.0
Vehicle Extension (s)					1.0					1.0		1.0
Lane Grp Cap (vph)		1342			1566					227		203
v/s Ratio Prot		c0.14			c0.16					c0.08		
v/s Ratio Perm												0.01
v/c Ratio		0.20			0.37					0.64		0.05
Uniform Delay, d1		3.6			14.8					32.9		30.4
Progression Factor		0.02			1.00					1.00		1.00
Incremental Delay, d2		0.0			0.7					4.6		0.0
Delay (s)		0.1			15.5					37.5		30.4
Level of Service		A			B					D		C
Approach Delay (s)		0.1			15.5			0.0			35.0	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	29.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	350	0	0	456	237	103	0	322	0	0	0
Future Volume (veh/h)	47	350	0	0	456	237	103	0	322	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	48	361	0	0	470	150	106	0	31			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	685	1491	0	0	678	562	170	0	151			
Arrive On Green	0.77	1.00	0.00	0.00	0.36	0.36	0.10	0.00	0.10			
Sat Flow, veh/h	1781	1870	0	0	1870	1550	1781	0	1585			
Grp Volume(v), veh/h	48	361	0	0	470	150	106	0	31			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1870	1550	1781	0	1585			
Q Serve(g_s), s	0.5	0.0	0.0	0.0	17.1	5.5	4.6	0.0	1.4			
Cycle Q Clear(g_c), s	0.5	0.0	0.0	0.0	17.1	5.5	4.6	0.0	1.4			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	685	1491	0	0	678	562	170	0	151			
V/C Ratio(X)	0.07	0.24	0.00	0.00	0.69	0.27	0.62	0.00	0.21			
Avail Cap(c_a), veh/h	685	1491	0	0	678	562	490	0	436			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.95	0.95	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	5.7	0.0	0.0	0.0	21.7	18.0	34.5	0.0	33.4			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	5.8	1.2	1.4	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.0	0.0	7.4	1.9	2.0	0.0	0.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.7	0.4	0.0	0.0	27.5	19.2	35.9	0.0	33.6			
LnGrp LOS	A	A	A	A	C	B	D	A	C			
Approach Vol, veh/h		409			620			137				
Approach Delay, s/veh		1.0			25.5			35.4				
Approach LOS		A			C			D				
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	34.8	33.0				67.8		12.2				
Change Period (Y+Rc), s	4.0	* 4				4.0		4.6				
Max Green Setting (Gmax), s	15.0	* 29				49.0		22.0				
Max Q Clear Time (g_c+I1), s	2.5	19.1				2.0		6.6				
Green Ext Time (p_c), s	0.0	0.6				0.5		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			18.0									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	0.7					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	268	25	10	309	19	16
Future Vol, veh/h	268	25	10	309	19	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	110	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	282	26	11	325	20	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	308	0	642	295
Stage 1	-	-	-	-	295	-
Stage 2	-	-	-	-	347	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1253	-	438	744
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1253	-	434	744
Mov Cap-2 Maneuver	-	-	-	-	434	-
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	716	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	434	744	-	-	1253	-
HCM Lane V/C Ratio	0.046	0.023	-	-	0.008	-
HCM Control Delay (s)	13.7	10	-	-	7.9	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	8.6					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	347	33	46	307	35	29
Future Vol, veh/h	347	33	46	307	35	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	358	34	47	316	36	30

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	307	205	0	0	363	0
Stage 1	205	-	-	-	-	-
Stage 2	102	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	685	836	-	-	1196	-
Stage 1	829	-	-	-	-	-
Stage 2	922	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	664	836	-	-	1196	-
Mov Cap-2 Maneuver	664	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	922	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.4	0	4.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	676	1196	-
HCM Lane V/C Ratio	-	-	0.58	0.03	-
HCM Control Delay (s)	-	-	17.4	8.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	3.7	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	98	316	90	185	342	185	1	75	90	117	130	100
Future Volume (veh/h)	98	316	90	185	342	185	1	75	90	117	130	100
Initial Q (Qb), veh	0	0	0	0	0	0		0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98		1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No				No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	326	0	191	353	144		77	93	0	134	103
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	125	2017		221	1481	593		98	149		159	122
Arrive On Green	0.07	0.57	0.00	0.12	0.60	0.60		0.06	0.08	0.00	0.09	0.11
Sat Flow, veh/h	1781	3554	1585	1781	2459	984		1781	1870	1585	1781	1072
Grp Volume(v), veh/h	101	326	0	191	253	244		77	93	0	134	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1667		1781	1870	1585	1781	0
Q Serve(g_s), s	7.3	5.7	0.0	13.7	8.6	8.9		5.6	6.3	0.0	9.6	0.0
Cycle Q Clear(g_c), s	7.3	5.7	0.0	13.7	8.6	8.9		5.6	6.3	0.0	9.6	0.0
Prop In Lane	1.00		1.00	1.00		0.59		1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	125	2017		221	1070	1004		98	149		159	0
V/C Ratio(X)	0.81	0.16		0.87	0.24	0.24		0.79	0.62		0.84	0.00
Avail Cap(c_a), veh/h	206	2017		411	1070	1004		206	360		206	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.86	0.86	0.86		1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	59.6	13.4	0.0	55.9	12.0	12.1		60.7	57.9	0.0	58.3	0.0
Incr Delay (d2), s/veh	11.6	0.2	0.0	8.5	0.4	0.5		12.8	4.2	0.0	21.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	2.3	0.0	6.7	3.6	3.5		2.9	3.2	0.0	5.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.2	13.6	0.0	64.4	12.4	12.5		73.5	62.1	0.0	79.2	0.0
LnGrp LOS	E	B		E	B	B		E	E		E	A
Approach Vol, veh/h		427	A		688				170	A		302
Approach Delay, s/veh		27.2			26.9				67.3			71.6
Approach LOS		C			C				E			E

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	78.4	13.2	18.9	15.1	82.9	17.6	14.4
Change Period (Y+Rc), s	3.5	4.6	6.0	4.0	6.0	4.6	6.0	4.0
Max Green Setting (Gmax), s	30.0	41.9	15.0	25.0	15.0	54.4	15.0	25.0
Max Q Clear Time (g_c+I1), s	15.7	7.7	7.6	14.2	9.3	10.9	11.6	8.3
Green Ext Time (p_c), s	0.4	2.3	0.1	0.6	0.1	3.7	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	88
Future Volume (veh/h)	88
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	65
Peak Hour Factor	0.97
Percent Heavy Veh, %	2
Cap, veh/h	77
Arrive On Green	0.11
Sat Flow, veh/h	677
Grp Volume(v), veh/h	168
Grp Sat Flow(s),veh/h/ln	1749
Q Serve(g_s), s	12.2
Cycle Q Clear(g_c), s	12.2
Prop In Lane	0.39
Lane Grp Cap(c), veh/h	200
V/C Ratio(X)	0.84
Avail Cap(c_a), veh/h	336
HCM Platoon Ratio	1.00
Upstream Filter(I)	1.00
Uniform Delay (d), s/veh	56.4
Incr Delay (d2), s/veh	9.1
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	6.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	65.5
LnGrp LOS	E
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	422	568	143	203	144
Future Volume (veh/h)	141	422	568	143	203	144
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	444	598	0	214	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	241	1867	952		373	
Arrive On Green	0.14	0.53	0.27	0.00	0.21	0.00
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	148	444	598	0	214	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	2.6	2.2	4.9	0.0	3.5	0.0
Cycle Q Clear(g_c), s	2.6	2.2	4.9	0.0	3.5	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	241	1867	952		373	
V/C Ratio(X)	0.61	0.24	0.63		0.57	
Avail Cap(c_a), veh/h	1358	5420	5420		1902	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	13.4	4.2	10.6	0.0	11.6	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.3	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.4	1.5	0.0	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.3	4.2	10.8	0.0	12.2	0.0
LnGrp LOS	B	A	B		B	
Approach Vol, veh/h		592	598	A	214	A
Approach Delay, s/veh		6.8	10.8		12.2	
Approach LOS		A	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		21.8		11.0	8.4	13.4
Change Period (Y+Rc), s		4.6		4.1	4.0	4.6
Max Green Setting (Gmax), s		50.0		35.0	25.0	50.0
Max Q Clear Time (g_c+I1), s		4.2		5.5	4.6	6.9
Green Ext Time (p_c), s		1.2		0.1	0.1	1.8

Intersection Summary	
HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	348	52	167	11	35	13	216	129	14	4	155	413
Future Volume (veh/h)	348	52	167	11	35	13	216	129	14	4	155	413
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	374	56	68	12	38	8	232	139	12	4	167	56
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	425	446	624	60	189	40	278	427	37	11	250	208
Arrive On Green	0.24	0.24	0.24	0.20	0.18	0.18	0.16	0.28	0.28	0.01	0.13	0.13
Sat Flow, veh/h	1781	1870	1582	332	1052	222	1781	1510	130	1781	1870	1555
Grp Volume(v), veh/h	374	56	68	58	0	0	232	0	151	4	167	56
Grp Sat Flow(s),veh/h/ln	1781	1870	1582	1606	0	0	1781	0	1640	1781	1870	1555
Q Serve(g_s), s	13.5	1.6	1.8	2.0	0.0	0.0	8.4	0.0	4.8	0.1	5.7	2.2
Cycle Q Clear(g_c), s	13.5	1.6	1.8	2.0	0.0	0.0	8.4	0.0	4.8	0.1	5.7	2.2
Prop In Lane	1.00		1.00	0.21		0.14	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	425	446	624	289	0	0	278	0	464	11	250	208
V/C Ratio(X)	0.88	0.13	0.11	0.20	0.00	0.00	0.84	0.00	0.33	0.35	0.67	0.27
Avail Cap(c_a), veh/h	1202	1262	1314	289	0	0	935	0	738	401	841	700
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	19.9	12.8	23.1	0.0	0.0	27.3	0.0	18.9	33.0	27.5	26.0
Incr Delay (d2), s/veh	2.4	0.0	0.0	1.6	0.0	0.0	2.6	0.0	0.1	6.6	1.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.7	0.6	0.9	0.0	0.0	3.7	0.0	1.8	0.1	2.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	20.0	12.8	24.7	0.0	0.0	29.9	0.0	19.0	39.6	28.6	26.2
LnGrp LOS	C	B	B	C	A	A	C	A	B	D	C	C
Approach Vol, veh/h		498			58			383			227	
Approach Delay, s/veh		24.2			24.7			25.6			28.2	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	3.9	24.4		17.5	13.9	14.4		20.9
Change Period (Y+Rc), s	3.5	5.5		5.5	3.5	5.5		5.0
Max Green Setting (Gmax), s	15.0	30.0		12.0	35.0	30.0		45.0
Max Q Clear Time (g_c+I1), s	2.1	6.8		4.0	10.4	7.7		15.5
Green Ext Time (p_c), s	0.0	0.3		0.0	0.1	0.4		0.3

Intersection Summary	
HCM 6th Ctrl Delay	25.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	337	20	0	367	22	35	20	5	31	15	202
Future Volume (veh/h)	154	337	20	0	367	22	35	20	5	31	15	202
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	351	20	0	382	21	36	21	0	32	16	62
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	880	50	4	501	28	164	173	0	165	83	404
Arrive On Green	0.12	0.50	0.50	0.00	0.29	0.29	0.09	0.09	0.00	0.13	0.14	0.14
Sat Flow, veh/h	1781	1753	100	1781	1756	97	1781	1870	0	1207	603	1585
Grp Volume(v), veh/h	160	0	371	0	0	403	36	21	0	48	0	62
Grp Sat Flow(s),veh/h/ln	1781	0	1852	1781	0	1853	1781	1870	0	1810	0	1585
Q Serve(g_s), s	3.7	0.0	5.3	0.0	0.0	8.4	0.8	0.4	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	3.7	0.0	5.3	0.0	0.0	8.4	0.8	0.4	0.0	1.0	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.05	1.00		0.00	0.67		1.00
Lane Grp Cap(c), veh/h	210	0	930	4	0	528	164	173	0	248	0	404
V/C Ratio(X)	0.76	0.00	0.40	0.00	0.00	0.76	0.22	0.12	0.00	0.19	0.00	0.15
Avail Cap(c_a), veh/h	1050	0	1310	630	0	1311	840	882	0	853	0	934
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.1	0.0	6.6	0.0	0.0	13.9	17.8	17.7	0.0	16.3	0.0	12.3
Incr Delay (d2), s/veh	2.2	0.0	0.1	0.0	0.0	0.9	0.2	0.1	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.5	0.0	0.0	3.1	0.3	0.2	0.0	0.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	6.7	0.0	0.0	14.7	18.1	17.8	0.0	16.5	0.0	12.3
LnGrp LOS	C	A	A	A	A	B	B	B	A	B	A	B
Approach Vol, veh/h		531			403			57			110	
Approach Delay, s/veh		10.8			14.7			18.0			14.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.2	16.3		7.5	0.0	25.5		9.4
Change Period (Y+Rc), s	* 4.2	* 4.2		3.6	3.6	* 4.2		3.6
Max Green Setting (Gmax), s	* 25	* 30		20.0	15.0	* 30		20.0
Max Q Clear Time (g_c+I1), s	5.7	10.4		2.8	0.0	7.3		3.0
Green Ext Time (p_c), s	0.2	1.7		0.1	0.0	1.6		0.2

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	9	20	15	40	19	226	15	150	45	4	174	182	9
Future Vol, veh/h	9	20	15	40	19	226	15	150	45	4	174	182	9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	21	15	41	20	233	15	155	46	4	179	188	9
Number of Lanes	0	1	0	0	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	1
HCM Control Delay	10.4	11.7	11.2	12.4
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	20%	68%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	45%	32%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	34%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	150	45	44	59	226	178	182	9
LT Vol	15	0	0	9	40	0	178	0	0
Through Vol	0	150	0	20	19	0	0	182	0
RT Vol	0	0	45	15	0	226	0	0	9
Lane Flow Rate	15	155	46	45	61	233	184	188	9
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.031	0.284	0.076	0.087	0.115	0.374	0.344	0.325	0.014
Departure Headway (Hd)	7.115	6.607	5.896	6.927	6.82	5.781	6.743	6.236	5.526
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	502	543	605	515	524	620	532	576	645
Service Time	4.878	4.37	3.658	4.702	4.577	3.537	4.497	3.99	3.279
HCM Lane V/C Ratio	0.03	0.285	0.076	0.087	0.116	0.376	0.346	0.326	0.014
HCM Control Delay	10.1	12	9.1	10.4	10.5	12	13	12	8.4
HCM Lane LOS	B	B	A	B	B	B	B	B	A
HCM 95th-tile Q	0.1	1.2	0.2	0.3	0.4	1.7	1.5	1.4	0

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Old Foresthill Rd / Foresthill Rd
Scenario	Existing Conditions

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*		*Stop*					*Free*	*Free*	*Yield*	*Free*	
AM Peak Hour Volume	7		12					92	2	13	430	
AM Peak Hour Delay (s)	13.2		8.9					0	0	7.5	0	
PM Peak Hour Volume	7		18					489	23	9	172	
PM Peak Hour Delay (s)	15.4		12.2					0	0	8.7	0	
MD Peak Hour Volume	19		16					268	25	10	309	
MD Peak Hour Delay (s)	13.7		10					0	0	7.9	0	

Weekday AM Delay (s)	**9.3**
Weekday AM LOS	**A**

Weekday PM Delay (s)	**11.9**
Weekday PM LOS	**B**

Weekend MD Delay	**11.1**
Weekend MD LOS	**B**

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Northbound
From/To	Old Foresthill Rd to Lincoln W
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.87	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	50.0	%
Segment length	2.3	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	421	veh/h
Opposing direction volume, Vo	172	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	14.4		1.5	
PCE for RVs, ER	1.3		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.482		0.874	
Grade adj. factor,(note-1) fg	0.67		1.00	
Directional flow rate,(note-2) vi	1498	pc/h	226	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	3.8	mi/h
Average travel speed, ATSd	22.3	mi/h
Percent Free Flow Speed, PFFS	56.5	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                     Analysis(d)         Opposing (o)
PCE for trucks, ET                                3.1                 1.1
PCE for RVs, ER                                   1.0                 1.0
Heavy-vehicle adjustment factor, fHV              0.856               0.992
Grade adjustment factor,(note-1) fg               1.00                1.00
Directional flow rate,(note-2) vi                 565    pc/h         199     pc/h
Base percent time-spent-following,(note-4) BPTSFd  48.7   %
Adjustment for no-passing zones, fnp                       37.0
Percent time-spent-following, PTSFd                        76.1   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                      D
Volume to capacity ratio, v/c                              0.33
Peak 15-min vehicle-miles of travel, VMT15                 278     veh-mi
Peak-hour vehicle-miles of travel, VMT60                   968     veh-mi
Peak 15-min total travel time, TT15                        12.4    veh-h
Capacity from ATS, CdATS                                   810     veh/h
Capacity from PTSF, CdPTSF                                 1551    veh/h
Directional Capacity                                       1551    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                                 2.3     mi
Length of two-lane highway upstream of the passing lane, Lu          -       mi
Length of passing lane including tapers, Lpl                         -       mi
Average travel speed, ATSd (from above)                              22.3    mi/h
Percent time-spent-following, PTSFd (from above)                     76.1
Level of service, LOSd (from above)                                  D

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde             -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld          -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                            -
Average travel speed including passing lane, ATSpl                   -
Percent free flow speed including passing lane, PFFSpl               0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde            -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld            -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                             -
Percent time-spent-following
    including passing lane, PTSFpl                                   -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl             A
Peak 15-min total travel time, TT15                        -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	483.9
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.86
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Southbound
From/To	Lincoln Wy to OldForesthill Rd
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.87	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	0.0	%
Segment length	2.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	3	/mi

Analysis direction volume, Vd 172 veh/h
Opposing direction volume, Vo 421 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.5		14.4	
PCE for RVs, ER	1.0		1.3	
Heavy-vehicle adj. factor,(note-5) fHV	0.962		0.482	
Grade adj. factor,(note-1) fg	1.00		0.67	
Directional flow rate,(note-2) vi	206	pc/h	1498	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	25.7	mi/h
Percent Free Flow Speed, PFFS	64.9	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		3.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.992		0.856	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	199	pc/h	565	pc/h
Base percent time-spent-following,(note-4) BPTSFd	27.8	%		
Adjustment for no-passing zones, fnp	37.0			
Percent time-spent-following, PTSFd	37.4	%		

Level of Service and Other Performance Measures

Level of service, LOS	A	
Volume to capacity ratio, v/c	0.12	
Peak 15-min vehicle-miles of travel, VMT15	114	veh-mi
Peak-hour vehicle-miles of travel, VMT60	396	veh-mi
Peak 15-min total travel time, TT15	4.4	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	25.7	mi/h
Percent time-spent-following, PTSFd (from above)	37.4	
Level of service, LOSd (from above)	A	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	197.7
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.39
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Northbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	451	veh/h
Opposing direction volume, Vo	181	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.2		12.4	
PCE for RVs, ER	1.0		1.4	
Heavy-vehicle adj. factor,(note-5) fHV	0.984		0.522	
Grade adj. factor,(note-1) fg	1.00		0.45	
Directional flow rate,(note-2) vi	539	pc/h	907	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	27.9	mi/h
Percent Free Flow Speed, PFFS	69.3	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		2.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		0.896	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	531	pc/h	238	pc/h

Base percent time-spent-following,(note-4) BPTSFd	49.0	%
Adjustment for no-passing zones, fnp	36.5	
Percent time-spent-following, PTSFd	74.2	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.31	
Peak 15-min vehicle-miles of travel, VMT15	239	veh-mi
Peak-hour vehicle-miles of travel, VMT60	812	veh-mi
Peak 15-min total travel time, TT15	8.6	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	27.9	mi/h
Percent time-spent-following, PTSFd (from above)	74.2	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	530.6
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.81
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Southbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	181	veh/h
Opposing direction volume, Vo	451	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	12.4		1.2	
PCE for RVs, ER	1.4		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.522		0.938	
Grade adj. factor,(note-1) fg	0.45		1.00	
Directional flow rate,(note-2) vi	907	pc/h	566	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.0	mi/h
Average travel speed, ATSd	26.9	mi/h
Percent Free Flow Speed, PFFS	66.8	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.4		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.896		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	238	pc/h	531	pc/h
Base percent time-spent-following,(note-4) BPTSFd	31.2	%		
Adjustment for no-passing zones, fnp	36.5			
Percent time-spent-following, PTSFd	42.5	%		

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.14	
Peak 15-min vehicle-miles of travel, VMT15	96	veh-mi
Peak-hour vehicle-miles of travel, VMT60	326	veh-mi
Peak 15-min total travel time, TT15	3.6	veh-h
Capacity from ATS, CdATS	899	veh/h
Capacity from PTSF, CdPTSF	1568	veh/h
Directional Capacity	1568	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	26.9	mi/h
Percent time-spent-following, PTSFd (from above)	42.5	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	212.9
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.32
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 S of OFR to SR 193
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd 451 veh/h
Opposing direction volume, Vo 181 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.8		2.3	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.940		0.906	
Grade adj. factor,(note-1) fg	0.96		0.76	
Directional flow rate,(note-2) vi	588	pc/h	309	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	3.3	mi/h
Average travel speed, ATSd	30.0	mi/h
Percent Free Flow Speed, PFFS	74.6	%

```
________________________Percent Time-Spent-Following________________________

Direction                                     Analysis(d)        Opposing (o)
PCE for trucks, ET                                1.2                1.7
PCE for RVs, ER                                   1.0                1.0
Heavy-vehicle adjustment factor, fHV              0.984              0.947
Grade adjustment factor,(note-1) fg               0.96               0.81
Directional flow rate,(note-2) vi                 562    pc/h        278     pc/h
Base percent time-spent-following,(note-4) BPTSFd  50.8   %
Adjustment for no-passing zones, fnp                       34.0
Percent time-spent-following, PTSFd                        73.5   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                      D
Volume to capacity ratio, v/c                              0.31
Peak 15-min vehicle-miles of travel, VMT15                 239     veh-mi
Peak-hour vehicle-miles of travel, VMT60                   812     veh-mi
Peak 15-min total travel time, TT15                        8.0     veh-h
Capacity from ATS, CdATS                                   1661    veh/h
Capacity from PTSF, CdPTSF                                 1700    veh/h
Directional Capacity                                       1700    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                                 1.8     mi
Length of two-lane highway upstream of the passing lane, Lu         -       mi
Length of passing lane including tapers, Lpl                         -       mi
Average travel speed, ATSd (from above)                              30.0    mi/h
Percent time-spent-following, PTSFd (from above)                     73.5
Level of service, LOSd (from above)                                  D

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde     -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld  -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                    -
Average travel speed including passing lane, ATSpl           -
Percent free flow speed including passing lane, PFFSpl       0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde    -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld    -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                     -
Percent time-spent-following
    including passing lane, PTSFpl                           -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl     A
Peak 15-min total travel time, TT15                -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	530.6
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.81
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

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Phone:                                  Fax:
E-Mail:

_________________Directional Two-Lane Highway Segment Analysis________________

Analyst                  Fehr & Peers
Agency/Co.
Date Performed           10/12/2018
Analysis Time Period     Weekday AM Peak Hour
Highway                  SR 49 - Southbound
From/To                  1.8 mi S of OFR to SR 193
Jurisdiction
Analysis Year            Existing Conditions
Description  Auburn SRA General Plan

__________________________________Input Data__________________________________

Highway class  Class 2             Peak hour factor, PHF    0.85
Shoulder width       1.2     ft    % Trucks and buses       8        %
Lane width           12.0    ft    % Trucks crawling        50.0     %
Segment length       1.8     mi    Truck crawl speed        10.0     mi/hr
Terrain type         Rolling       % Recreational vehicles  0        %
Grade:  Length       -       mi    % No-passing zones       100      %
        Up/down      -       %     Access point density     2        /mi

Analysis direction volume, Vd  181     veh/h
Opposing direction volume, Vo  451     veh/h

____________________________Average Travel Speed______________________________

Direction                             Analysis(d)         Opposing (o)
PCE for trucks, ET                        2.3                 1.8
PCE for RVs, ER                           1.1                 1.1
Heavy-vehicle adj. factor,(note-5) fHV    0.906               0.940
Grade adj. factor,(note-1) fg             0.76                0.96
Directional flow rate,(note-2) vi         309     pc/h        588     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed,(note-3) S FM                -      mi/h
Observed total demand,(note-3) V                  -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed,(note-3) BFFS               45.0    mi/h
Adj. for lane and shoulder width,(note-3) fLS    4.2     mi/h
Adj. for access point density,(note-3) fA        0.5     mi/h

Free-flow speed, FFSd                            40.3    mi/h

Adjustment for no-passing zones, fnp             1.9     mi/h
Average travel speed, ATSd                       31.5    mi/h
Percent Free Flow Speed, PFFS                    78.1    %
```

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7		1.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.947		0.984	
Grade adjustment factor,(note-1) fg	0.81		0.96	
Directional flow rate,(note-2) vi	278	pc/h	562	pc/h
Base percent time-spent-following,(note-4) BPTSFd	35.5	%		
Adjustment for no-passing zones, fnp	34.0			
Percent time-spent-following, PTSFd	46.8	%		

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.13	
Peak 15-min vehicle-miles of travel, VMT15	96	veh-mi
Peak-hour vehicle-miles of travel, VMT60	326	veh-mi
Peak 15-min total travel time, TT15	3.0	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	31.5	mi/h
Percent time-spent-following, PTSFd (from above)	46.8	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	212.9
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.32
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Northbound
From/To	Old Foresthill Rd to Lincoln W
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.89	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	50.0	%
Segment length	2.3	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	3	/mi

Analysis direction volume, Vd 277 veh/h
Opposing direction volume, Vo 514 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	14.5		1.1	
PCE for RVs, ER	1.2		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.481		0.950	
Grade adj. factor,(note-1) fg	0.49		1.00	
Directional flow rate,(note-2) vi	1321	pc/h	608	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	1.8	mi/h
Average travel speed, ATSd	22.8	mi/h
Percent Free Flow Speed, PFFS	57.7	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	3.7		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.823		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	378	pc/h	578	pc/h

Base percent time-spent-following,(note-4) BPTSFd	44.0	%
Adjustment for no-passing zones, fnp	34.9	
Percent time-spent-following, PTSFd	57.8	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.22	
Peak 15-min vehicle-miles of travel, VMT15	179	veh-mi
Peak-hour vehicle-miles of travel, VMT60	637	veh-mi
Peak 15-min total travel time, TT15	7.8	veh-h
Capacity from ATS, CdATS	810	veh/h
Capacity from PTSF, CdPTSF	1551	veh/h
Directional Capacity	1551	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	22.8	mi/h
Percent time-spent-following, PTSFd (from above)	57.8	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	311.2
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.63
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Southbound
From/To	Lincoln Wy to OldForesthill Rd
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.89	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	0.0	%
Segment length	2.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	514	veh/h
Opposing direction volume, Vo	277	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		14.5	
PCE for RVs, ER	1.0		1.2	
Heavy-vehicle adj. factor,(note-5) fHV	0.992		0.481	
Grade adj. factor,(note-1) fg	1.00		0.49	
Directional flow rate,(note-2) vi	582	pc/h	1321	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATSd	24.0	mi/h
Percent Free Flow Speed, PFFS	60.6	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		3.7	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		0.823	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	578	pc/h	378	pc/h
Base percent time-spent-following,(note-4) BPTSFd	53.6	%		
Adjustment for no-passing zones, fnp	34.9			
Percent time-spent-following, PTSFd	74.7	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.34	
Peak 15-min vehicle-miles of travel, VMT15	332	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1182	veh-mi
Peak 15-min total travel time, TT15	13.9	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	24.0	mi/h
Percent time-spent-following, PTSFd (from above)	74.7	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	577.5
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.95
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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                        HCS7: Two-Lane Highways Release 7.3





Phone:                                  Fax:
E-Mail:

_________________Directional Two-Lane Highway Segment Analysis________________

Analyst                  Fehr & Peers
Agency/Co.
Date Performed           10/12/2018
Analysis Time Period     Weekday PM Peak Hour
Highway                  SR 49 - Northbound
From/To                  OFR to 1.8 mi S of OFR
Jurisdiction
Analysis Year            Existing Conditions
Description  Auburn SRA General Plan

__________________________________Input Data__________________________________

Highway class  Class 2             Peak hour factor, PHF    0.91
Shoulder width       1.2     ft    % Trucks and buses       8       %
Lane width           12.0    ft    % Trucks crawling        0.0     %
Segment length       1.8     mi    Truck crawl speed        0.0     mi/hr
Terrain type         Specific Grade % Recreational vehicles 0       %
Grade:  Length       1.75    mi    % No-passing zones       100     %
        Up/down      -8.0    %     Access point density     2       /mi

Analysis direction volume, Vd  300     veh/h
Opposing direction volume, Vo  522     veh/h

____________________________Average Travel Speed______________________________

Direction                             Analysis(d)        Opposing (o)
PCE for trucks, ET                        1.4                12.4
PCE for RVs, ER                           1.0                1.0
Heavy-vehicle adj. factor,(note-5) fHV    0.969              0.524
Grade adj. factor,(note-1) fg             1.00               0.74
Directional flow rate,(note-2) vi         340     pc/h       1479    pc/h

Free-Flow Speed from Field Measurement:
Field measured speed,(note-3) S FM              -      mi/h
Observed total demand,(note-3) V                -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed,(note-3) BFFS             45.0    mi/h
Adj. for lane and shoulder width,(note-3) fLS  4.2     mi/h
Adj. for access point density,(note-3) fA      0.5     mi/h

Free-flow speed, FFSd                          40.3    mi/h

Adjustment for no-passing zones, fnp           0.7     mi/h
Average travel speed, ATSd                     25.5    mi/h
Percent Free Flow Speed, PFFS                  63.3    %
```

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		2.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.992		0.912	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	332	pc/h	629	pc/h
Base percent time-spent-following,(note-4) BPTSFd	41.2	%		
Adjustment for no-passing zones, fnp	35.6			
Percent time-spent-following, PTSFd	53.5	%		

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.19	
Peak 15-min vehicle-miles of travel, VMT15	148	veh-mi
Peak-hour vehicle-miles of travel, VMT60	540	veh-mi
Peak 15-min total travel time, TT15	5.8	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	25.5	mi/h
Percent time-spent-following, PTSFd (from above)	53.5	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	329.7
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.57
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Southbound
From/To	OFR to 1.8 S of OFR
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	522	veh/h
Opposing direction volume, Vo	300	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	12.4		1.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.524		0.898	
Grade adj. factor,(note-1) fg	0.74		1.00	
Directional flow rate,(note-2) vi	1479	pc/h	367	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.9	mi/h
Average travel speed, ATSd	23.1	mi/h
Percent Free Flow Speed, PFFS	57.2	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.2		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.912		0.992	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	629	pc/h	332	pc/h

Base percent time-spent-following,(note-4) BPTSFd	55.6	%
Adjustment for no-passing zones, fnp	35.6	
Percent time-spent-following, PTSFd	78.9	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.37	
Peak 15-min vehicle-miles of travel, VMT15	258	veh-mi
Peak-hour vehicle-miles of travel, VMT60	940	veh-mi
Peak 15-min total travel time, TT15	11.2	veh-h
Capacity from ATS, CdATS	899	veh/h
Capacity from PTSF, CdPTSF	1568	veh/h
Directional Capacity	1568	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	23.1	mi/h
Percent time-spent-following, PTSFd (from above)	78.9	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	573.6
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.83
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	0.25	mi	% No-passing zones	100	%
Up/down	3.0	%	Access point density	2	/mi

Analysis direction volume, Vd	300	veh/h
Opposing direction volume, Vo	522	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.3		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.908		0.992	
Grade adj. factor,(note-1) fg	0.88		1.00	
Directional flow rate,(note-2) vi	413	pc/h	578	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.9	mi/h
Average travel speed, ATSd	30.7	mi/h
Percent Free Flow Speed, PFFS	76.2	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		1.000	
Grade adjustment factor,(note-1) fg	0.97		1.00	
Directional flow rate,(note-2) vi	341	pc/h	574	pc/h

Base percent time-spent-following,(note-4) BPTSFd	41.3	%
Adjustment for no-passing zones, fnp	36.6	
Percent time-spent-following, PTSFd	54.9	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.20	
Peak 15-min vehicle-miles of travel, VMT15	148	veh-mi
Peak-hour vehicle-miles of travel, VMT60	540	veh-mi
Peak 15-min total travel time, TT15	4.8	veh-h
Capacity from ATS, CdATS	1686	veh/h
Capacity from PTSF, CdPTSF	1564	veh/h
Directional Capacity	1564	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	30.7	mi/h
Percent time-spent-following, PTSFd (from above)	54.9	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	329.7
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.57
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Southbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	522	veh/h
Opposing direction volume, Vo	300	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7		2.1	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.947		0.919	
Grade adj. factor,(note-1) fg	0.96		0.85	
Directional flow rate,(note-2) vi	631	pc/h	422	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.6	mi/h
Average travel speed, ATSd	29.5	mi/h
Percent Free Flow Speed, PFFS	73.3	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.2		1.6	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.984		0.954	
Grade adjustment factor,(note-1) fg	0.97		0.87	
Directional flow rate,(note-2) vi	601	pc/h	397	pc/h
Base percent time-spent-following,(note-4) BPTSFd	55.6	%		
Adjustment for no-passing zones, fnp	34.7			
Percent time-spent-following, PTSFd	76.5	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.34	
Peak 15-min vehicle-miles of travel, VMT15	258	veh-mi
Peak-hour vehicle-miles of travel, VMT60	940	veh-mi
Peak 15-min total travel time, TT15	8.7	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	29.5	mi/h
Percent time-spent-following, PTSFd (from above)	76.5	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	573.6
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.83
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Northbound
From/To	Old Foresthill Rd to Lincoln W
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.95	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	50.0	%
Segment length	2.3	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	376	veh/h
Opposing direction volume, Vo	353	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	14.5		1.3	
PCE for RVs, ER	1.2		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.481		0.908	
Grade adj. factor,(note-1) fg	0.53		1.00	
Directional flow rate,(note-2) vi	1553	pc/h	409	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	2.7	mi/h
Average travel speed, ATSd	21.7	mi/h
Percent Free Flow Speed, PFFS	54.8	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                     Analysis(d)         Opposing (o)
PCE for trucks, ET                                3.6                 1.1
PCE for RVs, ER                                   1.0                 1.0
Heavy-vehicle adjustment factor, fHV              0.828               0.992
Grade adjustment factor,(note-1) fg               1.00                1.00
Directional flow rate,(note-2) vi                 478    pc/h         375     pc/h
Base percent time-spent-following,(note-4) BPTSFd  47.7   %
Adjustment for no-passing zones, fnp                 44.2
Percent time-spent-following, PTSFd                  72.5   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                D
Volume to capacity ratio, v/c                        0.28
Peak 15-min vehicle-miles of travel, VMT15           228      veh-mi
Peak-hour vehicle-miles of travel, VMT60             865      veh-mi
Peak 15-min total travel time, TT15                  10.5     veh-h
Capacity from ATS, CdATS                             810      veh/h
Capacity from PTSF, CdPTSF                           1551     veh/h
Directional Capacity                                 1551     veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                           2.3       mi
Length of two-lane highway upstream of the passing lane, Lu   -         mi
Length of passing lane including tapers, Lpl                   -         mi
Average travel speed, ATSd (from above)                        21.7      mi/h
Percent time-spent-following, PTSFd (from above)               72.5
Level of service, LOSd (from above)                            D

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde       -         mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld   -         mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                      -
Average travel speed including passing lane, ATSpl             -
Percent free flow speed including passing lane, PFFSpl         0.0       %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde      -         mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld      -         mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                       -
Percent time-spent-following
    including passing lane, PTSFpl                             -         %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl       A
Peak 15-min total travel time, TT15                  -        veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	395.8
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.75
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Southbound
From/To	Lincoln Wy to OldForesthill Rd
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.95	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	0.0	%
Segment length	2.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	353	veh/h
Opposing direction volume, Vo	376	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.3		14.5	
PCE for RVs, ER	1.0		1.2	
Heavy-vehicle adj. factor,(note-5) fHV	0.977		0.481	
Grade adj. factor,(note-1) fg	1.00		0.53	
Directional flow rate,(note-2) vi	380	pc/h	1553	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATSd	23.9	mi/h
Percent Free Flow Speed, PFFS	60.5	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                      Analysis(d)        Opposing (o)
PCE for trucks, ET                                 1.1                3.6
PCE for RVs, ER                                    1.0                1.0
Heavy-vehicle adjustment factor, fHV               0.992              0.828
Grade adjustment factor,(note-1) fg                1.00               1.00
Directional flow rate,(note-2) vi                  375    pc/h        478     pc/h
Base percent time-spent-following,(note-4) BPTSFd  42.0   %
Adjustment for no-passing zones, fnp                   44.2
Percent time-spent-following, PTSFd                    61.4   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                  C
Volume to capacity ratio, v/c                          0.22
Peak 15-min vehicle-miles of travel, VMT15             214     veh-mi
Peak-hour vehicle-miles of travel, VMT60               812     veh-mi
Peak 15-min total travel time, TT15                    8.9     veh-h
Capacity from ATS, CdATS                               1700    veh/h
Capacity from PTSF, CdPTSF                             1700    veh/h
Directional Capacity                                   1700    veh/h

____________________________Passing Lane Analysis_____________________________

Total length of analysis segment, Lt                             2.3     mi
Length of two-lane highway upstream of the passing lane, Lu      -       mi
Length of passing lane including tapers, Lpl                     -       mi
Average travel speed, ATSd (from above)                          23.9    mi/h
Percent time-spent-following, PTSFd (from above)                 61.4
Level of service, LOSd (from above)                              C

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde         -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld      -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                        -
Average travel speed including passing lane, ATSpl               -
Percent free flow speed including passing lane, PFFSpl           0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde        -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld        -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                         -
Percent time-spent-following
    including passing lane, PTSFpl                               -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl         A
Peak 15-min total travel time, TT15                    -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	371.6
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.72
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Northbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.97	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	380	veh/h
Opposing direction volume, Vo	342	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.3		12.4	
PCE for RVs, ER	1.0		1.2	
Heavy-vehicle adj. factor,(note-5) fHV	0.977		0.522	
Grade adj. factor,(note-1) fg	1.00		0.51	
Directional flow rate,(note-2) vi	401	pc/h	1324	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	0.8	mi/h
Average travel speed, ATSd	26.1	mi/h
Percent Free Flow Speed, PFFS	64.8	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		2.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.992		0.899	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	395	pc/h	392	pc/h

Base percent time-spent-following,(note-4) BPTSFd	42.6	%
Adjustment for no-passing zones, fnp	45.9	
Percent time-spent-following, PTSFd	65.6	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.23	
Peak 15-min vehicle-miles of travel, VMT15	176	veh-mi
Peak-hour vehicle-miles of travel, VMT60	684	veh-mi
Peak 15-min total travel time, TT15	6.7	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	26.1	mi/h
Percent time-spent-following, PTSFd (from above)	65.6	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	391.8
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.66
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Southbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	342	veh/h
Opposing direction volume, Vo	380	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	12.4		1.3	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.522		0.920	
Grade adj. factor,(note-1) fg	0.54		1.00	
Directional flow rate,(note-2) vi	1427	pc/h	486	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.3	mi/h
Average travel speed, ATSd	23.1	mi/h
Percent Free Flow Speed, PFFS	57.4	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.4		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.900		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	447	pc/h	447	pc/h
Base percent time-spent-following,(note-4) BPTSFd	47.8	%		
Adjustment for no-passing zones, fnp	42.6			
Percent time-spent-following, PTSFd	69.1	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.26	
Peak 15-min vehicle-miles of travel, VMT15	181	veh-mi
Peak-hour vehicle-miles of travel, VMT60	616	veh-mi
Peak 15-min total travel time, TT15	7.8	veh-h
Capacity from ATS, CdATS	899	veh/h
Capacity from PTSF, CdPTSF	1568	veh/h
Directional Capacity	1568	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	23.1	mi/h
Percent time-spent-following, PTSFd (from above)	69.1	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	402.4
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.65
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.97	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	380	veh/h
Opposing direction volume, Vo	342	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0		2.0	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.926		0.926	
Grade adj. factor,(note-1) fg	0.89		0.87	
Directional flow rate,(note-2) vi	475	pc/h	438	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.5	mi/h
Average travel speed, ATSd	30.7	mi/h
Percent Free Flow Speed, PFFS	76.1	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                     Analysis(d)         Opposing (o)
PCE for trucks, ET                                1.6                 1.6
PCE for RVs, ER                                   1.0                 1.0
Heavy-vehicle adjustment factor, fHV              0.954               0.954
Grade adjustment factor,(note-1) fg               0.90                0.88
Directional flow rate,(note-2) vi                 456    pc/h         420     pc/h
Base percent time-spent-following,(note-4) BPTSFd  47.0   %
Adjustment for no-passing zones, fnp                       43.1
Percent time-spent-following, PTSFd                        69.4   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                      C
Volume to capacity ratio, v/c                              0.23
Peak 15-min vehicle-miles of travel, VMT15                 176     veh-mi
Peak-hour vehicle-miles of travel, VMT60                   684     veh-mi
Peak 15-min total travel time, TT15                        5.7     veh-h
Capacity from ATS, CdATS                                   1661    veh/h
Capacity from PTSF, CdPTSF                                 1700    veh/h
Directional Capacity                                       1700    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                                1.8     mi
Length of two-lane highway upstream of the passing lane, Lu         -       mi
Length of passing lane including tapers, Lpl                        -       mi
Average travel speed, ATSd (from above)                             30.7    mi/h
Percent time-spent-following, PTSFd (from above)                    69.4
Level of service, LOSd (from above)                                 C

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde            -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld         -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                           -
Average travel speed including passing lane, ATSpl                  -
Percent free flow speed including passing lane, PFFSpl              0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde           -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld           -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                            -
Percent time-spent-following
    including passing lane, PTSFpl                                  -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl             A
Peak 15-min total travel time, TT15                        -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	391.8
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.66
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

```
Analyst                  Fehr & Peers
Agency/Co.
Date Performed           10/12/2018
Analysis Time Period     Weekend MD Peak Hour
Highway                  SR 49 - Southbound
From/To                  1.8 mi S of OFR to SR 193
Jurisdiction
Analysis Year            Existing Conditions
Description  Auburn SRA General Plan
```

Input Data

```
Highway class  Class 2             Peak hour factor, PHF    0.85
Shoulder width       1.2     ft    % Trucks and buses       8       %
Lane width           12.0    ft    % Trucks crawling        50.0    %
Segment length       1.8     mi    Truck crawl speed        10.0    mi/hr
Terrain type         Rolling       % Recreational vehicles  0       %
Grade:  Length       -       mi    % No-passing zones       100     %
        Up/down      -       %     Access point density     2       /mi

Analysis direction volume, Vd  342     veh/h
Opposing direction volume, Vo  380     veh/h
```

Average Travel Speed

```
Direction                                 Analysis(d)        Opposing (o)
PCE for trucks, ET                            2.0                 1.9
PCE for RVs, ER                               1.1                 1.1
Heavy-vehicle adj. factor,(note-5) fHV        0.926               0.933
Grade adj. factor,(note-1) fg                 0.90                0.92
Directional flow rate,(note-2) vi             483     pc/h        521     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed,(note-3) S FM                 -      mi/h
Observed total demand,(note-3) V                   -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed,(note-3) BFFS                45.0    mi/h
Adj. for lane and shoulder width,(note-3) fLS     4.2     mi/h
Adj. for access point density,(note-3) fA         0.5     mi/h

Free-flow speed, FFSd                             40.3    mi/h

Adjustment for no-passing zones, fnp              2.2     mi/h
Average travel speed, ATSd                        30.4    mi/h
Percent Free Flow Speed, PFFS                     75.3    %
```

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.4		1.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.969		0.969	
Grade adjustment factor,(note-1) fg	0.90		0.93	
Directional flow rate,(note-2) vi	461	pc/h	496	pc/h
Base percent time-spent-following,(note-4) BPTSFd	48.6	%		
Adjustment for no-passing zones, fnp	40.8			
Percent time-spent-following, PTSFd	68.3	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.24	
Peak 15-min vehicle-miles of travel, VMT15	181	veh-mi
Peak-hour vehicle-miles of travel, VMT60	616	veh-mi
Peak 15-min total travel time, TT15	6.0	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	30.4	mi/h
Percent time-spent-following, PTSFd (from above)	68.3	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	402.4
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.65
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

EXISTING WEEKDAY LOS

Roadway Segments	Jurisdiction	Study Period	Volume (Daily or Peak Hour)	A	B	C	D	E	V / C Ratio	LOS
Foresthill Rd - Lincoln Wy to Old Auburn Foresthill Rd	Placer County	Daily	8,674	12,000	14,000	16,000	18,000	20,000	0.43	LOS A
Old Foresthill Rd - SR 49 to Foresthill Rd	Placer County	Daily	1,055	12,000	14,000	16,000	18,000	20,000	0.05	LOS A
Maidu Dr - Auburn Folsom Rd to China Bar Access	City of Auburn	Daily	3,010	N / A	11,610	16,650	18,720	20,070	0.15	LOS B or better
Sliger Mine Rd - SR 193 and San Martin Mine Rd - AM Peak Hour	El Dorado County	Peak Hour	47	N / A	N / A	640	1,310	1,510	0.03	LOS C or better
Sliger Mine Rd - SR 193 and San Martin Mine Rd - PM Peak Hour	El Dorado County	Peak Hour	76	N / A	N / A	640	1,310	1,510	0.05	LOS C or better

EXISTING WEEKEND LOS

Roadway Segments	Jurisdiction	Study Period	Volume (Daily or Peak Hour)	A	B	C	D	E	V / C Ratio	LOS
Foresthill Rd - Lincoln Wy to Old Auburn Foresthill Rd	Placer County	Daily	7,946	12,000	14,000	16,000	18,000	20,000	0.40	LOS A
Old Foresthill Rd - SR 49 to Foresthill Rd	Placer County	Daily	1,728	12,000	14,000	16,000	18,000	20,000	0.09	LOS A
Maidu Dr - Auburn Folsom Rd to China Bar Access	City of Auburn	Daily	2,473	N / A	11,610	16,650	18,720	20,070	0.12	LOS B or better
Sliger Mine Rd - SR 193 and San Martin Mine Rd	El Dorado County	Peak Hour	54	N / A	N / A	640	1,310	1,510	0.04	LOS C or better

TIRE Index Analysis - Auburn SRA GP

	Existing			
Segment	**Weekday Volume**	**TIRE**	**Weekend Volume**	**TIRE**
Skyridge Dr - Sacramento St to Riverview Dr	975	3.0	1,046	3.0
Riverview Dr - Skyridge Dr to Maidu Dr	465	2.7	631	2.8

Appendix B:

Existing Plus Project Conditions Level of Service Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	73	82	225	206	164	0	0	0	45	161	56
Future Volume (vph)	39	73	82	225	206	164	0	0	0	45	161	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.93					1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1739					1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1739					1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	77	86	237	217	173	0	0	0	47	169	59
RTOR Reduction (vph)	0	0	74	0	26	0	0	0	0	0	0	50
Lane Group Flow (vph)	41	77	12	237	364	0	0	0	0	47	169	9
Turn Type	Prot	NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases	1	6		5 7	2 7					8	8	
Permitted Phases			6									8
Actuated Green, G (s)	5.2	11.0	11.0	44.3	50.6					12.2	12.2	12.2
Effective Green, g (s)	5.2	11.0	11.0	44.3	50.6					12.2	12.2	12.2
Actuated g/C Ratio	0.07	0.14	0.14	0.56	0.64					0.15	0.15	0.15
Clearance Time (s)	3.5	4.0	4.0							4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0							1.0	1.0	1.0
Lane Grp Cap (vph)	115	257	219	986	1106					271	285	242
v/s Ratio Prot	0.02	c0.04		0.13	c0.21					0.03	c0.09	
v/s Ratio Perm			0.01									0.01
v/c Ratio	0.36	0.30	0.05	0.24	0.33					0.17	0.59	0.04
Uniform Delay, d1	35.5	30.8	29.7	9.0	6.6					29.3	31.3	28.7
Progression Factor	1.00	1.00	1.00	0.49	0.17					1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	0.0	0.0	0.1					0.1	2.2	0.0
Delay (s)	36.2	31.0	29.8	4.5	1.2					29.4	33.5	28.7
Level of Service	D	C	C	A	A					C	C	C
Approach Delay (s)		31.5			2.4			0.0			31.8	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	118	0	0	489	0	0	0	0	77	0	106
Future Volume (vph)	0	118	0	0	489	0	0	0	0	77	0	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			4.0					4.0		4.0
Lane Util. Factor		1.00			0.95					1.00		1.00
Frt		1.00			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		1863			3539					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		1863			3539					1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	124	0	0	515	0	0	0	0	81	0	112
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	99
Lane Group Flow (vph)	0	124	0	0	515	0	0	0	0	81	0	13
Turn Type		NA			NA					Prot		Perm
Protected Phases		1 2 6 8			2					7		
Permitted Phases												7
Actuated Green, G (s)		62.2			37.3					9.3		9.3
Effective Green, g (s)		58.2			37.3					9.3		9.3
Actuated g/C Ratio		0.73			0.47					0.12		0.12
Clearance Time (s)					4.0					4.0		4.0
Vehicle Extension (s)					1.0					1.0		1.0
Lane Grp Cap (vph)		1363			1660					207		185
v/s Ratio Prot		c0.07			c0.15					c0.05		
v/s Ratio Perm												0.01
v/c Ratio		0.09			0.31					0.39		0.07
Uniform Delay, d1		3.1			13.1					32.5		31.3
Progression Factor		0.04			1.00					1.00		1.00
Incremental Delay, d2		0.0			0.5					0.4		0.1
Delay (s)		0.1			13.6					32.9		31.3
Level of Service		A			B					C		C
Approach Delay (s)		0.1			13.6			0.0			32.0	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	165	0	0	398	211	91	2	166	0	0	0
Future Volume (veh/h)	30	165	0	0	398	211	91	2	166	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	33	179	0	0	433	142	99	2	7			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	693	1499	0	0	678	563	159	3	144			
Arrive On Green	0.78	1.00	0.00	0.00	0.36	0.36	0.10	0.09	0.09			
Sat Flow, veh/h	1781	1870	0	0	1870	1552	1748	35	1585			
Grp Volume(v), veh/h	33	179	0	0	433	142	101	0	7			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1870	1552	1783	0	1585			
Q Serve(g_s), s	0.3	0.0	0.0	0.0	15.4	5.1	4.4	0.0	0.3			
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.0	15.4	5.1	4.4	0.0	0.3			
Prop In Lane	1.00		0.00	0.00		1.00	0.98		1.00			
Lane Grp Cap(c), veh/h	693	1499	0	0	678	563	162	0	144			
V/C Ratio(X)	0.05	0.12	0.00	0.00	0.64	0.25	0.62	0.00	0.05			
Avail Cap(c_a), veh/h	693	1499	0	0	678	563	490	0	436			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.99	0.99	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	5.5	0.0	0.0	0.0	21.2	17.9	34.8	0.0	33.2			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	4.6	1.1	1.5	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.0	0.0	6.6	1.8	1.9	0.0	0.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	0.2	0.0	0.0	25.7	19.0	36.2	0.0	33.3			
LnGrp LOS	A	A	A	A	C	B	D	A	C			
Approach Vol, veh/h		212			575			108				
Approach Delay, s/veh		1.0			24.1			36.0				
Approach LOS		A			C			D				

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	35.1	33.0				68.1		11.9
Change Period (Y+Rc), s	4.0	* 4				4.0		4.6
Max Green Setting (Gmax), s	15.0	* 29				49.0		22.0
Max Q Clear Time (g_c+I1), s	2.3	17.4				2.0		6.4
Green Ext Time (p_c), s	0.0	0.6				0.2		0.2

Intersection Summary			
HCM 6th Ctrl Delay			20.0
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	97	8	15	435	14	15
Future Vol, veh/h	97	8	15	435	14	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	110	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	110	9	17	494	16	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	119	0	643	115
Stage 1	-	-	-	-	115	-
Stage 2	-	-	-	-	528	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1469	-	438	937
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	592	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1469	-	433	937
Mov Cap-2 Maneuver	-	-	-	-	433	-
Stage 1	-	-	-	-	899	-
Stage 2	-	-	-	-	592	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	433	937	-	-	1469	-
HCM Lane V/C Ratio	0.037	0.018	-	-	0.012	-
HCM Control Delay (s)	13.6	8.9	-	-	7.5	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	11.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	459	24	7	191	19	6
Future Vol, veh/h	459	24	7	191	19	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	494	26	8	205	20	6

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	157	111	0	0	213	0
Stage 1	111	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	834	942	-	-	1357	-
Stage 1	914	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	821	942	-	-	1357	-
Mov Cap-2 Maneuver	821	-	-	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	976	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	5.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	826	1357	-
HCM Lane V/C Ratio	-	-	0.629	0.015	-
HCM Control Delay (s)	-	-	16.4	7.7	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	4.5	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	177	97	211	323	112	75	35	102	56	50	44
Future Volume (veh/h)	37	177	97	211	323	112	75	35	102	56	50	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	188	0	224	344	101	80	37	0	60	53	18
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	2148		254	1884	545	102	131		78	76	26
Arrive On Green	0.03	0.60	0.00	0.14	0.69	0.69	0.06	0.07	0.00	0.04	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	1781	2719	787	1781	1870	1585	1781	1335	453
Grp Volume(v), veh/h	39	188	0	224	223	222	80	37	0	60	0	71
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1729	1781	1870	1585	1781	0	1789
Q Serve(g_s), s	2.8	2.9	0.0	16.0	5.7	5.9	5.8	2.4	0.0	4.3	0.0	5.1
Cycle Q Clear(g_c), s	2.8	2.9	0.0	16.0	5.7	5.9	5.8	2.4	0.0	4.3	0.0	5.1
Prop In Lane	1.00		1.00	1.00		0.46	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	62	2148		254	1231	1198	102	131		78	0	102
V/C Ratio(X)	0.63	0.09		0.88	0.18	0.19	0.79	0.28		0.77	0.00	0.70
Avail Cap(c_a), veh/h	206	2148		411	1231	1198	206	360		206	0	344
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.92	0.92	0.92	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	61.9	10.7	0.0	54.7	7.0	7.0	60.5	57.3	0.0	61.5	0.0	60.2
Incr Delay (d2), s/veh	10.0	0.1	0.0	11.5	0.3	0.3	12.6	1.2	0.0	14.9	0.0	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.2	0.0	8.1	2.3	2.3	3.0	1.2	0.0	2.3	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.9	10.8	0.0	66.2	7.3	7.3	73.1	58.5	0.0	76.4	0.0	68.6
LnGrp LOS	E	B		E	A	A	E	E		E	A	E
Approach Vol, veh/h		227	A		669			117	A		131	
Approach Delay, s/veh		21.3			27.0			68.5			72.2	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	83.2	13.4	11.4	10.5	94.7	11.7	13.1
Change Period (Y+Rc), s	3.5	4.6	6.0	4.0	6.0	4.6	6.0	4.0
Max Green Setting (Gmax), s	30.0	41.9	15.0	25.0	15.0	54.4	15.0	25.0
Max Q Clear Time (g_c+I1), s	18.0	4.9	7.8	7.1	4.8	7.9	6.3	4.4
Green Ext Time (p_c), s	0.5	1.3	0.1	0.3	0.0	3.2	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑	↑↑	↱	↰	↱
Traffic Volume (veh/h)	52	283	503	130	153	143
Future Volume (veh/h)	52	283	503	130	153	143
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	57	308	547	0	166	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	136	1763	1001		363	
Arrive On Green	0.08	0.50	0.28	0.00	0.20	0.00
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	57	308	547	0	166	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.9	1.4	3.8	0.0	2.4	0.0
Cycle Q Clear(g_c), s	0.9	1.4	3.8	0.0	2.4	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	136	1763	1001		363	
V/C Ratio(X)	0.42	0.17	0.55		0.46	
Avail Cap(c_a), veh/h	1538	6135	6135		2153	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	12.8	4.0	8.8	0.0	10.1	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.2	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	1.0	0.0	0.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.5	4.0	9.0	0.0	10.5	0.0
LnGrp LOS	B	A	A		B	
Approach Vol, veh/h		365	547	A	166	A
Approach Delay, s/veh		5.5	9.0		10.5	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		19.0		10.0	6.2	12.8
Change Period (Y+Rc), s		4.6		4.1	4.0	4.6
Max Green Setting (Gmax), s		50.0		35.0	25.0	50.0
Max Q Clear Time (g_c+I1), s		3.4		4.4	2.9	5.8
Green Ext Time (p_c), s		0.8		0.1	0.0	1.6

Intersection Summary						
HCM 6th Ctrl Delay			8.1			
HCM 6th LOS			A			

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	231	34	128	1	16	0	127	65	2	2	106	464
Future Volume (veh/h)	231	34	128	1	16	0	127	65	2	2	106	464
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	0.89	1.00	1.00	1.00	0.89	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	238	35	37	1	16	0	131	67	1	2	109	69
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	298	313	417	22	349	0	171	399	6	6	283	234
Arrive On Green	0.17	0.17	0.17	0.25	0.22	0.00	0.10	0.24	0.24	0.00	0.15	0.15
Sat Flow, veh/h	1781	1870	1585	98	1562	0	1781	1636	24	1781	1870	1544
Grp Volume(v), veh/h	238	35	37	17	0	0	131	0	68	2	109	69
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1660	0	0	1781	0	1660	1781	1870	1544
Q Serve(g_s), s	6.9	0.9	0.9	0.4	0.0	0.0	3.9	0.0	1.7	0.1	2.8	2.1
Cycle Q Clear(g_c), s	6.9	0.9	0.9	0.4	0.0	0.0	3.9	0.0	1.7	0.1	2.8	2.1
Prop In Lane	1.00		1.00	0.06		0.00	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	298	313	417	370	0	0	171	0	405	6	283	234
V/C Ratio(X)	0.80	0.11	0.09	0.05	0.00	0.00	0.77	0.00	0.17	0.34	0.38	0.30
Avail Cap(c_a), veh/h	1490	1565	1478	370	0	0	1159	0	926	497	1043	861
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	19.0	15.0	16.4	0.0	0.0	23.7	0.0	16.0	26.7	20.6	20.3
Incr Delay (d2), s/veh	1.9	0.1	0.0	0.2	0.0	0.0	2.7	0.0	0.1	12.3	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.3	0.3	0.2	0.0	0.0	1.7	0.0	0.6	0.0	1.2	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.4	19.1	15.0	16.6	0.0	0.0	26.5	0.0	16.1	39.0	20.9	20.5
LnGrp LOS	C	B	B	B	A	A	C	A	B	D	C	C
Approach Vol, veh/h		310			17			199			180	
Approach Delay, s/veh		21.9			16.6			22.9			20.9	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	3.7	18.6		17.5	8.7	13.6		14.0
Change Period (Y+Rc), s	3.5	5.5		5.5	3.5	5.5		5.0
Max Green Setting (Gmax), s	15.0	30.0		12.0	35.0	30.0		45.0
Max Q Clear Time (g_c+I1), s	2.1	3.7		2.4	5.9	4.8		8.9
Green Ext Time (p_c), s	0.0	0.1		0.0	0.1	0.3		0.2

Intersection Summary			
HCM 6th Ctrl Delay			21.8
HCM 6th LOS			C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	200	28	4	396	26	33	25	5	25	27	160
Future Volume (veh/h)	81	200	28	4	396	26	33	25	5	25	27	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	85	211	26	4	417	25	35	26	0	26	28	43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	630	78	6	547	33	176	185	0	117	126	302
Arrive On Green	0.06	0.39	0.39	0.00	0.31	0.31	0.10	0.10	0.00	0.12	0.13	0.13
Sat Flow, veh/h	1781	1633	201	1781	1747	105	1781	1870	0	879	947	1550
Grp Volume(v), veh/h	85	0	237	4	0	442	35	26	0	54	0	43
Grp Sat Flow(s),veh/h/ln	1781	0	1834	1781	0	1852	1781	1870	0	1826	0	1550
Q Serve(g_s), s	1.9	0.0	3.6	0.1	0.0	8.5	0.7	0.5	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	1.9	0.0	3.6	0.1	0.0	8.5	0.7	0.5	0.0	1.0	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.06	1.00		0.00	0.48		1.00
Lane Grp Cap(c), veh/h	108	0	708	6	0	580	176	185	0	242	0	302
V/C Ratio(X)	0.79	0.00	0.33	0.69	0.00	0.76	0.20	0.14	0.00	0.22	0.00	0.14
Avail Cap(c_a), veh/h	1127	0	1392	676	0	1405	901	946	0	924	0	881
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.3	0.0	8.6	19.7	0.0	12.2	16.4	16.3	0.0	15.4	0.0	13.2
Incr Delay (d2), s/veh	4.7	0.0	0.1	42.2	0.0	0.8	0.2	0.1	0.0	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.1	0.1	0.0	3.0	0.3	0.2	0.0	0.4	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	0.0	8.7	61.9	0.0	13.0	16.6	16.4	0.0	15.6	0.0	13.3
LnGrp LOS	C	A	A	E	A	B	B	B	A	B	A	B
Approach Vol, veh/h		322			446			61			97	
Approach Delay, s/veh		12.4			13.5			16.5			14.6	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	16.6		7.5	3.7	19.4		8.8				
Change Period (Y+Rc), s	* 4.2	* 4.2		3.6	3.6	* 4.2		3.6				
Max Green Setting (Gmax), s	* 25	* 30		20.0	15.0	* 30		20.0				
Max Q Clear Time (g_c+I1), s	3.9	10.5		2.7	2.1	5.6		3.0				
Green Ext Time (p_c), s	0.1	1.9		0.1	0.0	0.9		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			13.4									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	10	12	8	69	29	292	14	140	18	1	116	96	2
Future Vol, veh/h	10	12	8	69	29	292	14	140	18	1	116	96	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	13	8	73	31	307	15	147	19	1	122	101	2
Number of Lanes	0	1	0	0	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	1
HCM Control Delay	9.9	11.7	11.1	11.1
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	33%	70%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	40%	30%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	27%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	14	140	18	30	98	292	117	96	2
LT Vol	14	0	0	10	69	0	117	0	0
Through Vol	0	140	0	12	29	0	0	96	0
RT Vol	0	0	18	8	0	292	0	0	2
Lane Flow Rate	15	147	19	32	103	307	123	101	2
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.029	0.265	0.03	0.059	0.18	0.447	0.234	0.178	0.003
Departure Headway (Hd)	6.973	6.465	5.753	6.724	6.29	5.239	6.854	6.346	5.635
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	513	556	621	531	570	685	523	565	634
Service Time	4.716	4.208	3.496	4.478	4.028	2.977	4.597	4.089	3.377
HCM Lane V/C Ratio	0.029	0.264	0.031	0.06	0.181	0.448	0.235	0.179	0.003
HCM Control Delay	9.9	11.5	8.7	9.9	10.4	12.2	11.7	10.5	8.4
HCM Lane LOS	A	B	A	A	B	B	B	B	A
HCM 95th-tile Q	0.1	1.1	0.1	0.2	0.7	2.3	0.9	0.6	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	162	52	185	166	278	0	0	0	151	120	69
Future Volume (vph)	73	162	52	185	166	278	0	0	0	151	120	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.91					1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1688					1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1688					1770	1863	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	75	167	54	191	171	287	0	0	0	156	124	71
RTOR Reduction (vph)	0	0	31	0	51	0	0	0	0	0	0	61
Lane Group Flow (vph)	75	167	23	191	407	0	0	0	0	156	124	10
Turn Type	Prot	NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases	1	6		5 7	2 7					8	8	
Permitted Phases			6									8
Actuated Green, G (s)	7.6	37.5	37.5	27.0	57.4					13.0	13.0	13.0
Effective Green, g (s)	7.6	37.5	37.5	27.0	57.4					13.0	13.0	13.0
Actuated g/C Ratio	0.08	0.42	0.42	0.30	0.64					0.15	0.15	0.15
Clearance Time (s)	3.5	4.0	4.0							4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0							1.0	1.0	1.0
Lane Grp Cap (vph)	150	780	663	533	1082					257	270	229
v/s Ratio Prot	c0.04	0.09		0.11	c0.24					c0.09	0.07	
v/s Ratio Perm			0.01									0.01
v/c Ratio	0.50	0.21	0.03	0.36	0.38					0.61	0.46	0.05
Uniform Delay, d1	39.1	16.6	15.3	24.5	7.6					35.9	35.0	32.9
Progression Factor	1.00	1.00	1.00	0.81	0.34					1.00	1.00	1.00
Incremental Delay, d2	1.0	0.6	0.1	0.1	0.1					2.8	0.5	0.0
Delay (s)	40.1	17.2	15.4	19.9	2.7					38.6	35.5	32.9
Level of Service	D	B	B	B	A					D	D	C
Approach Delay (s)		22.7			7.7			0.0			36.4	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	313	0	0	548	0	0	0	0	121	0	81
Future Volume (vph)	0	313	0	0	548	0	0	0	0	121	0	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			4.0					4.0		4.0
Lane Util. Factor		1.00			0.95					1.00		1.00
Frt		1.00			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		1863			3539					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		1863			3539					1770		1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	323	0	0	565	0	0	0	0	125	0	84
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	74
Lane Group Flow (vph)	0	323	0	0	565	0	0	0	0	125	0	10
Turn Type		NA			NA					Prot		Perm
Protected Phases		1 2 6 8			2					7		
Permitted Phases												7
Actuated Green, G (s)		71.0			42.9					10.5		10.5
Effective Green, g (s)		67.0			42.9					10.5		10.5
Actuated g/C Ratio		0.75			0.48					0.12		0.12
Clearance Time (s)					4.0					4.0		4.0
Vehicle Extension (s)					1.0					1.0		1.0
Lane Grp Cap (vph)		1394			1696					207		185
v/s Ratio Prot		c0.17			c0.16					c0.07		
v/s Ratio Perm												0.01
v/c Ratio		0.23			0.33					0.60		0.05
Uniform Delay, d1		3.4			14.4					37.5		35.1
Progression Factor		0.03			1.00					1.00		1.00
Incremental Delay, d2		0.0			0.5					3.4		0.0
Delay (s)		0.1			15.0					40.9		35.1
Level of Service		A			B					D		D
Approach Delay (s)		0.1			15.0			0.0			38.6	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	375	0	0	383	244	165	2	348	0	0	0
Future Volume (veh/h)	59	375	0	0	383	244	165	2	348	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	63	403	0	0	412	137	177	2	33			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	898	1434	0	0	397	337	222	3	199			
Arrive On Green	0.50	0.77	0.00	0.00	0.21	0.21	0.13	0.13	0.13			
Sat Flow, veh/h	1781	1870	0	0	1870	1585	1762	20	1585			
Grp Volume(v), veh/h	63	403	0	0	412	137	179	0	33			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1870	1585	1782	0	1585			
Q Serve(g_s), s	1.5	5.1	0.0	0.0	17.0	6.0	7.8	0.0	1.5			
Cycle Q Clear(g_c), s	1.5	5.1	0.0	0.0	17.0	6.0	7.8	0.0	1.5			
Prop In Lane	1.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	898	1434	0	0	397	337	224	0	199			
V/C Ratio(X)	0.07	0.28	0.00	0.00	1.04	0.41	0.80	0.00	0.17			
Avail Cap(c_a), veh/h	898	1434	0	0	397	337	668	0	594			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.96	0.96	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.2	2.8	0.0	0.0	31.5	27.2	33.7	0.0	31.2			
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	54.9	3.6	2.5	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.5	0.8	0.0	0.0	12.9	2.4	3.4	0.0	0.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.2	3.2	0.0	0.0	86.4	30.8	36.2	0.0	31.4			
LnGrp LOS	B	A	A	A	F	C	D	A	C			
Approach Vol, veh/h		466			549			212				
Approach Delay, s/veh		4.2			72.5			35.4				
Approach LOS		A			E			D				

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	44.3	21.0				65.3		14.7
Change Period (Y+Rc), s	4.0	* 4				4.0		4.6
Max Green Setting (Gmax), s	19.0	* 17				41.0		30.0
Max Q Clear Time (g_c+I1), s	3.5	19.0				7.1		9.8
Green Ext Time (p_c), s	0.0	0.0				0.6		0.4

Intersection Summary	
HCM 6th Ctrl Delay	40.2
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	497	36	14	180	19	23
Future Vol, veh/h	497	36	14	180	19	23
Conflicting Peds, #/hr	0	0	0	0	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	110	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	571	41	16	207	22	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	612	0	832	592
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	240	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	967	-	339	506
Stage 1	-	-	-	-	553	-
Stage 2	-	-	-	-	800	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	967	-	333	506
Mov Cap-2 Maneuver	-	-	-	-	333	-
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	799	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	333	506	-	-	967	-
HCM Lane V/C Ratio	0.066	0.052	-	-	0.017	-
HCM Control Delay (s)	16.6	12.5	-	-	8.8	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.1	-

Intersection						
Int Delay, s/veh	8.7					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	307	33	17	609	47	23
Future Vol, veh/h	307	33	17	609	47	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	330	35	18	655	51	25

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	473	346	0	0	673	0
Stage 1	346	-	-	-	-	-
Stage 2	127	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	550	697	-	-	918	-
Stage 1	716	-	-	-	-	-
Stage 2	899	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	519	697	-	-	918	-
Mov Cap-2 Maneuver	519	-	-	-	-	-
Stage 1	676	-	-	-	-	-
Stage 2	899	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.3	0	6.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	532	918	-
HCM Lane V/C Ratio	-	-	0.687	0.055	-
HCM Control Delay (s)	-	-	25.3	9.2	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	5.3	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	466	122	173	358	187	65	51	169	179	93	72
Future Volume (veh/h)	92	466	122	173	358	187	65	51	169	179	93	72
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	96	485	0	180	373	152	68	53	0	186	97	51
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	119	2044		210	1501	603	87	98		206	137	72
Arrive On Green	0.07	0.58	0.00	0.12	0.61	0.61	0.05	0.05	0.00	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	2475	994	1781	1870	1585	1781	1154	607
Grp Volume(v), veh/h	96	485	0	180	266	259	68	53	0	186	0	148
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1691	1781	1870	1585	1781	0	1761
Q Serve(g_s), s	6.9	8.7	0.0	12.9	9.0	9.2	4.9	3.6	0.0	13.4	0.0	10.5
Cycle Q Clear(g_c), s	6.9	8.7	0.0	12.9	9.0	9.2	4.9	3.6	0.0	13.4	0.0	10.5
Prop In Lane	1.00		1.00	1.00		0.59	1.00		1.00	1.00		0.34
Lane Grp Cap(c), veh/h	119	2044		210	1078	1026	87	98		206	0	209
V/C Ratio(X)	0.80	0.24		0.86	0.25	0.25	0.78	0.54		0.90	0.00	0.71
Avail Cap(c_a), veh/h	206	2044		411	1078	1026	206	360		206	0	339
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.84	0.84	0.84	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.8	13.6	0.0	56.3	11.8	11.9	61.1	60.1	0.0	56.8	0.0	55.1
Incr Delay (d2), s/veh	11.7	0.3	0.0	8.4	0.5	0.5	13.7	4.6	0.0	37.7	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	3.6	0.0	6.3	3.8	3.7	2.6	1.8	0.0	8.2	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.5	13.9	0.0	64.7	12.3	12.4	74.8	64.6	0.0	94.5	0.0	59.5
LnGrp LOS	E	B		E	B	B	E	E		F	A	E
Approach Vol, veh/h		581	A		705			121	A		334	
Approach Delay, s/veh		23.4			25.7			70.4			79.0	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.8	79.4	12.4	19.4	14.7	83.5	21.0	10.8
Change Period (Y+Rc), s	3.5	4.6	6.0	4.0	6.0	4.6	6.0	4.0
Max Green Setting (Gmax), s	30.0	41.9	15.0	25.0	15.0	54.4	15.0	25.0
Max Q Clear Time (g_c+I1), s	14.9	10.7	6.9	12.5	8.9	11.2	15.4	5.6
Green Ext Time (p_c), s	0.4	3.5	0.1	0.6	0.1	3.9	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	38.3
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	183	632	528	182	344	190
Future Volume (veh/h)	183	632	528	182	344	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	193	665	556	0	362	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	257	1804	888		438	
Arrive On Green	0.14	0.51	0.25	0.00	0.25	0.00
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	193	665	556	0	362	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	3.7	4.0	4.9	0.0	6.8	0.0
Cycle Q Clear(g_c), s	3.7	4.0	4.9	0.0	6.8	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	257	1804	888		438	
V/C Ratio(X)	0.75	0.37	0.63		0.83	
Avail Cap(c_a), veh/h	1261	5033	5033		1766	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	14.5	5.3	11.8	0.0	12.6	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.3	0.0	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.8	1.6	0.0	2.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.2	5.3	12.0	0.0	14.1	0.0
LnGrp LOS	B	A	B		B	
Approach Vol, veh/h		858	556	A	362	A
Approach Delay, s/veh		7.8	12.0		14.1	
Approach LOS		A	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		22.5		12.8	9.1	13.4
Change Period (Y+Rc), s		4.6		4.1	4.0	4.6
Max Green Setting (Gmax), s		50.0		35.0	25.0	50.0
Max Q Clear Time (g_c+I1), s		6.0		8.8	5.7	6.9
Green Ext Time (p_c), s		1.9		0.2	0.1	1.7

Intersection Summary						
HCM 6th Ctrl Delay			10.4			
HCM 6th LOS			B			

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	592	85	190	7	58	7	236	168	19	3	116	370
Future Volume (veh/h)	592	85	190	7	58	7	236	168	19	3	116	370
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	610	88	100	7	60	5	243	173	16	3	120	38
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	645	677	824	23	199	17	281	375	35	9	182	154
Arrive On Green	0.36	0.36	0.36	0.16	0.15	0.15	0.16	0.25	0.25	0.00	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	159	1363	114	1781	1499	139	1781	1870	1585
Grp Volume(v), veh/h	610	88	100	72	0	0	243	0	189	3	120	38
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1636	0	0	1781	0	1638	1781	1870	1585
Q Serve(g_s), s	27.3	2.6	2.7	3.2	0.0	0.0	10.9	0.0	8.0	0.1	5.1	1.8
Cycle Q Clear(g_c), s	27.3	2.6	2.7	3.2	0.0	0.0	10.9	0.0	8.0	0.1	5.1	1.8
Prop In Lane	1.00		1.00	0.10		0.07	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	645	677	824	238	0	0	281	0	410	9	182	154
V/C Ratio(X)	0.95	0.13	0.12	0.30	0.00	0.00	0.86	0.00	0.46	0.35	0.66	0.25
Avail Cap(c_a), veh/h	974	1023	1117	238	0	0	758	0	597	325	682	578
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	17.6	10.1	31.3	0.0	0.0	33.8	0.0	26.1	40.8	35.8	34.4
Incr Delay (d2), s/veh	10.6	0.0	0.0	3.2	0.0	0.0	3.1	0.0	0.3	8.7	1.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	1.1	0.9	1.5	0.0	0.0	4.9	0.0	3.1	0.1	2.4	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.1	17.6	10.1	34.6	0.0	0.0	36.9	0.0	26.4	49.5	37.4	34.7
LnGrp LOS	D	B	B	C	A	A	D	A	C	D	D	C
Approach Vol, veh/h		798			72			432			161	
Approach Delay, s/veh		30.8			34.6			32.3			37.0	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.9	26.1		17.5	16.5	13.5		34.8				
Change Period (Y+Rc), s	3.5	5.5		5.5	3.5	5.5		5.0				
Max Green Setting (Gmax), s	15.0	30.0		12.0	35.0	30.0		45.0				
Max Q Clear Time (g_c+I1), s	2.1	10.0		5.2	12.9	7.1		29.3				
Green Ext Time (p_c), s	0.0	0.4		0.1	0.1	0.2		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			32.1									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	527	29	1	325	39	43	34	13	69	29	162
Future Volume (veh/h)	226	527	29	1	325	39	43	34	13	69	29	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	240	561	30	1	346	37	46	36	0	73	31	63
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	783	42	4	439	47	194	204	0	183	78	498
Arrive On Green	0.17	0.45	0.45	0.00	0.26	0.26	0.11	0.11	0.00	0.14	0.14	0.14
Sat Flow, veh/h	1781	1759	94	1781	1661	178	1781	1870	0	1268	539	1585
Grp Volume(v), veh/h	240	0	591	1	0	383	46	36	0	104	0	63
Grp Sat Flow(s),veh/h/ln	1781	0	1853	1781	0	1838	1781	1870	0	1807	0	1585
Q Serve(g_s), s	6.5	0.0	13.0	0.0	0.0	9.7	1.2	0.9	0.0	2.6	0.0	0.0
Cycle Q Clear(g_c), s	6.5	0.0	13.0	0.0	0.0	9.7	1.2	0.9	0.0	2.6	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.10	1.00		0.00	0.70		1.00
Lane Grp Cap(c), veh/h	302	0	825	4	0	486	194	204	0	261	0	498
V/C Ratio(X)	0.80	0.00	0.72	0.28	0.00	0.79	0.24	0.18	0.00	0.40	0.00	0.13
Avail Cap(c_a), veh/h	892	0	1114	535	0	1105	714	750	0	724	0	904
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.9	0.0	11.3	24.9	0.0	17.0	20.3	20.2	0.0	19.5	0.0	12.2
Incr Delay (d2), s/veh	1.8	0.0	0.7	15.0	0.0	1.1	0.2	0.2	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	4.5	0.0	0.0	3.8	0.5	0.4	0.0	1.0	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.7	0.0	12.0	39.9	0.0	18.1	20.6	20.4	0.0	19.9	0.0	12.3
LnGrp LOS	C	A	B	D	A	B	C	C	A	B	A	B
Approach Vol, veh/h		831			384			82			167	
Approach Delay, s/veh		14.8			18.2			20.5			17.0	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.7	17.4		9.0	3.6	26.4		10.8
Change Period (Y+Rc), s	* 4.2	* 4.2		3.6	3.6	* 4.2		3.6
Max Green Setting (Gmax), s	* 25	* 30		20.0	15.0	* 30		20.0
Max Q Clear Time (g_c+I1), s	8.5	11.7		3.2	2.0	15.0		4.6
Green Ext Time (p_c), s	0.3	1.5		0.1	0.0	2.5		0.4

Intersection Summary			
HCM 6th Ctrl Delay			16.3
HCM 6th LOS			B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	23.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	38	9	31	15	176	12	157	83	416	230	7
Future Vol, veh/h	3	38	9	31	15	176	12	157	83	416	230	7
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	41	10	33	16	189	13	169	89	447	247	8
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	1
HCM Control Delay	12	13.3	12.9	31.6
HCM LOS	B	B	B	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	6%	67%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	76%	33%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	18%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	157	83	50	46	176	416	230	7
LT Vol	12	0	0	3	31	0	416	0	0
Through Vol	0	157	0	38	15	0	0	230	0
RT Vol	0	0	83	9	0	176	0	0	7
Lane Flow Rate	13	169	89	54	49	189	447	247	8
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.029	0.35	0.167	0.121	0.11	0.366	0.876	0.449	0.012
Departure Headway (Hd)	7.965	7.455	6.74	8.109	8.002	6.958	7.051	6.543	5.831
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	450	483	532	442	448	517	519	554	618
Service Time	5.71	5.199	4.484	5.864	5.746	4.702	4.751	4.243	3.531
HCM Lane V/C Ratio	0.029	0.35	0.167	0.122	0.109	0.366	0.861	0.446	0.013
HCM Control Delay	10.9	14.2	10.8	12	11.7	13.7	41.5	14.5	8.6
HCM Lane LOS	B	B	B	B	B	B	E	B	A
HCM 95th-tile Q	0.1	1.6	0.6	0.4	0.4	1.7	9.6	2.3	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	155	58	297	152	221	0	0	0	118	131	78
Future Volume (vph)	74	155	58	297	152	221	0	0	0	118	131	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.91					1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1697					1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1697					1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	77	161	60	309	158	230	0	0	0	123	136	81
RTOR Reduction (vph)	0	0	34	0	49	0	0	0	0	0	0	69
Lane Group Flow (vph)	77	161	26	309	339	0	0	0	0	123	136	12
Turn Type	Prot	NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases	1	6		5 7	2 7					8	8	
Permitted Phases			6									8
Actuated Green, G (s)	7.0	34.7	34.7	21.2	49.4					11.6	11.6	11.6
Effective Green, g (s)	7.0	34.7	34.7	21.2	49.4					11.6	11.6	11.6
Actuated g/C Ratio	0.09	0.44	0.44	0.27	0.62					0.15	0.15	0.15
Clearance Time (s)	3.5	4.0	4.0							4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0							1.0	1.0	1.0
Lane Grp Cap (vph)	155	813	690	472	1054					258	271	230
v/s Ratio Prot	c0.04	0.09		c0.17	c0.20					0.07	c0.07	
v/s Ratio Perm			0.02									0.01
v/c Ratio	0.50	0.20	0.04	0.65	0.32					0.48	0.50	0.05
Uniform Delay, d1	34.6	13.8	12.8	25.9	7.1					31.2	31.3	29.2
Progression Factor	1.00	1.00	1.00	0.85	0.18					1.00	1.00	1.00
Incremental Delay, d2	0.9	0.5	0.1	2.4	0.1					0.5	0.5	0.0
Delay (s)	35.5	14.4	12.9	24.4	1.3					31.7	31.8	29.2
Level of Service	D	B	B	C	A					C	C	C
Approach Delay (s)		19.5			11.5			0.0			31.2	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑↑					↰		↱
Traffic Volume (vph)	0	273	0	0	593	0	0	0	0	156	0	77
Future Volume (vph)	0	273	0	0	593	0	0	0	0	156	0	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			4.0					4.0		4.0
Lane Util. Factor		1.00			0.95					1.00		1.00
Frt		1.00			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		1863			3539					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		1863			3539					1770		1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	284	0	0	618	0	0	0	0	162	0	80
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	69
Lane Group Flow (vph)	0	284	0	0	618	0	0	0	0	163	0	11
Turn Type		NA			NA					Prot		Perm
Protected Phases		1 2 6 8			2					7		
Permitted Phases												7
Actuated Green, G (s)		60.8			34.7					10.7		10.7
Effective Green, g (s)		56.8			34.7					10.7		10.7
Actuated g/C Ratio		0.71			0.44					0.13		0.13
Clearance Time (s)					4.0					4.0		4.0
Vehicle Extension (s)					1.0					1.0		1.0
Lane Grp Cap (vph)		1331			1544					238		213
v/s Ratio Prot		c0.15			c0.17					c0.09		
v/s Ratio Perm												0.01
v/c Ratio		0.21			0.40					0.68		0.05
Uniform Delay, d1		3.8			15.3					32.8		30.0
Progression Factor		0.02			1.00					1.00		1.00
Incremental Delay, d2		0.0			0.8					6.4		0.0
Delay (s)		0.1			16.1					39.1		30.0
Level of Service		A			B					D		C
Approach Delay (s)		0.1			16.1			0.0			36.1	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	382	0	0	490	249	103	0	353	0	0	0
Future Volume (veh/h)	47	382	0	0	490	249	103	0	353	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	48	394	0	0	505	165	106	0	34			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	685	1491	0	0	678	562	170	0	151			
Arrive On Green	0.77	1.00	0.00	0.00	0.36	0.36	0.10	0.00	0.10			
Sat Flow, veh/h	1781	1870	0	0	1870	1550	1781	0	1585			
Grp Volume(v), veh/h	48	394	0	0	505	165	106	0	34			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1870	1550	1781	0	1585			
Q Serve(g_s), s	0.5	0.0	0.0	0.0	18.9	6.1	4.6	0.0	1.6			
Cycle Q Clear(g_c), s	0.5	0.0	0.0	0.0	18.9	6.1	4.6	0.0	1.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	685	1491	0	0	678	562	170	0	151			
V/C Ratio(X)	0.07	0.26	0.00	0.00	0.74	0.29	0.62	0.00	0.22			
Avail Cap(c_a), veh/h	685	1491	0	0	678	562	490	0	436			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.93	0.93	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	5.8	0.0	0.0	0.0	22.3	18.2	34.8	0.0	33.4			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	7.3	1.3	1.4	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.0	0.0	8.4	2.1	2.0	0.0	0.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.8	0.4	0.0	0.0	29.6	19.5	36.2	0.0	33.7			
LnGrp LOS	A	A	A	A	C	B	D	A	C			
Approach Vol, veh/h		442			670			140				
Approach Delay, s/veh		1.0			27.1			35.6				
Approach LOS		A			C			D				
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	34.8	33.0				67.8		12.2				
Change Period (Y+Rc), s	4.0	* 4				4.0		4.6				
Max Green Setting (Gmax), s	15.6	* 29				49.0		22.0				
Max Q Clear Time (g_c+I1), s	2.5	20.9				2.0		6.6				
Green Ext Time (p_c), s	0.0	0.7				0.5		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		18.8
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	277	42	17	320	31	21
Future Vol, veh/h	277	42	17	320	31	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	110	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	292	44	18	337	33	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	336	0	687	314
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	373	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1223	-	413	726
Stage 1	-	-	-	-	741	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1223	-	407	726
Mov Cap-2 Maneuver	-	-	-	-	407	-
Stage 1	-	-	-	-	730	-
Stage 2	-	-	-	-	696	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	407	726	-	-	1223	-
HCM Lane V/C Ratio	0.08	0.03	-	-	0.015	-
HCM Control Delay (s)	14.6	10.1	-	-	8	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	14.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	416	45	51	398	46	33
Future Vol, veh/h	416	45	51	398	46	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	429	46	53	410	47	34

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	386	258	0	0	463	0
Stage 1	258	-	-	-	-	-
Stage 2	128	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	617	781	-	-	1098	-
Stage 1	785	-	-	-	-	-
Stage 2	898	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	590	781	-	-	1098	-
Mov Cap-2 Maneuver	590	-	-	-	-	-
Stage 1	750	-	-	-	-	-
Stage 2	898	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.4	0	4.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	604	1098	-
HCM Lane V/C Ratio	-	-	0.787	0.043	-
HCM Control Delay (s)	-	-	29.4	8.4	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	7.5	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	334	90	210	355	190	76	90	135	137	100	88
Future Volume (veh/h)	98	334	90	210	355	190	76	90	135	137	100	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	101	344	0	216	366	150	78	93	0	141	103	65
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	125	1964		246	1476	594	99	143		166	122	77
Arrive On Green	0.07	0.55	0.00	0.14	0.60	0.60	0.06	0.08	0.00	0.09	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	1781	2455	988	1781	1870	1585	1781	1072	677
Grp Volume(v), veh/h	101	344	0	216	263	253	78	93	0	141	0	168
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1666	1781	1870	1585	1781	0	1749
Q Serve(g_s), s	7.3	6.2	0.0	15.5	9.0	9.3	5.6	6.3	0.0	10.1	0.0	12.2
Cycle Q Clear(g_c), s	7.3	6.2	0.0	15.5	9.0	9.3	5.6	6.3	0.0	10.1	0.0	12.2
Prop In Lane	1.00		1.00	1.00		0.59	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	125	1964		246	1069	1002	99	143		166	0	200
V/C Ratio(X)	0.81	0.18		0.88	0.25	0.25	0.79	0.65		0.85	0.00	0.84
Avail Cap(c_a), veh/h	206	1964		411	1069	1002	206	360		206	0	336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.82	0.82	0.82	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.6	14.4	0.0	55.0	12.1	12.2	60.6	58.3	0.0	58.0	0.0	56.4
Incr Delay (d2), s/veh	11.6	0.2	0.0	9.5	0.5	0.5	12.7	4.9	0.0	22.8	0.0	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	2.6	0.0	7.6	3.8	3.6	2.9	3.2	0.0	5.7	0.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.2	14.6	0.0	64.4	12.6	12.7	73.3	63.2	0.0	80.9	0.0	65.5
LnGrp LOS	E	B		E	B	B	E	E		F	A	E
Approach Vol, veh/h		445	A		732			171	A		309	
Approach Delay, s/veh		27.4			27.9			67.8			72.5	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	76.5	13.2	18.9	15.1	82.8	18.1	13.9
Change Period (Y+Rc), s	3.5	4.6	6.0	4.0	6.0	4.6	6.0	4.0
Max Green Setting (Gmax), s	30.0	41.9	15.0	25.0	15.0	54.4	15.0	25.0
Max Q Clear Time (g_c+I1), s	17.5	8.2	7.6	14.2	9.3	11.3	12.1	8.3
Green Ext Time (p_c), s	0.5	2.4	0.1	0.6	0.1	3.8	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	40.2
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	141	465	611	156	235	144
Future Volume (veh/h)	141	465	611	156	235	144
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	148	489	643	0	247	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	237	1885	993		379	
Arrive On Green	0.13	0.53	0.28	0.00	0.21	0.00
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	148	489	643	0	247	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	2.7	2.5	5.4	0.0	4.3	0.0
Cycle Q Clear(g_c), s	2.7	2.5	5.4	0.0	4.3	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	237	1885	993		379	
V/C Ratio(X)	0.62	0.26	0.65		0.65	
Avail Cap(c_a), veh/h	1313	5240	5240		1839	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	13.9	4.3	10.7	0.0	12.2	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.3	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.4	1.7	0.0	1.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.9	4.4	11.0	0.0	12.9	0.0
LnGrp LOS	B	A	B		B	
Approach Vol, veh/h		637	643	A	247	A
Approach Delay, s/veh		6.8	11.0		12.9	
Approach LOS		A	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		22.6		11.3	8.5	14.1
Change Period (Y+Rc), s		4.6		4.1	4.0	4.6
Max Green Setting (Gmax), s		50.0		35.0	25.0	50.0
Max Q Clear Time (g_c+I1), s		4.5		6.3	4.7	7.4
Green Ext Time (p_c), s		1.3		0.1	0.1	2.0

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	423	52	167	11	35	13	216	143	14	4	166	469
Future Volume (veh/h)	423	52	167	11	35	13	216	143	14	4	166	469
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	455	56	74	12	38	8	232	154	12	4	178	91
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	498	523	687	54	172	36	274	432	34	11	255	212
Arrive On Green	0.28	0.28	0.28	0.16	0.16	0.16	0.15	0.28	0.28	0.01	0.14	0.14
Sat Flow, veh/h	1781	1870	1582	332	1052	221	1781	1524	119	1781	1870	1556
Grp Volume(v), veh/h	455	56	74	58	0	0	232	0	166	4	178	91
Grp Sat Flow(s),veh/h/ln	1781	1870	1582	1606	0	0	1781	0	1642	1781	1870	1556
Q Serve(g_s), s	18.1	1.6	2.0	2.3	0.0	0.0	9.3	0.0	5.9	0.2	6.7	3.9
Cycle Q Clear(g_c), s	18.1	1.6	2.0	2.3	0.0	0.0	9.3	0.0	5.9	0.2	6.7	3.9
Prop In Lane	1.00		1.00	0.21		0.14	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	498	523	687	263	0	0	274	0	466	11	255	212
V/C Ratio(X)	0.91	0.11	0.11	0.22	0.00	0.00	0.85	0.00	0.36	0.35	0.70	0.43
Avail Cap(c_a), veh/h	1094	1149	1216	263	0	0	851	0	673	365	766	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.5	19.6	12.3	26.6	0.0	0.0	30.1	0.0	20.9	36.2	30.2	29.0
Incr Delay (d2), s/veh	2.8	0.0	0.0	1.9	0.0	0.0	2.8	0.0	0.2	6.7	1.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.7	0.7	1.0	0.0	0.0	4.1	0.0	2.2	0.1	3.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.3	19.6	12.3	28.5	0.0	0.0	32.9	0.0	21.1	42.9	31.5	29.5
LnGrp LOS	C	B	B	C	A	A	C	A	C	D	C	C
Approach Vol, veh/h		585			58			398			273	
Approach Delay, s/veh		25.5			28.5			28.0			31.0	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.0	26.3		17.5	14.8	15.5		25.5				
Change Period (Y+Rc), s	3.5	5.5		5.5	3.5	5.5		5.0				
Max Green Setting (Gmax), s	15.0	30.0		12.0	35.0	30.0		45.0				
Max Q Clear Time (g_c+I1), s	2.2	7.9		4.3	11.3	8.7		20.1				
Green Ext Time (p_c), s	0.0	0.3		0.0	0.1	0.4		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			27.5									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	426	20	0	435	27	35	20	6	37	15	202
Future Volume (veh/h)	154	426	20	0	435	27	35	20	6	37	15	202
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	444	20	0	453	26	36	21	0	39	16	54
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	944	43	4	566	32	160	168	0	167	69	393
Arrive On Green	0.12	0.53	0.53	0.00	0.32	0.32	0.09	0.09	0.00	0.13	0.13	0.13
Sat Flow, veh/h	1781	1776	80	1781	1752	101	1781	1870	0	1281	525	1585
Grp Volume(v), veh/h	160	0	464	0	0	479	36	21	0	55	0	54
Grp Sat Flow(s),veh/h/ln	1781	0	1856	1781	0	1852	1781	1870	0	1806	0	1585
Q Serve(g_s), s	4.0	0.0	7.2	0.0	0.0	10.9	0.9	0.5	0.0	1.3	0.0	0.0
Cycle Q Clear(g_c), s	4.0	0.0	7.2	0.0	0.0	10.9	0.9	0.5	0.0	1.3	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.05	1.00		0.00	0.71		1.00
Lane Grp Cap(c), veh/h	209	0	987	4	0	598	160	168	0	236	0	393
V/C Ratio(X)	0.76	0.00	0.47	0.00	0.00	0.80	0.22	0.12	0.00	0.23	0.00	0.14
Avail Cap(c_a), veh/h	968	0	1210	581	0	1208	774	813	0	785	0	875
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.7	0.0	6.7	0.0	0.0	14.2	19.4	19.3	0.0	17.9	0.0	13.5
Incr Delay (d2), s/veh	2.2	0.0	0.1	0.0	0.0	1.0	0.3	0.1	0.0	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	2.1	0.0	0.0	4.0	0.3	0.2	0.0	0.5	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	0.0	6.9	0.0	0.0	15.2	19.7	19.4	0.0	18.1	0.0	13.5
LnGrp LOS	C	A	A	A	A	B	B	B	A	B	A	B
Approach Vol, veh/h		624			479			57			109	
Approach Delay, s/veh		10.7			15.2			19.6			15.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	9.6	19.1	7.7	0.0	28.7	9.6
Change Period (Y+Rc), s	* 4.2	* 4.2	3.6	3.6	* 4.2	3.6
Max Green Setting (Gmax), s	* 25	* 30	20.0	15.0	* 30	20.0
Max Q Clear Time (g_c+I1), s	6.0	12.9	2.9	0.0	9.2	3.3
Green Ext Time (p_c), s	0.2	2.0	0.1	0.0	2.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	22	15	43	21	246	15	165	49	194	193	9
Future Vol, veh/h	9	22	15	43	21	246	15	165	49	194	193	9
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	23	15	44	22	254	15	170	51	200	199	9
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	1
HCM Control Delay	10.7	12.5	11.9	13.2
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	20%	67%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	48%	33%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	33%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	165	49	46	64	246	194	193	9
LT Vol	15	0	0	9	43	0	194	0	0
Through Vol	0	165	0	22	21	0	0	193	0
RT Vol	0	0	49	15	0	246	0	0	9
Lane Flow Rate	15	170	51	47	66	254	200	199	9
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.031	0.322	0.086	0.095	0.128	0.42	0.385	0.355	0.015
Departure Headway (Hd)	7.321	6.812	6.099	7.187	6.997	5.96	6.927	6.419	5.707
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	526	583	495	510	601	518	557	624
Service Time	5.1	4.59	3.877	4.982	4.769	3.731	4.695	4.187	3.475
HCM Lane V/C Ratio	0.031	0.323	0.087	0.095	0.129	0.423	0.386	0.357	0.014
HCM Control Delay	10.3	12.8	9.5	10.7	10.8	13	14	12.7	8.6
HCM Lane LOS	B	B	A	B	B	B	B	B	A
HCM 95th-tile Q	0.1	1.4	0.3	0.3	0.4	2.1	1.8	1.6	0

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Old Foresthill Rd / Foresthill Rd
Scenario	Existing Plus Project Conditions

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*		*Stop*					*Free*	*Free*	*Yield*	*Free*	
AM Peak Hour Volume	14		15					97	8	15	435	
AM Peak Hour Delay (s)	13.6		8.9					0	0	7.5	0	
PM Peak Hour Volume	19		23					497	36	14	180	
PM Peak Hour Delay (s)	16.6		12.5					0	0	8.8	0	
MD Peak Hour Volume	31		21					277	42	17	320	
MD Peak Hour Delay (s)	14.6		10.1					0	0	8	0	

Weekday AM Delay (s)	**9.9**
Weekday AM LOS	**A**

Weekday PM Delay (s)	**13.0**
Weekday PM LOS	**B**

Weekend MD Delay	**11.6**
Weekend MD LOS	**B**

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Northbound
From/To	Old Foresthill Rd to Lincoln W
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.87	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	50.0	%
Segment length	2.3	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	459	veh/h
Opposing direction volume, Vo	206	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	14.4		1.5	
PCE for RVs, ER	1.3		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.483		0.880	
Grade adj. factor,(note-1) fg	0.71		1.00	
Directional flow rate,(note-2) vi	1538	pc/h	269	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	3.6	mi/h
Average travel speed, ATSd	22.0	mi/h
Percent Free Flow Speed, PFFS	55.6	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.9		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.865		0.992	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	610	pc/h	239	pc/h
Base percent time-spent-following,(note-4) BPTSFd	53.7	%		
Adjustment for no-passing zones, fnp	35.0			
Percent time-spent-following, PTSFd	78.8	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.36	
Peak 15-min vehicle-miles of travel, VMT15	303	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1056	veh-mi
Peak 15-min total travel time, TT15	13.8	veh-h
Capacity from ATS, CdATS	810	veh/h
Capacity from PTSF, CdPTSF	1551	veh/h
Directional Capacity	1551	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	22.0	mi/h
Percent time-spent-following, PTSFd (from above)	78.8	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	527.6
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.90
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Southbound
From/To	Lincoln Wy to OldForesthill Rd
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.87	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	0.0	%
Segment length	2.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	3	/mi

Analysis direction volume, Vd 206 veh/h
Opposing direction volume, Vo 459 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.5		14.4	
PCE for RVs, ER	1.0		1.3	
Heavy-vehicle adj. factor,(note-5) fHV	0.962		0.483	
Grade adj. factor,(note-1) fg	1.00		0.71	
Directional flow rate,(note-2) vi	246	pc/h	1538	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATSd	25.1	mi/h
Percent Free Flow Speed, PFFS	63.4	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		2.9	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.992		0.865	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	239	pc/h	610	pc/h

Base percent time-spent-following,(note-4) BPTSFd	32.6	%
Adjustment for no-passing zones, fnp	35.0	
Percent time-spent-following, PTSFd	42.5	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.14	
Peak 15-min vehicle-miles of travel, VMT15	136	veh-mi
Peak-hour vehicle-miles of travel, VMT60	474	veh-mi
Peak 15-min total travel time, TT15	5.4	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	25.1	mi/h
Percent time-spent-following, PTSFd (from above)	42.5	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	236.8
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.49
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Northbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	462	veh/h
Opposing direction volume, Vo	195	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.2		12.4	
PCE for RVs, ER	1.0		1.4	
Heavy-vehicle adj. factor,(note-5) fHV	0.984		0.522	
Grade adj. factor,(note-1) fg	1.00		0.46	
Directional flow rate,(note-2) vi	552	pc/h	955	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	27.5	mi/h
Percent Free Flow Speed, PFFS	68.2	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		2.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		0.897	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	544	pc/h	256	pc/h
Base percent time-spent-following,(note-4) BPTSFd	48.9	%		
Adjustment for no-passing zones, fnp	35.3			
Percent time-spent-following, PTSFd	72.9	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.32	
Peak 15-min vehicle-miles of travel, VMT15	245	veh-mi
Peak-hour vehicle-miles of travel, VMT60	832	veh-mi
Peak 15-min total travel time, TT15	8.9	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	27.5	mi/h
Percent time-spent-following, PTSFd (from above)	72.9	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	543.5
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.82
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Southbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	195	veh/h
Opposing direction volume, Vo	462	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.5		12.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.879		0.524	
Grade adj. factor,(note-1) fg	1.00		0.73	
Directional flow rate,(note-2) vi	261	pc/h	1421	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	26.6	mi/h
Percent Free Flow Speed, PFFS	65.9	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		2.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.992		0.912	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	231	pc/h	596	pc/h
Base percent time-spent-following,(note-4) BPTSFd	31.5	%		
Adjustment for no-passing zones, fnp	34.7			
Percent time-spent-following, PTSFd	41.2	%		

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.13	
Peak 15-min vehicle-miles of travel, VMT15	103	veh-mi
Peak-hour vehicle-miles of travel, VMT60	351	veh-mi
Peak 15-min total travel time, TT15	3.9	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	26.6	mi/h
Percent time-spent-following, PTSFd (from above)	41.2	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	229.4
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.36
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	462	veh/h
Opposing direction volume, Vo	195	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.8		2.2	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.940		0.912	
Grade adj. factor,(note-1) fg	0.96		0.77	
Directional flow rate,(note-2) vi	602	pc/h	327	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	3.2	mi/h
Average travel speed, ATSd	29.9	mi/h
Percent Free Flow Speed, PFFS	74.2	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.2		1.7	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.984		0.947	
Grade adjustment factor,(note-1) fg	0.96		0.81	
Directional flow rate,(note-2) vi	575	pc/h	299	pc/h

Base percent time-spent-following,(note-4) BPTSFd	52.5	%
Adjustment for no-passing zones, fnp	33.8	
Percent time-spent-following, PTSFd	74.7	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.32	
Peak 15-min vehicle-miles of travel, VMT15	245	veh-mi
Peak-hour vehicle-miles of travel, VMT60	832	veh-mi
Peak 15-min total travel time, TT15	8.2	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	29.9	mi/h
Percent time-spent-following, PTSFd (from above)	74.7	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	543.5
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.82
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Southbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	0.25	mi	% No-passing zones	100	%
Up/down	3.0	%	Access point density	2	/mi

Analysis direction volume, Vd	195	veh/h
Opposing direction volume, Vo	462	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.4		1.2	
PCE for RVs, ER	1.1		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.901		0.941	
Grade adj. factor,(note-1) fg	0.85		1.00	
Directional flow rate,(note-2) vi	300	pc/h	578	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.9	mi/h
Average travel speed, ATSd	31.6	mi/h
Percent Free Flow Speed, PFFS	78.4	%

```
________________________Percent Time-Spent-Following________________________

Direction                                    Analysis(d)        Opposing (o)
PCE for trucks, ET                               1.0                1.0
PCE for RVs, ER                                  1.0                1.0
Heavy-vehicle adjustment factor, fHV             1.000              1.000
Grade adjustment factor,(note-1) fg              0.98               1.00
Directional flow rate,(note-2) vi                233    pc/h        544     pc/h
Base percent time-spent-following,(note-4) BPTSFd  31.2   %
Adjustment for no-passing zones, fnp               36.6
Percent time-spent-following, PTSFd                42.2   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                              B
Volume to capacity ratio, v/c                      0.14
Peak 15-min vehicle-miles of travel, VMT15         103     veh-mi
Peak-hour vehicle-miles of travel, VMT60           351     veh-mi
Peak 15-min total travel time, TT15                3.3     veh-h
Capacity from ATS, CdATS                           1686    veh/h
Capacity from PTSF, CdPTSF                         1564    veh/h
Directional Capacity                               1564    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                         1.8     mi
Length of two-lane highway upstream of the passing lane, Lu  -       mi
Length of passing lane including tapers, Lpl                 -       mi
Average travel speed, ATSd (from above)                      31.6    mi/h
Percent time-spent-following, PTSFd (from above)             42.2
Level of service, LOSd (from above)                          B

___________________Average Travel Speed  with Passing Lane___________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde     -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld  -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                    -
Average travel speed including passing lane, ATSpl           -
Percent free flow speed including passing lane, PFFSpl       0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde    -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld    -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                     -
Percent time-spent-following
    including passing lane, PTSFpl                           -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl     A
Peak 15-min total travel time, TT15                -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	229.4
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.36
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Northbound
From/To	Old Foresthill Rd to Lincoln W
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.89	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	50.0	%
Segment length	2.3	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	346	veh/h
Opposing direction volume, Vo	588	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	14.5		1.1	
PCE for RVs, ER	1.2		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.481		0.965	
Grade adj. factor,(note-1) fg	0.52		1.00	
Directional flow rate,(note-2) vi	1554	pc/h	684	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATSd	20.6	mi/h
Percent Free Flow Speed, PFFS	52.2	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	3.6		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.827		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	470	pc/h	661	pc/h

Base percent time-spent-following,(note-4) BPTSFd	51.8	%
Adjustment for no-passing zones, fnp	32.0	
Percent time-spent-following, PTSFd	65.1	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.28	
Peak 15-min vehicle-miles of travel, VMT15	224	veh-mi
Peak-hour vehicle-miles of travel, VMT60	796	veh-mi
Peak 15-min total travel time, TT15	10.9	veh-h
Capacity from ATS, CdATS	810	veh/h
Capacity from PTSF, CdPTSF	1551	veh/h
Directional Capacity	1551	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	20.6	mi/h
Percent time-spent-following, PTSFd (from above)	65.1	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	388.8
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.74
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Southbound
From/To	Lincoln Wy to OldForesthill Rd
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.89	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	0.0	%
Segment length	2.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	3	/mi

Analysis direction volume, Vd 588 veh/h
Opposing direction volume, Vo 346 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		14.5	
PCE for RVs, ER	1.0		1.2	
Heavy-vehicle adj. factor,(note-5) fHV	0.992		0.481	
Grade adj. factor,(note-1) fg	1.00		0.52	
Directional flow rate,(note-2) vi	666	pc/h	1554	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATSd	21.7	mi/h
Percent Free Flow Speed, PFFS	54.9	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		3.6	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		0.827	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	661	pc/h	470	pc/h
Base percent time-spent-following,(note-4) BPTSFd	60.2	%		
Adjustment for no-passing zones, fnp	32.0			
Percent time-spent-following, PTSFd	78.9	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.39	
Peak 15-min vehicle-miles of travel, VMT15	380	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1352	veh-mi
Peak 15-min total travel time, TT15	17.5	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	21.7	mi/h
Percent time-spent-following, PTSFd (from above)	78.9	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	660.7
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	7.01
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Northbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	2	/mi

Analysis direction volume, Vd 327 veh/h
Opposing direction volume, Vo 546 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.3		12.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.977		0.524	
Grade adj. factor,(note-1) fg	1.00		0.75	
Directional flow rate,(note-2) vi	368	pc/h	1527	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATSd	25.0	mi/h
Percent Free Flow Speed, PFFS	61.9	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		2.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.992		0.912	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	362	pc/h	658	pc/h
Base percent time-spent-following,(note-4) BPTSFd	43.3	%		
Adjustment for no-passing zones, fnp	34.8			
Percent time-spent-following, PTSFd	55.7	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.21	
Peak 15-min vehicle-miles of travel, VMT15	162	veh-mi
Peak-hour vehicle-miles of travel, VMT60	589	veh-mi
Peak 15-min total travel time, TT15	6.5	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	25.0	mi/h
Percent time-spent-following, PTSFd (from above)	55.7	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	359.3
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.61
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Southbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	546	veh/h
Opposing direction volume, Vo	327	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	12.4		1.3	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.524		0.906	
Grade adj. factor,(note-1) fg	0.75		1.00	
Directional flow rate,(note-2) vi	1527	pc/h	397	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.7	mi/h
Average travel speed, ATSd	22.7	mi/h
Percent Free Flow Speed, PFFS	56.2	%

```
________________________Percent Time-Spent-Following________________________

Direction                                    Analysis(d)         Opposing (o)
PCE for trucks, ET                               2.2                 1.1
PCE for RVs, ER                                  1.0                 1.0
Heavy-vehicle adjustment factor, fHV             0.912               0.992
Grade adjustment factor,(note-1) fg              1.00                1.00
Directional flow rate,(note-2) vi                658    pc/h         362     pc/h
Base percent time-spent-following,(note-4) BPTSFd  57.3   %
Adjustment for no-passing zones, fnp                       34.8
Percent time-spent-following, PTSFd                        79.7   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                      D
Volume to capacity ratio, v/c                              0.39
Peak 15-min vehicle-miles of travel, VMT15                 270     veh-mi
Peak-hour vehicle-miles of travel, VMT60                   983     veh-mi
Peak 15-min total travel time, TT15                        11.9    veh-h
Capacity from ATS, CdATS                                   899     veh/h
Capacity from PTSF, CdPTSF                                 1568    veh/h
Directional Capacity                                       1568    veh/h

____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                                 1.8     mi
Length of two-lane highway upstream of the passing lane, Lu          -       mi
Length of passing lane including tapers, Lpl                         -       mi
Average travel speed, ATSd (from above)                              22.7    mi/h
Percent time-spent-following, PTSFd (from above)                     79.7
Level of service, LOSd (from above)                                  D

___________________Average Travel Speed  with Passing Lane___________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde             -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld          -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                            -
Average travel speed including passing lane, ATSpl                   -
Percent free flow speed including passing lane, PFFSpl               0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde            -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld            -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                             -
Percent time-spent-following
    including passing lane, PTSFpl                                   -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl             A
Peak 15-min total travel time, TT15                        -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	600.0
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.85
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	Existing Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	327	veh/h
Opposing direction volume, Vo	546	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0		1.7	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.926		0.947	
Grade adj. factor,(note-1) fg	0.87		0.97	
Directional flow rate,(note-2) vi	446	pc/h	653	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.6	mi/h
Average travel speed, ATSd	30.1	mi/h
Percent Free Flow Speed, PFFS	74.8	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                    Analysis(d)        Opposing (o)
PCE for trucks, ET                              1.6                 1.2
PCE for RVs, ER                                 1.0                 1.0
Heavy-vehicle adjustment factor, fHV            0.954               0.984
Grade adjustment factor,(note-1) fg             0.88                0.97
Directional flow rate,(note-2) vi               428    pc/h         628     pc/h
Base percent time-spent-following,(note-4) BPTSFd  48.4   %
Adjustment for no-passing zones, fnp               33.9
Percent time-spent-following, PTSFd                62.1   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                              C
Volume to capacity ratio, v/c                      0.21
Peak 15-min vehicle-miles of travel, VMT15         162     veh-mi
Peak-hour vehicle-miles of travel, VMT60           589     veh-mi
Peak 15-min total travel time, TT15                5.4     veh-h
Capacity from ATS, CdATS                           1661    veh/h
Capacity from PTSF, CdPTSF                         1700    veh/h
Directional Capacity                               1700    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                         1.8     mi
Length of two-lane highway upstream of the passing lane, Lu  -       mi
Length of passing lane including tapers, Lpl                 -       mi
Average travel speed, ATSd (from above)                      30.1    mi/h
Percent time-spent-following, PTSFd (from above)             62.1
Level of service, LOSd (from above)                          C

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde     -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld  -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                    -
Average travel speed including passing lane, ATSpl           -
Percent free flow speed including passing lane, PFFSpl       0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde    -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld    -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                     -
Percent time-spent-following
    including passing lane, PTSFpl                           -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl     A
Peak 15-min total travel time, TT15                -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	359.3
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.61
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Southbound
From/To	1.8 S of OFR to SR 193
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	546	veh/h
Opposing direction volume, Vo	327	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7		2.0	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.947		0.926	
Grade adj. factor,(note-1) fg	0.97		0.87	
Directional flow rate,(note-2) vi	653	pc/h	446	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.5	mi/h
Average travel speed, ATSd	29.3	mi/h
Percent Free Flow Speed, PFFS	72.7	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.2		1.6	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.984		0.954	
Grade adjustment factor,(note-1) fg	0.97		0.88	
Directional flow rate,(note-2) vi	628	pc/h	428	pc/h

Base percent time-spent-following,(note-4) BPTSFd	58.4	%
Adjustment for no-passing zones, fnp	33.9	
Percent time-spent-following, PTSFd	78.6	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.35	
Peak 15-min vehicle-miles of travel, VMT15	270	veh-mi
Peak-hour vehicle-miles of travel, VMT60	983	veh-mi
Peak 15-min total travel time, TT15	9.2	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	29.3	mi/h
Percent time-spent-following, PTSFd (from above)	78.6	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	600.0
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.85
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Northbound
From/To	Old Foresthill Rd to Lincoln W
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.95	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	50.0	%
Segment length	2.3	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	449	veh/h
Opposing direction volume, Vo	449	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	14.4		1.2	
PCE for RVs, ER	1.3		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.482		0.928	
Grade adj. factor,(note-1) fg	0.65		1.00	
Directional flow rate,(note-2) vi	1509	pc/h	509	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	2.2	mi/h
Average travel speed, ATSd	21.7	mi/h
Percent Free Flow Speed, PFFS	54.8	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	3.2		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.853		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	554	pc/h	473	pc/h

Base percent time-spent-following,(note-4) BPTSFd	54.4	%
Adjustment for no-passing zones, fnp	39.8	
Percent time-spent-following, PTSFd	75.9	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.33	
Peak 15-min vehicle-miles of travel, VMT15	272	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1033	veh-mi
Peak 15-min total travel time, TT15	12.5	veh-h
Capacity from ATS, CdATS	810	veh/h
Capacity from PTSF, CdPTSF	1551	veh/h
Directional Capacity	1551	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	21.7	mi/h
Percent time-spent-following, PTSFd (from above)	75.9	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	472.6
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.84
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Southbound
From/To	Lincoln Wy to OldForesthill Rd
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.95	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	0.0	%
Segment length	2.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	449	veh/h
Opposing direction volume, Vo	449	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.2		14.4	
PCE for RVs, ER	1.0		1.3	
Heavy-vehicle adj. factor,(note-5) fHV	0.984		0.482	
Grade adj. factor,(note-1) fg	1.00		0.65	
Directional flow rate,(note-2) vi	480	pc/h	1509	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATSd	23.5	mi/h
Percent Free Flow Speed, PFFS	59.3	%

```
________________________Percent Time-Spent-Following________________________

Direction                                     Analysis(d)         Opposing (o)
PCE for trucks, ET                                1.0                 3.2
PCE for RVs, ER                                   1.0                 1.0
Heavy-vehicle adjustment factor, fHV              1.000               0.853
Grade adjustment factor,(note-1) fg               1.00                1.00
Directional flow rate,(note-2) vi                 473    pc/h         554     pc/h
Base percent time-spent-following,(note-4) BPTSFd  49.6   %
Adjustment for no-passing zones, fnp                       39.8
Percent time-spent-following, PTSFd                        67.9   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                      C
Volume to capacity ratio, v/c                              0.28
Peak 15-min vehicle-miles of travel, VMT15                 272     veh-mi
Peak-hour vehicle-miles of travel, VMT60                   1033    veh-mi
Peak 15-min total travel time, TT15                        11.6    veh-h
Capacity from ATS, CdATS                                   1700    veh/h
Capacity from PTSF, CdPTSF                                 1700    veh/h
Directional Capacity                                       1700    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                                 2.3     mi
Length of two-lane highway upstream of the passing lane, Lu          -       mi
Length of passing lane including tapers, Lpl                         -       mi
Average travel speed, ATSd (from above)                              23.5    mi/h
Percent time-spent-following, PTSFd (from above)                     67.9
Level of service, LOSd (from above)                                  C

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde             -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld          -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                            -
Average travel speed including passing lane, ATSpl                   -
Percent free flow speed including passing lane, PFFSpl               0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde            -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld            -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                             -
Percent time-spent-following
    including passing lane, PTSFpl                                   -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl             A
Peak 15-min total travel time, TT15                        -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	472.6
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.84
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Northbound
From/To	
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.97	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	398	veh/h
Opposing direction volume, Vo	369	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.3		12.4	
PCE for RVs, ER	1.0		1.2	
Heavy-vehicle adj. factor,(note-5) fHV	0.977		0.522	
Grade adj. factor,(note-1) fg	1.00		0.52	
Directional flow rate,(note-2) vi	420	pc/h	1401	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	25.5	mi/h
Percent Free Flow Speed, PFFS	63.2	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		2.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		0.899	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	410	pc/h	423	pc/h

Base percent time-spent-following,(note-4) BPTSFd	43.6	%
Adjustment for no-passing zones, fnp	44.6	
Percent time-spent-following, PTSFd	65.6	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.24	
Peak 15-min vehicle-miles of travel, VMT15	185	veh-mi
Peak-hour vehicle-miles of travel, VMT60	716	veh-mi
Peak 15-min total travel time, TT15	7.3	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	25.5	mi/h
Percent time-spent-following, PTSFd (from above)	65.6	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	410.3
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.68
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Southbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	2	/mi

Analysis direction volume, Vd 369 veh/h
Opposing direction volume, Vo 398 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	12.4		1.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.523		0.927	
Grade adj. factor,(note-1) fg	0.59		1.00	
Directional flow rate,(note-2) vi	1407	pc/h	505	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.2	mi/h
Average travel speed, ATSd	23.2	mi/h
Percent Free Flow Speed, PFFS	57.7	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.3		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.904		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	480	pc/h	468	pc/h

Base percent time-spent-following,(note-4) BPTSFd	50.1	%
Adjustment for no-passing zones, fnp	41.3	
Percent time-spent-following, PTSFd	71.0	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.28	
Peak 15-min vehicle-miles of travel, VMT15	195	veh-mi
Peak-hour vehicle-miles of travel, VMT60	664	veh-mi
Peak 15-min total travel time, TT15	8.4	veh-h
Capacity from ATS, CdATS	899	veh/h
Capacity from PTSF, CdPTSF	1568	veh/h
Directional Capacity	1568	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	23.2	mi/h
Percent time-spent-following, PTSFd (from above)	71.0	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	434.1
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.68
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.97	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	398	veh/h
Opposing direction volume, Vo	369	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0		2.0	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.926		0.926	
Grade adj. factor,(note-1) fg	0.90		0.89	
Directional flow rate,(note-2) vi	492	pc/h	462	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.4	mi/h
Average travel speed, ATSd	30.5	mi/h
Percent Free Flow Speed, PFFS	75.6	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.4		1.6	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.969		0.954	
Grade adjustment factor,(note-1) fg	0.91		0.89	
Directional flow rate,(note-2) vi	465	pc/h	448	pc/h
Base percent time-spent-following,(note-4) BPTSFd	48.8	%		
Adjustment for no-passing zones, fnp	42.4			
Percent time-spent-following, PTSFd	70.4	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.24	
Peak 15-min vehicle-miles of travel, VMT15	185	veh-mi
Peak-hour vehicle-miles of travel, VMT60	716	veh-mi
Peak 15-min total travel time, TT15	6.1	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	30.5	mi/h
Percent time-spent-following, PTSFd (from above)	70.4	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	410.3
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.68
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Southbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	EPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	369	veh/h
Opposing direction volume, Vo	398	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.9		1.9	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.933		0.933	
Grade adj. factor,(note-1) fg	0.92		0.93	
Directional flow rate,(note-2) vi	506	pc/h	540	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.1	mi/h
Average travel speed, ATSd	30.1	mi/h
Percent Free Flow Speed, PFFS	74.7	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.4		1.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.969		0.969	
Grade adjustment factor,(note-1) fg	0.92		0.94	
Directional flow rate,(note-2) vi	487	pc/h	514	pc/h

Base percent time-spent-following,(note-4) BPTSFd	50.5	%
Adjustment for no-passing zones, fnp	39.8	
Percent time-spent-following, PTSFd	69.9	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.26	
Peak 15-min vehicle-miles of travel, VMT15	195	veh-mi
Peak-hour vehicle-miles of travel, VMT60	664	veh-mi
Peak 15-min total travel time, TT15	6.5	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	30.1	mi/h
Percent time-spent-following, PTSFd (from above)	69.9	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	434.1
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.68
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

EXISTING PLUS PROJECT WEEKDAY LOS

Roadway Segments	Jurisdiction	Study Period	Volume (Daily or Peak Hour)	A	B	C	D	E	V / C Ratio	LOS
Foresthill Rd - Lincoln Wy to Old Auburn Foresthill Rd	Placer County	Daily	9,130	12,000	14,000	16,000	18,000	20,000	0.46	LOS A
Old Foresthill Rd - SR 49 to Foresthill Rd	Placer County	Daily	1,430	12,000	14,000	16,000	18,000	20,000	0.07	LOS A
Maidu Dr - Auburn Folsom Rd to China Bar Access	City of Auburn	Daily	3,190	N / A	11,610	16,650	18,720	20,070	0.16	LOS B or better
Sliger Mine Rd - SR 193 and San Martin Mine Rd - AM Peak Hour	El Dorado County	Peak Hour	67	N / A	N / A	640	1,310	1,510	0.04	LOS C or better
Sliger Mine Rd - SR 193 and San Martin Mine Rd - PM Peak Hour	El Dorado County	Peak Hour	113	N / A	N / A	640	1,310	1,510	0.07	LOS C or better

EXISTING PLUS PROJECT WEEKEND LOS

Roadway Segments	Jurisdiction	Study Period	Volume (Daily or Peak Hour)	A	B	C	D	E	V / C Ratio	LOS
Foresthill Rd - Lincoln Wy to Old Auburn Foresthill Rd	Placer County	Daily	8,640	12,000	14,000	16,000	18,000	20,000	0.43	LOS A
Old Foresthill Rd - SR 49 to Foresthill Rd	Placer County	Daily	2,310	12,000	14,000	16,000	18,000	20,000	0.12	LOS A
Maidu Dr - Auburn Folsom Rd to China Bar Access	City of Auburn	Daily	3,680	N / A	11,610	16,650	18,720	20,070	0.18	LOS B or better
Sliger Mine Rd - SR 193 and San Martin Mine Rd	El Dorado County	Peak Hour	96	N / A	N / A	640	1,310	1,510	0.06	LOS C or better

TIRE Index Analysis - Auburn SRA GP

	Existing Plus Project			
Segment	**Weekday Volume**	**TIRE**	**Weekend Volume**	**TIRE**
Skyridge Dr - Sacramento St to Riverview Dr	1,150	3.1	1,180	3.1
Riverview Dr - Skyridge Dr to Maidu Dr	640	2.8	760	2.9

Appendix C:

Cumulative Conditions
Level of Service Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	120	90	290	230	280	0	0	0	100	200	60
Future Volume (vph)	50	120	90	290	230	280	0	0	0	100	200	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92					1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1709					1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1709					1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	126	95	305	242	295	0	0	0	105	211	63
RTOR Reduction (vph)	0	0	81	0	43	0	0	0	0	0	0	52
Lane Group Flow (vph)	53	126	14	305	494	0	0	0	0	105	211	11
Turn Type	Prot	NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases	1	6		5 7	2 7					8	8	
Permitted Phases			6									8
Actuated Green, G (s)	6.6	11.7	11.7	42.3	47.9					13.5	13.5	13.5
Effective Green, g (s)	6.6	11.7	11.7	42.3	47.9					13.5	13.5	13.5
Actuated g/C Ratio	0.08	0.15	0.15	0.53	0.60					0.17	0.17	0.17
Clearance Time (s)	3.5	4.0	4.0							4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0							1.0	1.0	1.0
Lane Grp Cap (vph)	146	274	232	941	1029					300	316	268
v/s Ratio Prot	0.03	c0.07		0.17	c0.29					0.06	c0.11	
v/s Ratio Perm			0.01									0.01
v/c Ratio	0.36	0.46	0.06	0.32	0.48					0.35	0.67	0.04
Uniform Delay, d1	34.5	31.0	29.2	10.5	8.8					29.1	30.9	27.6
Progression Factor	1.00	1.00	1.00	0.40	0.26					1.00	1.00	1.00
Incremental Delay, d2	0.6	0.4	0.0	0.1	0.1					0.3	4.1	0.0
Delay (s)	35.0	31.5	29.2	4.3	2.4					29.4	35.0	27.6
Level of Service	D	C	C	A	A					C	C	C
Approach Delay (s)		31.4			3.1			0.0			32.2	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	220	0	0	680	0	0	0	0	100	0	120
Future Volume (vph)	0	220	0	0	680	0	0	0	0	100	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			4.0					4.0		4.0
Lane Util. Factor		1.00			0.95					1.00		1.00
Frt		1.00			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		1863			3539					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		1863			3539					1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	232	0	0	716	0	0	0	0	105	0	126
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	110
Lane Group Flow (vph)	0	232	0	0	716	0	0	0	0	105	0	16
Turn Type		NA			NA					Prot		Perm
Protected Phases		1 2 6 8			2					7		
Permitted Phases												7
Actuated Green, G (s)		61.1			33.5					10.4		10.4
Effective Green, g (s)		57.1			33.5					10.4		10.4
Actuated g/C Ratio		0.72			0.42					0.13		0.13
Clearance Time (s)					4.0					4.0		4.0
Vehicle Extension (s)					1.0					1.0		1.0
Lane Grp Cap (vph)		1338			1491					231		207
v/s Ratio Prot		c0.12			c0.20					c0.06		
v/s Ratio Perm												0.01
v/c Ratio		0.17			0.48					0.45		0.08
Uniform Delay, d1		3.6			16.7					31.9		30.3
Progression Factor		0.03			1.00					1.00		1.00
Incremental Delay, d2		0.0			1.1					0.5		0.1
Delay (s)		0.1			17.8					32.4		30.4
Level of Service		A			B					C		C
Approach Delay (s)		0.1			17.8			0.0			31.3	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	32.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	250	0	0	530	240	150	10	230	0	0	0
Future Volume (veh/h)	70	250	0	0	530	240	150	10	230	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	76	272	0	0	576	160	163	11	17			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	639	1442	0	0	678	560	203	14	192			
Arrive On Green	0.72	1.00	0.00	0.00	0.36	0.36	0.13	0.12	0.12			
Sat Flow, veh/h	1781	1870	0	0	1870	1545	1674	113	1585			
Grp Volume(v), veh/h	76	272	0	0	576	160	174	0	17			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1870	1545	1787	0	1585			
Q Serve(g_s), s	1.1	0.0	0.0	0.0	22.7	5.9	7.6	0.0	0.8			
Cycle Q Clear(g_c), s	1.1	0.0	0.0	0.0	22.7	5.9	7.6	0.0	0.8			
Prop In Lane	1.00		0.00	0.00		1.00	0.94		1.00			
Lane Grp Cap(c), veh/h	639	1442	0	0	678	560	217	0	192			
V/C Ratio(X)	0.12	0.19	0.00	0.00	0.85	0.29	0.80	0.00	0.09			
Avail Cap(c_a), veh/h	639	1442	0	0	678	560	491	0	436			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.98	0.98	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	7.4	0.0	0.0	0.0	23.5	18.1	33.9	0.0	31.2			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	12.6	1.3	2.6	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	0.1	0.0	0.0	10.8	2.0	3.3	0.0	0.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.4	0.3	0.0	0.0	36.1	19.4	36.6	0.0	31.3			
LnGrp LOS	A	A	A	A	D	B	D	A	C			
Approach Vol, veh/h		348			736			191				
Approach Delay, s/veh		1.8			32.5			36.1				
Approach LOS		A			C			D				

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	12.7	33.0				65.7		14.3				
Change Period (Y+Rc), s	4.0	* 4				4.0		4.6				
Max Green Setting (Gmax), s	15.0	* 29				49.0		22.0				
Max Q Clear Time (g_c+I1), s	3.1	24.7				2.0		9.6				
Green Ext Time (p_c), s	0.0	0.6				0.4		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		24.7
HCM 6th LOS		C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	120	10	20	470	10	20
Future Vol, veh/h	120	10	20	470	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	110	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	133	11	22	522	11	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	144	0	705	139
Stage 1	-	-	-	-	139	-
Stage 2	-	-	-	-	566	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1438	-	403	909
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	568	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1438	-	397	909
Mov Cap-2 Maneuver	-	-	-	-	397	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	568	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	397	909	-	-	1438	-
HCM Lane V/C Ratio	0.028	0.024	-	-	0.015	-
HCM Control Delay (s)	14.3	9.1	-	-	7.5	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	11.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	450	20	10	180	20	10
Future Vol, veh/h	450	20	10	180	20	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	484	22	11	194	22	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	163	108	0	0	205	0
Stage 1	108	-	-	-	-	-
Stage 2	55	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	828	946	-	-	1366	-
Stage 1	916	-	-	-	-	-
Stage 2	968	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	815	946	-	-	1366	-
Mov Cap-2 Maneuver	815	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	968	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	5.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	820	1366	-
HCM Lane V/C Ratio	-	-	0.616	0.016	-
HCM Control Delay (s)	-	-	16.2	7.7	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	4.3	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	200	110	250	330	120	90	40	110	70	50	50
Future Volume (veh/h)	40	200	110	250	330	120	90	40	110	70	50	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	213	0	266	351	107	96	43	0	74	53	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	2028		296	1833	551	120	133		95	74	28
Arrive On Green	0.04	0.57	0.00	0.17	0.68	0.68	0.07	0.07	0.00	0.05	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	1781	2693	809	1781	1870	1585	1781	1294	488
Grp Volume(v), veh/h	43	213	0	266	230	228	96	43	0	74	0	73
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1725	1781	1870	1585	1781	0	1782
Q Serve(g_s), s	3.1	3.6	0.0	19.0	6.2	6.3	6.9	2.8	0.0	5.3	0.0	5.2
Cycle Q Clear(g_c), s	3.1	3.6	0.0	19.0	6.2	6.3	6.9	2.8	0.0	5.3	0.0	5.2
Prop In Lane	1.00		1.00	1.00		0.47	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	65	2028		296	1210	1174	120	133		95	0	102
V/C Ratio(X)	0.66	0.11		0.90	0.19	0.19	0.80	0.32		0.78	0.00	0.72
Avail Cap(c_a), veh/h	206	2028		411	1210	1174	206	360		206	0	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.91	0.91	0.91	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	61.8	12.7	0.0	53.2	7.6	7.6	59.8	57.4	0.0	60.8	0.0	60.3
Incr Delay (d2), s/veh	11.0	0.1	0.0	16.4	0.3	0.3	11.7	1.4	0.0	13.1	0.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.5	0.0	9.9	2.4	2.4	3.5	1.4	0.0	2.8	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.9	12.9	0.0	69.5	7.9	8.0	71.5	58.8	0.0	73.9	0.0	69.3
LnGrp LOS	E	B		E	A	A	E	E		E	A	E
Approach Vol, veh/h		256	A		724			139	A		147	
Approach Delay, s/veh		22.9			30.6			67.6			71.6	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.1	78.8	14.7	11.4	10.7	93.1	12.9	13.2
Change Period (Y+Rc), s	3.5	4.6	6.0	4.0	6.0	4.6	6.0	4.0
Max Green Setting (Gmax), s	30.0	41.9	15.0	25.0	15.0	54.4	15.0	25.0
Max Q Clear Time (g_c+I1), s	21.0	5.6	8.9	7.2	5.1	8.3	7.3	4.8
Green Ext Time (p_c), s	0.5	1.4	0.1	0.3	0.0	3.3	0.1	0.1

Intersection Summary			
HCM 6th Ctrl Delay			37.8
HCM 6th LOS			D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	330	510	140	150	190
Future Volume (veh/h)	50	330	510	140	150	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	359	554	0	163	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	130	1767	1016		360	
Arrive On Green	0.07	0.50	0.29	0.00	0.20	0.00
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	54	359	554	0	163	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.8	1.6	3.8	0.0	2.3	0.0
Cycle Q Clear(g_c), s	0.8	1.6	3.8	0.0	2.3	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	130	1767	1016		360	
V/C Ratio(X)	0.42	0.20	0.55		0.45	
Avail Cap(c_a), veh/h	1540	6145	6145		2156	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	12.8	4.1	8.7	0.0	10.1	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.2	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	1.0	0.0	0.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.6	4.1	8.9	0.0	10.5	0.0
LnGrp LOS	B	A	A		B	
Approach Vol, veh/h		413	554	A	163	A
Approach Delay, s/veh		5.3	8.9		10.5	
Approach LOS		A	A		B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		19.0		9.9	6.1	12.9
Change Period (Y+Rc), s		4.6		4.1	4.0	4.6
Max Green Setting (Gmax), s		50.0		35.0	25.0	50.0
Max Q Clear Time (g_c+I1), s		3.6		4.3	2.8	5.8
Green Ext Time (p_c), s		0.9		0.1	0.0	1.7
Intersection Summary						
HCM 6th Ctrl Delay			7.8			
HCM 6th LOS			A			

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	40	130	10	20	0	90	70	10	10	110	510
Future Volume (veh/h)	260	40	130	10	20	0	90	70	10	10	110	510
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	0.89	1.00	1.00	1.00	0.89	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	268	41	37	10	21	0	93	72	6	10	113	78
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	343	422	116	243	0	148	343	29	28	298	240
Arrive On Green	0.18	0.18	0.18	0.25	0.22	0.00	0.08	0.23	0.23	0.02	0.16	0.16
Sat Flow, veh/h	1781	1870	1585	528	1110	0	1781	1515	126	1781	1870	1511
Grp Volume(v), veh/h	268	41	37	31	0	0	93	0	78	10	113	78
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1638	0	0	1781	0	1641	1781	1870	1511
Q Serve(g_s), s	7.9	1.0	1.0	0.8	0.0	0.0	2.8	0.0	2.1	0.3	3.0	2.5
Cycle Q Clear(g_c), s	7.9	1.0	1.0	0.8	0.0	0.0	2.8	0.0	2.1	0.3	3.0	2.5
Prop In Lane	1.00		1.00	0.32		0.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	327	343	422	358	0	0	148	0	372	28	298	240
V/C Ratio(X)	0.82	0.12	0.09	0.09	0.00	0.00	0.63	0.00	0.21	0.36	0.38	0.32
Avail Cap(c_a), veh/h	1462	1535	1432	358	0	0	1137	0	898	487	1023	826
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	18.7	15.1	16.9	0.0	0.0	24.3	0.0	17.2	26.7	20.6	20.4
Incr Delay (d2), s/veh	1.9	0.1	0.0	0.5	0.0	0.0	1.6	0.0	0.1	3.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.4	0.3	0.3	0.0	0.0	1.2	0.0	0.8	0.1	1.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	18.7	15.1	17.3	0.0	0.0	26.0	0.0	17.3	29.7	20.9	20.7
LnGrp LOS	C	B	B	B	A	A	C	A	B	C	C	C
Approach Vol, veh/h		346			31			171			201	
Approach Delay, s/veh		22.0			17.3			22.0			21.3	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.3	17.9		17.5	8.0	14.2		15.1
Change Period (Y+Rc), s	3.5	5.5		5.5	3.5	5.5		5.0
Max Green Setting (Gmax), s	15.0	30.0		12.0	35.0	30.0		45.0
Max Q Clear Time (g_c+I1), s	2.3	4.1		2.8	4.8	5.0		9.9
Green Ext Time (p_c), s	0.0	0.1		0.0	0.0	0.3		0.2

Intersection Summary	
HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	210	30	10	420	30	40	30	10	30	40	190
Future Volume (veh/h)	110	210	30	10	420	30	40	30	10	30	40	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	221	29	11	442	30	42	32	0	32	42	56
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	665	87	15	555	38	191	200	0	113	148	354
Arrive On Green	0.09	0.41	0.41	0.01	0.32	0.32	0.11	0.11	0.00	0.13	0.14	0.14
Sat Flow, veh/h	1781	1620	213	1781	1732	118	1781	1870	0	792	1039	1537
Grp Volume(v), veh/h	116	0	250	11	0	472	42	32	0	74	0	56
Grp Sat Flow(s),veh/h/ln	1781	0	1832	1781	0	1849	1781	1870	0	1831	0	1537
Q Serve(g_s), s	2.9	0.0	4.2	0.3	0.0	10.5	1.0	0.7	0.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	2.9	0.0	4.2	0.3	0.0	10.5	1.0	0.7	0.0	1.6	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.06	1.00		0.00	0.43		1.00
Lane Grp Cap(c), veh/h	152	0	752	15	0	593	191	200	0	261	0	354
V/C Ratio(X)	0.76	0.00	0.33	0.72	0.00	0.80	0.22	0.16	0.00	0.28	0.00	0.16
Avail Cap(c_a), veh/h	985	0	1215	591	0	1227	788	827	0	810	0	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.2	0.0	9.1	22.4	0.0	14.0	18.5	18.3	0.0	17.4	0.0	14.0
Incr Delay (d2), s/veh	3.0	0.0	0.1	21.0	0.0	0.9	0.2	0.1	0.0	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	1.4	0.2	0.0	3.9	0.4	0.3	0.0	0.6	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	9.2	43.4	0.0	15.0	18.7	18.5	0.0	17.6	0.0	14.1
LnGrp LOS	C	A	A	D	A	B	B	B	A	B	A	B
Approach Vol, veh/h		366			483			74			130	
Approach Delay, s/veh		13.7			15.6			18.6			16.1	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	18.7		8.4	4.0	22.8		10.0				
Change Period (Y+Rc), s	* 4.2	* 4.2		3.6	3.6	* 4.2		3.6				
Max Green Setting (Gmax), s	* 25	* 30		20.0	15.0	* 30		20.0				
Max Q Clear Time (g_c+I1), s	4.9	12.5		3.0	2.3	6.2		3.6				
Green Ext Time (p_c), s	0.1	2.0		0.1	0.0	1.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			15.2									
HCM 6th LOS			B									

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	20	20	100	40	310	20	140	30	130	100	10
Future Vol, veh/h	20	20	20	100	40	310	20	140	30	130	100	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	21	21	105	42	326	21	147	32	137	105	11
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	1
HCM Control Delay	10.8	13.2	11.7	12
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	33%	71%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	33%	29%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	33%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	140	30	60	140	310	130	100	10
LT Vol	20	0	0	20	100	0	130	0	0
Through Vol	0	140	0	20	40	0	0	100	0
RT Vol	0	0	30	20	0	310	0	0	10
Lane Flow Rate	21	147	32	63	147	326	137	105	11
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.043	0.282	0.054	0.124	0.27	0.502	0.276	0.198	0.018
Departure Headway (Hd)	7.41	6.899	6.185	7.046	6.591	5.533	7.265	6.755	6.041
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	481	519	576	506	544	649	493	529	589
Service Time	5.187	4.676	3.96	4.83	4.35	3.292	5.036	4.525	3.811
HCM Lane V/C Ratio	0.044	0.283	0.056	0.125	0.27	0.502	0.278	0.198	0.019
HCM Control Delay	10.5	12.4	9.3	10.8	11.8	13.8	12.8	11.2	8.9
HCM Lane LOS	B	B	A	B	B	B	B	B	A
HCM 95th-tile Q	0.1	1.1	0.2	0.4	1.1	2.8	1.1	0.7	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	220	60	240	190	390	0	0	0	220	170	80
Future Volume (vph)	80	220	60	240	190	390	0	0	0	220	170	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.90					1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1675					1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1675					1770	1863	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	82	227	62	247	196	402	0	0	0	227	175	82
RTOR Reduction (vph)	0	0	39	0	68	0	0	0	0	0	0	68
Lane Group Flow (vph)	82	227	23	247	530	0	0	0	0	227	175	14
Turn Type	Prot	NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases	1	6		5 7	2 7					8	8	
Permitted Phases			6									8
Actuated Green, G (s)	7.8	33.8	33.8	28.0	54.5					15.7	15.7	15.7
Effective Green, g (s)	7.8	33.8	33.8	28.0	54.5					15.7	15.7	15.7
Actuated g/C Ratio	0.09	0.38	0.38	0.31	0.61					0.18	0.18	0.18
Clearance Time (s)	3.5	4.0	4.0							4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0							1.0	1.0	1.0
Lane Grp Cap (vph)	154	703	597	553	1019					310	326	277
v/s Ratio Prot	c0.05	0.12		0.14	c0.32					c0.13	0.09	
v/s Ratio Perm			0.01									0.01
v/c Ratio	0.53	0.32	0.04	0.45	0.52					0.73	0.54	0.05
Uniform Delay, d1	39.1	19.7	17.6	24.6	10.0					34.9	33.6	30.7
Progression Factor	1.00	1.00	1.00	0.70	0.46					1.00	1.00	1.00
Incremental Delay, d2	1.8	1.2	0.1	0.2	0.2					7.5	0.9	0.0
Delay (s)	40.9	21.0	17.7	17.4	4.8					42.4	34.4	30.7
Level of Service	D	C	B	B	A					D	C	C
Approach Delay (s)		24.8			8.5			0.0			37.5	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑↑					↰		↱
Traffic Volume (vph)	0	440	0	0	730	0	0	0	0	140	0	90
Future Volume (vph)	0	440	0	0	730	0	0	0	0	140	0	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			4.0					4.0		4.0
Lane Util. Factor		1.00			0.95					1.00		1.00
Frt		1.00			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		1863			3539					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		1863			3539					1770		1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	454	0	0	753	0	0	0	0	144	0	93
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	81
Lane Group Flow (vph)	0	454	0	0	753	0	0	0	0	144	0	12
Turn Type		NA			NA					Prot		Perm
Protected Phases		1 2 6 8			2					7		
Permitted Phases												7
Actuated Green, G (s)		70.0			39.0					11.5		11.5
Effective Green, g (s)		66.0			39.0					11.5		11.5
Actuated g/C Ratio		0.74			0.44					0.13		0.13
Clearance Time (s)					4.0					4.0		4.0
Vehicle Extension (s)					1.0					1.0		1.0
Lane Grp Cap (vph)		1373			1542					227		203
v/s Ratio Prot		c0.24			c0.21					c0.08		
v/s Ratio Perm												0.01
v/c Ratio		0.33			0.49					0.63		0.06
Uniform Delay, d1		4.1			18.1					37.0		34.2
Progression Factor		0.03			1.00					1.00		1.00
Incremental Delay, d2		0.0			1.1					4.2		0.0
Delay (s)		0.2			19.2					41.2		34.3
Level of Service		A			B					D		C
Approach Delay (s)		0.2			19.2			0.0			38.5	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	480	0	0	510	260	220	10	400	0	0	0
Future Volume (veh/h)	100	480	0	0	510	260	220	10	400	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	108	516	0	0	548	158	237	11	116			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	414	1361	0	0	832	705	282	13	262			
Arrive On Green	0.23	0.73	0.00	0.00	0.44	0.44	0.17	0.17	0.17			
Sat Flow, veh/h	1781	1870	0	0	1870	1585	1706	79	1585			
Grp Volume(v), veh/h	108	516	0	0	548	158	248	0	116			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1870	1585	1785	0	1585			
Q Serve(g_s), s	4.0	8.3	0.0	0.0	18.4	4.9	10.8	0.0	5.3			
Cycle Q Clear(g_c), s	4.0	8.3	0.0	0.0	18.4	4.9	10.8	0.0	5.3			
Prop In Lane	1.00		0.00	0.00		1.00	0.96		1.00			
Lane Grp Cap(c), veh/h	414	1361	0	0	832	705	295	0	262			
V/C Ratio(X)	0.26	0.38	0.00	0.00	0.66	0.22	0.84	0.00	0.44			
Avail Cap(c_a), veh/h	414	1361	0	0	832	705	500	0	444			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.93	0.93	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	25.1	4.1	0.0	0.0	17.4	13.7	32.1	0.0	30.1			
Incr Delay (d2), s/veh	0.1	0.7	0.0	0.0	4.1	0.7	2.5	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.5	1.8	0.0	0.0	7.4	1.6	4.7	0.0	2.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.2	4.9	0.0	0.0	21.5	14.4	34.6	0.0	30.5			
LnGrp LOS	C	A	A	A	C	B	C	A	C			
Approach Vol, veh/h		624			706			364				
Approach Delay, s/veh		8.4			19.9			33.3				
Approach LOS		A			B			C				

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	22.6	39.6				62.2		17.8
Change Period (Y+Rc), s	4.0	* 4				4.0		4.6
Max Green Setting (Gmax), s	9.5	* 36				48.6		22.4
Max Q Clear Time (g_c+I1), s	6.0	20.4				10.3		12.8
Green Ext Time (p_c), s	0.0	0.8				0.7		0.5

Intersection Summary			
HCM 6th Ctrl Delay			18.5
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	0.7					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	550	30	20	210	10	20
Future Vol, veh/h	550	30	20	210	10	20
Conflicting Peds, #/hr	0	0	0	0	5	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	110	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	611	33	22	233	11	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	644	0	910	628
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	282	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	941	-	305	483
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	766	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	941	-	296	483
Mov Cap-2 Maneuver	-	-	-	-	296	-
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	762	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	296	483	-	-	941	-
HCM Lane V/C Ratio	0.038	0.046	-	-	0.024	-
HCM Control Delay (s)	17.6	12.8	-	-	8.9	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	260	30	20	560	40	20
Future Vol, veh/h	260	30	20	560	40	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	280	32	22	602	43	22

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	431	323	0	0	624	0
Stage 1	323	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	581	718	-	-	957	-
Stage 1	734	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	555	718	-	-	957	-
Mov Cap-2 Maneuver	555	-	-	-	-	-
Stage 1	701	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.8	0	6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	568	957	-
HCM Lane V/C Ratio	-	-	0.549	0.045	-
HCM Control Delay (s)	-	-	18.8	8.9	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	3.3	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	490	140	220	340	210	70	60	160	190	100	80
Future Volume (veh/h)	100	490	140	220	340	210	70	60	160	190	100	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	104	510	0	229	354	158	73	62	0	198	104	59
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	1937		259	1440	632	93	103		206	132	75
Arrive On Green	0.07	0.55	0.00	0.15	0.60	0.60	0.05	0.05	0.00	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	2403	1054	1781	1870	1585	1781	1120	636
Grp Volume(v), veh/h	104	510	0	229	260	252	73	62	0	198	0	163
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1681	1781	1870	1585	1781	0	1756
Q Serve(g_s), s	7.5	9.9	0.0	16.4	8.9	9.2	5.3	4.2	0.0	14.4	0.0	11.7
Cycle Q Clear(g_c), s	7.5	9.9	0.0	16.4	8.9	9.2	5.3	4.2	0.0	14.4	0.0	11.7
Prop In Lane	1.00		1.00	1.00		0.63	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	128	1937		259	1065	1007	93	103		206	0	207
V/C Ratio(X)	0.81	0.26		0.88	0.24	0.25	0.78	0.60		0.96	0.00	0.79
Avail Cap(c_a), veh/h	206	1937		411	1065	1007	206	360		206	0	338
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.84	0.84	0.84	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.5	15.7	0.0	54.5	12.2	12.3	60.9	60.0	0.0	57.2	0.0	55.7
Incr Delay (d2), s/veh	11.9	0.3	0.0	11.2	0.5	0.5	13.2	5.6	0.0	52.1	0.0	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.1	0.0	8.2	3.7	3.6	2.7	2.2	0.0	9.5	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.4	16.0	0.0	65.7	12.7	12.8	74.0	65.6	0.0	109.4	0.0	62.2
LnGrp LOS	E	B		E	B	B	E	E		F	A	E
Approach Vol, veh/h		614	A		741			135	A		361	
Approach Delay, s/veh		25.4			29.1			70.2			88.1	
Approach LOS		C			C			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.4	75.5	12.8	19.3	15.4	82.5	21.0	11.1
Change Period (Y+Rc), s	3.5	4.6	6.0	4.0	6.0	4.6	6.0	4.0
Max Green Setting (Gmax), s	30.0	41.9	15.0	25.0	15.0	54.4	15.0	25.0
Max Q Clear Time (g_c+I1), s	18.4	11.9	7.3	13.7	9.5	11.2	16.4	6.2
Green Ext Time (p_c), s	0.5	3.7	0.1	0.6	0.1	3.8	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	170	680	530	170	300	240
Future Volume (veh/h)	170	680	530	170	300	240
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	179	716	558	0	316	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	257	1843	910		400	
Arrive On Green	0.14	0.52	0.26	0.00	0.22	0.00
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	179	716	558	0	316	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	3.2	4.1	4.7	0.0	5.7	0.0
Cycle Q Clear(g_c), s	3.2	4.1	4.7	0.0	5.7	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	257	1843	910		400	
V/C Ratio(X)	0.70	0.39	0.61		0.79	
Avail Cap(c_a), veh/h	1316	5251	5251		1843	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	13.8	4.9	11.1	0.0	12.4	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.3	0.0	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.7	1.5	0.0	1.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.0	5.0	11.4	0.0	13.7	0.0
LnGrp LOS	B	A	B		B	
Approach Vol, veh/h		895	558	A	316	A
Approach Delay, s/veh		7.0	11.4		13.7	
Approach LOS		A	B		B	

Timer - Assigned Phs	2	4	5	6
Phs Duration (G+Y+Rc), s	22.1	11.7	8.9	13.3
Change Period (Y+Rc), s	4.6	4.1	4.0	4.6
Max Green Setting (Gmax), s	50.0	35.0	25.0	50.0
Max Q Clear Time (g_c+I1), s	6.1	7.7	5.2	6.7
Green Ext Time (p_c), s	2.0	0.1	0.1	1.7

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	590	90	190	10	60	10	210	170	20	10	120	380
Future Volume (veh/h)	590	90	190	10	60	10	210	170	20	10	120	380
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	608	93	98	10	62	7	216	175	17	10	124	39
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	644	676	800	31	192	22	255	341	33	27	188	159
Arrive On Green	0.36	0.36	0.36	0.17	0.15	0.15	0.14	0.23	0.23	0.01	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	206	1276	144	1781	1491	145	1781	1870	1585
Grp Volume(v), veh/h	608	93	98	79	0	0	216	0	192	10	124	39
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1626	0	0	1781	0	1636	1781	1870	1585
Q Serve(g_s), s	26.4	2.7	2.6	3.5	0.0	0.0	9.4	0.0	8.2	0.4	5.1	1.8
Cycle Q Clear(g_c), s	26.4	2.7	2.6	3.5	0.0	0.0	9.4	0.0	8.2	0.4	5.1	1.8
Prop In Lane	1.00		1.00	0.13		0.09	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	644	676	800	244	0	0	255	0	374	27	188	159
V/C Ratio(X)	0.94	0.14	0.12	0.32	0.00	0.00	0.85	0.00	0.51	0.38	0.66	0.25
Avail Cap(c_a), veh/h	1005	1055	1121	244	0	0	781	0	615	335	703	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	17.1	10.4	30.2	0.0	0.0	33.3	0.0	26.9	38.9	34.6	33.1
Incr Delay (d2), s/veh	9.4	0.0	0.0	3.5	0.0	0.0	3.0	0.0	0.4	3.2	1.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.1	1.1	0.8	1.6	0.0	0.0	4.2	0.0	3.2	0.2	2.4	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.0	17.1	10.4	33.7	0.0	0.0	36.3	0.0	27.3	42.1	36.1	33.4
LnGrp LOS	C	B	B	C	A	A	D	A	C	D	D	C
Approach Vol, veh/h		799			79			408			173	
Approach Delay, s/veh		29.2			33.7			32.1			35.8	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	4.7	23.7	17.5	14.9	13.5	33.9
Change Period (Y+Rc), s	3.5	5.5	5.5	3.5	5.5	5.0
Max Green Setting (Gmax), s	15.0	30.0	12.0	35.0	30.0	45.0
Max Q Clear Time (g_c+I1), s	12.4	10.2	5.5	11.4	7.1	28.4
Green Ext Time (p_c), s	0.0	0.4	0.1	0.1	0.3	0.5

Intersection Summary	
HCM 6th Ctrl Delay	31.0
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	510	30	10	310	40	50	50	10	70	40	190
Future Volume (veh/h)	250	510	30	10	310	40	50	50	10	70	40	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	266	543	31	11	330	39	53	53	4	74	43	76
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	773	44	15	417	49	217	209	16	164	95	519
Arrive On Green	0.18	0.44	0.44	0.01	0.25	0.25	0.12	0.12	0.12	0.14	0.14	0.14
Sat Flow, veh/h	1781	1752	100	1781	1641	194	1781	1715	129	1147	666	1585
Grp Volume(v), veh/h	266	0	574	11	0	369	53	0	57	117	0	76
Grp Sat Flow(s),veh/h/ln	1781	0	1852	1781	0	1835	1781	0	1845	1813	0	1585
Q Serve(g_s), s	7.5	0.0	13.2	0.3	0.0	9.9	1.4	0.0	1.5	3.1	0.0	0.0
Cycle Q Clear(g_c), s	7.5	0.0	13.2	0.3	0.0	9.9	1.4	0.0	1.5	3.1	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.11	1.00		0.07	0.63		1.00
Lane Grp Cap(c), veh/h	328	0	817	15	0	466	217	0	225	260	0	519
V/C Ratio(X)	0.81	0.00	0.70	0.73	0.00	0.79	0.24	0.00	0.25	0.45	0.00	0.15
Avail Cap(c_a), veh/h	848	0	1058	509	0	1049	678	0	702	690	0	896
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.5	0.0	11.9	26.0	0.0	18.3	20.9	0.0	20.9	20.7	0.0	12.5
Incr Delay (d2), s/veh	1.8	0.0	0.8	21.9	0.0	1.2	0.2	0.0	0.2	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	4.7	0.2	0.0	3.9	0.6	0.0	0.6	1.3	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	0.0	12.7	47.8	0.0	19.5	21.1	0.0	21.1	21.2	0.0	12.5
LnGrp LOS	C	A	B	D	A	B	C	A	C	C	A	B
Approach Vol, veh/h		840			380			110			193	
Approach Delay, s/veh		15.8			20.3			21.1			17.8	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.9	17.5		10.0	4.0	27.4		11.1
Change Period (Y+Rc), s	* 4.2	* 4.2		3.6	3.6	* 4.2		3.6
Max Green Setting (Gmax), s	* 25	* 30		20.0	15.0	* 30		20.0
Max Q Clear Time (g_c+I1), s	9.5	11.9		3.5	2.3	15.2		5.1
Green Ext Time (p_c), s	0.4	1.5		0.2	0.0	2.4		0.5

Intersection Summary	
HCM 6th Ctrl Delay	17.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	27.8
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	50	20	50	20	170	30	160	120	420	240	10
Future Vol, veh/h	10	50	20	50	20	170	30	160	120	420	240	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	54	22	54	22	183	32	172	129	452	258	11
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	1
HCM Control Delay	13.5	14.2	13.9	40.9
HCM LOS	B	B	B	E

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	12%	71%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	62%	29%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	25%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	160	120	80	70	170	420	240	10
LT Vol	30	0	0	10	50	0	420	0	0
Through Vol	0	160	0	50	20	0	0	240	0
RT Vol	0	0	120	20	0	170	0	0	10
Lane Flow Rate	32	172	129	86	75	183	452	258	11
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.075	0.377	0.257	0.205	0.178	0.379	0.943	0.502	0.019
Departure Headway (Hd)	8.405	7.892	7.174	8.562	8.527	7.457	7.515	7.004	6.289
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	426	456	499	418	420	481	483	514	568
Service Time	6.167	5.654	4.935	6.334	6.288	5.217	5.267	4.756	4.041
HCM Lane V/C Ratio	0.075	0.377	0.259	0.206	0.179	0.38	0.936	0.502	0.019
HCM Control Delay	11.9	15.4	12.4	13.5	13.1	14.7	55.5	16.7	9.2
HCM Lane LOS	B	C	B	B	B	B	F	C	A
HCM 95th-tile Q	0.2	1.7	1	0.8	0.6	1.7	11.4	2.8	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	220	70	390	170	330	0	0	0	190	170	90
Future Volume (vph)	80	220	70	390	170	330	0	0	0	190	170	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.90					1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1678					1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1678					1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	83	229	73	406	177	344	0	0	0	198	177	94
RTOR Reduction (vph)	0	0	44	0	71	0	0	0	0	0	0	78
Lane Group Flow (vph)	83	229	29	406	450	0	0	0	0	198	177	16
Turn Type	Prot	NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases	1	6		5 7	2 7					8	8	
Permitted Phases			6									8
Actuated Green, G (s)	7.0	31.3	31.3	22.3	47.1					13.9	13.9	13.9
Effective Green, g (s)	7.0	31.3	31.3	22.3	47.1					13.9	13.9	13.9
Actuated g/C Ratio	0.09	0.39	0.39	0.28	0.59					0.17	0.17	0.17
Clearance Time (s)	3.5	4.0	4.0							4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0							1.0	1.0	1.0
Lane Grp Cap (vph)	155	733	623	496	994					309	325	276
v/s Ratio Prot	c0.05	0.12		c0.23	c0.27					c0.11	0.10	
v/s Ratio Perm			0.02									0.01
v/c Ratio	0.54	0.31	0.05	0.82	0.45					0.64	0.54	0.06
Uniform Delay, d1	34.7	16.7	14.9	26.7	9.0					30.5	29.9	27.3
Progression Factor	1.00	1.00	1.00	0.77	0.30					1.00	1.00	1.00
Incremental Delay, d2	1.8	1.1	0.1	8.2	0.1					3.4	1.0	0.0
Delay (s)	36.5	17.8	15.0	28.8	2.8					33.9	30.9	27.4
Level of Service	D	B	B	C	A					C	C	C
Approach Delay (s)		21.3			14.2			0.0			31.5	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	410	0	0	800	0	0	0	0	180	0	90
Future Volume (vph)	0	410	0	0	800	0	0	0	0	180	0	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			4.0					4.0		4.0
Lane Util. Factor		1.00			0.95					1.00		1.00
Frt		1.00			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		1863			3539					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		1863			3539					1770		1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	427	0	0	833	0	0	0	0	188	0	94
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	80
Lane Group Flow (vph)	0	427	0	0	833	0	0	0	0	188	0	14
Turn Type		NA			NA					Prot		Perm
Protected Phases		1 2 6 8			2					7		
Permitted Phases												7
Actuated Green, G (s)		59.7			31.3					11.8		11.8
Effective Green, g (s)		55.7			31.3					11.8		11.8
Actuated g/C Ratio		0.70			0.39					0.15		0.15
Clearance Time (s)					4.0					4.0		4.0
Vehicle Extension (s)					1.0					1.0		1.0
Lane Grp Cap (vph)		1305			1393					262		234
v/s Ratio Prot		c0.23			c0.24					c0.11		
v/s Ratio Perm												0.01
v/c Ratio		0.33			0.60					0.72		0.06
Uniform Delay, d1		4.6			19.1					32.3		29.1
Progression Factor		0.02			1.00					1.00		1.00
Incremental Delay, d2		0.1			1.9					7.6		0.0
Delay (s)		0.2			21.0					39.8		29.1
Level of Service		A			C					D		C
Approach Delay (s)		0.2			21.0			0.0			36.3	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	500	0	0	650	270	150	0	420	0	0	0
Future Volume (veh/h)	90	500	0	0	650	270	150	0	420	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	93	515	0	0	670	175	155	0	194			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	591	1392	0	0	678	560	264	0	235			
Arrive On Green	0.66	1.00	0.00	0.00	0.36	0.36	0.15	0.00	0.15			
Sat Flow, veh/h	1781	1870	0	0	1870	1545	1781	0	1585			
Grp Volume(v), veh/h	93	515	0	0	670	175	155	0	194			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1870	1545	1781	0	1585			
Q Serve(g_s), s	1.6	0.0	0.0	0.0	28.5	6.5	6.5	0.0	9.5			
Cycle Q Clear(g_c), s	1.6	0.0	0.0	0.0	28.5	6.5	6.5	0.0	9.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	591	1392	0	0	678	560	264	0	235			
V/C Ratio(X)	0.16	0.37	0.00	0.00	0.99	0.31	0.59	0.00	0.83			
Avail Cap(c_a), veh/h	591	1392	0	0	678	560	490	0	436			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.91	0.91	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.2	0.0	0.0	0.0	25.3	18.3	31.8	0.0	33.1			
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	31.8	1.5	0.8	0.0	2.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.5	0.3	0.0	0.0	16.6	2.2	2.8	0.0	3.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.3	0.7	0.0	0.0	57.1	19.8	32.6	0.0	35.9			
LnGrp LOS	A	A	A	A	E	B	C	A	D			
Approach Vol, veh/h		608			845			349				
Approach Delay, s/veh		2.0			49.4			34.4				
Approach LOS		A			D			C				

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	30.6	33.0				63.6		16.4
Change Period (Y+Rc), s	4.0	* 4				4.0		4.6
Max Green Setting (Gmax), s	15.0	* 29				49.0		22.0
Max Q Clear Time (g_c+I1), s	3.6	30.5				2.0		11.5
Green Ext Time (p_c), s	0.0	0.0				0.7		0.3

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	320	30	20	350	20	20
Future Vol, veh/h	320	30	20	350	20	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	110	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	337	32	21	368	21	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	369	0	763	353
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	410	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1190	-	372	691
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	670	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1190	-	365	691
Mov Cap-2 Maneuver	-	-	-	-	365	-
Stage 1	-	-	-	-	698	-
Stage 2	-	-	-	-	670	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	365	691	-	-	1190	-
HCM Lane V/C Ratio	0.058	0.03	-	-	0.018	-
HCM Control Delay (s)	15.5	10.4	-	-	8.1	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	10

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	370	40	50	320	40	30
Future Vol, veh/h	370	40	50	320	40	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	381	41	52	330	41	31

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	330	217	0	0	382	0
Stage 1	217	-	-	-	-	-
Stage 2	113	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	665	823	-	-	1176	-
Stage 1	819	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	642	823	-	-	1176	-
Mov Cap-2 Maneuver	642	-	-	-	-	-
Stage 1	790	-	-	-	-	-
Stage 2	912	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.9	0	4.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	656	1176	-
HCM Lane V/C Ratio	-	-	0.644	0.035	-
HCM Control Delay (s)	-	-	19.9	8.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	4.7	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	350	110	240	350	210	90	90	130	140	100	90
Future Volume (veh/h)	100	350	110	240	350	210	90	90	130	140	100	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	361	0	247	361	158	93	93	0	144	103	65
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	1869		277	1417	608	116	158		169	122	77
Arrive On Green	0.07	0.53	0.00	0.16	0.59	0.59	0.07	0.08	0.00	0.10	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	1781	2398	1030	1781	1870	1585	1781	1072	677
Grp Volume(v), veh/h	103	361	0	247	266	253	93	93	0	144	0	168
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1651	1781	1870	1585	1781	0	1749
Q Serve(g_s), s	7.4	7.0	0.0	17.7	9.4	9.6	6.7	6.2	0.0	10.3	0.0	12.2
Cycle Q Clear(g_c), s	7.4	7.0	0.0	17.7	9.4	9.6	6.7	6.2	0.0	10.3	0.0	12.2
Prop In Lane	1.00		1.00	1.00		0.62	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	127	1869		277	1050	975	116	158		169	0	200
V/C Ratio(X)	0.81	0.19		0.89	0.25	0.26	0.80	0.59		0.85	0.00	0.84
Avail Cap(c_a), veh/h	206	1869		411	1050	975	206	360		206	0	336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.85	0.85	0.85	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.5	16.3	0.0	53.8	12.8	12.9	59.9	57.3	0.0	57.9	0.0	56.4
Incr Delay (d2), s/veh	11.6	0.2	0.0	13.4	0.5	0.5	11.8	3.5	0.0	23.6	0.0	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	2.9	0.0	9.0	3.9	3.8	3.4	3.1	0.0	5.8	0.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.1	16.5	0.0	67.3	13.3	13.4	71.8	60.8	0.0	81.5	0.0	65.5
LnGrp LOS	E	B		E	B	B	E	E		F	A	E
Approach Vol, veh/h		464	A		766			186	A		312	
Approach Delay, s/veh		28.6			30.7			66.3			72.9	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.7	73.0	14.5	18.9	15.3	81.4	18.4	15.0
Change Period (Y+Rc), s	3.5	4.6	6.0	4.0	6.0	4.6	6.0	4.0
Max Green Setting (Gmax), s	30.0	41.9	15.0	25.0	15.0	54.4	15.0	25.0
Max Q Clear Time (g_c+I1), s	19.7	9.0	8.7	14.2	9.4	11.6	12.3	8.2
Green Ext Time (p_c), s	0.5	2.6	0.1	0.6	0.1	3.9	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	41.6
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	490	610	150	200	190
Future Volume (veh/h)	130	490	610	150	200	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	516	642	0	211	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	230	1897	1012		366	
Arrive On Green	0.13	0.53	0.28	0.00	0.21	0.00
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	137	516	642	0	211	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	2.4	2.6	5.3	0.0	3.6	0.0
Cycle Q Clear(g_c), s	2.4	2.6	5.3	0.0	3.6	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	230	1897	1012		366	
V/C Ratio(X)	0.60	0.27	0.63		0.58	
Avail Cap(c_a), veh/h	1334	5321	5321		1867	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	13.7	4.2	10.4	0.0	11.9	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.2	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.4	1.6	0.0	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.6	4.3	10.7	0.0	12.5	0.0
LnGrp LOS	B	A	B		B	
Approach Vol, veh/h		653	642	A	211	A
Approach Delay, s/veh		6.4	10.7		12.5	
Approach LOS		A	B		B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		22.4		11.0	8.3	14.1
Change Period (Y+Rc), s		4.6		4.1	4.0	4.6
Max Green Setting (Gmax), s		50.0		35.0	25.0	50.0
Max Q Clear Time (g_c+I1), s		4.6		5.6	4.4	7.3
Green Ext Time (p_c), s		1.4		0.1	0.1	2.0

Intersection Summary		
HCM 6th Ctrl Delay		9.1
HCM 6th LOS		A

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	400	60	170	20	40	20	180	140	20	10	170	490
Future Volume (veh/h)	400	60	170	20	40	20	180	140	20	10	170	490
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	430	65	69	22	43	14	194	151	18	11	183	111
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	484	508	637	77	150	49	237	375	45	29	263	219
Arrive On Green	0.27	0.27	0.27	0.17	0.17	0.17	0.13	0.26	0.26	0.02	0.14	0.14
Sat Flow, veh/h	1781	1870	1570	442	864	281	1781	1457	174	1781	1870	1557
Grp Volume(v), veh/h	430	65	69	79	0	0	194	0	169	11	183	111
Grp Sat Flow(s),veh/h/ln	1781	1870	1570	1587	0	0	1781	0	1631	1781	1870	1557
Q Serve(g_s), s	16.1	1.8	1.9	3.0	0.0	0.0	7.3	0.0	6.0	0.4	6.5	4.6
Cycle Q Clear(g_c), s	16.1	1.8	1.9	3.0	0.0	0.0	7.3	0.0	6.0	0.4	6.5	4.6
Prop In Lane	1.00		1.00	0.28		0.18	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	484	508	637	275	0	0	237	0	419	29	263	219
V/C Ratio(X)	0.89	0.13	0.11	0.29	0.00	0.00	0.82	0.00	0.40	0.37	0.69	0.51
Avail Cap(c_a), veh/h	1157	1214	1230	275	0	0	900	0	706	386	810	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	19.0	12.8	24.9	0.0	0.0	29.2	0.0	21.3	33.7	28.4	27.5
Incr Delay (d2), s/veh	2.3	0.0	0.0	2.6	0.0	0.0	2.7	0.0	0.2	2.9	1.2	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.8	0.6	1.3	0.0	0.0	3.2	0.0	2.2	0.2	2.9	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	19.1	12.9	27.6	0.0	0.0	31.9	0.0	21.6	36.6	29.6	28.2
LnGrp LOS	C	B	B	C	A	A	C	A	C	D	C	C
Approach Vol, veh/h		564			79			363			305	
Approach Delay, s/veh		24.0			27.6			27.1			29.3	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	23.3		17.5	12.7	15.3		23.8				
Change Period (Y+Rc), s	3.5	5.5		5.5	3.5	5.5		5.0				
Max Green Setting (Gmax), s	5.0	30.0		12.0	35.0	30.0		45.0				
Max Q Clear Time (g_c+I1), s	2.4	8.0		5.0	9.3	8.5		18.1				
Green Ext Time (p_c), s	0.0	0.3		0.1	0.1	0.4		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		26.3
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	380	20	0	430	30	40	30	10	40	20	240
Future Volume (veh/h)	180	380	20	0	430	30	40	30	10	40	20	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.95	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	188	396	20	0	448	29	42	31	1	42	21	72
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	242	945	48	4	549	36	183	184	6	163	81	429
Arrive On Green	0.14	0.54	0.54	0.00	0.32	0.32	0.10	0.10	0.10	0.14	0.14	0.14
Sat Flow, veh/h	1781	1765	89	1781	1738	112	1781	1799	58	1207	603	1585
Grp Volume(v), veh/h	188	0	416	0	0	477	42	0	32	63	0	72
Grp Sat Flow(s),veh/h/ln	1781	0	1854	1781	0	1850	1781	0	1857	1810	0	1585
Q Serve(g_s), s	5.1	0.0	6.7	0.0	0.0	11.9	1.1	0.0	0.8	1.6	0.0	0.0
Cycle Q Clear(g_c), s	5.1	0.0	6.7	0.0	0.0	11.9	1.1	0.0	0.8	1.6	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.06	1.00		0.03	0.67		1.00
Lane Grp Cap(c), veh/h	242	0	993	4	0	585	183	0	190	244	0	429
V/C Ratio(X)	0.78	0.00	0.42	0.00	0.00	0.82	0.23	0.00	0.17	0.26	0.00	0.17
Avail Cap(c_a), veh/h	886	0	1107	532	0	1105	709	0	739	721	0	846
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.0	0.0	7.0	0.0	0.0	15.8	20.7	0.0	20.6	19.5	0.0	14.0
Incr Delay (d2), s/veh	2.0	0.0	0.1	0.0	0.0	1.1	0.2	0.0	0.2	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	2.1	0.0	0.0	4.6	0.4	0.0	0.3	0.6	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.0	0.0	7.1	0.0	0.0	16.9	21.0	0.0	20.7	19.7	0.0	14.1
LnGrp LOS	C	A	A	A	A	B	C	A	C	B	A	B
Approach Vol, veh/h		604			477			74			135	
Approach Delay, s/veh		12.0			16.9			20.9			16.7	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	20.1		8.8	0.0	31.1		10.4
Change Period (Y+Rc), s	* 4.2	* 4.2		3.6	3.6	* 4.2		3.6
Max Green Setting (Gmax), s	* 25	* 30		20.0	15.0	* 30		20.0
Max Q Clear Time (g_c+I1), s	7.1	13.9		3.1	0.0	8.7		3.6
Green Ext Time (p_c), s	0.2	1.9		0.1	0.0	1.8		0.3

Intersection Summary	
HCM 6th Ctrl Delay	14.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	13.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	10	30	30	60	30	240	30	160	70	10	180	200	10
Future Vol, veh/h	10	30	30	60	30	240	30	160	70	10	180	200	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	31	31	62	31	247	31	165	72	10	186	206	10
Number of Lanes	0	1	0	0	1	1	1	1	1	0	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	1
HCM Control Delay	11.5	13.2	12.2	14.2
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	14%	67%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	43%	33%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	43%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	160	70	70	90	240	190	200	10
LT Vol	30	0	0	10	60	0	190	0	0
Through Vol	0	160	0	30	30	0	0	200	0
RT Vol	0	0	70	30	0	240	0	0	10
Lane Flow Rate	31	165	72	72	93	247	196	206	10
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.066	0.327	0.129	0.149	0.189	0.432	0.398	0.389	0.017
Departure Headway (Hd)	7.655	7.144	6.434	7.428	7.327	6.289	7.309	6.799	6.085
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	468	503	558	483	492	574	494	532	590
Service Time	5.394	4.883	4.167	5.17	5.046	4.009	5.029	4.519	3.805
HCM Lane V/C Ratio	0.066	0.328	0.129	0.149	0.189	0.43	0.397	0.387	0.017
HCM Control Delay	10.9	13.3	10.1	11.5	11.7	13.7	14.8	13.8	8.9
HCM Lane LOS	B	B	B	B	B	B	B	B	A
HCM 95th-tile Q	0.2	1.4	0.4	0.5	0.7	2.2	1.9	1.8	0.1

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Old Foresthill Rd / Foresthill Rd
Scenario	Cumulative No Project Conditions

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*		*Stop*					*Free*	*Free*	*Yield*	*Free*	
AM Peak Hour Volume	10		20					120	10	20	470	
AM Peak Hour Delay (s)	14.3		9.1					0	0	7.5	0	
PM Peak Hour Volume	10		20					550	30	20	210	
PM Peak Hour Delay (s)	17.6		12.8					0	0	8.9	0	
MD Peak Hour Volume	20		20					320	30	20	350	
MD Peak Hour Delay (s)	15.5		10.4					0	0	8.1	0	

Weekday AM Delay (s)	**9.5**
Weekday AM LOS	**A**

Weekday PM Delay (s)	**12.2**
Weekday PM LOS	**B**

Weekend MD Delay	**11.3**
Weekend MD LOS	**B**

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Northbound
From/To	Old Foresthill Rd to Lincoln W
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.87	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	50.0	%
Segment length	2.3	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	450	veh/h
Opposing direction volume, Vo	190	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	14.4		1.5	
PCE for RVs, ER	1.3		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.483		0.877	
Grade adj. factor,(note-1) fg	0.71		1.00	
Directional flow rate,(note-2) vi	1508	pc/h	249	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	3.7	mi/h
Average travel speed, ATSd	22.2	mi/h
Percent Free Flow Speed, PFFS	56.2	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	3.0		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.864		0.992	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	599	pc/h	220	pc/h
Base percent time-spent-following,(note-4) BPTSFd	51.9	%		
Adjustment for no-passing zones, fnp	34.9			
Percent time-spent-following, PTSFd	77.4	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.35	
Peak 15-min vehicle-miles of travel, VMT15	297	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1035	veh-mi
Peak 15-min total travel time, TT15	13.4	veh-h
Capacity from ATS, CdATS	810	veh/h
Capacity from PTSF, CdPTSF	1551	veh/h
Directional Capacity	1551	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	22.2	mi/h
Percent time-spent-following, PTSFd (from above)	77.4	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	517.2
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.89
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Southbound
From/To	Lincoln Wy to OldForesthill Rd
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.87	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	0.0	%
Segment length	2.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	190	veh/h
Opposing direction volume, Vo	450	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.5		14.4	
PCE for RVs, ER	1.0		1.3	
Heavy-vehicle adj. factor,(note-5) fHV	0.962		0.483	
Grade adj. factor,(note-1) fg	1.00		0.71	
Directional flow rate,(note-2) vi	227	pc/h	1508	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATSd	25.4	mi/h
Percent Free Flow Speed, PFFS	64.3	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                  Analysis(d)        Opposing (o)
PCE for trucks, ET                            1.1                 3.0
PCE for RVs, ER                               1.0                 1.0
Heavy-vehicle adjustment factor, fHV          0.992               0.864
Grade adjustment factor,(note-1) fg           1.00                1.00
Directional flow rate,(note-2) vi             220    pc/h         599     pc/h
Base percent time-spent-following,(note-4) BPTSFd  30.2   %
Adjustment for no-passing zones, fnp               34.9
Percent time-spent-following, PTSFd                39.6   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                              A
Volume to capacity ratio, v/c                      0.13
Peak 15-min vehicle-miles of travel, VMT15         126     veh-mi
Peak-hour vehicle-miles of travel, VMT60           437     veh-mi
Peak 15-min total travel time, TT15                5.0     veh-h
Capacity from ATS, CdATS                           1700    veh/h
Capacity from PTSF, CdPTSF                         1700    veh/h
Directional Capacity                               1700    veh/h

____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                         2.3     mi
Length of two-lane highway upstream of the passing lane, Lu  -       mi
Length of passing lane including tapers, Lpl                 -       mi
Average travel speed, ATSd (from above)                      25.4    mi/h
Percent time-spent-following, PTSFd (from above)             39.6
Level of service, LOSd (from above)                          A

___________________Average Travel Speed  with Passing Lane___________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde     -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld  -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                    -
Average travel speed including passing lane, ATSpl           -
Percent free flow speed including passing lane, PFFSpl       0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde    -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld    -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                     -
Percent time-spent-following
    including passing lane, PTSFpl                           -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl     A
Peak 15-min total travel time, TT15                -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	218.4
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.45
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Northbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	2	/mi

Analysis direction volume, Vd 480 veh/h
Opposing direction volume, Vo 200 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		12.4	
PCE for RVs, ER	1.0		1.4	
Heavy-vehicle adj. factor,(note-5) fHV	0.992		0.522	
Grade adj. factor,(note-1) fg	1.00		0.46	
Directional flow rate,(note-2) vi	569	pc/h	980	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	27.2	mi/h
Percent Free Flow Speed, PFFS	67.4	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		2.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		0.897	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	565	pc/h	262	pc/h
Base percent time-spent-following,(note-4) BPTSFd	49.8	%		
Adjustment for no-passing zones, fnp	34.6			
Percent time-spent-following, PTSFd	73.4	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.33	
Peak 15-min vehicle-miles of travel, VMT15	254	veh-mi
Peak-hour vehicle-miles of travel, VMT60	864	veh-mi
Peak 15-min total travel time, TT15	9.3	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	27.2	mi/h
Percent time-spent-following, PTSFd (from above)	73.4	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	564.7
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.84
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Southbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	2	/mi

Analysis direction volume, Vd 200 veh/h
Opposing direction volume, Vo 480 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	12.4		1.1	
PCE for RVs, ER	1.4		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.522		0.948	
Grade adj. factor,(note-1) fg	0.46		1.00	
Directional flow rate,(note-2) vi	980	pc/h	596	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.8	mi/h
Average travel speed, ATSd	26.3	mi/h
Percent Free Flow Speed, PFFS	65.1	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.4		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.897		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	262	pc/h	565	pc/h
Base percent time-spent-following,(note-4) BPTSFd	33.9	%		
Adjustment for no-passing zones, fnp	34.6			
Percent time-spent-following, PTSFd	44.9	%		

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.15	
Peak 15-min vehicle-miles of travel, VMT15	106	veh-mi
Peak-hour vehicle-miles of travel, VMT60	360	veh-mi
Peak 15-min total travel time, TT15	4.0	veh-h
Capacity from ATS, CdATS	899	veh/h
Capacity from PTSF, CdPTSF	1568	veh/h
Directional Capacity	1568	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	26.3	mi/h
Percent time-spent-following, PTSFd (from above)	44.9	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	235.3
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.37
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	480	veh/h
Opposing direction volume, Vo	200	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7		2.2	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.947		0.912	
Grade adj. factor,(note-1) fg	0.96		0.78	
Directional flow rate,(note-2) vi	621	pc/h	331	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	3.1	mi/h
Average travel speed, ATSd	29.8	mi/h
Percent Free Flow Speed, PFFS	73.9	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.2	1.7
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.984	0.947
Grade adjustment factor,(note-1) fg	0.97	0.82
Directional flow rate,(note-2) vi	591 pc/h	303 pc/h

Base percent time-spent-following,(note-4) BPTSFd	53.2	%
Adjustment for no-passing zones, fnp	33.2	
Percent time-spent-following, PTSFd	75.1	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.33	
Peak 15-min vehicle-miles of travel, VMT15	254	veh-mi
Peak-hour vehicle-miles of travel, VMT60	864	veh-mi
Peak 15-min total travel time, TT15	8.5	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	29.8	mi/h
Percent time-spent-following, PTSFd (from above)	75.1	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	564.7
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.84
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Southbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd 200 veh/h
Opposing direction volume, Vo 480 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.2		1.7	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.912		0.947	
Grade adj. factor,(note-1) fg	0.78		0.96	
Directional flow rate,(note-2) vi	331	pc/h	621	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.7	mi/h
Average travel speed, ATSd	31.2	mi/h
Percent Free Flow Speed, PFFS	77.4	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7		1.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.947		0.984	
Grade adjustment factor,(note-1) fg	0.82		0.97	
Directional flow rate,(note-2) vi	303	pc/h	591	pc/h
Base percent time-spent-following,(note-4) BPTSFd	38.2	%		
Adjustment for no-passing zones, fnp	33.2			
Percent time-spent-following, PTSFd	49.5	%		

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.14	
Peak 15-min vehicle-miles of travel, VMT15	106	veh-mi
Peak-hour vehicle-miles of travel, VMT60	360	veh-mi
Peak 15-min total travel time, TT15	3.4	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	31.2	mi/h
Percent time-spent-following, PTSFd (from above)	49.5	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	235.3
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.37
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Northbound
From/To	Old Foresthill Rd to Lincoln W
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.89	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	50.0	%
Segment length	2.3	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	300	veh/h
Opposing direction volume, Vo	530	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	14.5		1.1	
PCE for RVs, ER	1.2		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.481		0.953	
Grade adj. factor,(note-1) fg	0.50		1.00	
Directional flow rate,(note-2) vi	1402	pc/h	625	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	1.7	mi/h
Average travel speed, ATSd	22.1	mi/h
Percent Free Flow Speed, PFFS	55.9	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	3.7		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.824		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	409	pc/h	596	pc/h

Base percent time-spent-following,(note-4) BPTSFd	46.3	%
Adjustment for no-passing zones, fnp	34.4	
Percent time-spent-following, PTSFd	60.3	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.24	
Peak 15-min vehicle-miles of travel, VMT15	194	veh-mi
Peak-hour vehicle-miles of travel, VMT60	690	veh-mi
Peak 15-min total travel time, TT15	8.8	veh-h
Capacity from ATS, CdATS	810	veh/h
Capacity from PTSF, CdPTSF	1551	veh/h
Directional Capacity	1551	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	22.1	mi/h
Percent time-spent-following, PTSFd (from above)	60.3	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	337.1
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.67
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Southbound
From/To	Lincoln Wy to OldForesthill Rd
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.89	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	0.0	%
Segment length	2.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	530	veh/h
Opposing direction volume, Vo	300	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		14.5	
PCE for RVs, ER	1.0		1.2	
Heavy-vehicle adj. factor,(note-5) fHV	0.992		0.481	
Grade adj. factor,(note-1) fg	1.00		0.50	
Directional flow rate,(note-2) vi	600	pc/h	1402	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	23.3	mi/h
Percent Free Flow Speed, PFFS	59.0	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		3.7	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		0.824	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	596	pc/h	409	pc/h

Base percent time-spent-following,(note-4) BPTSFd	54.7	%
Adjustment for no-passing zones, fnp	34.4	
Percent time-spent-following, PTSFd	75.1	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.35	
Peak 15-min vehicle-miles of travel, VMT15	342	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1219	veh-mi
Peak 15-min total travel time, TT15	14.7	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	23.3	mi/h
Percent time-spent-following, PTSFd (from above)	75.1	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	595.5
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.96
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	320	veh/h
Opposing direction volume, Vo	540	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.3		12.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.977		0.524	
Grade adj. factor,(note-1) fg	1.00		0.74	
Directional flow rate,(note-2) vi	360	pc/h	1530	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATSd	25.0	mi/h
Percent Free Flow Speed, PFFS	62.0	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		2.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.992		0.912	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	354	pc/h	650	pc/h
Base percent time-spent-following,(note-4) BPTSFd	43.1	%		
Adjustment for no-passing zones, fnp	35.0			
Percent time-spent-following, PTSFd	55.4	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.21	
Peak 15-min vehicle-miles of travel, VMT15	158	veh-mi
Peak-hour vehicle-miles of travel, VMT60	576	veh-mi
Peak 15-min total travel time, TT15	6.3	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	25.0	mi/h
Percent time-spent-following, PTSFd (from above)	55.4	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	351.6
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.60
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Southbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	540	veh/h
Opposing direction volume, Vo	320	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	12.4		1.3	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.524		0.904	
Grade adj. factor,(note-1) fg	0.74		1.00	
Directional flow rate,(note-2) vi	1530	pc/h	389	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.8	mi/h
Average travel speed, ATSd	22.6	mi/h
Percent Free Flow Speed, PFFS	56.2	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.2		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.912		0.992	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	650	pc/h	354	pc/h
Base percent time-spent-following,(note-4) BPTSFd	57.2	%		
Adjustment for no-passing zones, fnp	35.0			
Percent time-spent-following, PTSFd	79.9	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.38	
Peak 15-min vehicle-miles of travel, VMT15	267	veh-mi
Peak-hour vehicle-miles of travel, VMT60	972	veh-mi
Peak 15-min total travel time, TT15	11.8	veh-h
Capacity from ATS, CdATS	899	veh/h
Capacity from PTSF, CdPTSF	1568	veh/h
Directional Capacity	1568	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	22.6	mi/h
Percent time-spent-following, PTSFd (from above)	79.9	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	593.4
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.84
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	320	veh/h
Opposing direction volume, Vo	540	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0		1.7	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.926		0.947	
Grade adj. factor,(note-1) fg	0.87		0.97	
Directional flow rate,(note-2) vi	436	pc/h	646	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.7	mi/h
Average travel speed, ATSd	30.2	mi/h
Percent Free Flow Speed, PFFS	75.0	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.6		1.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.954		0.984	
Grade adjustment factor,(note-1) fg	0.88		0.97	
Directional flow rate,(note-2) vi	419	pc/h	622	pc/h
Base percent time-spent-following,(note-4) BPTSFd	47.0	%		
Adjustment for no-passing zones, fnp	34.1			
Percent time-spent-following, PTSFd	60.7	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.21	
Peak 15-min vehicle-miles of travel, VMT15	158	veh-mi
Peak-hour vehicle-miles of travel, VMT60	576	veh-mi
Peak 15-min total travel time, TT15	5.2	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	30.2	mi/h
Percent time-spent-following, PTSFd (from above)	60.7	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	351.6
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.60
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Southbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	540	veh/h
Opposing direction volume, Vo	320	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7		2.0	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.947		0.926	
Grade adj. factor,(note-1) fg	0.97		0.87	
Directional flow rate,(note-2) vi	646	pc/h	436	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.5	mi/h
Average travel speed, ATSd	29.4	mi/h
Percent Free Flow Speed, PFFS	72.9	%

```
________________________Percent Time-Spent-Following________________________

Direction                                     Analysis(d)         Opposing (o)
PCE for trucks, ET                                1.2                 1.6
PCE for RVs, ER                                   1.0                 1.0
Heavy-vehicle adjustment factor, fHV              0.984               0.954
Grade adjustment factor,(note-1) fg               0.97                0.88
Directional flow rate,(note-2) vi                 622    pc/h         419     pc/h
Base percent time-spent-following,(note-4) BPTSFd  57.0   %
Adjustment for no-passing zones, fnp                      34.1
Percent time-spent-following, PTSFd                       77.4   %

________________Level of Service and Other Performance Measures______________

Level of service, LOS                                     D
Volume to capacity ratio, v/c                             0.35
Peak 15-min vehicle-miles of travel, VMT15                267     veh-mi
Peak-hour vehicle-miles of travel, VMT60                  972     veh-mi
Peak 15-min total travel time, TT15                       9.1     veh-h
Capacity from ATS, CdATS                                  1661    veh/h
Capacity from PTSF, CdPTSF                                1700    veh/h
Directional Capacity                                      1700    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                                1.8     mi
Length of two-lane highway upstream of the passing lane, Lu         -       mi
Length of passing lane including tapers, Lpl                        -       mi
Average travel speed, ATSd (from above)                             29.4    mi/h
Percent time-spent-following, PTSFd (from above)                    77.4
Level of service, LOSd (from above)                                 D

___________________Average Travel Speed  with Passing Lane___________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde            -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld         -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                           -
Average travel speed including passing lane, ATSpl                  -
Percent free flow speed including passing lane, PFFSpl              0.0     %

________________Percent Time-Spent-Following with Passing Lane_______________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde           -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld           -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                            -
Percent time-spent-following
    including passing lane, PTSFpl                                  -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl            A
Peak 15-min total travel time, TT15                       -       veh-h

__________________________ Bicycle Level of Service __________________________
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Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	593.4
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.84
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Northbound
From/To	Old Foresthill Rd to Lincoln W
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.95	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	50.0	%
Segment length	2.3	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	400	veh/h
Opposing direction volume, Vo	370	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	14.5		1.3	
PCE for RVs, ER	1.3		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.481		0.911	
Grade adj. factor,(note-1) fg	0.57		1.00	
Directional flow rate,(note-2) vi	1536	pc/h	428	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	2.6	mi/h
Average travel speed, ATSd	21.7	mi/h
Percent Free Flow Speed, PFFS	55.0	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	3.5		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.835		0.992	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	504	pc/h	393	pc/h
Base percent time-spent-following,(note-4) BPTSFd	50.1	%		
Adjustment for no-passing zones, fnp	42.8			
Percent time-spent-following, PTSFd	74.1	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.30	
Peak 15-min vehicle-miles of travel, VMT15	242	veh-mi
Peak-hour vehicle-miles of travel, VMT60	920	veh-mi
Peak 15-min total travel time, TT15	11.1	veh-h
Capacity from ATS, CdATS	810	veh/h
Capacity from PTSF, CdPTSF	1551	veh/h
Directional Capacity	1551	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	21.7	mi/h
Percent time-spent-following, PTSFd (from above)	74.1	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	421.1
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.78
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Southbound
From/To	Lincoln Wy to OldForesthill Rd
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.95	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	0.0	%
Segment length	2.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	370	veh/h
Opposing direction volume, Vo	400	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.3		14.5	
PCE for RVs, ER	1.0		1.3	
Heavy-vehicle adj. factor,(note-5) fHV	0.977		0.481	
Grade adj. factor,(note-1) fg	1.00		0.57	
Directional flow rate,(note-2) vi	399	pc/h	1536	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATSd	23.9	mi/h
Percent Free Flow Speed, PFFS	60.4	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		3.5	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.992		0.835	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	393	pc/h	504	pc/h

Base percent time-spent-following,(note-4) BPTSFd	44.4	%
Adjustment for no-passing zones, fnp	42.8	
Percent time-spent-following, PTSFd	63.2	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.23	
Peak 15-min vehicle-miles of travel, VMT15	224	veh-mi
Peak-hour vehicle-miles of travel, VMT60	851	veh-mi
Peak 15-min total travel time, TT15	9.4	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	23.9	mi/h
Percent time-spent-following, PTSFd (from above)	63.2	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	389.5
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.74
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Northbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.97	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	2	/mi

Analysis direction volume, Vd 400 veh/h
Opposing direction volume, Vo 360 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.3		12.4	
PCE for RVs, ER	1.0		1.2	
Heavy-vehicle adj. factor,(note-5) fHV	0.977		0.522	
Grade adj. factor,(note-1) fg	1.00		0.52	
Directional flow rate,(note-2) vi	422	pc/h	1367	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	25.7	mi/h
Percent Free Flow Speed, PFFS	63.7	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		2.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		0.899	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	412	pc/h	413	pc/h
Base percent time-spent-following,(note-4) BPTSFd	44.3	%		
Adjustment for no-passing zones, fnp	44.5			
Percent time-spent-following, PTSFd	66.5	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.24	
Peak 15-min vehicle-miles of travel, VMT15	186	veh-mi
Peak-hour vehicle-miles of travel, VMT60	720	veh-mi
Peak 15-min total travel time, TT15	7.2	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	25.7	mi/h
Percent time-spent-following, PTSFd (from above)	66.5	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	412.4
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.68
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
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4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Southbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	360	veh/h
Opposing direction volume, Vo	400	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	12.4		1.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.522		0.928	
Grade adj. factor,(note-1) fg	0.58		1.00	
Directional flow rate,(note-2) vi	1399	pc/h	507	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.2	mi/h
Average travel speed, ATSd	23.3	mi/h
Percent Free Flow Speed, PFFS	57.8	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.4		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.902		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	469	pc/h	471	pc/h
Base percent time-spent-following,(note-4) BPTSFd	49.1	%		
Adjustment for no-passing zones, fnp	41.3			
Percent time-spent-following, PTSFd	69.7	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.28	
Peak 15-min vehicle-miles of travel, VMT15	191	veh-mi
Peak-hour vehicle-miles of travel, VMT60	648	veh-mi
Peak 15-min total travel time, TT15	8.2	veh-h
Capacity from ATS, CdATS	899	veh/h
Capacity from PTSF, CdPTSF	1568	veh/h
Directional Capacity	1568	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	23.3	mi/h
Percent time-spent-following, PTSFd (from above)	69.7	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	423.5
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.67
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	CNP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.97	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd 400 veh/h
Opposing direction volume, Vo 360 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0		2.0	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.926		0.926	
Grade adj. factor,(note-1) fg	0.91		0.88	
Directional flow rate,(note-2) vi	489	pc/h	455	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.5	mi/h
Average travel speed, ATSd	30.5	mi/h
Percent Free Flow Speed, PFFS	75.7	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.4		1.6	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.969		0.954	
Grade adjustment factor,(note-1) fg	0.91		0.89	
Directional flow rate,(note-2) vi	468	pc/h	437	pc/h
Base percent time-spent-following,(note-4) BPTSFd	48.2	%		
Adjustment for no-passing zones, fnp	42.2			
Percent time-spent-following, PTSFd	70.0	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.24	
Peak 15-min vehicle-miles of travel, VMT15	186	veh-mi
Peak-hour vehicle-miles of travel, VMT60	720	veh-mi
Peak 15-min total travel time, TT15	6.1	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	30.5	mi/h
Percent time-spent-following, PTSFd (from above)	70.0	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	412.4
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.68
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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_________________Directional Two-Lane Highway Segment Analysis________________

Analyst                  Fehr & Peers
Agency/Co.
Date Performed           10/12/2018
Analysis Time Period     Weekend MD Peak Hour
Highway                  SR 49 - Southbound
From/To                  1.8 mi S of OFR to SR 193
Jurisdiction
Analysis Year            CNP Conditions
Description  Auburn SRA General Plan

__________________________________Input Data__________________________________

Highway class  Class 2             Peak hour factor, PHF    0.85
Shoulder width       1.2     ft    % Trucks and buses       8        %
Lane width           12.0    ft    % Trucks crawling        50.0     %
Segment length       1.8     mi    Truck crawl speed        10.0     mi/hr
Terrain type         Rolling       % Recreational vehicles  0        %
Grade:  Length       -       mi    % No-passing zones       100      %
        Up/down      -       %     Access point density     2        /mi

Analysis direction volume, Vd  360     veh/h
Opposing direction volume, Vo  400     veh/h

____________________________Average Travel Speed______________________________

Direction                                     Analysis(d)        Opposing (o)
PCE for trucks, ET                               2.0                 1.9
PCE for RVs, ER                                  1.1                 1.1
Heavy-vehicle adj. factor,(note-5) fHV           0.926               0.933
Grade adj. factor,(note-1) fg                    0.91                0.94
Directional flow rate,(note-2) vi                503     pc/h        537     pc/h

Free-Flow Speed from Field Measurement:
Field measured speed,(note-3) S FM                    -      mi/h
Observed total demand,(note-3) V                      -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed,(note-3) BFFS                   45.0    mi/h
Adj. for lane and shoulder width,(note-3) fLS        4.2     mi/h
Adj. for access point density,(note-3) fA            0.5     mi/h

Free-flow speed, FFSd                                40.3    mi/h

Adjustment for no-passing zones, fnp                 2.1     mi/h
Average travel speed, ATSd                           30.1    mi/h
Percent Free Flow Speed, PFFS                        74.8    %
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_________________________Percent Time-Spent-Following_________________________

Direction                                      Analysis(d)        Opposing (o)
PCE for trucks, ET                                 1.4                1.4
PCE for RVs, ER                                    1.0                1.0
Heavy-vehicle adjustment factor, fHV              0.969              0.969
Grade adjustment factor,(note-1) fg               0.91               0.94
Directional flow rate,(note-2) vi                 480    pc/h        517     pc/h
Base percent time-spent-following,(note-4) BPTSFd  49.8   %
Adjustment for no-passing zones, fnp                       39.6
Percent time-spent-following, PTSFd                        68.9   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                      C
Volume to capacity ratio, v/c                              0.25
Peak 15-min vehicle-miles of travel, VMT15                 191     veh-mi
Peak-hour vehicle-miles of travel, VMT60                   648     veh-mi
Peak 15-min total travel time, TT15                        6.3     veh-h
Capacity from ATS, CdATS                                   1661    veh/h
Capacity from PTSF, CdPTSF                                 1700    veh/h
Directional Capacity                                       1700    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                                1.8     mi
Length of two-lane highway upstream of the passing lane, Lu         -       mi
Length of passing lane including tapers, Lpl                        -       mi
Average travel speed, ATSd (from above)                             30.1    mi/h
Percent time-spent-following, PTSFd (from above)                    68.9
Level of service, LOSd (from above)                                 C

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde            -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld         -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                           -
Average travel speed including passing lane, ATSpl                  -
Percent free flow speed including passing lane, PFFSpl              0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde           -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld           -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                            -
Percent time-spent-following
    including passing lane, PTSFpl                                  -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl             A
Peak 15-min total travel time, TT15                        -       veh-h

__________________________ Bicycle Level of Service __________________________
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Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	423.5
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.67
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

CUMULATIVE NO PROJECT WEEKDAY LOS

Roadway Segments	Jurisdiction	Study Period	Volume (Daily or Peak Hour)	A	B	C	D	E	V / C Ratio	LOS
Foresthill Rd - Lincoln Wy to Old Auburn Foresthill Rd	Placer County	Daily	12,500	12,000	14,000	16,000	18,000	20,000	0.63	LOS B
Old Foresthill Rd - SR 49 to Foresthill Rd	Placer County	Daily	1,100	12,000	14,000	16,000	18,000	20,000	0.06	LOS A
Maidu Dr - Auburn Folsom Rd to China Bar Access	City of Auburn	Daily	3,060	N / A	11,610	16,650	18,720	20,070	0.15	LOS B or better
Sliger Mine Rd - SR 193 and San Martin Mine Rd - AM Peak Hour	El Dorado County	Peak Hour	110	N / A	N / A	640	1,310	1,510	0.07	LOS C or better
Sliger Mine Rd - SR 193 and San Martin Mine Rd - PM Peak Hour	El Dorado County	Peak Hour	140	N / A	N / A	640	1,310	1,510	0.09	LOS C or better

CUMULATIVE NO PROJECT WEEKEND LOS

Roadway Segments	Jurisdiction	Study Period	Volume (Daily or Peak Hour)	A	B	C	D	E	V / C Ratio	LOS
Foresthill Rd - Lincoln Wy to Old Auburn Foresthill Rd	Placer County	Daily	11,450	12,000	14,000	16,000	18,000	20,000	0.57	LOS A
Old Foresthill Rd - SR 49 to Foresthill Rd	Placer County	Daily	1,800	12,000	14,000	16,000	18,000	20,000	0.09	LOS A
Maidu Dr - Auburn Folsom Rd to China Bar Access	City of Auburn	Daily	2,720	N / A	11,610	16,650	18,720	20,070	0.14	LOS B or better
Sliger Mine Rd - SR 193 and San Martin Mine Rd	El Dorado County	Peak Hour	100	N / A	N / A	640	1,310	1,510	0.07	LOS C or better

	Cumulative No Project			
Segment	**Weekday Volume**	**TIRE**	**Weekend Volume**	**TIRE**
Skyridge Dr - Sacramento St to Riverview Dr	1,110	3.0	1,210	3.1
Riverview Dr - Skyridge Dr to Maidu Dr	520	2.7	700	2.8

Appendix D:

Cumulative Plus Project Conditions Level of Service Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	125	90	302	234	282	0	0	0	102	200	60
Future Volume (vph)	50	125	90	302	234	282	0	0	0	102	200	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.92					1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1710					1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1710					1770	1863	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	132	95	318	246	297	0	0	0	107	211	63
RTOR Reduction (vph)	0	0	81	0	43	0	0	0	0	0	0	52
Lane Group Flow (vph)	53	132	14	318	500	0	0	0	0	107	211	11
Turn Type	Prot	NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases	1	6		5 7	2 7					8	8	
Permitted Phases			6									8
Actuated Green, G (s)	6.6	11.8	11.8	42.2	47.9					13.5	13.5	13.5
Effective Green, g (s)	6.6	11.8	11.8	42.2	47.9					13.5	13.5	13.5
Actuated g/C Ratio	0.08	0.15	0.15	0.53	0.60					0.17	0.17	0.17
Clearance Time (s)	3.5	4.0	4.0							4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0							1.0	1.0	1.0
Lane Grp Cap (vph)	146	276	234	939	1030					300	316	268
v/s Ratio Prot	0.03	c0.07		0.18	c0.29					0.06	c0.11	
v/s Ratio Perm			0.01									0.01
v/c Ratio	0.36	0.48	0.06	0.34	0.49					0.36	0.67	0.04
Uniform Delay, d1	34.5	31.0	29.1	10.7	8.9					29.2	30.9	27.6
Progression Factor	1.00	1.00	1.00	0.41	0.26					1.00	1.00	1.00
Incremental Delay, d2	0.6	0.5	0.0	0.1	0.1					0.3	4.1	0.0
Delay (s)	35.0	31.5	29.1	4.4	2.4					29.4	35.0	27.6
Level of Service	D	C	C	A	A					C	C	C
Approach Delay (s)		31.4			3.1			0.0			32.2	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	227	0	0	698	0	0	0	0	105	0	120
Future Volume (vph)	0	227	0	0	698	0	0	0	0	105	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			4.0					4.0		4.0
Lane Util. Factor		1.00			0.95					1.00		1.00
Frt		1.00			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		1863			3539					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		1863			3539					1770		1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	239	0	0	735	0	0	0	0	111	0	126
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	109
Lane Group Flow (vph)	0	239	0	0	735	0	0	0	0	111	0	17
Turn Type		NA			NA					Prot		Perm
Protected Phases		1 2 6 8			2					7		
Permitted Phases												7
Actuated Green, G (s)		61.0			33.4					10.5		10.5
Effective Green, g (s)		57.0			33.4					10.5		10.5
Actuated g/C Ratio		0.72			0.42					0.13		0.13
Clearance Time (s)					4.0					4.0		4.0
Vehicle Extension (s)					1.0					1.0		1.0
Lane Grp Cap (vph)		1335			1486					233		209
v/s Ratio Prot		c0.13			c0.21					c0.06		
v/s Ratio Perm												0.01
v/c Ratio		0.18			0.49					0.48		0.08
Uniform Delay, d1		3.7			16.9					32.0		30.3
Progression Factor		0.03			1.00					1.00		1.00
Incremental Delay, d2		0.0			1.2					0.6		0.1
Delay (s)		0.1			18.1					32.5		30.3
Level of Service		A			B					C		C
Approach Delay (s)		0.1			18.1			0.0			31.3	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	262	0	0	548	246	150	10	242	0	0	0
Future Volume (veh/h)	70	262	0	0	548	246	150	10	242	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	76	285	0	0	596	167	163	11	18			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	639	1442	0	0	678	560	203	14	192			
Arrive On Green	0.72	1.00	0.00	0.00	0.36	0.36	0.13	0.12	0.12			
Sat Flow, veh/h	1781	1870	0	0	1870	1545	1674	113	1585			
Grp Volume(v), veh/h	76	285	0	0	596	167	174	0	18			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1870	1545	1787	0	1585			
Q Serve(g_s), s	1.1	0.0	0.0	0.0	23.9	6.2	7.6	0.0	0.8			
Cycle Q Clear(g_c), s	1.1	0.0	0.0	0.0	23.9	6.2	7.6	0.0	0.8			
Prop In Lane	1.00		0.00	0.00		1.00	0.94		1.00			
Lane Grp Cap(c), veh/h	639	1442	0	0	678	560	217	0	192			
V/C Ratio(X)	0.12	0.20	0.00	0.00	0.88	0.30	0.80	0.00	0.09			
Avail Cap(c_a), veh/h	639	1442	0	0	678	560	491	0	436			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.97	0.97	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	7.4	0.0	0.0	0.0	23.9	18.2	33.9	0.0	31.2			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	15.1	1.4	2.6	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	0.1	0.0	0.0	11.7	2.1	3.3	0.0	0.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.4	0.3	0.0	0.0	39.0	19.6	36.5	0.0	31.3			
LnGrp LOS	A	A	A	A	D	B	D	A	C			
Approach Vol, veh/h		361			763			192				
Approach Delay, s/veh		1.8			34.7			36.1				
Approach LOS		A			C			D				

Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	32.7	33.0				65.7		14.3				
Change Period (Y+Rc), s	4.0	* 4				4.0		4.6				
Max Green Setting (Gmax), s	15.0	* 29				49.0		22.0				
Max Q Clear Time (g_c+I1), s	3.1	25.9				2.0		9.6				
Green Ext Time (p_c), s	0.0	0.5				0.4		0.3				

Intersection Summary			
HCM 6th Ctrl Delay			25.9
HCM 6th LOS			C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	125	16	22	475	17	23
Future Vol, veh/h	125	16	22	475	17	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	110	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	139	18	24	528	19	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	157	0	724	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	576	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1423	-	393	899
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	562	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1423	-	386	899
Mov Cap-2 Maneuver	-	-	-	-	386	-
Stage 1	-	-	-	-	865	-
Stage 2	-	-	-	-	562	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	386	899	-	-	1423	-
HCM Lane V/C Ratio	0.049	0.028	-	-	0.017	-
HCM Control Delay (s)	14.8	9.1	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	13.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	486	25	12	212	26	12
Future Vol, veh/h	486	25	12	212	26	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	523	27	13	228	28	13

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	196	127	0	0	241	0
Stage 1	127	-	-	-	-	-
Stage 2	69	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	793	923	-	-	1326	-
Stage 1	899	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	776	923	-	-	1326	-
Mov Cap-2 Maneuver	776	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	954	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.7	0	5.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	782	1326	-
HCM Lane V/C Ratio	-	-	0.703	0.021	-
HCM Control Delay (s)	-	-	19.7	7.8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	5.9	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	206	110	264	337	122	90	40	116	73	50	50
Future Volume (veh/h)	40	206	110	264	337	122	90	40	116	73	50	50
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	219	0	281	359	109	96	43	0	78	53	20
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	1999		310	1835	549	120	128		99	74	28
Arrive On Green	0.04	0.56	0.00	0.17	0.68	0.68	0.07	0.07	0.00	0.06	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	1781	2695	807	1781	1870	1585	1781	1294	488
Grp Volume(v), veh/h	43	219	0	281	235	233	96	43	0	78	0	73
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1725	1781	1870	1585	1781	0	1782
Q Serve(g_s), s	3.1	3.7	0.0	20.1	6.3	6.5	6.9	2.8	0.0	5.6	0.0	5.2
Cycle Q Clear(g_c), s	3.1	3.7	0.0	20.1	6.3	6.5	6.9	2.8	0.0	5.6	0.0	5.2
Prop In Lane	1.00		1.00	1.00		0.47	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	65	1999		310	1210	1175	120	128		99	0	102
V/C Ratio(X)	0.66	0.11		0.91	0.19	0.20	0.80	0.34		0.79	0.00	0.72
Avail Cap(c_a), veh/h	206	1999		411	1210	1175	206	360		206	0	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.91	0.91	0.91	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	61.8	13.3	0.0	52.6	7.6	7.7	59.8	57.7	0.0	60.6	0.0	60.3
Incr Delay (d2), s/veh	11.0	0.1	0.0	18.0	0.3	0.3	11.7	1.5	0.0	12.7	0.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	1.5	0.0	10.6	2.5	2.5	3.5	1.4	0.0	2.9	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.9	13.4	0.0	70.6	8.0	8.0	71.5	59.2	0.0	73.3	0.0	69.3
LnGrp LOS	E	B		E	A	A	E	E		E	A	E
Approach Vol, veh/h		262	A		749			139	A		151	
Approach Delay, s/veh		23.1			31.5			67.7			71.4	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.1	77.7	14.7	11.4	10.7	93.1	13.2	12.9
Change Period (Y+Rc), s	3.5	4.6	6.0	4.0	6.0	4.6	6.0	4.0
Max Green Setting (Gmax), s	30.0	41.9	15.0	25.0	15.0	54.4	15.0	25.0
Max Q Clear Time (g_c+I1), s	22.1	5.7	8.9	7.2	5.1	8.5	7.6	4.8
Green Ext Time (p_c), s	0.5	1.5	0.1	0.3	0.0	3.4	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	38.3
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	345	533	147	161	190
Future Volume (veh/h)	50	345	533	147	161	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	54	375	579	0	175	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	130	1754	1008		370	
Arrive On Green	0.07	0.49	0.28	0.00	0.21	0.00
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	54	375	579	0	175	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.8	1.7	4.1	0.0	2.5	0.0
Cycle Q Clear(g_c), s	0.8	1.7	4.1	0.0	2.5	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	130	1754	1008		370	
V/C Ratio(X)	0.42	0.21	0.57		0.47	
Avail Cap(c_a), veh/h	1528	6095	6095		2139	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	12.9	4.2	8.9	0.0	10.1	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.2	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	1.1	0.0	0.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.7	4.2	9.1	0.0	10.5	0.0
LnGrp LOS	B	A	A		B	
Approach Vol, veh/h		429	579	A	175	A
Approach Delay, s/veh		5.4	9.1		10.5	
Approach LOS		A	A		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		19.0		10.2	6.1	12.9
Change Period (Y+Rc), s		4.6		4.1	4.0	4.6
Max Green Setting (Gmax), s		50.0		35.0	25.0	50.0
Max Q Clear Time (g_c+I1), s		3.7		4.5	2.8	6.1
Green Ext Time (p_c), s		1.0		0.1	0.0	1.7

Intersection Summary	
HCM 6th Ctrl Delay	8.0
HCM 6th LOS	A

Notes
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑	↱		✥		↰	↱		↰	↑	↱
Traffic Volume (veh/h)	286	40	130	10	20	0	90	75	10	10	115	540
Future Volume (veh/h)	286	40	130	10	20	0	90	75	10	10	115	540
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	0.89	1.00	1.00	1.00	0.89	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	295	41	38	10	21	0	93	77	6	10	119	82
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	353	370	444	113	238	0	146	340	26	27	292	236
Arrive On Green	0.20	0.20	0.20	0.24	0.21	0.00	0.08	0.22	0.22	0.02	0.16	0.16
Sat Flow, veh/h	1781	1870	1585	528	1110	0	1781	1524	119	1781	1870	1510
Grp Volume(v), veh/h	295	41	38	31	0	0	93	0	83	10	119	82
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1638	0	0	1781	0	1642	1781	1870	1510
Q Serve(g_s), s	8.9	1.0	1.0	0.8	0.0	0.0	2.8	0.0	2.3	0.3	3.2	2.7
Cycle Q Clear(g_c), s	8.9	1.0	1.0	0.8	0.0	0.0	2.8	0.0	2.3	0.3	3.2	2.7
Prop In Lane	1.00		1.00	0.32		0.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	353	370	444	352	0	0	146	0	366	27	292	236
V/C Ratio(X)	0.84	0.11	0.09	0.09	0.00	0.00	0.64	0.00	0.23	0.36	0.41	0.35
Avail Cap(c_a), veh/h	1434	1506	1406	352	0	0	1116	0	882	478	1004	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	18.4	14.8	17.4	0.0	0.0	24.8	0.0	17.8	27.2	21.2	21.0
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.5	0.0	0.0	1.7	0.0	0.1	3.0	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.4	0.3	0.3	0.0	0.0	1.2	0.0	0.8	0.1	1.4	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	18.4	14.9	17.9	0.0	0.0	26.6	0.0	17.9	30.2	21.6	21.4
LnGrp LOS	C	B	B	B	A	A	C	A	B	C	C	C
Approach Vol, veh/h		374			31			176			211	
Approach Delay, s/veh		22.1			17.9			22.5			21.9	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.4	18.0		17.5	8.1	14.2		16.1				
Change Period (Y+Rc), s	3.5	5.5		5.5	3.5	5.5		5.0				
Max Green Setting (Gmax), s	15.0	30.0		12.0	35.0	30.0		45.0				
Max Q Clear Time (g_c+I1), s	2.3	4.3		2.8	4.8	5.2		10.9				
Green Ext Time (p_c), s	0.0	0.1		0.0	0.0	0.3		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		22.0
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	242	30	10	455	33	40	30	10	32	40	190
Future Volume (veh/h)	110	242	30	10	455	33	40	30	10	32	40	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	116	255	29	11	479	33	42	32	0	34	42	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	709	81	15	589	41	188	197	0	113	139	347
Arrive On Green	0.09	0.43	0.43	0.01	0.34	0.34	0.11	0.11	0.00	0.13	0.14	0.14
Sat Flow, veh/h	1781	1649	188	1781	1730	119	1781	1870	0	818	1011	1536
Grp Volume(v), veh/h	116	0	284	11	0	512	42	32	0	76	0	51
Grp Sat Flow(s),veh/h/ln	1781	0	1837	1781	0	1849	1781	1870	0	1829	0	1536
Q Serve(g_s), s	3.0	0.0	4.9	0.3	0.0	11.9	1.0	0.7	0.0	1.8	0.0	0.0
Cycle Q Clear(g_c), s	3.0	0.0	4.9	0.3	0.0	11.9	1.0	0.7	0.0	1.8	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.06	1.00		0.00	0.45		1.00
Lane Grp Cap(c), veh/h	152	0	789	15	0	629	188	197	0	252	0	347
V/C Ratio(X)	0.76	0.00	0.36	0.72	0.00	0.81	0.22	0.16	0.00	0.30	0.00	0.15
Avail Cap(c_a), veh/h	946	0	1171	568	0	1179	757	795	0	777	0	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	9.1	23.3	0.0	14.2	19.3	19.2	0.0	18.3	0.0	14.7
Incr Delay (d2), s/veh	3.0	0.0	0.1	21.2	0.0	1.0	0.2	0.1	0.0	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	1.6	0.2	0.0	4.4	0.4	0.3	0.0	0.7	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	0.0	9.2	44.5	0.0	15.2	19.5	19.3	0.0	18.6	0.0	14.8
LnGrp LOS	C	A	A	D	A	B	B	B	A	B	A	B
Approach Vol, veh/h		400			523			74			127	
Approach Delay, s/veh		13.5			15.8			19.4			17.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	20.2		8.6	4.0	24.4		10.1
Change Period (Y+Rc), s	* 4.2	* 4.2		3.6	3.6	* 4.2		3.6
Max Green Setting (Gmax), s	* 25	* 30		20.0	15.0	* 30		20.0
Max Q Clear Time (g_c+I1), s	5.0	13.9		3.0	2.3	6.9		3.8
Green Ext Time (p_c), s	0.1	2.1		0.1	0.0	1.1		0.3

Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	21	20	102	41	317	20	144	31	138	106	10
Future Vol, veh/h	20	21	20	102	41	317	20	144	31	138	106	10
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	22	21	107	43	334	21	152	33	145	112	11
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	1
HCM Control Delay	11	13.7	12	12.3
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	33%	71%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	34%	29%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	33%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	144	31	61	143	317	138	106	10
LT Vol	20	0	0	20	102	0	138	0	0
Through Vol	0	144	0	21	41	0	0	106	0
RT Vol	0	0	31	20	0	317	0	0	10
Lane Flow Rate	21	152	33	64	151	334	145	112	11
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.044	0.294	0.057	0.128	0.279	0.52	0.296	0.211	0.018
Departure Headway (Hd)	7.502	6.991	6.276	7.154	6.667	5.61	7.333	6.823	6.108
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	475	511	567	498	537	641	488	523	582
Service Time	5.285	4.774	4.058	4.948	4.435	3.377	5.112	4.601	3.886
HCM Lane V/C Ratio	0.044	0.297	0.058	0.129	0.281	0.521	0.297	0.214	0.019
HCM Control Delay	10.6	12.7	9.4	11	12	14.4	13.2	11.4	9
HCM Lane LOS	B	B	A	B	B	B	B	B	A
HCM 95th-tile Q	0.1	1.2	0.2	0.4	1.1	3	1.2	0.8	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	226	60	262	196	396	0	0	0	226	170	80
Future Volume (vph)	80	226	60	262	196	396	0	0	0	226	170	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.90					1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1676					1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1676					1770	1863	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	82	233	62	270	202	408	0	0	0	233	175	82
RTOR Reduction (vph)	0	0	39	0	68	0	0	0	0	0	0	67
Lane Group Flow (vph)	82	233	23	270	542	0	0	0	0	233	175	15
Turn Type	Prot	NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases	1	6		5 7	2 7					8	8	
Permitted Phases			6									8
Actuated Green, G (s)	7.8	32.7	32.7	28.7	54.1					16.1	16.1	16.1
Effective Green, g (s)	7.8	32.7	32.7	28.7	54.1					16.1	16.1	16.1
Actuated g/C Ratio	0.09	0.37	0.37	0.32	0.60					0.18	0.18	0.18
Clearance Time (s)	3.5	4.0	4.0							4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0							1.0	1.0	1.0
Lane Grp Cap (vph)	154	680	578	567	1013					318	335	284
v/s Ratio Prot	c0.05	0.13		0.15	c0.32					c0.13	0.09	
v/s Ratio Perm			0.01									0.01
v/c Ratio	0.53	0.34	0.04	0.48	0.54					0.73	0.52	0.05
Uniform Delay, d1	39.1	20.6	18.3	24.4	10.4					34.7	33.2	30.4
Progression Factor	1.00	1.00	1.00	0.68	0.45					1.00	1.00	1.00
Incremental Delay, d2	1.8	1.4	0.1	0.2	0.2					7.3	0.7	0.0
Delay (s)	40.9	22.0	18.4	16.8	4.9					42.0	33.9	30.4
Level of Service	D	C	B	B	A					D	C	C
Approach Delay (s)		25.5			8.6			0.0			37.2	
Approach LOS		C			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	452	0	0	764	0	0	0	0	152	0	90
Future Volume (vph)	0	452	0	0	764	0	0	0	0	152	0	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5			4.0					4.0		4.0
Lane Util. Factor		1.00			0.95					1.00		1.00
Frt		1.00			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		1863			3539					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		1863			3539					1770		1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	466	0	0	788	0	0	0	0	157	0	93
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	80
Lane Group Flow (vph)	0	466	0	0	788	0	0	0	0	157	0	13
Turn Type		NA			NA					Prot		Perm
Protected Phases		1 2 6 8			2					7		
Permitted Phases												7
Actuated Green, G (s)		69.3			37.9					12.2		12.2
Effective Green, g (s)		65.3			37.9					12.2		12.2
Actuated g/C Ratio		0.73			0.42					0.14		0.14
Clearance Time (s)					4.0					4.0		4.0
Vehicle Extension (s)					1.0					1.0		1.0
Lane Grp Cap (vph)		1359			1498					241		215
v/s Ratio Prot		c0.25			c0.22					c0.09		
v/s Ratio Perm												0.01
v/c Ratio		0.34			0.53					0.65		0.06
Uniform Delay, d1		4.4			19.1					36.6		33.7
Progression Factor		0.03			1.00					1.00		1.00
Incremental Delay, d2		0.1			1.3					4.7		0.0
Delay (s)		0.2			20.5					41.4		33.7
Level of Service		A			C					D		C
Approach Delay (s)		0.2			20.5			0.0			38.5	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	504	0	0	544	272	220	10	422	0	0	0
Future Volume (veh/h)	100	504	0	0	544	272	220	10	422	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	108	542	0	0	585	173	237	11	159			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	413	1360	0	0	832	705	282	13	262			
Arrive On Green	0.23	0.73	0.00	0.00	0.44	0.44	0.17	0.17	0.17			
Sat Flow, veh/h	1781	1870	0	0	1870	1585	1706	79	1585			
Grp Volume(v), veh/h	108	542	0	0	585	173	248	0	159			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1870	1585	1785	0	1585			
Q Serve(g_s), s	4.0	8.9	0.0	0.0	20.2	5.4	10.8	0.0	7.4			
Cycle Q Clear(g_c), s	4.0	8.9	0.0	0.0	20.2	5.4	10.8	0.0	7.4			
Prop In Lane	1.00		0.00	0.00		1.00	0.96		1.00			
Lane Grp Cap(c), veh/h	413	1360	0	0	832	705	295	0	262			
V/C Ratio(X)	0.26	0.40	0.00	0.00	0.70	0.25	0.84	0.00	0.61			
Avail Cap(c_a), veh/h	413	1360	0	0	832	705	500	0	444			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.92	0.92	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	25.1	4.2	0.0	0.0	17.9	13.8	32.1	0.0	31.0			
Incr Delay (d2), s/veh	0.1	0.8	0.0	0.0	4.9	0.8	2.5	0.0	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.5	1.9	0.0	0.0	8.2	1.8	4.7	0.0	2.8			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.2	5.0	0.0	0.0	22.9	14.7	34.5	0.0	31.8			
LnGrp LOS	C	A	A	A	C	B	C	A	C			
Approach Vol, veh/h		650			758			407				
Approach Delay, s/veh		8.4			21.0			33.5				
Approach LOS		A			C			C				
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	22.6	39.6				62.2		17.8				
Change Period (Y+Rc), s	4.0	* 4				4.0		4.6				
Max Green Setting (Gmax), s	9.5	* 36				48.6		22.4				
Max Q Clear Time (g_c+I1), s	6.0	22.2				10.9		12.8				
Green Ext Time (p_c), s	0.0	0.9				0.8		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			19.3									
HCM 6th LOS			B									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	1.1					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	558	43	25	218	22	25
Future Vol, veh/h	558	43	25	218	22	25
Conflicting Peds, #/hr	0	0	0	0	5	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	110	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	620	48	28	242	24	28

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	668	0	947	644
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	303	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	922	-	290	473
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	749	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	922	-	280	473
Mov Cap-2 Maneuver	-	-	-	-	280	-
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	745	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	280	473	-	-	922	-
HCM Lane V/C Ratio	0.087	0.059	-	-	0.03	-
HCM Control Delay (s)	19.1	13.1	-	-	9	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.2	-	-	0.1	-

Intersection						
Int Delay, s/veh	10.8					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	325	40	24	629	50	24
Future Vol, veh/h	325	40	24	629	50	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	349	43	26	676	54	26

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	498	364	0	0	702	0
Stage 1	364	-	-	-	-	-
Stage 2	134	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	532	681	-	-	895	-
Stage 1	703	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	500	681	-	-	895	-
Mov Cap-2 Maneuver	500	-	-	-	-	-
Stage 1	660	-	-	-	-	-
Stage 2	892	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31	0	6.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	515	895	-
HCM Lane V/C Ratio	-	-	0.762	0.06	-
HCM Control Delay (s)	-	-	31	9.3	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	6.7	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	504	140	243	353	215	70	60	173	196	100	80
Future Volume (veh/h)	100	504	140	243	353	215	70	60	173	196	100	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	104	525	0	253	368	165	73	62	0	204	104	59
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	128	1889		283	1437	634	93	103		206	132	75
Arrive On Green	0.07	0.53	0.00	0.16	0.60	0.60	0.05	0.05	0.00	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	2398	1059	1781	1870	1585	1781	1120	636
Grp Volume(v), veh/h	104	525	0	253	271	262	73	62	0	204	0	163
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1680	1781	1870	1585	1781	0	1756
Q Serve(g_s), s	7.5	10.6	0.0	18.1	9.4	9.6	5.3	4.2	0.0	14.9	0.0	11.7
Cycle Q Clear(g_c), s	7.5	10.6	0.0	18.1	9.4	9.6	5.3	4.2	0.0	14.9	0.0	11.7
Prop In Lane	1.00		1.00	1.00		0.63	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	128	1889		283	1065	1007	93	103		206	0	207
V/C Ratio(X)	0.81	0.28		0.89	0.25	0.26	0.78	0.60		0.99	0.00	0.79
Avail Cap(c_a), veh/h	206	1889		411	1065	1007	206	360		206	0	338
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.83	0.83	0.83	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.5	16.7	0.0	53.6	12.3	12.4	60.9	60.0	0.0	57.4	0.0	55.7
Incr Delay (d2), s/veh	11.9	0.4	0.0	13.8	0.5	0.5	13.2	5.6	0.0	60.5	0.0	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	4.4	0.0	9.3	3.9	3.8	2.7	2.2	0.0	10.2	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.4	17.1	0.0	67.4	12.8	12.9	74.0	65.6	0.0	118.0	0.0	62.2
LnGrp LOS	E	B		E	B	B	E	E		F	A	E
Approach Vol, veh/h		629	A		786			135	A		367	
Approach Delay, s/veh		26.1			30.4			70.2			93.2	
Approach LOS		C			C			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.1	73.7	12.8	19.3	15.4	82.5	21.0	11.1
Change Period (Y+Rc), s	3.5	4.6	6.0	4.0	6.0	4.6	6.0	4.0
Max Green Setting (Gmax), s	30.0	41.9	15.0	25.0	15.0	54.4	15.0	25.0
Max Q Clear Time (g_c+I1), s	20.1	12.6	7.3	13.7	9.5	11.6	16.9	6.2
Green Ext Time (p_c), s	0.5	3.8	0.1	0.6	0.1	4.0	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	43.8
HCM 6th LOS	D

Notes

User approved ignoring U-Turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	170	713	571	184	325	240
Future Volume (veh/h)	170	713	571	184	325	240
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	179	751	601	0	342	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	250	1846	945		417	
Arrive On Green	0.14	0.52	0.27	0.00	0.23	0.00
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	179	751	601	0	342	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	3.4	4.5	5.3	0.0	6.4	0.0
Cycle Q Clear(g_c), s	3.4	4.5	5.3	0.0	6.4	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	250	1846	945		417	
V/C Ratio(X)	0.72	0.41	0.64		0.82	
Avail Cap(c_a), veh/h	1260	5029	5029		1765	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	14.5	5.2	11.5	0.0	12.8	0.0
Incr Delay (d2), s/veh	1.4	0.1	0.3	0.0	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.9	1.7	0.0	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.9	5.2	11.7	0.0	14.4	0.0
LnGrp LOS	B	A	B		B	
Approach Vol, veh/h		930	601	A	342	A
Approach Delay, s/veh		7.3	11.7		14.4	
Approach LOS		A	B		B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		23.0		12.4	9.0	14.0
Change Period (Y+Rc), s		4.6		4.1	4.0	4.6
Max Green Setting (Gmax), s		50.0		35.0	25.0	50.0
Max Q Clear Time (g_c+I1), s		6.5		8.4	5.4	7.3
Green Ext Time (p_c), s		2.1		0.1	0.1	1.8
Intersection Summary						
HCM 6th Ctrl Delay			10.0			
HCM 6th LOS			B			

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	648	90	190	10	60	10	210	181	20	10	130	434
Future Volume (veh/h)	648	90	190	10	60	10	210	181	20	10	130	434
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	668	93	98	10	62	7	216	187	18	10	134	46
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	700	735	848	29	179	20	253	334	32	26	180	153
Arrive On Green	0.39	0.39	0.39	0.16	0.14	0.14	0.14	0.22	0.22	0.01	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	206	1276	144	1781	1493	144	1781	1870	1585
Grp Volume(v), veh/h	668	93	98	79	0	0	216	0	205	10	134	46
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1625	0	0	1781	0	1636	1781	1870	1585
Q Serve(g_s), s	31.1	2.7	2.6	3.7	0.0	0.0	10.1	0.0	9.5	0.5	6.0	2.3
Cycle Q Clear(g_c), s	31.1	2.7	2.6	3.7	0.0	0.0	10.1	0.0	9.5	0.5	6.0	2.3
Prop In Lane	1.00		1.00	0.13		0.09	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	700	735	848	228	0	0	253	0	366	26	180	153
V/C Ratio(X)	0.95	0.13	0.12	0.35	0.00	0.00	0.85	0.00	0.56	0.38	0.74	0.30
Avail Cap(c_a), veh/h	937	984	1059	228	0	0	729	0	574	312	656	556
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.2	16.6	9.8	33.1	0.0	0.0	35.8	0.0	29.5	41.7	37.6	35.9
Incr Delay (d2), s/veh	14.7	0.0	0.0	4.1	0.0	0.0	3.2	0.0	0.5	3.3	2.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	1.1	0.9	1.7	0.0	0.0	4.6	0.0	3.7	0.2	2.8	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.9	16.6	9.9	37.2	0.0	0.0	39.0	0.0	30.0	45.0	39.9	36.4
LnGrp LOS	D	B	A	D	A	A	D	A	C	D	D	D
Approach Vol, veh/h		859			79			421			190	
Approach Delay, s/veh		33.9			37.2			34.6			39.3	
Approach LOS		C			D			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	24.6		17.5	15.6	13.7		38.6				
Change Period (Y+Rc), s	3.5	5.5		5.5	3.5	5.5		5.0				
Max Green Setting (Gmax), s	15.0	30.0		12.0	35.0	30.0		45.0				
Max Q Clear Time (g_c+I1), s	2.5	11.5		5.7	12.1	8.0		33.1				
Green Ext Time (p_c), s	0.0	0.4		0.1	0.1	0.3		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		34.9
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	579	30	10	374	45	50	50	11	74	40	190
Future Volume (veh/h)	250	579	30	10	374	45	50	50	11	74	40	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	266	616	31	11	398	45	53	53	3	79	43	72
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	840	42	15	481	54	206	203	11	158	86	502
Arrive On Green	0.18	0.48	0.48	0.01	0.29	0.29	0.12	0.12	0.12	0.13	0.13	0.13
Sat Flow, veh/h	1781	1766	89	1781	1650	187	1781	1751	99	1173	639	1585
Grp Volume(v), veh/h	266	0	647	11	0	443	53	0	56	122	0	72
Grp Sat Flow(s),veh/h/ln	1781	0	1854	1781	0	1837	1781	0	1850	1812	0	1585
Q Serve(g_s), s	8.1	0.0	15.9	0.3	0.0	12.7	1.5	0.0	1.6	3.5	0.0	0.0
Cycle Q Clear(g_c), s	8.1	0.0	15.9	0.3	0.0	12.7	1.5	0.0	1.6	3.5	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.10	1.00		0.05	0.65		1.00
Lane Grp Cap(c), veh/h	325	0	882	15	0	535	206	0	214	244	0	502
V/C Ratio(X)	0.82	0.00	0.73	0.73	0.00	0.83	0.26	0.00	0.26	0.50	0.00	0.14
Avail Cap(c_a), veh/h	787	0	983	472	0	974	630	0	654	641	0	849
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.2	0.0	11.9	28.0	0.0	18.7	22.8	0.0	22.8	22.8	0.0	13.8
Incr Delay (d2), s/veh	2.0	0.0	2.0	22.4	0.0	1.3	0.2	0.0	0.2	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	6.0	0.2	0.0	5.1	0.6	0.0	0.7	1.5	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.2	0.0	14.0	50.3	0.0	20.0	23.0	0.0	23.0	23.4	0.0	13.9
LnGrp LOS	C	A	B	D	A	B	C	A	C	C	A	B
Approach Vol, veh/h		913			454			109			194	
Approach Delay, s/veh		17.0			20.7			23.0			19.9	
Approach LOS		B			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.5	20.7		10.2	4.1	31.1		11.2				
Change Period (Y+Rc), s	* 4.2	* 4.2		3.6	3.6	* 4.2		3.6				
Max Green Setting (Gmax), s	* 25	* 30		20.0	15.0	* 30		20.0				
Max Q Clear Time (g_c+I1), s	10.1	14.7		3.6	2.3	17.9		5.5				
Green Ext Time (p_c), s	0.3	1.7		0.2	0.0	2.6		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		18.7
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	33.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	52	20	53	22	186	30	171	123	435	249	10
Future Vol, veh/h	10	52	20	53	22	186	30	171	123	435	249	10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	56	22	57	24	200	32	184	132	468	268	11
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	1
HCM Control Delay	14.1	15.3	14.8	50.5
HCM LOS	B	C	B	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	12%	71%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	63%	29%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	24%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	171	123	82	75	186	435	249	10
LT Vol	30	0	0	10	53	0	435	0	0
Through Vol	0	171	0	52	22	0	0	249	0
RT Vol	0	0	123	20	0	186	0	0	10
Lane Flow Rate	32	184	132	88	81	200	468	268	11
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.077	0.415	0.272	0.216	0.195	0.425	1.002	0.536	0.019
Departure Headway (Hd)	8.633	8.119	7.399	8.836	8.714	7.647	7.715	7.204	6.487
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	414	443	484	405	411	470	468	501	550
Service Time	6.404	5.89	5.169	6.62	6.483	5.415	5.476	4.964	4.247
HCM Lane V/C Ratio	0.077	0.415	0.273	0.217	0.197	0.426	1	0.535	0.02
HCM Control Delay	12.1	16.6	12.9	14.1	13.6	16	70.1	18	9.4
HCM Lane LOS	B	C	B	B	B	C	F	C	A
HCM 95th-tile Q	0.2	2	1.1	0.8	0.7	2.1	13.2	3.1	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	228	70	413	175	336	0	0	0	198	170	90
Future Volume (vph)	80	228	70	413	175	336	0	0	0	198	170	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0	4.0	3.5	4.0					4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.90					1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1679					1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00					0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1679					1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	83	238	73	430	182	350	0	0	0	206	177	94
RTOR Reduction (vph)	0	0	45	0	70	0	0	0	0	0	0	77
Lane Group Flow (vph)	83	238	28	430	462	0	0	0	0	206	177	17
Turn Type	Prot	NA	Perm	Prot	NA					Split	NA	Perm
Protected Phases	1	6		5 7	2 7					8	8	
Permitted Phases			6									8
Actuated Green, G (s)	7.0	30.8	30.8	22.6	46.9					14.1	14.1	14.1
Effective Green, g (s)	7.0	30.8	30.8	22.6	46.9					14.1	14.1	14.1
Actuated g/C Ratio	0.09	0.39	0.39	0.28	0.59					0.18	0.18	0.18
Clearance Time (s)	3.5	4.0	4.0							4.0	4.0	4.0
Vehicle Extension (s)	1.0	1.0	1.0							1.0	1.0	1.0
Lane Grp Cap (vph)	155	721	613	503	990					313	330	280
v/s Ratio Prot	c0.05	0.13		c0.24	c0.28					c0.12	0.10	
v/s Ratio Perm			0.02									0.01
v/c Ratio	0.54	0.33	0.05	0.85	0.47					0.66	0.54	0.06
Uniform Delay, d1	34.7	17.1	15.2	26.9	9.2					30.5	29.7	27.2
Progression Factor	1.00	1.00	1.00	0.77	0.30					1.00	1.00	1.00
Incremental Delay, d2	1.8	1.2	0.1	10.7	0.1					3.8	0.8	0.0
Delay (s)	36.5	18.3	15.3	31.3	2.9					34.2	30.6	27.2
Level of Service	D	B	B	C	A					C	C	C
Approach Delay (s)		21.6			15.6			0.0			31.5	
Approach LOS		C			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	426	0	0	834	0	0	0	0	196	0	90
Future Volume (vph)	0	426	0	0	834	0	0	0	0	196	0	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0		4.0
Lane Util. Factor		1.00			0.95					1.00		1.00
Frt		1.00			1.00					1.00		0.85
Flt Protected		1.00			1.00					0.95		1.00
Satd. Flow (prot)		1863			3539					1770		1583
Flt Permitted		1.00			1.00					0.95		1.00
Satd. Flow (perm)		1863			3539					1770		1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	444	0	0	869	0	0	0	0	204	0	94
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	80
Lane Group Flow (vph)	0	444	0	0	869	0	0	0	0	204	0	14
Turn Type		NA			NA					Prot		Perm
Protected Phases		1 2 6 8			2					7		
Permitted Phases												7
Actuated Green, G (s)		59.4			30.8					12.1		12.1
Effective Green, g (s)		54.4			30.8					12.1		12.1
Actuated g/C Ratio		0.68			0.39					0.15		0.15
Clearance Time (s)					4.0					4.0		4.0
Vehicle Extension (s)					1.0					1.0		1.0
Lane Grp Cap (vph)		1274			1371					269		240
v/s Ratio Prot		c0.24			c0.25					c0.12		
v/s Ratio Perm												0.01
v/c Ratio		0.35			0.63					0.76		0.06
Uniform Delay, d1		5.2			19.8					32.3		28.8
Progression Factor		0.02			1.00					1.00		1.00
Incremental Delay, d2		0.1			2.2					10.4		0.0
Delay (s)		0.2			22.0					42.7		28.9
Level of Service		A			C					D		C
Approach Delay (s)		0.2			22.0			0.0			38.3	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	79.5	Sum of lost time (s)	17.0
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	532	0	0	684	282	150	0	451	0	0	0
Future Volume (veh/h)	90	532	0	0	684	282	150	0	451	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1870	0	0	1870	1870	1870	1870	1870			
Adj Flow Rate, veh/h	93	548	0	0	705	200	155	0	175			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	612	1414	0	0	678	560	243	0	216			
Arrive On Green	0.69	1.00	0.00	0.00	0.36	0.36	0.14	0.00	0.14			
Sat Flow, veh/h	1781	1870	0	0	1870	1545	1781	0	1585			
Grp Volume(v), veh/h	93	548	0	0	705	200	155	0	175			
Grp Sat Flow(s),veh/h/ln	1781	1870	0	0	1870	1545	1781	0	1585			
Q Serve(g_s), s	1.5	0.0	0.0	0.0	29.0	7.6	6.6	0.0	8.6			
Cycle Q Clear(g_c), s	1.5	0.0	0.0	0.0	29.0	7.6	6.6	0.0	8.6			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	612	1414	0	0	678	560	243	0	216			
V/C Ratio(X)	0.15	0.39	0.00	0.00	1.04	0.36	0.64	0.00	0.81			
Avail Cap(c_a), veh/h	612	1414	0	0	678	560	490	0	436			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.89	0.89	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.4	0.0	0.0	0.0	25.5	18.7	32.4	0.0	33.5			
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	45.3	1.8	1.0	0.0	2.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.5	0.3	0.0	0.0	19.3	2.6	2.8	0.0	3.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.5	0.7	0.0	0.0	70.8	20.4	33.4	0.0	36.3			
LnGrp LOS	A	A	A	A	F	C	C	A	D			
Approach Vol, veh/h		641			905			330				
Approach Delay, s/veh		1.8			59.7			34.9				
Approach LOS		A			E			C				
Timer - Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	31.5	33.0				64.5		15.5				
Change Period (Y+Rc), s	4.0	* 4				4.0		4.6				
Max Green Setting (Gmax), s	15.0	* 29				49.0		22.0				
Max Q Clear Time (g_c+I1), s	3.5	31.0				2.0		10.6				
Green Ext Time (p_c), s	0.0	0.0				0.8		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		35.6
HCM 6th LOS		D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection						
Int Delay, s/veh	1.3					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	329	47	27	361	32	25
Future Vol, veh/h	329	47	27	361	32	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	110	-	0	60
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	346	49	28	380	34	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	395	0	807	371
Stage 1	-	-	-	-	371	-
Stage 2	-	-	-	-	436	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1164	-	351	675
Stage 1	-	-	-	-	698	-
Stage 2	-	-	-	-	652	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1164	-	343	675
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	652	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	14
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	343	675	-	-	1164	-
HCM Lane V/C Ratio	0.098	0.039	-	-	0.024	-
HCM Control Delay (s)	16.6	10.6	-	-	8.2	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	18.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	439	52	55	411	51	34
Future Vol, veh/h	439	52	55	411	51	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	453	54	57	424	53	35

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	410	269	0	0	481	0
Stage 1	269	-	-	-	-	-
Stage 2	141	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	598	770	-	-	1082	-
Stage 1	776	-	-	-	-	-
Stage 2	886	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	568	770	-	-	1082	-
Mov Cap-2 Maneuver	568	-	-	-	-	-
Stage 1	737	-	-	-	-	-
Stage 2	886	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	38.7	0	5.1
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	584	1082	-
HCM Lane V/C Ratio	-	-	0.867	0.049	-
HCM Control Delay (s)	-	-	38.7	8.5	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	9.7	0.2	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	368	110	265	363	215	90	90	148	147	100	90
Future Volume (veh/h)	100	368	110	265	363	215	90	90	148	147	100	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	103	379	0	273	374	165	93	93	0	152	103	65
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	1818		302	1412	612	116	149		177	122	77
Arrive On Green	0.07	0.51	0.00	0.17	0.59	0.59	0.07	0.08	0.00	0.10	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	1781	2390	1036	1781	1870	1585	1781	1072	677
Grp Volume(v), veh/h	103	379	0	273	276	263	93	93	0	152	0	168
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1650	1781	1870	1585	1781	0	1749
Q Serve(g_s), s	7.4	7.6	0.0	19.5	9.8	10.1	6.7	6.3	0.0	10.9	0.0	12.2
Cycle Q Clear(g_c), s	7.4	7.6	0.0	19.5	9.8	10.1	6.7	6.3	0.0	10.9	0.0	12.2
Prop In Lane	1.00		1.00	1.00		0.63	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	127	1818		302	1050	974	116	149		177	0	200
V/C Ratio(X)	0.81	0.21		0.90	0.26	0.27	0.80	0.62		0.86	0.00	0.84
Avail Cap(c_a), veh/h	206	1818		411	1050	974	206	360		206	0	336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.83	0.83	0.83	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.5	17.4	0.0	52.9	12.9	13.0	59.9	57.9	0.0	57.6	0.0	56.4
Incr Delay (d2), s/veh	11.6	0.3	0.0	15.9	0.5	0.6	11.8	4.2	0.0	25.7	0.0	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	3.2	0.0	10.1	4.1	3.9	3.4	3.2	0.0	6.2	0.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.1	17.6	0.0	68.8	13.4	13.5	71.8	62.1	0.0	83.3	0.0	65.5
LnGrp LOS	E	B		E	B	B	E	E		F	A	E
Approach Vol, veh/h		482	A		812			186	A		320	
Approach Delay, s/veh		29.1			32.1			66.9			74.0	
Approach LOS		C			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.6	71.1	14.5	18.9	15.3	81.4	18.9	14.4
Change Period (Y+Rc), s	3.5	4.6	6.0	4.0	6.0	4.6	6.0	4.0
Max Green Setting (Gmax), s	30.0	41.9	15.0	25.0	15.0	54.4	15.0	25.0
Max Q Clear Time (g_c+I1), s	21.5	9.6	8.7	14.2	9.4	12.1	12.9	8.3
Green Ext Time (p_c), s	0.5	2.7	0.1	0.6	0.1	4.0	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	42.3
HCM 6th LOS	D

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	533	653	163	232	190
Future Volume (veh/h)	130	533	653	163	232	190
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	561	687	0	244	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	226	1915	1052		373	
Arrive On Green	0.13	0.54	0.30	0.00	0.21	0.00
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	137	561	687	0	244	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	2.5	3.0	5.8	0.0	4.3	0.0
Cycle Q Clear(g_c), s	2.5	3.0	5.8	0.0	4.3	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	226	1915	1052		373	
V/C Ratio(X)	0.61	0.29	0.65		0.65	
Avail Cap(c_a), veh/h	1289	5145	5145		1805	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	14.3	4.4	10.6	0.0	12.5	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.3	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.5	1.8	0.0	1.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.2	4.4	10.9	0.0	13.2	0.0
LnGrp LOS	B	A	B		B	
Approach Vol, veh/h		698	687	A	244	A
Approach Delay, s/veh		6.5	10.9		13.2	
Approach LOS		A	B		B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		23.2		11.3	8.4	14.8
Change Period (Y+Rc), s		4.6		4.1	4.0	4.6
Max Green Setting (Gmax), s		50.0		35.0	25.0	50.0
Max Q Clear Time (g_c+I1), s		5.0		6.3	4.5	7.8
Green Ext Time (p_c), s		1.5		0.1	0.1	2.1

Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	60	170	20	40	20	180	154	20	10	181	546
Future Volume (veh/h)	475	60	170	20	40	20	180	154	20	10	181	546
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00	0.89	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	511	65	77	22	43	14	194	166	19	11	195	153
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	554	582	698	70	136	44	234	379	43	29	269	224
Arrive On Green	0.31	0.31	0.31	0.18	0.16	0.16	0.13	0.26	0.26	0.02	0.14	0.14
Sat Flow, veh/h	1781	1870	1572	442	864	281	1781	1465	168	1781	1870	1558
Grp Volume(v), veh/h	511	65	77	79	0	0	194	0	185	11	195	153
Grp Sat Flow(s),veh/h/ln	1781	1870	1572	1587	0	0	1781	0	1632	1781	1870	1558
Q Serve(g_s), s	21.1	1.9	2.2	3.3	0.0	0.0	8.1	0.0	7.2	0.5	7.6	7.1
Cycle Q Clear(g_c), s	21.1	1.9	2.2	3.3	0.0	0.0	8.1	0.0	7.2	0.5	7.6	7.1
Prop In Lane	1.00		1.00	0.28		0.18	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	554	582	698	250	0	0	234	0	423	29	269	224
V/C Ratio(X)	0.92	0.11	0.11	0.32	0.00	0.00	0.83	0.00	0.44	0.38	0.72	0.68
Avail Cap(c_a), veh/h	1052	1105	1137	250	0	0	818	0	643	351	737	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	18.7	12.4	28.3	0.0	0.0	32.3	0.0	23.6	37.1	31.2	31.0
Incr Delay (d2), s/veh	2.8	0.0	0.0	3.3	0.0	0.0	2.9	0.0	0.3	3.0	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	0.8	0.7	1.5	0.0	0.0	3.6	0.0	2.7	0.2	3.5	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.2	18.8	12.5	31.6	0.0	0.0	35.1	0.0	23.9	40.0	32.6	32.3
LnGrp LOS	C	B	B	C	A	A	D	A	C	D	C	C
Approach Vol, veh/h		653			79			379			359	
Approach Delay, s/veh		25.4			31.6			29.6			32.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.7	25.2		17.5	13.5	16.5		28.7
Change Period (Y+Rc), s	3.5	5.5		5.5	3.5	5.5		5.0
Max Green Setting (Gmax), s	15.0	30.0		12.0	35.0	30.0		45.0
Max Q Clear Time (g_c+I1), s	12.5	9.2		5.3	10.1	9.6		23.1
Green Ext Time (p_c), s	0.0	0.4		0.1	0.1	0.5		0.4

Intersection Summary	
HCM 6th Ctrl Delay	28.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	469	20	0	498	35	40	30	11	46	20	240
Future Volume (veh/h)	180	469	20	0	498	35	40	30	11	46	20	240
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.95	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	188	489	20	0	519	34	42	31	1	48	21	65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	240	1007	41	3	612	40	176	178	6	160	70	416
Arrive On Green	0.13	0.56	0.56	0.00	0.35	0.35	0.10	0.10	0.10	0.12	0.13	0.13
Sat Flow, veh/h	1781	1784	73	1781	1736	114	1781	1798	58	1257	550	1585
Grp Volume(v), veh/h	188	0	509	0	0	553	42	0	32	69	0	65
Grp Sat Flow(s),veh/h/ln	1781	0	1857	1781	0	1850	1781	0	1856	1807	0	1585
Q Serve(g_s), s	5.6	0.0	9.0	0.0	0.0	15.0	1.2	0.0	0.9	1.9	0.0	0.0
Cycle Q Clear(g_c), s	5.6	0.0	9.0	0.0	0.0	15.0	1.2	0.0	0.9	1.9	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.06	1.00		0.03	0.70		1.00
Lane Grp Cap(c), veh/h	240	0	1048	3	0	652	176	0	184	230	0	416
V/C Ratio(X)	0.78	0.00	0.49	0.00	0.00	0.85	0.24	0.00	0.17	0.30	0.00	0.16
Avail Cap(c_a), veh/h	817	0	1048	490	0	1019	654	0	681	664	0	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.8	0.0	7.1	0.0	0.0	16.3	22.7	0.0	22.5	21.7	0.0	15.5
Incr Delay (d2), s/veh	2.1	0.0	0.1	0.0	0.0	2.4	0.3	0.0	0.2	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	2.8	0.0	0.0	6.1	0.5	0.0	0.4	0.8	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.9	0.0	7.3	0.0	0.0	18.7	22.9	0.0	22.7	22.0	0.0	15.5
LnGrp LOS	C	A	A	A	A	B	C	A	C	C	A	B
Approach Vol, veh/h		697			553			74			134	
Approach Delay, s/veh		12.0			18.7			22.8			18.8	
Approach LOS		B			B			C			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.5	23.4		9.0	0.0	34.9		10.5
Change Period (Y+Rc), s	* 4.2	* 4.2		3.6	3.6	* 4.2		3.6
Max Green Setting (Gmax), s	* 25	* 30		20.0	15.0	* 30		20.0
Max Q Clear Time (g_c+I1), s	7.6	17.0		3.2	0.0	11.0		3.9
Green Ext Time (p_c), s	0.2	2.2		0.1	0.0	2.2		0.3

Intersection Summary		
HCM 6th Ctrl Delay		15.7
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	32	30	63	32	260	30	175	74	206	211	10
Future Vol, veh/h	10	32	30	63	32	260	30	175	74	206	211	10
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	33	31	65	33	268	31	180	76	212	218	10
Number of Lanes	0	1	0	0	1	1	1	1	1	1	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	3	3
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	3	3	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	3	3	2	1
HCM Control Delay	11.9	14.4	13	15.3
HCM LOS	B	B	B	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	14%	66%	0%	100%	0%	0%
Vol Thru, %	0%	100%	0%	44%	34%	0%	0%	100%	0%
Vol Right, %	0%	0%	100%	42%	0%	100%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	175	74	72	95	260	206	211	10
LT Vol	30	0	0	10	63	0	206	0	0
Through Vol	0	175	0	32	32	0	0	211	0
RT Vol	0	0	74	30	0	260	0	0	10
Lane Flow Rate	31	180	76	74	98	268	212	218	10
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.068	0.37	0.141	0.159	0.205	0.483	0.443	0.423	0.018
Departure Headway (Hd)	7.892	7.38	6.663	7.729	7.521	6.484	7.511	7	6.285
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	454	487	538	464	478	555	480	516	570
Service Time	5.635	5.123	4.405	5.478	5.259	4.222	5.249	4.738	4.022
HCM Lane V/C Ratio	0.068	0.37	0.141	0.159	0.205	0.483	0.442	0.422	0.018
HCM Control Delay	11.2	14.4	10.5	11.9	12.2	15.2	16.1	14.8	9.1
HCM Lane LOS	B	B	B	B	B	C	C	B	A
HCM 95th-tile Q	0.2	1.7	0.5	0.6	0.8	2.6	2.2	2.1	0.1

PLACER COUNTY SSSC INTERSECTION DELAY & LOS

Intersection	3. Old Foresthill Rd / Foresthill Rd
Scenario	Cumulative Plus Project Conditions

Movement	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**
Control	*Stop*		*Stop*					*Free*	*Free*	*Yield*	*Free*	
AM Peak Hour Volume	17		23					125	16	22	475	
AM Peak Hour Delay (s)	14.8		9.1					0	0	7.6	0	
PM Peak Hour Volume	22		25					558	43	25	218	
PM Peak Hour Delay (s)	19.1		13.1					0	0	9	0	
MD Peak Hour Volume	32		25					329	47	27	361	
MD Peak Hour Delay (s)	16.6		10.6					0	0	8.2	0	

Weekday AM Delay (s)	**10.1**
Weekday AM LOS	**B**

Weekday PM Delay (s)	**13.5**
Weekday PM LOS	**B**

Weekend MD Delay	**12.1**
Weekend MD LOS	**B**

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Northbound
From/To	Old Foresthill Rd to Lincoln W
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.87	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	50.0	%
Segment length	2.3	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	488	veh/h
Opposing direction volume, Vo	224	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	14.4		1.4	
PCE for RVs, ER	1.3		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.483		0.886	
Grade adj. factor,(note-1) fg	0.72		1.00	
Directional flow rate,(note-2) vi	1613	pc/h	291	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	3.4	mi/h
Average travel speed, ATSd	21.4	mi/h
Percent Free Flow Speed, PFFS	54.0	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.9		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.869		0.992	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	645	pc/h	260	pc/h

Base percent time-spent-following,(note-4) BPTSFd	54.5	%
Adjustment for no-passing zones, fnp	34.0	
Percent time-spent-following, PTSFd	78.7	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.38	
Peak 15-min vehicle-miles of travel, VMT15	323	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1122	veh-mi
Peak 15-min total travel time, TT15	15.1	veh-h
Capacity from ATS, CdATS	810	veh/h
Capacity from PTSF, CdPTSF	1551	veh/h
Directional Capacity	1551	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	21.4	mi/h
Percent time-spent-following, PTSFd (from above)	78.7	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	560.9
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.93
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Southbound
From/To	Lincoln Wy to OldForesthill Rd
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.87	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	0.0	%
Segment length	2.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	3	/mi

Analysis direction volume, Vd 224 veh/h
Opposing direction volume, Vo 488 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.4		14.4	
PCE for RVs, ER	1.0		1.3	
Heavy-vehicle adj. factor,(note-5) fHV	0.969		0.483	
Grade adj. factor,(note-1) fg	1.00		0.72	
Directional flow rate,(note-2) vi	266	pc/h	1613	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATSd	24.4	mi/h
Percent Free Flow Speed, PFFS	61.6	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		2.9	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.992		0.869	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	260	pc/h	645	pc/h

Base percent time-spent-following,(note-4) BPTSFd	35.2	%
Adjustment for no-passing zones, fnp	34.0	
Percent time-spent-following, PTSFd	45.0	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.15	
Peak 15-min vehicle-miles of travel, VMT15	148	veh-mi
Peak-hour vehicle-miles of travel, VMT60	515	veh-mi
Peak 15-min total travel time, TT15	6.1	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	24.4	mi/h
Percent time-spent-following, PTSFd (from above)	45.0	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	257.5
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.53
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Northbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	491	veh/h
Opposing direction volume, Vo	214	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		12.4	
PCE for RVs, ER	1.0		1.4	
Heavy-vehicle adj. factor,(note-5) fHV	0.992		0.522	
Grade adj. factor,(note-1) fg	1.00		0.47	
Directional flow rate,(note-2) vi	582	pc/h	1026	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.1	mi/h
Average travel speed, ATSd	26.7	mi/h
Percent Free Flow Speed, PFFS	66.3	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		2.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		0.898	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	578	pc/h	280	pc/h

Base percent time-spent-following,(note-4) BPTSFd	51.7	%
Adjustment for no-passing zones, fnp	34.4	
Percent time-spent-following, PTSFd	74.9	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.34	
Peak 15-min vehicle-miles of travel, VMT15	260	veh-mi
Peak-hour vehicle-miles of travel, VMT60	884	veh-mi
Peak 15-min total travel time, TT15	9.7	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	26.7	mi/h
Percent time-spent-following, PTSFd (from above)	74.9	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	577.6
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.86
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Southbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	214	veh/h
Opposing direction volume, Vo	491	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	12.4		1.1	
PCE for RVs, ER	1.4		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.522		0.950	
Grade adj. factor,(note-1) fg	0.47		1.00	
Directional flow rate,(note-2) vi	1026	pc/h	608	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.8	mi/h
Average travel speed, ATSd	25.8	mi/h
Percent Free Flow Speed, PFFS	64.1	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.4		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.898		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	280	pc/h	578	pc/h

Base percent time-spent-following,(note-4) BPTSFd	36.0	%
Adjustment for no-passing zones, fnp	34.4	
Percent time-spent-following, PTSFd	47.2	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.16	
Peak 15-min vehicle-miles of travel, VMT15	113	veh-mi
Peak-hour vehicle-miles of travel, VMT60	385	veh-mi
Peak 15-min total travel time, TT15	4.4	veh-h
Capacity from ATS, CdATS	899	veh/h
Capacity from PTSF, CdPTSF	1568	veh/h
Directional Capacity	1568	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	25.8	mi/h
Percent time-spent-following, PTSFd (from above)	47.2	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	251.8
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.41
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	491	veh/h
Opposing direction volume, Vo	214	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7		2.2	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.947		0.912	
Grade adj. factor,(note-1) fg	0.97		0.79	
Directional flow rate,(note-2) vi	629	pc/h	349	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	3.0	mi/h
Average travel speed, ATSd	29.7	mi/h
Percent Free Flow Speed, PFFS	73.6	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.2		1.7	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.984		0.947	
Grade adjustment factor,(note-1) fg	0.97		0.83	
Directional flow rate,(note-2) vi	605	pc/h	320	pc/h
Base percent time-spent-following,(note-4) BPTSFd	55.0	%		
Adjustment for no-passing zones, fnp	32.9			
Percent time-spent-following, PTSFd	76.5	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.34	
Peak 15-min vehicle-miles of travel, VMT15	260	veh-mi
Peak-hour vehicle-miles of travel, VMT60	884	veh-mi
Peak 15-min total travel time, TT15	8.8	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	29.7	mi/h
Percent time-spent-following, PTSFd (from above)	76.5	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	577.6
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.86
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday AM Peak Hour
Highway	SR 49 - Southbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd 214 veh/h
Opposing direction volume, Vo 491 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.2		1.7	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.912		0.947	
Grade adj. factor,(note-1) fg	0.79		0.97	
Directional flow rate,(note-2) vi	349	pc/h	629	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.7	mi/h
Average travel speed, ATSd	31.0	mi/h
Percent Free Flow Speed, PFFS	76.9	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7		1.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.947		0.984	
Grade adjustment factor,(note-1) fg	0.83		0.97	
Directional flow rate,(note-2) vi	320	pc/h	605	pc/h
Base percent time-spent-following,(note-4) BPTSFd	39.1	%		
Adjustment for no-passing zones, fnp	32.9			
Percent time-spent-following, PTSFd	50.5	%		

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.15	
Peak 15-min vehicle-miles of travel, VMT15	113	veh-mi
Peak-hour vehicle-miles of travel, VMT60	385	veh-mi
Peak 15-min total travel time, TT15	3.6	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	31.0	mi/h
Percent time-spent-following, PTSFd (from above)	50.5	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	251.8
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.41
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Northbound
From/To	Old Foresthill Rd to Lincoln W
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.89	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	50.0	%
Segment length	2.3	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	3	/mi

Analysis direction volume, Vd 369 veh/h
Opposing direction volume, Vo 604 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	14.5		1.1	
PCE for RVs, ER	1.3		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.481		0.969	
Grade adj. factor,(note-1) fg	0.56		1.00	
Directional flow rate,(note-2) vi	1539	pc/h	701	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATSd	20.7	mi/h
Percent Free Flow Speed, PFFS	52.3	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	3.5		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.833		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	498	pc/h	679	pc/h
Base percent time-spent-following,(note-4) BPTSFd	53.7	%		
Adjustment for no-passing zones, fnp	31.4			
Percent time-spent-following, PTSFd	67.0	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.29	
Peak 15-min vehicle-miles of travel, VMT15	238	veh-mi
Peak-hour vehicle-miles of travel, VMT60	849	veh-mi
Peak 15-min total travel time, TT15	11.5	veh-h
Capacity from ATS, CdATS	810	veh/h
Capacity from PTSF, CdPTSF	1551	veh/h
Directional Capacity	1551	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	20.7	mi/h
Percent time-spent-following, PTSFd (from above)	67.0	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	414.6
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.78
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Southbound
From/To	Lincoln Wy to OldForesthill Rd
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.89	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	0.0	%
Segment length	2.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	604	veh/h
Opposing direction volume, Vo	369	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		14.5	
PCE for RVs, ER	1.0		1.3	
Heavy-vehicle adj. factor,(note-5) fHV	0.992		0.481	
Grade adj. factor,(note-1) fg	1.00		0.56	
Directional flow rate,(note-2) vi	684	pc/h	1539	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATSd	21.7	mi/h
Percent Free Flow Speed, PFFS	54.8	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	3.5
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.833
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	679 pc/h	498 pc/h
Base percent time-spent-following,(note-4) BPTSFd	60.8 %	
Adjustment for no-passing zones, fnp	31.4	
Percent time-spent-following, PTSFd	78.9 %	

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.40	
Peak 15-min vehicle-miles of travel, VMT15	390	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1389	veh-mi
Peak 15-min total travel time, TT15	18.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	21.7	mi/h
Percent time-spent-following, PTSFd (from above)	78.9	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	678.7
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	7.03
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Northbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	347	veh/h
Opposing direction volume, Vo	564	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.3		12.4	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.977		0.524	
Grade adj. factor,(note-1) fg	1.00		0.75	
Directional flow rate,(note-2) vi	390	pc/h	1577	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	0.6	mi/h
Average travel speed, ATSd	24.4	mi/h
Percent Free Flow Speed, PFFS	60.6	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		2.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.992		0.913	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	384	pc/h	679	pc/h

Base percent time-spent-following,(note-4) BPTSFd	46.0	%
Adjustment for no-passing zones, fnp	34.1	
Percent time-spent-following, PTSFd	58.3	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.22	
Peak 15-min vehicle-miles of travel, VMT15	172	veh-mi
Peak-hour vehicle-miles of travel, VMT60	625	veh-mi
Peak 15-min total travel time, TT15	7.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	24.4	mi/h
Percent time-spent-following, PTSFd (from above)	58.3	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	381.3
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.64
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Southbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	564	veh/h
Opposing direction volume, Vo	347	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	12.4		1.3	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.524		0.909	
Grade adj. factor,(note-1) fg	0.75		1.00	
Directional flow rate,(note-2) vi	1577	pc/h	419	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.6	mi/h
Average travel speed, ATSd	22.2	mi/h
Percent Free Flow Speed, PFFS	55.1	%

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	2.2	1.1
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	0.913	0.992
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	679 pc/h	384 pc/h

Base percent time-spent-following,(note-4) BPTSFd	58.8	%
Adjustment for no-passing zones, fnp	34.1	
Percent time-spent-following, PTSFd	80.6	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.40	
Peak 15-min vehicle-miles of travel, VMT15	279	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1015	veh-mi
Peak 15-min total travel time, TT15	12.6	veh-h
Capacity from ATS, CdATS	899	veh/h
Capacity from PTSF, CdPTSF	1568	veh/h
Directional Capacity	1568	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	22.2	mi/h
Percent time-spent-following, PTSFd (from above)	80.6	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	619.8
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.87
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd 347 veh/h
Opposing direction volume, Vo 564 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.0		1.7	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.926		0.947	
Grade adj. factor,(note-1) fg	0.89		0.97	
Directional flow rate,(note-2) vi	463	pc/h	675	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.6	mi/h
Average travel speed, ATSd	29.9	mi/h
Percent Free Flow Speed, PFFS	74.2	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.6		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.954		1.000	
Grade adjustment factor,(note-1) fg	0.89		0.97	
Directional flow rate,(note-2) vi	449	pc/h	639	pc/h
Base percent time-spent-following,(note-4) BPTSFd	49.4	%		
Adjustment for no-passing zones, fnp	33.5			
Percent time-spent-following, PTSFd	63.2	%		

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.22	
Peak 15-min vehicle-miles of travel, VMT15	172	veh-mi
Peak-hour vehicle-miles of travel, VMT60	625	veh-mi
Peak 15-min total travel time, TT15	5.8	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	29.9	mi/h
Percent time-spent-following, PTSFd (from above)	63.2	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	381.3
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.64
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekday PM Peak Hour
Highway	SR 49 - Southbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.91	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	564	veh/h
Opposing direction volume, Vo	347	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.7		2.0	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.947		0.926	
Grade adj. factor,(note-1) fg	0.97		0.89	
Directional flow rate,(note-2) vi	675	pc/h	463	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.4	mi/h
Average travel speed, ATSd	29.1	mi/h
Percent Free Flow Speed, PFFS	72.1	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.6	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		0.954	
Grade adjustment factor,(note-1) fg	0.97		0.89	
Directional flow rate,(note-2) vi	639	pc/h	449	pc/h

Base percent time-spent-following,(note-4) BPTSFd	59.1	%
Adjustment for no-passing zones, fnp	33.5	
Percent time-spent-following, PTSFd	78.8	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.36	
Peak 15-min vehicle-miles of travel, VMT15	279	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1015	veh-mi
Peak 15-min total travel time, TT15	9.6	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	29.1	mi/h
Percent time-spent-following, PTSFd (from above)	78.8	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	619.8
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.87
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Northbound
From/To	Old Foresthill Rd to Lincoln W
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.95	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	50.0	%
Segment length	2.3	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	473	veh/h
Opposing direction volume, Vo	466	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	14.4		1.2	
PCE for RVs, ER	1.3		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.483		0.931	
Grade adj. factor,(note-1) fg	0.70		1.00	
Directional flow rate,(note-2) vi	1473	pc/h	527	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	2.1	mi/h
Average travel speed, ATSd	21.9	mi/h
Percent Free Flow Speed, PFFS	55.4	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	3.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.861		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	578	pc/h	491	pc/h
Base percent time-spent-following,(note-4) BPTSFd	56.0	%		
Adjustment for no-passing zones, fnp	38.4			
Percent time-spent-following, PTSFd	76.8	%		

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.34	
Peak 15-min vehicle-miles of travel, VMT15	286	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1088	veh-mi
Peak 15-min total travel time, TT15	13.1	veh-h
Capacity from ATS, CdATS	810	veh/h
Capacity from PTSF, CdPTSF	1551	veh/h
Directional Capacity	1551	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	21.9	mi/h
Percent time-spent-following, PTSFd (from above)	76.8	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	497.9
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.87
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

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Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Southbound
From/To	Lincoln Wy to OldForesthill Rd
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.95	
Shoulder width	1.0	ft	% Trucks and buses	8	%
Lane width	11.5	ft	% Trucks crawling	0.0	%
Segment length	2.3	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	3.00	mi	% No-passing zones	100	%
Up/down	-8.0	%	Access point density	3	/mi

Analysis direction volume, Vd	466	veh/h
Opposing direction volume, Vo	473	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.2		14.4	
PCE for RVs, ER	1.0		1.3	
Heavy-vehicle adj. factor,(note-5) fHV	0.984		0.483	
Grade adj. factor,(note-1) fg	1.00		0.70	
Directional flow rate,(note-2) vi	498	pc/h	1473	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.7	mi/h
Adj. for access point density,(note-3) fA	0.8	mi/h
Free-flow speed, FFSd	39.5	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	23.6	mi/h
Percent Free Flow Speed, PFFS	59.6	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		3.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		0.861	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	491	pc/h	578	pc/h

Base percent time-spent-following,(note-4) BPTSFd	51.7	%
Adjustment for no-passing zones, fnp	38.4	
Percent time-spent-following, PTSFd	69.3	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.29	
Peak 15-min vehicle-miles of travel, VMT15	282	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1072	veh-mi
Peak 15-min total travel time, TT15	12.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	2.3	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	23.6	mi/h
Percent time-spent-following, PTSFd (from above)	69.3	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	490.5
Effective width of outside lane, We	12.50
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.86
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

```
Analyst                  Fehr & Peers
Agency/Co.
Date Performed           10/12/2018
Analysis Time Period     Weekend MD Peak Hour
Highway                  SR 49 - Northbound
From/To                  OFR to 1.8 mi S of OFR
Jurisdiction
Analysis Year            CPP Conditions
Description  Auburn SRA General Plan
```

Input Data

```
Highway class  Class 2              Peak hour factor, PHF    0.97
Shoulder width       1.2     ft     % Trucks and buses       8       %
Lane width           12.0    ft     % Trucks crawling        0.0     %
Segment length       1.8     mi     Truck crawl speed        0.0     mi/hr
Terrain type         Specific Grade % Recreational vehicles  0       %
Grade:  Length       1.75    mi     % No-passing zones       100     %
        Up/down      -8.0    %      Access point density     2       /mi

Analysis direction volume, Vd  418     veh/h
Opposing direction volume, Vo  387     veh/h
```

Average Travel Speed

```
Direction                                 Analysis(d)        Opposing (o)
PCE for trucks, ET                            1.3                12.4
PCE for RVs, ER                               1.0                1.2
Heavy-vehicle adj. factor,(note-5) fHV        0.977              0.522
Grade adj. factor,(note-1) fg                 1.00               0.53
Directional flow rate,(note-2) vi             441     pc/h       1442    pc/h

Free-Flow Speed from Field Measurement:
Field measured speed,(note-3) S FM                -      mi/h
Observed total demand,(note-3) V                  -      veh/h
Estimated Free-Flow Speed:
Base free-flow speed,(note-3) BFFS               45.0    mi/h
Adj. for lane and shoulder width,(note-3) fLS    4.2     mi/h
Adj. for access point density,(note-3) fA        0.5     mi/h

Free-flow speed, FFSd                            40.3    mi/h

Adjustment for no-passing zones, fnp             0.7     mi/h
Average travel speed, ATSd                       25.0    mi/h
Percent Free Flow Speed, PFFS                    62.1    %
```

Percent Time-Spent-Following

Direction	Analysis(d)	Opposing (o)
PCE for trucks, ET	1.0	2.4
PCE for RVs, ER	1.0	1.0
Heavy-vehicle adjustment factor, fHV	1.000	0.899
Grade adjustment factor,(note-1) fg	1.00	1.00
Directional flow rate,(note-2) vi	431 pc/h	444 pc/h

Base percent time-spent-following,(note-4) BPTSFd	45.3	%
Adjustment for no-passing zones, fnp	43.4	
Percent time-spent-following, PTSFd	66.7	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.25	
Peak 15-min vehicle-miles of travel, VMT15	194	veh-mi
Peak-hour vehicle-miles of travel, VMT60	752	veh-mi
Peak 15-min total travel time, TT15	7.8	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	25.0	mi/h
Percent time-spent-following, PTSFd (from above)	66.7	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	430.9
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.71
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

HCS7: Two-Lane Highways Release 7.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Southbound
From/To	OFR to 1.8 mi S of OFR
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Specific Grade		% Recreational vehicles	0	%
Grade: Length	1.75	mi	% No-passing zones	100	%
Up/down	8.0	%	Access point density	2	/mi

Analysis direction volume, Vd	387	veh/h
Opposing direction volume, Vo	418	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	12.4		1.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.523		0.931	
Grade adj. factor,(note-1) fg	0.63		1.00	
Directional flow rate,(note-2) vi	1382	pc/h	528	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.1	mi/h
Average travel speed, ATSd	23.4	mi/h
Percent Free Flow Speed, PFFS	58.0	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	2.3		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.906		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	502	pc/h	492	pc/h

Base percent time-spent-following,(note-4) BPTSFd	51.5	%
Adjustment for no-passing zones, fnp	40.0	
Percent time-spent-following, PTSFd	71.7	%

Level of Service and Other Performance Measures

Level of service, LOS	D	
Volume to capacity ratio, v/c	0.30	
Peak 15-min vehicle-miles of travel, VMT15	205	veh-mi
Peak-hour vehicle-miles of travel, VMT60	697	veh-mi
Peak 15-min total travel time, TT15	8.8	veh-h
Capacity from ATS, CdATS	899	veh/h
Capacity from PTSF, CdPTSF	1568	veh/h
Directional Capacity	1568	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	23.4	mi/h
Percent time-spent-following, PTSFd (from above)	71.7	
Level of service, LOSd (from above)	D	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	455.3
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.71
Bicycle LOS	F

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Northbound
From/To	1.8 mi S of OFR to SR 193
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.97	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	1.8	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	418	veh/h
Opposing direction volume, Vo	387	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.9		2.0	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.933		0.926	
Grade adj. factor,(note-1) fg	0.92		0.90	
Directional flow rate,(note-2) vi	502	pc/h	479	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	2.3	mi/h
Average travel speed, ATSd	30.3	mi/h
Percent Free Flow Speed, PFFS	75.3	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                     Analysis(d)        Opposing (o)
PCE for trucks, ET                                1.4                1.6
PCE for RVs, ER                                   1.0                1.0
Heavy-vehicle adjustment factor, fHV              0.969              0.954
Grade adjustment factor,(note-1) fg               0.92               0.90
Directional flow rate,(note-2) vi                 483    pc/h        465     pc/h
Base percent time-spent-following,(note-4) BPTSFd  50.5   %
Adjustment for no-passing zones, fnp                       41.3
Percent time-spent-following, PTSFd                        71.5   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                      D
Volume to capacity ratio, v/c                              0.25
Peak 15-min vehicle-miles of travel, VMT15                 194     veh-mi
Peak-hour vehicle-miles of travel, VMT60                   752     veh-mi
Peak 15-min total travel time, TT15                        6.4     veh-h
Capacity from ATS, CdATS                                   1661    veh/h
Capacity from PTSF, CdPTSF                                 1700    veh/h
Directional Capacity                                       1700    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                                 1.8     mi
Length of two-lane highway upstream of the passing lane, Lu         -       mi
Length of passing lane including tapers, Lpl                        -       mi
Average travel speed, ATSd (from above)                             30.3    mi/h
Percent time-spent-following, PTSFd (from above)                    71.5
Level of service, LOSd (from above)                                 D

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde            -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld         -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                           -
Average travel speed including passing lane, ATSpl                  -
Percent free flow speed including passing lane, PFFSpl              0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde           -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld           -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                            -
Percent time-spent-following
    including passing lane, PTSFpl                                  -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl             A
Peak 15-min total travel time, TT15                        -       veh-h

_________________________ Bicycle Level of Service ___________________________
```

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	430.9
Effective width of outside lane, We	13.20
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.71
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Fehr & Peers
Agency/Co.	
Date Performed	10/12/2018
Analysis Time Period	Weekend MD Peak Hour
Highway	SR 49 - Southbound
From/To	1.8 S of OFR to SR 193
Jurisdiction	
Analysis Year	CPP Conditions
Description	Auburn SRA General Plan

Input Data

Highway class	Class 2		Peak hour factor, PHF	0.85	
Shoulder width	1.2	ft	% Trucks and buses	8	%
Lane width	12.0	ft	% Trucks crawling	50.0	%
Segment length	1.8	mi	Truck crawl speed	10.0	mi/hr
Terrain type	Rolling		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	100	%
Up/down	-	%	Access point density	2	/mi

Analysis direction volume, Vd	384	veh/h
Opposing direction volume, Vo	564	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.9		1.6	
PCE for RVs, ER	1.1		1.1	
Heavy-vehicle adj. factor,(note-5) fHV	0.933		0.954	
Grade adj. factor,(note-1) fg	0.93		0.98	
Directional flow rate,(note-2) vi	521	pc/h	710	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	45.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	4.2	mi/h
Adj. for access point density,(note-3) fA	0.5	mi/h
Free-flow speed, FFSd	40.3	mi/h
Adjustment for no-passing zones, fnp	1.5	mi/h
Average travel speed, ATSd	29.3	mi/h
Percent Free Flow Speed, PFFS	72.6	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.4		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.969		1.000	
Grade adjustment factor,(note-1) fg	0.93		0.98	
Directional flow rate,(note-2) vi	501	pc/h	677	pc/h

Base percent time-spent-following,(note-4) BPTSFd	54.1	%
Adjustment for no-passing zones, fnp	32.6	
Percent time-spent-following, PTSFd	68.0	%

Level of Service and Other Performance Measures

Level of service, LOS	C	
Volume to capacity ratio, v/c	0.27	
Peak 15-min vehicle-miles of travel, VMT15	203	veh-mi
Peak-hour vehicle-miles of travel, VMT60	691	veh-mi
Peak 15-min total travel time, TT15	6.9	veh-h
Capacity from ATS, CdATS	1661	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	1.8	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	29.3	mi/h
Percent time-spent-following, PTSFd (from above)	68.0	
Level of service, LOSd (from above)	C	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	A	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	6
Pavement rating, P	3
Flow rate in outside lane, vOL	451.8
Effective width of outside lane, We	13.39
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	6.70
Bicycle LOS	F

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

CUMULATIVE PLUS PROJECT WEEKDAY LOS

Roadway Segments	Jurisdiction	Study Period	Volume (Daily or Peak Hour)	A	B	C	D	E	V / C Ratio	LOS
Foresthill Rd - Lincoln Wy to Old Auburn Foresthill Rd	Placer County	Daily	12,960	12,000	14,000	16,000	18,000	20,000	0.65	LOS B
Old Foresthill Rd - SR 49 to Foresthill Rd	Placer County	Daily	1,480	12,000	14,000	16,000	18,000	20,000	0.07	LOS A
Maidu Dr - Auburn Folsom Rd to China Bar Access	City of Auburn	Daily	3,240	N / A	11,610	16,650	18,720	20,070	0.16	LOS B or better
Sliger Mine Rd - SR 193 and San Martin Mine Rd - AM Peak Hour	El Dorado County	Peak Hour	130	N / A	N / A	640	1,310	1,510	0.09	LOS C or better
Sliger Mine Rd - SR 193 and San Martin Mine Rd - PM Peak Hour	El Dorado County	Peak Hour	180	N / A	N / A	640	1,310	1,510	0.12	LOS C or better

CUMULATIVE PLUS PROJECT WEEKEND LOS

Roadway Segments	Jurisdiction	Study Period	Volume (Daily or Peak Hour)	A	B	C	D	E	V / C Ratio	LOS
Foresthill Rd - Lincoln Wy to Old Auburn Foresthill Rd	Placer County	Daily	12,140	12,000	14,000	16,000	18,000	20,000	0.61	LOS A
Old Foresthill Rd - SR 49 to Foresthill Rd	Placer County	Daily	2,380	12,000	14,000	16,000	18,000	20,000	0.12	LOS A
Maidu Dr - Auburn Folsom Rd to China Bar Access	City of Auburn	Daily	3,130	N / A	11,610	16,650	18,720	20,070	0.16	LOS B or better
Sliger Mine Rd - SR 193 and San Martin Mine Rd	El Dorado County	Peak Hour	150	N / A	N / A	640	1,310	1,510	0.10	LOS C or better

	Cumulative Plus Project			
Segment	Weekday Volume	TIRE	Weekend Volume	TIRE
Skyridge Dr - Sacramento St to Riverview Dr	1,280	3.1	1,340	3.1
Riverview Dr - Skyridge Dr to Maidu Dr	690	2.8	830	2.9

FEHR PEERS

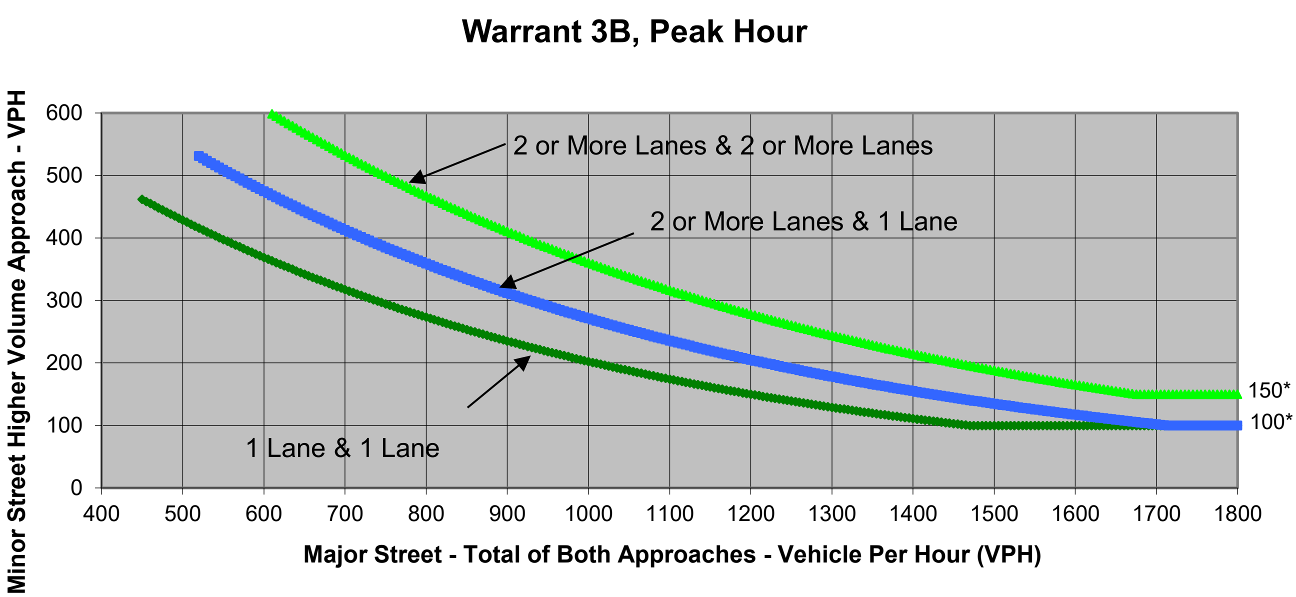
		Project	Auburn SRA General Plan
Major Street	SR 49 / SR 193 / Old Foresthill Rd	Scenario	Cumulative Plus Project Conditions
Minor Street	SR 49	Peak Hour	Weekday AM

Turn Movement Volumes

	NB	SB	EB	WB
Left		26		486
Through	12	12		
Right	212			25
Total	224	38	0	511

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR 49 / SR 193 / Old Foresthill Rd	SR 49	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**262**	**511**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	SR 49 / SR 193 / Old Foresthill Rd		Project	Auburn SRA General Plan
Minor Street	SR 49		Scenario	Cumulative Plus Project Conditions
			Peak Hour	Weekday AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	26	0	486
Through	12	12	0	0
Right	212	0	0	25
Total	224	38	0	511

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	19.7
Approach with Worst Case Delay	WB
Total Vehicles on Approach	511

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Cumulative Plus Project Conditions	**2.8**	**511**	**773**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

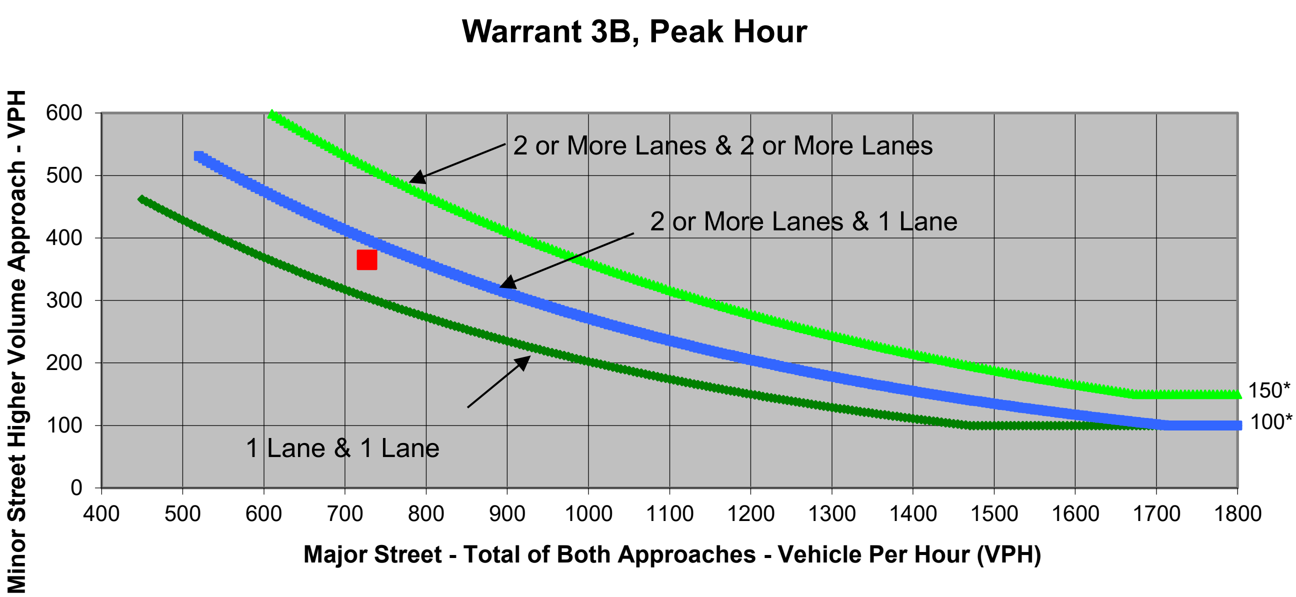
Major Street	SR 49 / SR 193 / Old Foresthill Rd	Project	Auburn SRA General Plan
Minor Street	SR 49	Scenario	Cumulative Plus Project Conditions
		Peak Hour	Weekday PM

Turn Movement Volumes

	NB	SB	EB	WB
Left		50		325
Through	24	24		
Right	629			40
Total	653	74	0	365

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street SR 49 / SR 193 / Old Foresthill Rd	Minor Street SR 49	Warrant Met
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**727**	**365**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	SR 49 / SR 193 / Old Foresthill Rd		Project	Auburn SRA General Plan
Minor Street	SR 49		Scenario	Cumulative Plus Project Conditions
			Peak Hour	Weekday PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	50	0	325
Through	24	24	0	0
Right	629	0	0	40
Total	653	74	0	365

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	31
Approach with Worst Case Delay	WB
Total Vehicles on Approach	365

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Cumulative Plus Project Conditions	**3.1**	**365**	**1,092**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

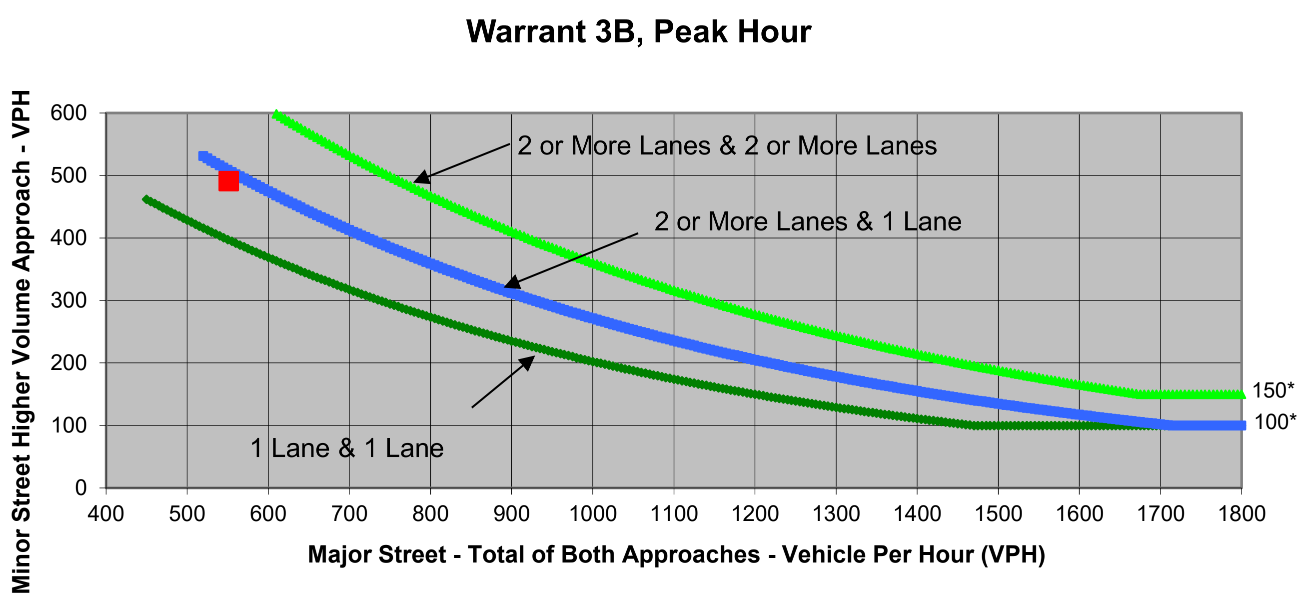
		Project	Auburn SRA General Plan
Major Street	SR 49 / SR 193 / Old Foresthill Rd	Scenario	Cumulative Plus Project Conditions
Minor Street	SR 49	Peak Hour	Weekend MD

Turn Movement Volumes

	NB	SB	EB	WB
Left		34		439
Through	55	51		
Right	411			52
Total	466	85	0	491

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street SR 49 / SR 193 / Old Foresthill Rd	Minor Street SR 49	Warrant Met
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**551**	**491**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	SR 49 / SR 193 / Old Foresthill Rd		Project	Auburn SRA General Plan
Minor Street	SR 49		Scenario	Cumulative Plus Project Conditions
			Peak Hour	Weekend MD

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	34	0	439
Through	55	51	0	0
Right	411	0	0	52
Total	466	85	0	491

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	38.7
Approach with Worst Case Delay	WB
Total Vehicles on Approach	491

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Cumulative Plus Project Conditions	**5.3**	**491**	**1,042**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	486	25	12	212	26	12
Future Volume (veh/h)	486	25	12	212	26	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	523	23	13	25	28	13
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	623	27	93	179	201	93
Arrive On Green	0.36	0.36	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1721	76	572	1100	1235	573
Grp Volume(v), veh/h	547	0	0	38	41	0
Grp Sat Flow(s),veh/h/ln	1800	0	0	1672	1809	0
Q Serve(g_s), s	12.0	0.0	0.0	0.8	0.8	0.0
Cycle Q Clear(g_c), s	12.0	0.0	0.0	0.8	0.8	0.0
Prop In Lane	0.96	0.04		0.66	0.68	
Lane Grp Cap(c), veh/h	651	0	0	272	294	0
V/C Ratio(X)	0.84	0.00	0.00	0.14	0.14	0.00
Avail Cap(c_a), veh/h	1107	0	0	485	315	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.6	0.0	0.0	15.5	15.5	0.0
Incr Delay (d2), s/veh	3.0	0.0	0.0	0.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	0.0	0.3	0.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.6	0.0	0.0	15.7	15.7	0.0
LnGrp LOS	B	A	A	B	B	A
Approach Vol, veh/h	547		38			41
Approach Delay, s/veh	15.6		15.7			15.7
Approach LOS	B		B			B

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	11.5	11.5	20.1
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.5	7.5	26.5
Max Q Clear Time (g_c+I1), s	2.8	2.8	14.0
Green Ext Time (p_c), s	0.1	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	325	40	24	629	50	24
Future Volume (veh/h)	325	40	24	629	50	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	349	33	26	109	54	26
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	449	42	58	243	225	109
Arrive On Green	0.28	0.28	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1632	154	315	1319	1221	588
Grp Volume(v), veh/h	383	0	0	135	80	0
Grp Sat Flow(s),veh/h/ln	1791	0	0	1633	1809	0
Q Serve(g_s), s	7.5	0.0	0.0	2.8	1.4	0.0
Cycle Q Clear(g_c), s	7.5	0.0	0.0	2.8	1.4	0.0
Prop In Lane	0.91	0.09		0.81	0.67	
Lane Grp Cap(c), veh/h	493	0	0	301	334	0
V/C Ratio(X)	0.78	0.00	0.00	0.45	0.24	0.00
Avail Cap(c_a), veh/h	1251	0	0	538	358	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.7	0.0	0.0	13.7	13.2	0.0
Incr Delay (d2), s/veh	2.7	0.0	0.0	1.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	0.0	1.0	0.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.4	0.0	0.0	14.8	13.6	0.0
LnGrp LOS	B	A	A	B	B	A
Approach Vol, veh/h	383		135			80
Approach Delay, s/veh	15.4		14.8			13.6
Approach LOS	B		B			B

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	11.5	11.5	14.9
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.5	7.5	26.5
Max Q Clear Time (g_c+I1), s	4.8	3.4	9.5
Green Ext Time (p_c), s	0.4	0.1	1.1

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	439	52	55	411	51	34
Future Volume (veh/h)	439	52	55	411	51	34
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1900	1900	1870	1870	1870	1870
Adj Flow Rate, veh/h	453	45	57	120	53	35
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	2	2	2	2
Cap, veh/h	600	60	148	312	388	200
Arrive On Green	0.37	0.37	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1625	161	537	1130	583	724
Grp Volume(v), veh/h	499	0	0	177	88	0
Grp Sat Flow(s),veh/h/ln	1790	0	0	1667	1306	0
Q Serve(g_s), s	6.2	0.0	0.0	2.2	0.1	0.0
Cycle Q Clear(g_c), s	6.2	0.0	0.0	2.2	2.2	0.0
Prop In Lane	0.91	0.09		0.68	0.60	
Lane Grp Cap(c), veh/h	661	0	0	460	588	0
V/C Ratio(X)	0.76	0.00	0.00	0.38	0.15	0.00
Avail Cap(c_a), veh/h	1517	0	0	1281	1280	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.0	0.0	0.0	7.4	7.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0	0.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	0.5	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.8	0.0	0.0	8.0	7.1	0.0
LnGrp LOS	A	A	A	A	A	A
Approach Vol, veh/h	499		177			88
Approach Delay, s/veh	8.8		8.0			7.1
Approach LOS	A		A			A

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	11.5	11.5	13.9
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	19.5	19.5	21.5
Max Q Clear Time (g_c+I1), s	4.2	4.2	8.2
Green Ext Time (p_c), s	0.9	0.4	1.5

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.