TRIBAL INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

IONE BAND OF MIWOK INDIANS

IONE PLYMOUTH CASINO PROJECT

JANUARY 2024

PREPARED FOR:

Ione Band of Miwok Indians
9252 Bush Street
Plymouth, CA 95669

PREPARED BY:

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1.0 INTRODUCTION

The Ione Band of Miwok Indians (Tribe) proposes to develop a casino on trust land (Reduced Project). The Project Site consists of federal trust land within unincorporated Amador County (**Figures 1** and **2**). An Environmental Impact Statement (EIS) was prepared pursuant to the National Environmental Policy Act (NEPA). The Final EIS was published in 2009 and a Record of Decision (ROD) was issued by the Bureau of Indian Affairs (BIA) in May of 2012 that led to the U.S. Department of the Interior acquiring the Project Site into federal trust status. The parcels that comprise the Project Site were placed into Federal Trust in March of 2020 (Amador County, 2020).

The Reduced Project is substantially smaller than Alternative A in the EIS, and includes less than 350 Class III gaming devices. This document assesses potential off-reservation environmental impacts of the Reduced Project.

1.1 REGULATORY CONSIDERATIONS

The following regulatory resources were considered in the environmental analysis:

- Tribal-State Compact Between the State of California and the Ione Band of Miwok Indians (Compact, 2020).
- Ione Band Environmental Protection Statute, Tribal Council Resolution No. 2023-06 (IBMI, 2023).
- Amador County General Plan (Amador County, 2016).
- Amador County Zoning Code (Amador County, 2023a).

The Tribe entered into a Tribal-State Compact with the State of California (Compact) on August 3, 2020. The Compact became effective upon the publication of notice in the Federal Register on December 11, 2020. Section 11.1 of the Compact states that the Tribe shall not commence construction on a Project (defined as a Gaming Facility) until certain requirements are met, including the evaluation of off-reservation environmental impacts. Pursuant to Section 11.2 of the Compact, in April of 2023 the Tribe adopted a Tribal Environmental Protection Ordinance. Compact Sections 11.3 through 11.14 describe the types of studies the Tribe may prepare to document its evaluation of off-reservation environmental impacts. Section 11.5 of the Compact states:

> "If the Tribe determines that the Project is not subject to a Categorical Exemption and that the Project may cause a Significant Effect on the Off-Reservation Environment, the Tribe shall prepare an Initial Study. The Tribe shall use the checklist at Appendix B for the Initial Study, and its findings shall be supported by substantial evidence. If, based upon the Initial Study, the Tribe determines that it is appropriate to do so, it may prepare a Negative Declaration or a Mitigated Negative Declaration for the Project."

In accordance with the Compact, the Tribe has made the determination that an Initial Study and a Mitigated Negative Declaration are the appropriate documents in connection with the evaluation of off-reservation environmental impacts. The Checklist included in Appendix B of the Compact (Checklist) is presented in **Section 3.0** herein.

1.2 AGREEMENTS

Mitigation measures to reduce off-reservation impacts to less-than-significant levels are listed in **Section 3.0**. The Tribe may enter into an intergovernmental agreement (IGA) with the County and/or the City of Plymouth to address significant off-reservation impacts to public services, including law enforcement, fire protection and emergency medical services, or if an IGA is not entered into, the Tribe will enter into an enforceable binding letter agreement with the State of California under which the Tribe shall agree to perform the required mitigation pursuant to section 11.5(c) of the Compact.

2.0 PROJECT DESCRIPTION

2.1 PROJECT COMPONENTS

The Reduced Project would be constructed within the Tribe's reservation, which is located in Amador County, on the southern border of the City of Plymouth (**Figures 1** and **2**). The Reduced Project is within the scope of the Gaming Facility identified as the preferred action alternative in the Final EIS (75 Fed. Reg 49513, Aug 13, 2010) and approved in the associated Record of Decision (77 Fed. Reg. 31871-31873, May 30, 2012).

The Project Site is located on the east side of State Highway 49/Golden Chain Highway (SR 49), approximately one mile south of the City of Plymouth downtown area. Most of the Project Site is located in unincorporated Amador County. A number of smaller parcels that are located on the western portion of the Project Site are located within the City of Plymouth (**Figure 3**).

The Reduced Project and associated facilities would be constructed primarily on an approximately 20-acre undeveloped portion of the Tribe's federal trust land. A Site Plan of the Reduced Project is shown in **Figures 3** and **4**, and project components are summarized in **Table 1**. A driveway to the casino would utilize the entrance to the Shenandoah Inn after it is demolished.

The Reduced Project includes the construction of a single-story casino with less than 350 Class III gaming devices. It would also include, a bar, a café, administrative offices, a breakroom, loading dock, warehouse and an outdoor entertainment area. An outdoor entertainment area would be constructed to the north of the main building structure. A wastewater treatment plant (WWTP) would be constructed to process wastewater generated by the casino, restaurants, administrative offices and other facilities. Three irrigation fields totaling approximately 7 acres would dispose of treated effluent. During the first full year of operations, the Reduced Project would employ approximately 240 persons on a full and part-time basis.

Parking lots would consist of approximately 672 parking spaces for the use of casino patrons and employees. The west lot would have 220 spaces, the north lot would have 249 spaces, and the south lot would have 203. Parking lots would include ADA compliant spaces and 48 spaces for valet parking.

Site Preparation and Construction

The Project Site currently consists mostly of undeveloped open space. Excavation and grading would occur during construction to accommodate the Reduced Project depicted in **Figure 4** and as further described in the Preliminary Drainage Analysis attached as **Appendix C**. The topography of the Project Site ranges from approximately 900 feet to 1,150 feet above mean sea level (amsl). Approximately 9 acres of impervious surfaces would be created on-site (Montrose, 2023).

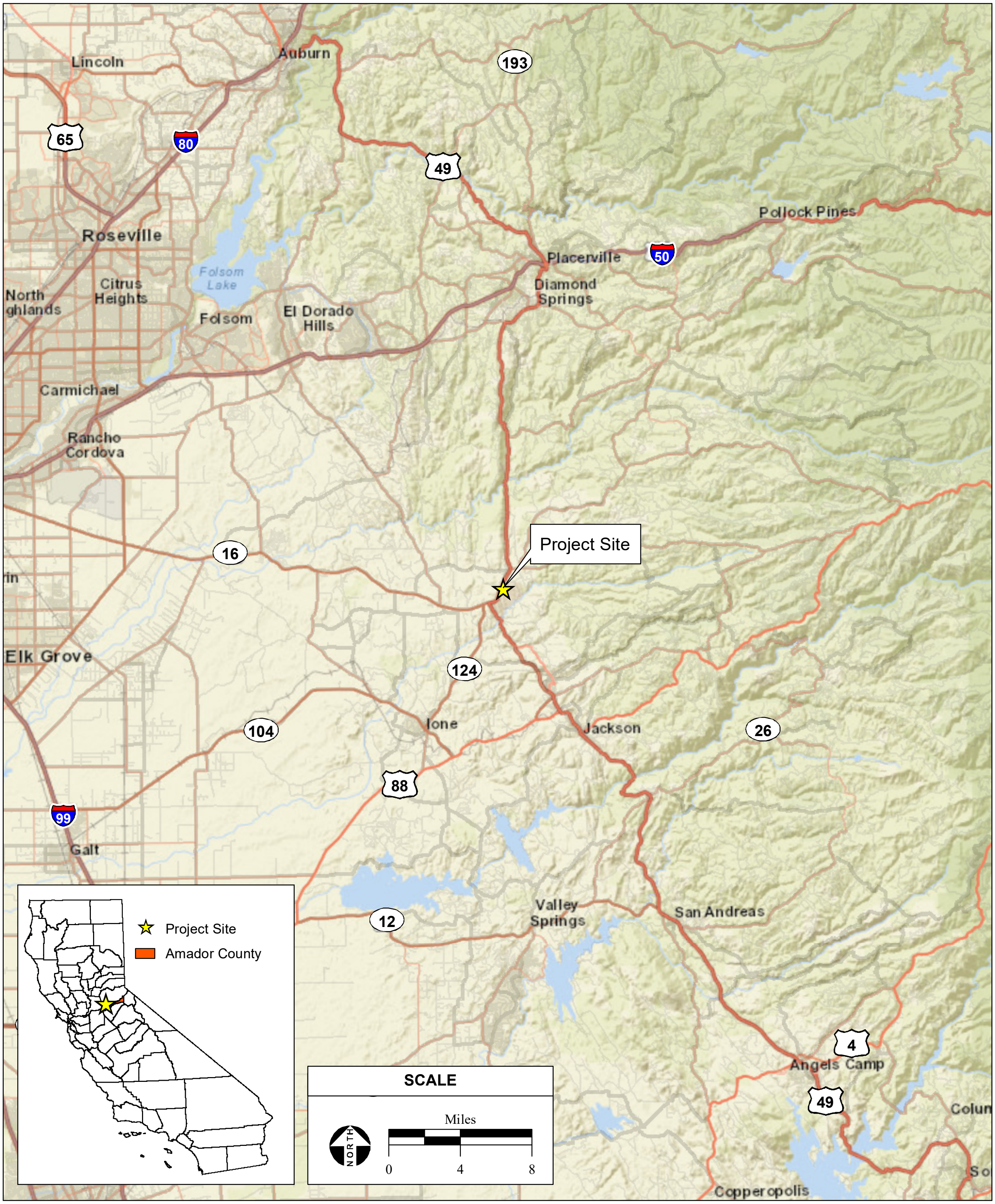
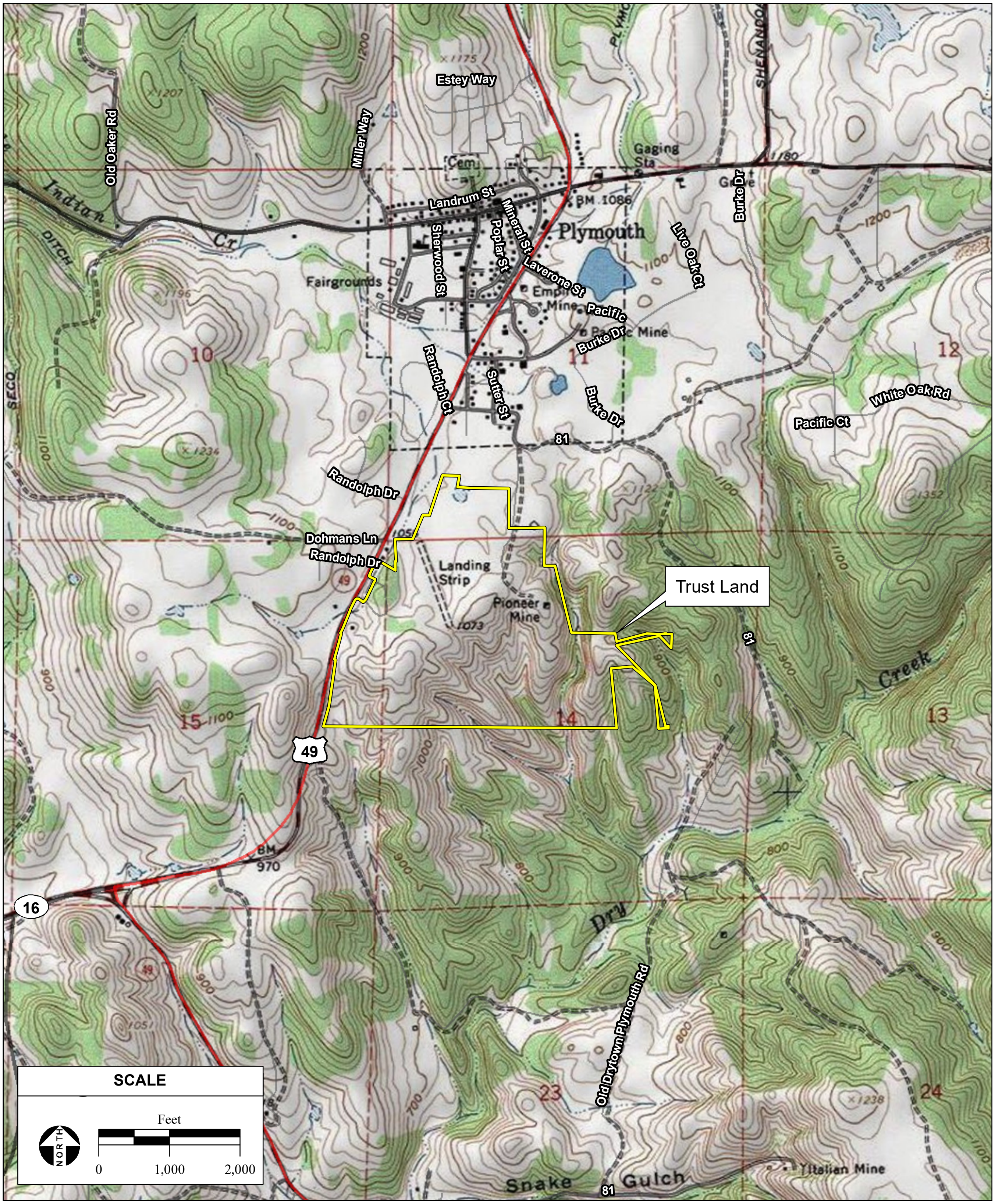
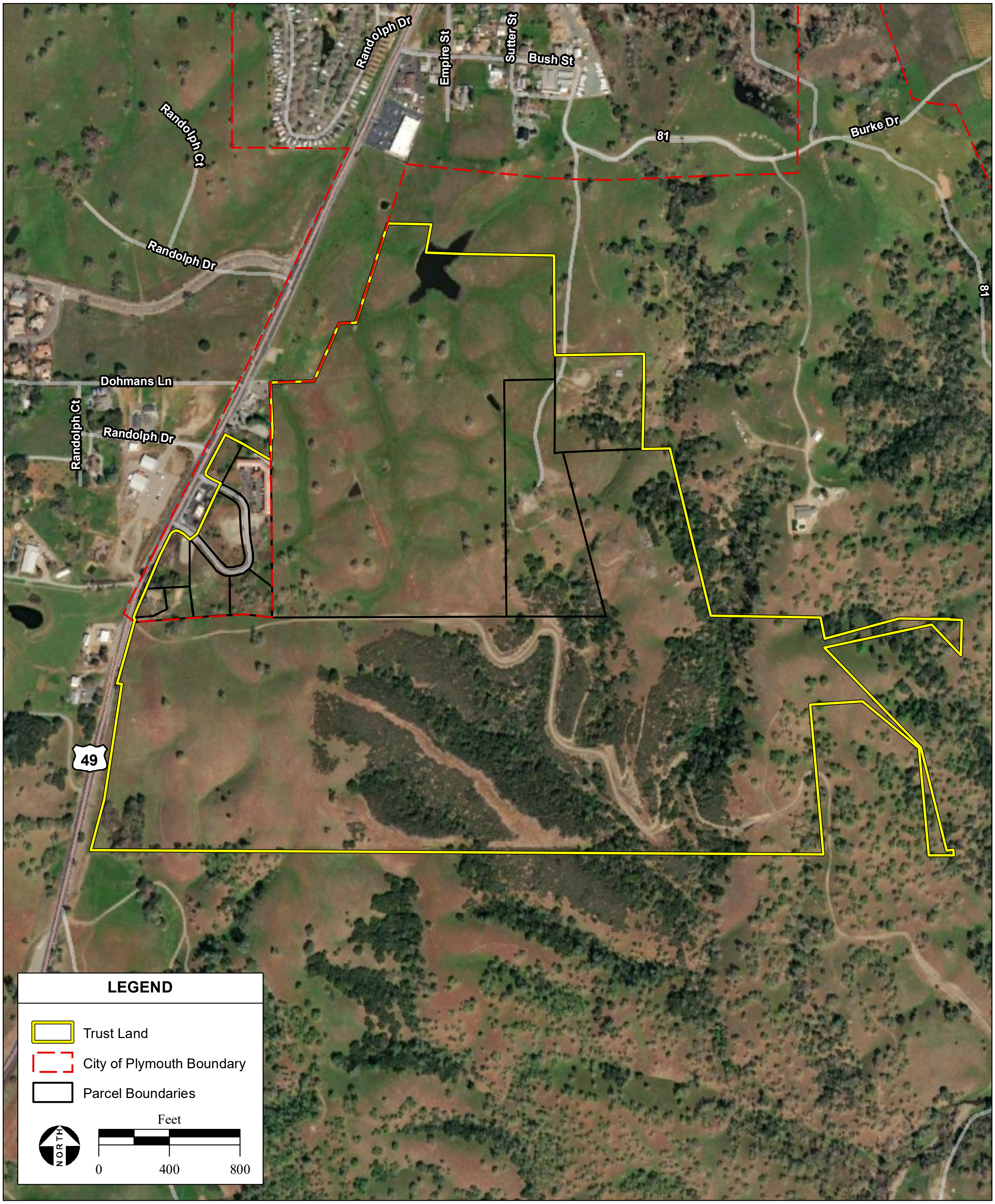


Figure 1
Regional Location



SOURCE: "Amador City, CA" USGS 7.5 Minute Topographic Quadrangle, T7N R10E, Section 11, 14, and 15, Mt Diablo Baseline & Meridian; ESRI, 2023; Montrose Environmental, 7/27/2023

Figure 2
Site and Vicinity



SOURCE: Amador County Parcels; Vivid Maxar aerial photograph, 3/14/2022;
ESRI, 2023; Montrose Environmental, 7/27/2023

Figure 3
Aerial Photograph

Stormwater from newly created impervious surfaces would flow into two stormwater facilities. Under Option A, these stormwater improvements would consist of two stormwater ponds, one to the north of the casino structure, and one to the south (see **Figure 4**). Stormwater conveyance would occur via pipes and culverts. Under Option B, the stormwater pond to the south would be replaced by an underground storage system. Stormwater ponds would be excavated, and earthen berms would not be a significant feature. A more detailed description of the proposed drainage improvements is presented in **Appendix C.**

During grading, cut and fill would be balanced, with no significant import or export of material. Construction would require heavy equipment such as dozers, graders, tractors, loaders, backhoes, mixers, cranes, forklifts, pavers, and rollers. Construction would adhere to Section 6.4.2 of the Compact, which requires the project to meet or exceed the requirements of the California Building Standards Code, the California Public Safety Code and Title III of the Americans with Disabilities Act of 1990 (Compact, 2020). Project construction is estimated to temporarily employ approximately 300 workers.

TABLE 1: PROJECT COMPONENTS

Component	Number	Approximate Square Footage
Casino		-
Gaming Floor		25,205
Class III Slot Machines	349 machines	
Table Games	10 tables	
Back of House Service and Support Areas		17,617
Subtotal		42,822
Food and Beverage		
Café		3,652
Bar		3,259
Kitchen		1,611
Grab and Go		162
Subtotal		8,684
Outdoor Entertainment	372 seats	5,568
	Total	**57,074**
Casino Surface Parking	672 spaces	
Wastewater Treatment Plant		-

SOURCE: Cuningham Group, 9/22/2023; Amador County Parcels; Vivid Maxar aerial photograph, 3/14/2022; ESRI, 2024; Montrose Environmental, 1/3/2024

Figure 4
Proposed Site Plan

Architecture, Signage, Lighting and Landscaping

The architecture and exterior signage of the building would be compatible with the natural and rural characteristics of the site and vicinity by incorporating native materials and neutral colors. Construction of the Reduced Project would primarily occur during daytime hours. Minor construction lighting could be visible from off-reservation residences during dusk and nighttime hours. Illuminated signs would be designed to blend with the light levels of the building and landscape lighting in both illumination levels and color characteristics. The exterior lighting of the Reduced Project would be integrated into components of the architecture and would be strategically positioned to minimize off-site lighting. The architectural design of the project would be enhanced by landscaping using drought tolerant plants native to the region.

Access

As described in **Appendix E** and as illustrated in **Figure 4**, access to the Project Site would be via Village Drive, which connects to SR 49.

Water Supply

As described in more detail in the FEIS, the Reduced Project would source water from existing wells. Water quality would be achieved by a multi-staged filtration and treatment process. Total potable water demand for the Reduced Project is estimated at 37,438 (**Appendix D**), to achieve the estimated 22,463 GPD net water usage by the casino facility. A 90,000-gallon storage tank will be constructed to meet water demands. The storage tank would provide 4 days of water storage to support fire flow demands, if wells or treatment systems were off-line for any reason.

Wastewater

Wastewater would be treated at an on-site WWTP, located to the east of the casino (**Figure 4**). The WWTP would be sized to treat the peak flows resulting from the Reduced Project. The anticipated average flow rate is 36,315 GPD, or 13.3 million gallons per year. Treated effluent would be used to irrigate 3 separate fields, with a combined area of approximately 7 acres. The combination of irrigation and evaporation would consume the effluent during most months. Irrigation disposal would be reduced during the rainy season (November to March). During periods of rain, effluent would be temporarily stored in either a 4 million-gallon tank (Option A), or a similar sized storage pond (Option B). Under Option B, the pond would be approximately 5.3 feet deep and the berms surrounding the pond would be up to 7.5 feet tall. A more detailed description of the proposed on-site WWTP and ponds is presented in **Appendix D**.

Gas and Electric

Pacific Gas & Electric (PG&E) provides electrical power to the majority of Amador County, including the City. PG&E currently maintains the Oleta substation, a 33-kilovolt facility on the corner of Main Street and Shenandoah Road that serves an area from Plymouth to Sutter Creek. Overhead PG&E utility lines are located adjacent to the Project Site and on the Project Site to serve the Shenandoah Inn. PG&E does not provide natural gas in the area. A propane tank will be brought to the site to provide gas.

2.2 CHANGES IN THE PROJECT

Components of the current project as compared to the EIS alternatives, including Alternative A that was approved in the ROD, are summarized in **Table 2**. As shown in the table, the Reduced Project is most similar to EIS Alternative C, but is still smaller in scope. EIS Alternative D is not listed in the table, as it is a retail development and thus not comparable to the other casino alternatives.

TABLE 2: REDUCED PROJECT COMPARED TO EIS ALTERNATIVES [1]

Component	EIS Alternative A – Proposed Casino and Hotel [1]	EIS Alternative B - Reduced Casino with Hotel [1]	EIS Alternative C - Reduced Casino [1]	Reduced Project
Casino Games				
Slot Machines	2,000	1,500	1,000	349
Table Games	40	30	20	10
Casino Square Footage				
Gaming Floor	65,000	48,750	32,500	25,205
Back of House Service and Support Areas	20,000	18,000	15,250	17,617
Food and Beverage	20,000	20,000	18,500	8,684
Outdoor Entertainment and Other	15,000	14,000	13,000	5,568
Total	**120,000**	**100,750**	**79,250**	**57,074**
Hotel Rooms	250	250	0	0
Event, Convention Center sf.	30,000	30,000	0	0
Parking Spaces				
Car Parking	2,914	2,354	1,069	672
RV and Bus Parking	51 spaces	51 spaces	51 spaces	0
Total	**2,965**	**2,405**	**1,120**	**672**
Water/Wastewater				
Water Demand	116,700 GPD [2]	104,000 GPD [2]	64,900 GPD [2]	37,438 GPD [3]
Wastewater Generation	154,600 GPD	135,200 GPD	75,400 GPD	36,315 GPD [3]

1. Source: Information for EIS alternatives obtained from Final EIS (BIA, 2009).
2. Net of adjusting for recycled water used to meet non-potable water demands.
3. Source: **Appendix D**.

3.0 ENVIRONMENTAL EFFECTS

3.1 DETERMINATION

Environmental impacts assessed on the following pages have been evaluated using the following rating system: potentially significant impact, less than significant impact with mitigation incorporated, less than significant impact, or no impact. If an impact is determined potentially significant, further environmental review is provided below. For impacts determined less than significant with mitigation incorporated, mitigation measures are recommended where necessary and have been designed consistent with applicable federal, State, and local regulatory requirements.

Environmental issue areas checked below have the potential to be affected by the Reduced Project and may constitute an effect necessitating mitigation or further environmental review. The Reduced Project was determined to have no significant impact on unchecked issue areas, and mitigation or additional environmental review are not warranted.

- [ ] Aesthetics
- [ ] Agricultural and Forest Resources
- [x] Air Quality
- [x] Biological Resources
- [x] Cultural Resources
- [x] Geology and Soils
- [ ] Greenhouse Gas Emissions
- [x] Hazards and Hazardous Materials
- [x] Water Resources
- [ ] Land Use
- [ ] Mineral Resources
- [x] Noise
- [ ] Population and Housing
- [x] Public Services
- [ ] Recreation
- [x] Transportation/Traffic
- [ ] Utilities and Service Systems
- [x] Cumulative Effects

3.2 AESTHETICS Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☑	☐
b) Substantially damage off-reservation scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☑	☐
c) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

Question A

The project location and on-reservation topography are such that construction and operation of the Project would alter the views from off-site vantage points. Machinery and construction activities would be visible to passing motorists on SR 49. Visibility of construction activities from off-site locations would be temporary in nature and would not permanently degrade existing visual characteristics.

The proposed casino is a one-story building with a height of approximately thirty (30) feet. The casino structure would be located where grade is approximately 1,150 feet amsl. The WWTP would be located on the south east portion of the Project Site and would either be marginally visible from SR 49 and public road ways, or not visible at all. Existing grade of the location of the WWTP is approximately 1,000 amsl. Off-site views of the Reduced Project would be partly shielded due to landscaping and local topography.

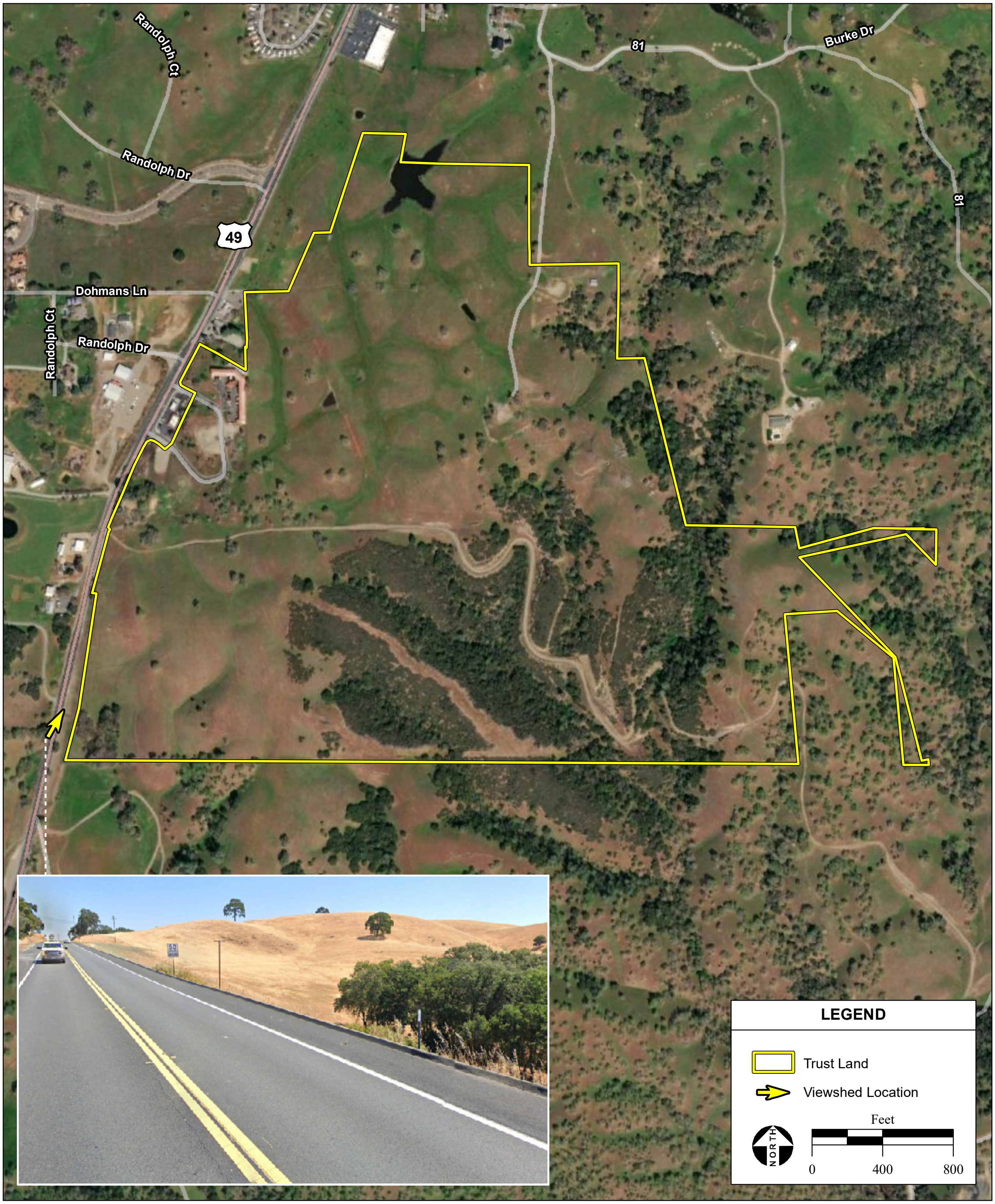
A viewshed of a northbound motorist on SR 49 is presented in **Figure 5.** Due to topography, existing landscaping, and the posted speed limit of 50 mph, passing motorists would only have brief views of the Reduced Project from SR 49.

As described in **Section 2.1**, Project landscaping would incorporate native plants, and the design would utilize neutral colored paints and building materials. Consequently, Reduced Project design would be compatible with the surrounding area.

For the reasons described above, the Reduced Project would have a less-than-significant impact on scenic vistas.

Question B

No off-reservation scenic resources would be affected by construction activities or operations. No off-reservation trees, outcroppings, or historic buildings would be physically altered.



SOURCE: Google Earth, 2022; Amador County Parcels; Vivid Maxar aerial photograph, 3/14/2022;
ESRI, 2023; Montrose Environmental, 11/6/2023

Figure 5
Viewshed Location

While SR 49 to the west of the Reservation is not a designated state scenic highway, it may be eligible to be classified for some segments (Caltrans, 2023). The closest state scenic highway is approximately eighteen miles to the north. The City of Plymouth has a scenic corridor overlay district that applies to all parcels that are adjacent to or front to or front on SR 49 (City of Plymouth, 2023). This district applies to off-reservation parcels in the vicinity of the Reduced Project, but does not apply to the Project Site. However, the project design would be generally consistent with the scenic corridor guidelines.

For the reasons described above, the Reduced Project would have a less than-significant impact on off-reservation scenic resources. Mitigation listed below would further reduce potential impacts.

Question C

Construction of the Reduced Project would primarily occur during daytime hours. Minor construction lighting could be visible from off-reservation residences during dusk and nighttime hours. Operation of Reduced Project would increase the amount of lighting in the vicinity. However, distance from the Project Site to the reservation boundary, the proposed landscaping, in conjunction with existing screening vegetation and topography would reduce the off-site impacts with regards to lighting. The Reduced Project would not use flashing signs or fluorescent lights. Further, lighting fixtures on the site would generally be downcast to direct lighting away from off-reservation areas. There would be a less than significant impact. Impacts would be further reduced through the implementation of mitigation listed in **Section 3.13**.

Mitigation Measures

A. The Tribe shall participate in Caltrans' Adopt-A-Highway Program to provide litter removal on one or more highway segments in the vicinity of the Project Site.

3.3 AGRICULTURE AND FOREST RESOURCES Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Involve changes in the existing environment, which, due to their location or nature, could result in conversion of off-reservation farmland to non-agricultural use or conversion of off-reservation forest land to non-forest use?	☐	☐	☐	☑

Question A

The economic development chapter of the Amador County General Plan outlines policies that emphasize the importance of farmlands for agricultural uses and agri-tourism (Amador County, 2016). Policy E-9.5 and E-9.6 mandate the need for a review of development compatibility with existing new land uses and direct future development away from farmlands of local or statewide importance.

The California Department of Conservation designates land within the vicinity of the Project Site within the classifications of grazing land, urban or build-up land, and other land (California Department of Conservation, 2022). Such land is not considered prime farmland. In addition, no off-reservation land within the vicinity of the Project Site is designated as timberland. With the exception of *de minimis* land disturbance that could occur from the construction of traffic mitigation measures, the Reduced Project would not cause any land use conversion of off-reservation farmland to non-agricultural use or conversion of off-reservation forest land to non-forest use. There would be no impact.

Mitigation Measures

None.

3.4 AIR QUALITY Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☑	☐
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☑	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?	☐	☐	☑	☐
d) Expose off-reservation sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
e) Create objectionable odors affecting a substantial number of people off-reservation?	☐	☑	☐	☐

Questions A – C

The Project Site is located within the Mountain Counties Air Basin (MCAB) which is part of the Amador County Air Pollution Control District (ACAPCD). The Clean Air Act is implemented by the U.S. Environmental Protection Agency (USEPA) and sets ambient air emission limits, referred to as the National Ambient Air Quality Standards (NAAQS), for six criteria air pollutants: particulate matter of aerodynamic radius of 10 microns or less (PM_{10}), particulate matter of aerodynamic radius of 2.5 microns or less ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO2), ground-level ozone (O3), and lead (Pb). The California Air Resources Board (CARB) sets standards for criteria pollutants in California that are more stringent than the NAAQS and include the following additional contaminants: visibility-reducing particles, hydrogen sulfide, sulfates, and vinyl chloride. **Table 3** lists California and National Ambient Air Quality Standards (CAAQS/NAAQS) for ozone and particulate matter ($PM_{2.5}$ and PM_{10}). The MCAB is designated under the NAAQS as marginal nonattainment for 8-hour ozone (USEPA, 2023). The MCAB is designated under the CAAQS as nonattainment for 1-hour and 8-hour ozone (CARB, 2023). The MCAB is in attainment or is unclassified for all other criteria pollutants under the NAAQS and the CAAQS.

TABLE 3: CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	CAAQS	NAAQS
Ozone	8-hour	0.07 ppm	0.07 ppm
	1 hour	0.09 ppm	-
$PM_{2.5}$	24-hour	-	35 μg/m^3
	Annual	12 μg/m^3	12 μg/m^3
PM_{10}	24-hour	50 μg/m^3	150 μg/m^3
	Annual	20 μg/m^3	-
Carbon Monoxide (CO)	1-hour	20 ppm	35 ppm
	8-hour	9 ppm	9 ppm
Nitrogen Dioxide (NO_2)	1-hour	0.18 ppm	0.100 ppm
	Annual	0.030 ppm	0.053 ppm
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm	0.075 ppm
	24-hour	0.04 ppm	0.14 ppm
	Annual	NA	0.03 ppm
Sulfates	24-hour	25 μg/m^3	NA
Lead	30-day	1.5 μg/m^3	NA
	Cal. Quarter	NA	1.5 μg/m^3
	Rolling 3-month average	NA	0.15
Hydrogen Sulfide	1-hour	0.03 ppm	NA
Vinyl Chloride[K] (chloroethene)	24-hour	0.010 ppm	NA
Visibility-Reducing Particles	8-hour	See Note	NA

SOURCE: CARB, 2016.
Note: Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10 - mile nominal visual range.
ppm = parts per million by volume.
μg/m^3 = micrograms per cubic meter of air.

Air quality impacts potentially associated with the Reduced Project include those resulting from short-term construction activities and operation. A significant impact would occur if the Reduced Project would result in emissions of ozone precursors (ROG and NOx) at levels that would conflict with or obstruct an applicable air quality plan, violate an air quality standard, or contribute to an existing or projected air quality violation. To determine the potential for significant off-site air quality impacts, the Reduced Project emissions are compared to the *de minimis* General Conformity levels set forth in 40 CFR 93.153. ACAPCD does not have any thresholds of significance for air quality. Since ACAPCD does not have specific thresholds of significance, the de minimis General Conformity thresholds will be used to determine if a project would result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Amador County's General Plan has several policies aimed at maintaining and improving air quality.

> **Policy C-9.1:** Encourage development of commercial or industrial businesses which provide jobs for county residents in order to reduce vehicle miles traveled for residents who must drive elsewhere for employment.
> **Policy C-9.2:** Encourage infill development, and development near existing activity centers in order to encourage walking or bicycle use in running local errands.
> **Policy C-9.3:** Promote the separation of emission sources from sensitive receptors such as schools, day care centers, and health care facilities.
> **Policy C-9.4:** Encourage energy conservation and energy efficient design in new development projects.
> **Policy C-9.5:** Promote recycling of waste materials and the use of recycled materials.
> **Policy C-9.6:** Maintain viable public transportation options in Amador County, and provide transit connections such as park-and-ride services to job centers in nearby counties.
> **Policy C-9.7:** Work with state and federal agencies to seek recognition of air pollutant movement from valley to mountain counties as a contributor to reduced air quality.

The Reduced Project is located near the City of Plymouth and would create new jobs. Thus, the Reduced Project is consistent with the first two policies. The Reduced Project is separated from sensitive receptors and would implement energy conservation and energy efficient design. Therefore, the Reduced Project does not conflict with the Amador County General Plan.

ACAPCD has enacted several rules and regulations to attain and maintain the air quality in its jurisdiction. ACAPCD Rule 218 is regarding fugitive dust emissions. The rule prevents and controls fugitive dust emissions to the atmosphere by using good housekeeping and/or work practices. In order to ensure that fugitive dust emissions from the Reduced Project do not cause substantial pollution off-site consistent with other construction projects in Amador County, **Mitigation Measure 3.4-A** would be implemented to control fugitive dust emissions.

Construction of the Reduced Project would generate criteria air pollutants from construction equipment (primarily diesel operated), construction worker automobiles (primarily gasoline operated), architectural coatings on buildings and parking lots, and physical land disturbance which generates fugitive dust. Construction emissions are summarized in **Table 4**, and CalEEMod output files are provided in **Appendix A**. Default assumptions in CalEEMod were used for construction estimates including construction duration and equipment with construction assumed to start in 2024. As shown in **Table 4,** project emissions would be far below the thresholds of significance.

TABLE 4: CONSTRUCTION EMISSIONS

Construction Year	Pollutants of Concern					
	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
	Tons per Year					
2024	0.25	2.98	2.44	0.01	0.46	0.23
2025	0.77	0.65	0.88	<0.005	0.04	0.03
Total Construction Emissions	**1.02**	**3.63**	**3.32**	**0.01**	**0.50**	**0.26**
Maximum Year Construction Emissions	**0.77**	**2.98**	**2.44**	**0.01**	**0.46**	**0.23**
de minimis levels	*100*	*100*	*n/a*	*n/a*	*n/a*	*n/a*
Exceeds Thresholds	**No**	**No**	**No**	**No**	**No**	**No**
Source: **Appendix A**.						

Operational emissions are summarized in **Table 5** and output files are provided in **Appendix A**. Information on building energy use was estimated for the casino and back offices using data from US Energy Information Administration 2018 Commercial buildings Energy Consumption Survey for Other Public Assembly Buildings which includes casinos (EIA, 2023). Trip information was obtained from the traffic impact study for the Reduced Project. Operation of the Reduced Project would result in direct area and energy emissions as well as indirect mobile emissions. Indirect mobile emissions are associated with vehicle trips to and from the Reduced Project. Direct area and energy emissions would result from such sources as heating, air conditioning, landscape maintenance, kitchen equipment use, and other combustion sources. **Table 5** shows that project emissions would be below thresholds of significance. Other fossil fuel sources such as boilers, emergency generators can emit criteria pollutants, including include ROG, NOx, CO, SOx, and particulate matter, however these emissions would be negligible.

TABLE 5: OPERATIONAL EMISSIONS

Emission Sources	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
	Tons per Year					
Area	0.31	<0.005	0.20	<0.005	<0.005	<0.005
Energy	0.01	0.11	0.10	<0.005	0.01	0.01
Mobile	3.56	4.74	24	0.04	3.26	0.88
Total Emissions	**3.87**	**4.85**	**24.3**	**0.04**	**3.27**	**0.89**
de minimis levels	*100*	*100*	*n/a*	*n/a*	*n/a*	*n/a*
Exceeds Thresholds	***No***	***No***	***No***	***No***	***No***	***No***
Source: **Appendix A**.						

Construction and Operation of the Reduced Project would not result in significant off-reservation effects associated with the regional air quality environment with implementation of **Mitigation Measure 3.4-A** for fugitive dust control. Therefore, the Reduced Project would not conflict with or obstruct implementation of applicable air quality plans, contribute to existing or projected air quality violations, result in a cumulatively considerable net increase of any criteria air pollutant for which the project region is nonattainment, or expose off-reservation sensitive receptors to substantial pollutant concentrations.

Past, present, and future development projects contribute to a region's air quality on a cumulative basis; thus, air pollution is predominantly considered a cumulative impact. A single project is not usually sufficient in size to result in nonattainment of the NAAQS or CAAQS. Should a project's individual emissions contribute toward the exceedance of such standards, cumulative impacts on air quality would be considered significant. In developing attainment designations for criteria pollutants, the USEPA considers the region's past, present, and future emission levels. The Reduced Project would not result in indirect or cumulative growth impacts, would not cause an exceedance of the thresholds, and would not result in a cumulatively considerable net increase in NOx, ROG, PM_{10}, or $PM_{2.5}$ to the extent that MCAB would be in nonattainment. There would be a less-than-significant impact.

Question D

The term "sensitive individuals" refers to those segments of the population most susceptible to poor air quality: children, the elderly, and individuals with pre-existing, serious health problems affected by air quality. Examples of sensitive receptor locations are residences, schools and school yards, parks and playgrounds, daycare centers, nursing homes, and medical facilities. The Project Site is adjacent to SR 49 and vacant land. The closest school that could be considered a sensitive receptor is Plymouth Elementary School located at 18601 Sherwood Street in Plymouth. Residences are located across SR 49 (to the west) approximately 200 feet from the eastern boundary of the site.

The USEPA and CARB classify air pollutants that can be toxic as Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants (TACs), respectively. Diesel exhaust is a complex mixture that includes hundreds of individual constituents and is identified by the State of California as a known carcinogen. Diesel exhaust would be emitted from construction equipment and trucks during operation. Other HAPs and TACs may be present in gasoline exhaust from vehicles, volatile components of wastewater during treatment, combustion of natural gas, and various other chemicals used in paints and consumer products. Due to the variable nature of construction activity, the generation of TAC emissions would be temporary in most cases, especially considering the short amount of time such equipment is typically within an influential distance to expose sensitive receptors to substantial emission concentrations. The majority of operational emissions from vehicles including cars and trucks would occur along roadways and would not be concentrated in any one specific location. Concentrations of mobile-source (including construction equipment) diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (CARB, 2005). The WWTP is not located near sensitive receptors and any emissions would disperse rapidly in the ambient air. Therefore, the Reduced Project would not expose off-reservation sensitive receptors to substantial air pollution.

Question E

Construction activities under the Reduced Project would not result in the generation of permanent or long-term objectionable odors. Odors associated with the intermittent operation of diesel-powered equipment might be detected by nearby sensitive receptors, but these odors are expected to be of short duration and are not expected to affect a substantial number of people. Excavated soil or sediment from the Reduced Project's grading activities within the confines of the reservoir may contain organic material that is decaying, which may create an objectionable odor. The intensity of the odor perceived by a receptor depends on the distance of the receptor from the construction activity and the amount and quality of the exposed soil material. Exposed soil would be quickly reused onsite, covered to control odors, or hauled and disposed of properly offsite.

Wastewater treatment plants can generate substantial odors related to decaying organic matter. The size and type of WWTP, as well as predominant wind directions and terrain impact how odors will disperse from the source. The Reduced Project should implement **Mitigation Measure 3.4-B** to ensure that odors are controlled with appropriate technology to ensure operation of the facility does not result in significant off-reservation odors. With implementation of **Mitigation Measure 3.4-B**, the impact of objectionable odors to sensitive individuals is less than significant.

Mitigation Measures

A. The following construction Mitigation Measure shall be implemented to reduce criteria air pollutant emissions:

- No person may cause, allow or permit fugitive dust emissions without first implementing good housekeeping and/or work practices that reduce and control the emissions to the atmosphere below 20% opacity or equivalent Ringlemann number, which is a measurement of opacity.
- Good housekeeping and/or work practices include but are not limited to the following:
  1. Application of water and/or approved chemicals to control emissions in the demolition of existing buildings or structures, construction operations, solid waste disposal operations, the grading of roads and/or the clearing of land.
  2. Application of asphalt, water and/or approved chemicals to road surfaces.
  3. Application of water and/or suitable chemicals to material stockpiles and other surfaces that may generate fugitive dust emissions.
  4. Maintenance of roadways in a clean condition by washing with water or sweeping promptly.
  5. Covering or wetting material stockpiles and open-bodied trucks, trailers, or other vehicles transporting materials that may generate fugitive dust emissions when in motion.
  6. Installation and use of paved entry aprons or other effective cleaning techniques to remove dirt accumulating on a vehicle's wheels on haul or access roads to prevent tracking onto paved roadways.
  7. Ceasing operations until fugitive emissions can be reduced and controlled.
  8. Using vegetation and other barriers to contain and to reduce fugitive emissions. Using vegetation for windbreaks.
  9. Instituting good housekeeping practices by regularly removing piles of material that have accumulated in work areas and/or are generated from equipment overflow.
  10. Restrict vehicle speeds to 15 miles per hour while driving on unpaved roads in order to minimize fugitive dust emissions.

B. The Reduced Project shall install and operate appropriate technology such as enclosures, aerators, and/or odor scrubbers to ensure that the WWTP does not produce significant off-reservation objectional odors. If more than 2 odor complaints are received in any given month, the Tribe shall investigate and implement appropriate additional odor control measures.

3.5 BIOLOGICAL RESOURCES Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Have a substantial adverse impact, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☑	☐	☐
b) Have a substantial adverse effect on any off-reservation riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☑	☐	☐
c) Have a substantial adverse effect on federally protected off-reservation wetlands as defined by Section 404 of the Clean Water Act?	☐	☑	☐	☐
d) Interfere substantially with the off-reservation movement of any native resident or migratory fish or wildlife species or with established native resident or migratory corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☑
e) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan outside Reservation boundaries?	☐	☐	☐	☑

Off-reservation terrestrial habitat types in the vicinity of the Project Site include developed/disturbed, annual grassland, oak woodland, oak savanna, riparian woodland, and chaparral. Off-reservation aquatic habitat types include ephemeral, and intermittent drainages, seasonal wetlands, and stock ponds. Riparian woodland, aquatic habitats such as wetlands and drainages, and Ione chaparral are considered sensitive.

Question A

A desktop review of biological databases was conducted for the Reduced Project. The Information for Planning and Consultation (IPaC) tool of the U.S. Fish and Wildlife Service was queried for a list of federally listed threatened and endangered species that may occur in the vicinity of the Project Site or may be affected by the Reduced Project (USFWS 2023a; **Appendix B).** A review was conducted of the occurrence records of state and federal special-status species mapped by California Department of Fish and Wildlife (CDFW) Biogeographic Information and Observation System (BIOS) (CDFW 2023a). The California Natural Diversity Data Base (CNDDB), a database maintained by CDFW (CDFW 2023b; **Appendix B**), was queried and a list of federally listed special-status species was generated, as was a special status plant species lists from the California Native Plant Society (CNPS 2023) Rare Plant Inventory (RPI). The CNDDB and RBI search area query was conducted within a radius of nine 7.5’ minute USGS topographical quads from the Project Site (**Appendix B**).

In connection with the preparation of the EIS, biological surveys were conducted within the Project Site and off-reservation where public access was available. No special-status species were observed during surveys. Off-reservation habitats were classified and their condition was then evaluated for their potential to support regionally occurring special-status species. An assessment of off-reservation habitats supported the analysis of potential effects to sensitive biological resources (BIA, 2009). It was found that no habitats suitable for special-status species would be directly impacted.

Construction stormwater pollution run-off has the potential to indirectly impact special-status species from the degradation to water quality of aquatic habitats suitable for regionally occurring special-status species. As discussed in **Section 3.1** and **Section 3.7**, potential impacts to off-reservation water quality standards would not have a substantial adverse impact to special-status species, with the implementation of **Mitigation Measure 3.5-E**.

Based on a review of surveys conducted in connection with the EIS, a 2023 survey, and a subsequent review of aerial photographs, suitable nesting habitat for birds protected by the Migratory Bird Treaty Act and eagles protected by the Bald and Golden Eagle Protection Act occurs within 500 feet of the Project Site. Construction of the off-site roadway improvements may result in the loss of some existing vegetation that may provide habitat that supports migratory birds, and could result in potentially significant effects. Indirect impacts to nesting migratory birds or eagles may occur from construction activities of the Reduced Project.

With the implementation of **Mitigation Measure 3.5-E**, potential impacts on nesting migratory birds and eagles from the Reduced Project would be reduced to less than significant.

Questions B and C

The nearest critical habitat designated by United States Fish and Wildlife Service is located more than 8 miles from the Project Site (USFWS 2023b: **Appendix B**). The nearest critical aquatic habitat designated by the National Oceanic and Atmospheric Administration (NOAA) Fisheries also known as the National Marine Fisheries Service (NMFS) is located more than 15 miles of the Project Site (NOAA 2023a; **Appendix B**). The Project Site is within Chinook salmon Essential Fish Habitat (EFH) designated by NOAA (NOAA 2023b; **Appendix B**). The USFWS National Wetlands Inventory (NWI) (UFWS 2023c; **Appendix B**) and USGS and aerial photographs (Google Earth, 2023) were referenced to identify known or previously mapped wetlands or other waters of the United States adjacent to the Project Site. NWI aquatic features in the vicinity of the Project Site are shown in **Figure 6.**

As described in **Appendix D**, all wastewater generated by the Reduced Project would be treated and disposed of on-reservation. The recycled water generated at the on-site WWTP and used to irrigate landscaped areas of the Project Site would be treated to disinfected tertiary recycled water standards under Title 22 of the California Code of Regulations (CCR). None of this treated water would flow offsite and therefore would not pose an adverse effect on off-reservation wetlands or waters as defined by Section 404 of the Clean Water Act (CWA).

The construction of traffic mitigation measures is the only land disturbance that would occur off-reservation. Implementation of proposed traffic mitigation measures will require the installation of a traffic signal on State Route 16 at Latrobe Road, and the widening of the Reduced Project entrance at Village Drive and Golden Chain Highway (SR 49). These locations are predominantly developed with pavement and disturbed and managed shoulder. Beyond the developed and disturbed habitat are highly disturbed annual grassland shoulder, and a roadside ditch. The vegetation on the road shoulder and ditch are regularly mowed and maintained and consists of predominantly non-native ruderal species. The roadside ditch appears to convey flows from a historical water canal system and therefore may be jurisdictional. No modifications to the roadside ditch are anticipated from construction of proposed traffic improvements. Potential environmental impacts related to the construction of traffic improvements, and the related costs, would be reduced to less than significant levels with the implementation of **Mitigation Measures 3.5-A** through **3.5-D** and **3.5-F**.

Surface water runoff from the proposed off-reservation improvements has the potential to cause impacts to water quality of sensitive habitats such as wetlands or ephemeral drainages that are downgradient. Soil disturbance from the proposed off-site traffic improvements, and the construction of the Reduced Project could result in stormwater pollution from soil erosion. These potential impacts are analyzed separately in **Section 3.7**. As discussed therein, potential impacts to water quality would be reduced to less than significant levels, with the implementation of mitigation.

Question D

The Reduced Project is located outside of the “Essential Connectivity Area,” of the California Essential Connectivity Project (CDFW, 2023a). The surrounding area includes SR 49, local roadways, rural and City of Plymouth development, fenced properties, grazing and vineyard operations. These elements all currently limit wildlife movement. Terrestrial wildlife movement likely occurs within the riparian habitat corridors and aquatic species in Dry Creek. However, these habitats are at lower elevations to the south and south east of the Reduced Project and therefore off-reservation interference with nursery sites of migratory fish or wildlife species or the movement through the areas with suitable habitats would be unrelated to the Reduced Project. There would be no impact.

Question E

The Reduced Project does not change any land use designation within the Project Site, nor would it affect any off-reservation conservation areas listed in any state, regional, or local conservation plan. The Reduced Project would not have any effect on conservation areas designated in the Amador County General Plan (see Amador County, 2016). In addition, no other HCP or NCCP has been approved in the vicinity of the Project Site, such that the Reduced Project could be in conflict with such plan (CDFW, 2023c). There would be no impact.

Mitigation Measures

A. Construction activities in the vicinity of any off-reservation jurisdictional wetland features shall be conducted during the dry season (April 15 through October 15), to the extent reasonable, to minimize potential erosion.

B. Temporary fencing shall be installed around off-reservation wetland and intermittent drainage features and associated riparian woodland that is outside of the construction area. Fencing shall be located as far as feasible from the edge of wetlands and riparian habitats and installed prior to any construction. The fencing shall remain in place until all construction activities have been completed.

C. Staging areas shall be located away from the areas of off-reservation wetland, intermittent drainage and riparian habitat that are fenced-off. Temporary stockpiling of excavated or imported material shall occur only in approved construction staging areas. Excess excavated soil shall be used on-site or disposed of at a regional landfill or other appropriate facility. Stockpiles that are to remain on the site through the wet season shall be protected to prevent erosion (e.g. tarps, silt fences, straw bales).

D. Best Management Practices (BMPs) shall be employed by the construction contractor to prevent the accidental release of fuel, oil, lubricant, or other hazardous materials associated with construction activities into jurisdictional features. In compliance with the CWA, the Tribe shall apply for coverage under the USEPA's National Pollutant Discharge Elimination System (NPDES) General Construction Permit (GCP). As part of the project's NPDES permit, a contaminant program shall be developed and implemented in the event of release of hazardous materials.

E. Site preparation activities, including tree trimming and removal, should occur outside of the bird-nesting season between September 1 and January 31. If tree disturbance or other project-related activities cannot avoid the nesting season (approximately February 1 – August 31), preconstruction surveys using recognized CDFW and USFWS protocols including call count surveys shall be conducted by a qualified biologist within 14-days prior to vegetation removal or ground disturbance activities to determine presence or absence and location of nesting bird species. If active nests are present within 500-feet of construction areas, temporary protective construction exclusion zones shall be established by a qualified biologist in order to avoid direct or indirect mortality or disruption of these birds, nests or young. The appropriate buffer distance is dependent on the species, surrounding vegetation and topography and will be determined by a qualified biologist. Exclusion zones shall remain in place until all young have fledged or until the nest has been naturally abandoned or predated. Work may proceed if no active nests are found during surveys or once nests are determined by a qualified biologist to be inactive.

F. Cleared vegetation shall be collected and transported offsite to prevent birds from nesting in vegetative debris.

G. If there is a lapse in construction activity for more than 7 consecutive days or if construction activity is phased at the work site, preconstruction and nesting bird surveys shall be repeated.

H. The Tribe shall contribute to the funding of the environmental review and mitigation for traffic improvements identified in **Section 3.17**. The contribution shall be based on the amount of traffic generated by the Reduced Project as a percentage of the overall traffic volume. The Tribe's contribution shall include the cost of preparing environmental documents and the cost of mitigation for biological resources, including but not limited to purchases of land, contributions to mitigation banks or programs, and restoration of habitat. The Tribe's contribution shall be provided to the agency undertaking the improvement (e.g. Caltrans, Amador County, City of Plymouth).

3.6 CULTURAL RESOURCES Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Cause a substantial adverse change in the significance of an off-reservation historical or archeological resource?	☐	☑	☐	☐
b) Directly or indirectly destroy a unique off-reservation paleontological resource or site or unique off-reservation geologic feature?	☐	☑	☐	☐
c) Disturb any off-reservation human remains, including those interred outside of formal cemeteries?	☐	☑	☐	☐

Questions A-C

A Cultural Resources Inventory and Evaluation of the Project Site was prepared in June 2004 and amended in July 2005. A literature and records search of the North Central Information Center (NCIC) of the California Historical Resources Information System was completed August 13, 2003 and an archaeological survey was conducted between August 14, 2003 and June 14, 2004. Nine historic archaeological sites, one standing historic building, and one historic district were identified during field reconnaissance of the project parcels. Six of the historic archaeological sites, the historic building, and the historic district, had previously been evaluated for inclusion on the California Register of Historical Resources and were found to be ineligible. Re-evaluation of these resources found that they were also ineligible for inclusion to the National Register of Historic Places (NRHP) (ECORP, 2005).

Due to the passage of time, a new NCIC record search was completed on October 30, 2023 (NCIC File No.: AMA-23-25). A total of 16 resources were reported in 2023 within the Project Site, with another 18 within a 0.5-mile buffer area. Four archaeological surveys have covered the entirety of the Project Site and another ten have included portions of the Project Site buffer area. Most of the sites identified date to the historic era, however there are two prehistoric resources, a bedrock mortar outcrop and a combination of a residence, mining features, and a bedrock milling outcrop.

As described above in previous sections, with the exception of *de minimis* land disturbance that would occur as a result of the construction of traffic mitigation measures, the Reduced Project would not result in disturbance of off-reservation ground-based resources. As described in **Section 3.17** and **Section 3.19**, three mitigation measures are proposed to address traffic impacts. The locations where these three Mitigation Measures would be constructed are:

- State Route 16 at Latrobe Road.
- Golden Chain Highway (SR 49) at Village Drive. This is the entrance to the Project Site.
- Golden Chain Highway (SR 49) at Randolph Street.

The last two locations are very close to each other. There are no documented resources within the footprint of any of these locations, and therefore the proposed traffic improvements would have no Impact on known cultural resources. However, construction of these traffic improvements could result in the discovery of previously unknown buried cultural resources or human remains. **Mitigation Measures 3.6-A** and **3.6-B** would be implemented to reduce impacts to resources uncovered during construction. There would be a less-than-significant impact with mitigation.

Mitigation Measures

A. If unusual amounts of bone, stone, shell, glass, building materials, or other artifacts are uncovered during traffic improvement construction, all work within 50 feet of the find shall halt and the Tribe and BIA notified; a qualified professional archaeologist shall be retained to assess the find for its eligibility to the NRHP and recommend appropriate treatment measures. Construction shall not resume until appropriate assessment and treatment of the find has been completed.

B. If human remains are uncovered during construction, the County Coroner, Tribe, and BIA shall be notified immediately. If the coroner determines that the remains are Native American, compliance with the provisions of NAGPRA shall be required.

3.7 GEOLOGY AND SOILS Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Expose off-reservation people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☑	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☑	☐
ii) Strong seismic ground shaking?	☐	☐	☑	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☑	☐
iv) Landslides?	☐	☐	☑	☐
b) Result in substantial off-reservation soil erosion or the loss of topsoil?	☐	☑	☐	☐

The dominant soil types on the Project Site is loams, and silty or rocky loams with low clay content (NRCS, 2019). The majority of soils identified on the Project Site belong to hydrologic group D, with the exception of ArC (Auburn Silt Loam) which is classified as hydrologic group C (NRCS, 2019). These soils are not identified as experiencing frequent ponding or flooding (NRCS, 2019). Further, the identified soils were found to have a low to moderate potential for sheet and rill erosion from wind and water. With regards to seismicity, the Project Site is located in an area with low potential for ground shaking as the closest faults are pre-quaternary. The nearest potentially active faults are part of the Bear Mountain Fault Zone, located approximately 23.5 miles north, and 11.5 miles south of the Project Site (California Geological Survey, 2023).

A recent geotechnical engineering study concluded that the location of the Project Site is one of low seismicity, and relatively shallow depth to bedrock. The risk of liquefaction and other related hazards such as slope instability, is low (Youngdahl, 2023). Although the geotechnical engineering study was conducted for the Reduced Project, the Project Site soils are characteristic of the surrounding area.

Question A

The Project Site and off-reservation immediate surroundings are not within a designated Alquist-Priolo Fault Zone (California Geological Survey, 2021). The nearest faults and zones are approximately 11.5 miles away from the Reduced Project (USGS, 2023). As described in **Section 2.1**, all project structures built would be designed and constructed to meet the California Building Standards Code (including provisions related to seismic), the California Public Safety Code and Title III of the Americans with Disabilities Act of 1990. For these reasons, the risk of exposing off-reservation people and structures to seismic hazards, and landslides is low. Off-reservation impacts are less than significant.

Question B

Construction of the Reduced Project would involve soil disturbance in order to construct pads and/or foundations for various project components. Soils would be stored onsite to be used as fill. The Reduced Project is located on-reservation, and, aside from the entry to the reservation, soil would not be placed close to any project boundary. This would provide distance between the Reduced Project and any potential off-reservation erosion impacts.

Earth-moving activities and excavation could create the potential for off-reservation erosion should soils be transported off-reservation by stormwater. Runoff would be collected in on-reservation detention basins and would not be discharged directly off-reservation. Furthermore, prior to and during construction of the Reduced Project, the General Construction NPDES permit from the USEPA under federal requirements of the CWA will be complied with. Per the NPDES permit, a SWPPP shall be prepared and implemented prior to construction of the Reduced Project. The SWPPP will contain applicable BMPs to reduce off-reservation impacts associated with stormwater runoff that could potentially affect off-reservation areas.

In the absence of mitigation measures, off-reservation soil erosion or the loss of topsoil could potentially be significant. The mitigation measures below, and the SWPPP would reduce impacts to less than significant levels.

Mitigation Measures

A. In compliance with the Clean Water Act (CWA), the Tribe shall apply for coverage under the USEPA’s National Pollutant Discharge Elimination System (NPDES) General Construction Permit (GCP). In compliance with permitting requirements, the Tribe shall develop a Storm Water Pollution Prevention Plan (SWPPP) that shall address water quality impacts associated with construction and operation of the project. Water quality control measures identified in the SWPPP shall include but not be limited to the following list.

General Construction Activities

1. Existing vegetation shall be retained where possible. To the extent feasible, grading activities shall be limited to the immediate area required for construction.
2. Temporary erosion control measures (such as silt fences, fiber rolls, vegetated swales, a velocity dissipation structure, staked straw bales, temporary revegetation, rock bag dams, and sediment traps) shall be employed for disturbed areas.
3. No disturbed surfaces shall be left without erosion control measures in place during the winter and spring months.
4. Construction area entrances and exits shall be stabilized with crushed aggregate.
5. Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures.

6. A spill prevention and countermeasure plan shall be developed, if necessary, which shall identify proper storage, collection, and disposal measures for potential pollutants (such as fuel, fertilizers, pesticides, etc.) used on-site.
7. Petroleum products shall be stored, handled, used, and disposed of properly.
8. Construction materials, including topsoil and chemicals shall be stored, covered, and isolated to prevent runoff losses and contamination of groundwater.
9. Fuel and vehicle maintenance areas shall be established away from all drainage courses and designed to control runoff.
10. Sanitary facilities shall be provided for construction workers.
11. Disposal facilities shall be provided for soil wastes, including excess asphalt produced during construction.
12. The Tribe shall educate all workers in the proper handling, use, cleanup, and disposal of all chemical materials used during construction activities and provide appropriate facilities to store and isolate contaminants.
13. The Tribe shall educate all contractors involved in the project on the potential environmental damages resulting from soil erosion prior to development by conducting a pre-construction conference. Copies of the project's erosion control plan shall be distributed at this time. All construction bid packages, contracts, plans, and specifications shall contain language that requires adherence to the plan.
14. Construction activities shall be scheduled to minimize land disturbance during peak runoff periods. Soil conservation practices shall be completed during the fall or late winter to reduce erosion during spring runoff.
15. Creating construction zones and phasing construction through grading only one part of a construction zone at a time shall minimize exposed areas. If possible, grading on a particular zone shall be delayed until protective cover is restored on the previously graded zone.
16. Utility installations shall be coordinated to limit the number of excavations.
17. Preserving as much natural cover, topography, and drainage as possible shall protect disturbed soils from rainfall during construction. Trees and shrubs shall not be removed unnecessarily.
18. Disturbed areas shall be stabilized as promptly as possible, especially on long or steep slopes. Recommended plant materials and mulches shall be used to establish protective ground cover. Vegetation such as fast-growing annual and perennial grasses shall be used to shield and bind the soil. Mulches and artificial binders shall be used until vegetation is established. Where truck traffic is frequent, gravel approaches shall be used to reduce soil compaction and limit the tracking of sediment onto SR-49.
19. Surface water runoff shall be controlled by directing flowing water away from critical areas and by reducing runoff velocity. Diversion structures such as terraces, dikes, and ditches shall collect and direct runoff water around vulnerable areas to prepared drainage outlets. Surface roughening, berms, check dams, hay bales, or similar devices shall be used to reduce runoff velocity and erosion.
20. Sediment shall be contained when conditions are too extreme for treatment by surface protection. Temporary sediment traps, filter fabric fences, inlet protectors, vegetative filters and buffers, or settling basins shall be used to detain runoff water long enough for sediment particles to settle out.

21. Topsoil removed during construction shall be carefully stored and treated as an important resource. Berms shall be placed around topsoil stockpiles to prevent runoff during storm events.
22. An independent storm water inspector shall be hired by the Tribe to ensure all NPDES permitting requirements are being implemented. The inspector will have authority to require construction contractors as well as their subcontractors to stop work until all aspects of the NPDES permit are implemented.

General Operation Measures

23. Storm drain inlets shall be labeled "No Dumping–Drains to Streams and Rivers."
24. The parking lot shall be designed to allow storm water runoff to be directed to vegetative filter strips to help control sediment and to control non-point source pollution, where possible.
25. Permanent energy dissipaters shall be included for drainage outlets.
26. The Tribe shall create, utilize, and update as necessary a maintenance plan for all BMPs for erosion and sediment control. BMPs will be selected and installed according to guidelines in the State of California Stormwater Quality Handbook and/or Caltrans Stormwater Quality Handbook.

3.8 GREENHOUSE GAS EMISSIONS Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the off-reservation environment?	☐	☐	☑	☐
b) Conflict with any off-reservation plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

Questions A and B

Global climate change is caused primarily by an increase in levels of greenhouse gas (GHG) emissions in the atmosphere. The major GHGs are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs). Individual GHGs are multiplied by their global warming potential to report emissions as carbon dioxide equivalents (CO2e). These GHGs absorb longwave radiant energy (heat) reflected by the earth which warms the atmosphere in a phenomenon known as the "greenhouse effect" The potential effects of global climate change include rising surface temperatures, loss in snowpack, sea level rise, ocean acidification, increase in the number of extreme eat days per year, increased occurrence and severity of wildfires and an increase in the number of drought years.

California established the first comprehensive GHG regulatory program in the U.S. and requires reduction in GHG emissions at key milestone years compared to 1990 levels. In 2020 emissions were to be equal to 1990 levels. In 2030 emissions are to be 40 percent below 1990 levels. This intermediate GHG emissions reduction target would make it possible to meet the ultimate GHG emissions reduction target of 80 percent below 1990 levels by 2050. California also has enacted mandatory reporting of GHG emissions for industrial sources and established a cap-and-trade program as part of the effort to achieve these goals. These were established in key legislation under Assembly Bill 32, Senate Bill 32 and several executive orders. The USEPA has mandatory GHG emission reporting for large industrial sources of GHG emissions. ACAPCD has not developed quantitative GHG thresholds for project-level analysis.

Table 6 provides a breakdown of project-related GHG emissions. Development of the Reduced Project would result in an increase in GHG emissions related to construction, mobile sources, and indirect sources related to electricity (combustion of fuels used to produce electricity), solid waste (solid waste decomposition at the landfill and haul trucks), wastewater processing, and water transport. CalEEMod was used to estimate construction, area, energy, mobile, stationary, water and wastewater, solid waste, and refrigeration related project-related GHG emissions. Assumptions were the same as described above for air quality.

As shown in **Table 6**, the combined amortized construction emissions and operational GHG emissions would be approximately 4,265 MT of CO_2e per year. Demolition of the Inn would result in a reduction of 624 MT of CO_2e emissions, which was estimated using CalEEMod. This results in a net increase of 3,641

MT of CO_2e. The Reduced Project includes implementation of several green building standards into the design which are not fully captured in CalEEMod, as a specific reduction in energy from Title 24 building codes was not established. Additional water saving features were also not incorporated into CalEEMod. Mobile sources make up the majority of the GHG emissions from the Reduced Project. One metric used to determine if GHG emissions are less than significant is if the Reduced Project would be 15 percent below the existing vehicle miles travelled (VMT) per employee. According to the traffic impact study (**Appendix E**), the project average VMT per employee is 13.2 miles while the existing VMT per employee in Amador County is 17.9 miles. Since this is greater than a 15 percent reduction in employee average VMT for the County, the Reduced Project's GHG emissions would be less than significant. Thus, the Reduced Project would not conflict with the statewide goals for GHG emission reductions. The Reduced Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. The Reduced Project's contribution to cumulative effects associated with climate change is considered a less than significant impact.

TABLE 6: PROJECT-RELATED GHG EMISSIONS

Emission Source	GHG Emissions (Unmitigated)
Construction (MT CO_2e)	
Construction	982
Operation (MT CO_2e/yr)	
Area	0.75
Energy	222
Mobile	3,749
Waste	45
Water	168
Refrigeration	2.2
Vegetation	44
Operation Subtotal	*4,232*
Amortized Construction [1]	*33*
Total Project-Related GHG Emissions	**4,265**
Reduction from Demolition of Inn	-624
Net GHG Emissions	**3,641**
1. Construction-related GHG emissions were amortized over the life of the project (30 years) to determine annual construction emissions. Source: **Appendix A.**	

Mitigation Measures

None.

3.9 HAZARDS AND HAZARDOUS MATERIALS Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Create a significant hazard to the off-reservation public or the off-reservation environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☑
b) Create a significant hazard to the off-reservation public or the off-reservation environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☑	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed off-reservation school?	☐	☐	☐	☑
d) Expose off-reservation people or structures to a significant risk of loss, injury, or death involving wildland fires.	☐	☐	☑	☐

A Phase I survey was completed in 2008 (AES, 2008) which noted the former Pioneer Mine and mine tailings on the eastern portion of the Project Site (**Figure 6**). Neither the Reduced Project improvements (**Figures 4** and **6**) nor Final EIS Alternative A project improvements (BIA, 2012) are located in the vicinity of the four former mines.

Question A

As described in **Section 2.1** and **Section 3.7**, grading activities of the Reduced Project would be balanced, with no significant import or export of material. In addition, as described above, the Reduced Project is not located in the vicinity of the former mining activities. Therefore, grading activities would have no impact to the off-reservation public or the off-reservation environment.

Question B

Limited quantities of miscellaneous hazardous substances, such as gasoline, concrete reagents, fertilizers, etc. may be transported to the Project Site. Hazardous materials use on and off-reservation such as transport of various operational and facility chemicals and light disposal of conventional cleaning chemicals would be consistent with current hazardous material use on the Project Site and off-reservation. Recommended mitigation measures for Final EIS Alternative A were listed in the ROD (BIA, 2012). These mitigation measures, which include BMPs, are applicable to the Reduced Project, and are listed below as **Mitigation Measure 3.9-A**. Off-reservation impacts from the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment would be reduced to a less than significant level, with the incorporation of mitigation.

Question C

There are no schools within a ¼ mile of the Reduced Project. The closest school is Plymouth Elementary School, located approximately 0.7 miles to the north of the northern border of the Project Site and Shenandoah Middle School, which is located approximately 1.0 mile to the northwest of the reservation border. In addition, the former Willow Springs School is located approximately 3.2 miles west of the Project Site. A group of local residents seek to restore the Willow Springs School. There are no known proposed new schools proposed in the vicinity of the Project Site. For these reasons, there would be no impact to existing or proposed off-reservation schools.

Question D

Risks associated with potential off-reservation impacts from wildland fires are analyzed in **Section 3.15**. As discussed therein, off-reservation risks associated with wildland fires are less than significant.

Mitigation Measures

A. Personnel shall follow written standard operating procedures (SOPs) for filling and servicing construction equipment and vehicles. These SOPs address storage and use of hazardous materials and would be implemented during both construction and operation of the casino. The SOPs, which are designed to reduce the potential for incidents involving the use and storage of hazardous materials, shall include the following where feasible and when reasonable:

   1. Refueling shall be conducted only with approved pumps, hoses, and nozzles.
   2. Catch-pans shall be placed under equipment to catch potential spills during servicing.
   3. All disconnected hoses shall be placed in containers to collect residual fuel from the hose.
   4. Vehicle engines shall be shut down during refueling.
   5. No smoking, open flames, or welding shall be allowed in refueling or service areas.
   6. Refueling shall be performed away from bodies of water to prevent contamination of water in the event of a leak or spill.
   7. Service trucks shall be provided with fire extinguishers and spill containment equipment, such as absorbents.
   8. Should a spill contaminate soil, the soil shall be put into containers and disposed of in accordance with local, state, and federal regulations.
   9. All containers used to store hazardous materials shall be inspected at least once per week for signs of leaking or failure. All maintenance and refueling areas shall be inspected monthly. Results of inspections shall be recorded in a logbook that shall be maintained on-site.
   10. Staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other materials that could serve as fire fuel. To the extent feasible, the contractor shall keep these areas clear of combustible materials in order to maintain a firebreak.
   11. Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order.

B. The amount of hazardous materials used in project construction and operation shall be consistently kept at the lowest volumes needed.

C. During project operation, the least toxic material capable of achieving the intended result will consistently be used. These materials include industrial strength cleaners, detergents, pesticides, and degreasers. All potentially toxic materials would be used as directed according to federal labeling requirements. All materials shall be kept within their original containers and at no time would the labels be removed from the original containers.

D. A hazardous materials and hazardous waste minimization program shall be developed, implemented, and reviewed annually by the Tribe to determine if additional opportunities for hazardous materials and hazardous waste minimization are feasible, for both project construction and operation. A copy of the hazardous waste minimization program and a full inventory of flammable and hazardous materials will be provided to the Amador County Fire Department.

E. The contractor shall be requested to avoid and minimize the use of hazardous materials and petroleum products during the project's construction to the fullest extent practicable.

F. The Tribe shall minimize the use of pesticides and toxic chemicals to the greatest extent feasible in landscaping or use less toxic alternatives, such as integrated pest management techniques.

G. As part of the WWTP design, hazardous materials used for disinfection of water and treated effluent would be fully stored in the chemical room of the WWTP operations building. The storage and chemical metering facilities shall be located inside a chemical spill containment area, sized to contain 150 percent of the storage volume in case of an unintentional release. To the extent feasible, chemicals shall be stored as dry material in sealed containers, and then in a 50-gallon mixing tank when needed.

H. In the event that contaminated soil and/or groundwater are encountered during construction related earth-moving activities, all work shall be halted until a professional hazardous materials specialist or a qualified individual can assess the extent of contamination. If contamination is determined to be significant, representatives of the Tribe shall consult with USEPA to determine the appropriate course of action, including the development of a Sampling Plan and Remediation Plan if necessary.

I. The Tribe shall establish a vegetative cover over mine tailings with California Flannelbush *(Fremontodendron californicum),* Yerba Santa *(Eriodictyon crassifolium),* Coyote Brush (Baccharis pilularis), or similar native plants used for soil stabilization/erosion control prior to public access to the project development. The Tribe will ensure the vegetative cover is maintained providing full coverage of the mine tailings. Additionally, the tailings area shall be fenced off to prevent public access.

3.10 WATER RESOURCES Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Violate any applicable off-reservation water quality standards or waste discharge requirements?	☐	☑	☐	☐
b) Substantially deplete off-reservation groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level? (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☑	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial off-site erosion or siltation?	☐	☐	☑	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding off-site?	☐	☐	☑	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff off-reservation?	☐	☑	☐	☐
f) Place within a 100-year flood hazard area structures, which would impede or redirect off-reservation flood flows?	☐	☐	☐	☑
g) Expose off-reservation people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☑	☐

As described in **Section 2.1**, water for the Reduced Project would be supplied by up to three water wells. Wastewater would be treated at an on-site WWTP, located to the east of the casino (**Figure 4**). The WWTP would be sized to treat the peak flows resulting from the Reduced Project. See **Section 2.1** for a detailed description of water and wastewater infrastructure.

Question A

As described in **Appendix D**, all wastewater generated by the Reduced Project would be treated and disposed of on-reservation. The recycled water generated at the on-site WWTP and used to irrigate landscaped areas of the Project Site, would be treated to disinfected tertiary recycled water standards under Title 22 of the California Code of Regulations (CCR). None of this treated water would flow offsite. Furthermore, as described in **Section 3.7**, the Tribe shall develop a Storm Water Pollution Prevention Plan (SWPPP) that would address water quality impacts associated with construction and operation of the project. For these reasons, impacts to off-reservation water quality standards or waste discharge requirements would be less than significant, with the incorporation of the mitigation listed in **Section 3.7**.

Question B

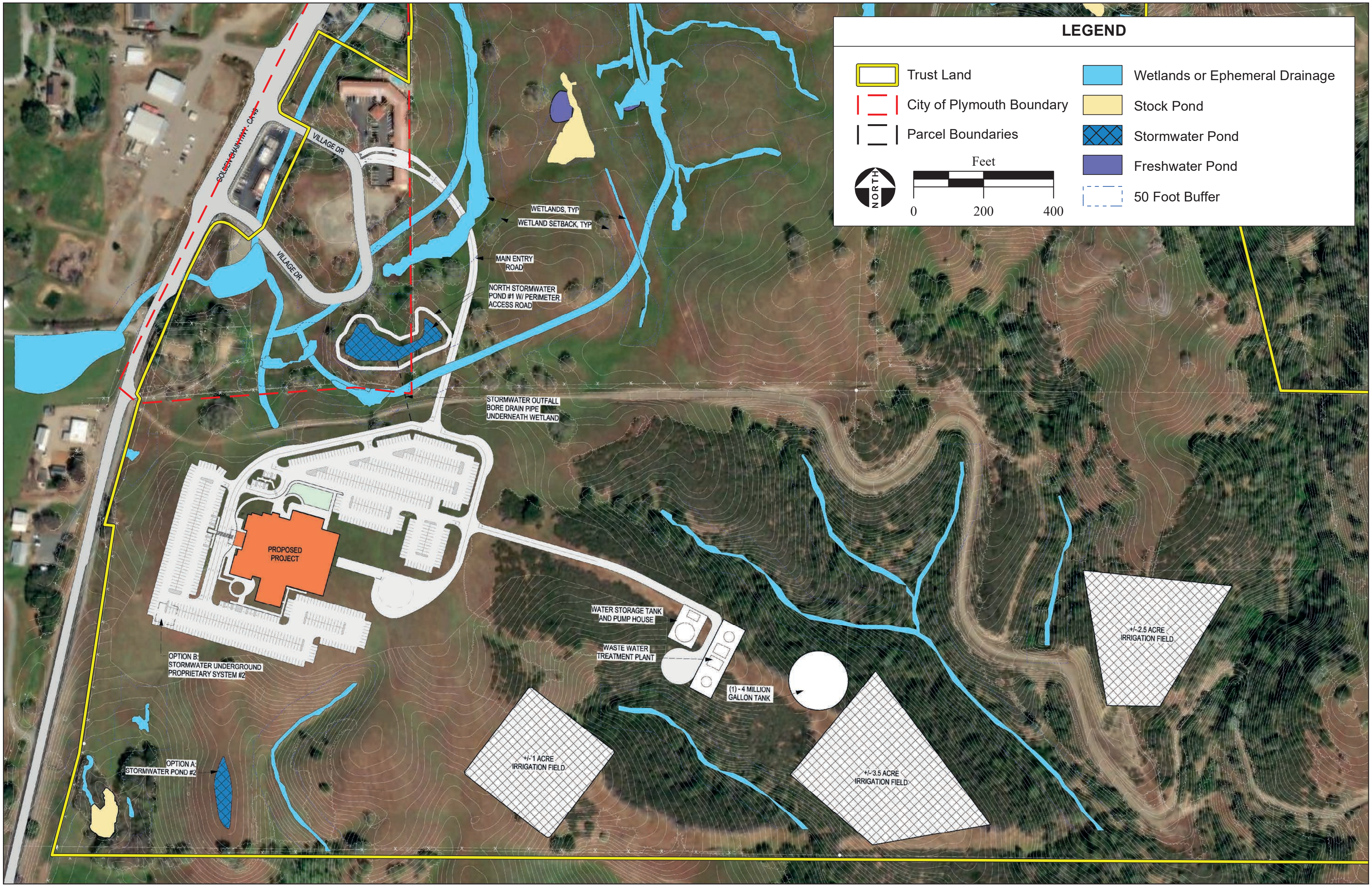
Estimated ground water usage of the Reduced Project is 37,438 GPD (**Appendix D**). Final EIS Alternative A included two options for water supply. Under Option 2, which was the preferred option, water would be sourced from two groundwater wells located on the Project Site (designated as M1 and H1), and one well located adjacent to the Project Site (designated as M3). The Final EIS estimated the total sustained yield of the groundwater wells at approximately 116,640 GPD (BIA, 2009). Because these three wells are the only existing ground water sources on the Project Site and one of the adjacent properties, they represent a small fraction of the existing ground water capacity. In addition, the estimated ground water usage of the Reduced Project presents only 32 percent of Final EIS Alternative A, Option 2, which was approved in the ROD. Also, some portion of the WWTP discharge used for irrigation may contribute to ground water recharge. For these reasons, The Reduced Project would not substantially deplete off-reservation groundwater supplies or interfere substantially with groundwater recharge. Impacts would be less than significant. Impacts would be further reduced through the implementation of the mitigation measures listed below.

Questions C and D

Approximately 9 acres of impervious surfaces would be created during construction (**Section 2.1**). Stormwater from newly created impervious surfaces would flow into two stormwater conveyance and detention systems. Under Option A, these stormwater improvements would consist of two stormwater ponds. Under Option B, the stormwater pond to the south would be replaced by an underground storage system. The amount of stormwater runoff resulting from the Reduced Project would be the same, or less than under existing conditions (**Appendix D**). In addition, as described in **Section 3.7**, the Tribe will develop a SWPPP that will address water quality issues associated with construction and operation of the project. As a result of these factors, impact to the existing drainage pattern of the Project Site or area would be less than significant. Impacts would be further reduced through the implementation of the mitigation measures listed below.

Question E

The amount of stormwater runoff resulting from the Reduced Project would be the same, or less than under existing conditions (**Appendix D**). In addition, as described in **Section 3.7**, the Tribe will develop a SWPPP that will address water quality issues associated with construction and operation of the project. As a result of these factors, the Reduced Project would not create or contribute runoff water which would



SOURCE: Cuningham Group, 9/22/2023; Amador County Parcels; Vivid Maxar aerial photograph, 3/14/2022; ESRI, 2024; Montrose Environmental, 1/3/2024

Figure 6
Wetlands

exceed the capacity of existing or planned stormwater drainage systems. However, as described in **Section 3.9**, potential risks associated with hazardous materials (which are potential sources of pollution) would be reduced to less than significant levels with mitigation. Therefore, impacts would be less than significant with the incorporation of the mitigation listed below, and in **Sections 3.7** and **3.9**.

Question F

As described in the Final EIS, (Section 3.3.2 and Figure 3.3-2) the majority of the Project Site is not located in a floodplain mapped by the Federal Emergency Management Agency (FEMA). Less than one-acre of Parcel # 3 is within Flood Zone A, an area with a 1-percent annual chance of flooding, for which no base flood elevations have been determined (BIA, 2009). The majority of the Project Site, including the area planned for development, is within Zone X, an area outside the 1-percent and 0.2-percent annual chance floodplains. None of the Reduced Project improvements would be located in Flood Zone A (i.e., the 100-year floodplain). There would be no impact.

Question G

The drainage ponds described in **Section 2.1** would not require a levee or dam, and thus would eliminate flooding risks associated with failure. The wastewater effluent storage pond (storage Option B) would use earthen berms in its construction. Water tanks would be used to store potable water and effluent under waste water storage Option A. Construction of the Reduced Project would adhere to the California Building Standards Code (including provisions related to seismic) and the California Public Safety Code. All water infrastructure, including ponds and tanks, would be designed by engineering professionals. For these reasons, the risk of flooding caused by failure would be less than significant.

Mitigation Measures

A. In compliance with the Clean Water Act, the Tribe shall apply for coverage under the USEPA's NPDES GCP. In compliance with permitting requirements, the Tribe shall develop a SWPPP that shall address potential water quality impacts associated with construction and operation of the project. These measures are identified above in **Mitigation Measure 3.7-A**.

B. As part of the overall water sampling and monitoring program for the WWTP an irrigation field monitoring plan shall be developed and implemented to ensure potential tail water is being captured and that no tail water is discharged to surface waters. The monitoring plan will include, but not be limited to the following:

   1. Water from irrigation field drift shall not migrate out of the irrigation field boundary.
   2. All tail water and/or stormwater shall be collected and returned to the WWTP holding pond at all times when water is being applied to the irrigation field.
   3. The Tribe shall use the irrigation fields only during periods of dry weather. The Tribe will not use the irrigation fields 24 hours prior to a forecasted rain event and will wait 24 hours after the rain event to return to irrigation field operation.
   4. A tail water capture system will be operated to capture all effluent runoff, as well as stormwater runoff that occurs 24 hours after the last application of effluent to the irrigation fields.

5. The irrigation fields shall not be operated during periods of winds exceeding 30 mph.
6. A controlled 100-foot buffer shall be maintained around the irrigation field operating area.

C. The following additional conservation measures shall be implemented by the Tribe to further reduce water usage:

1. Checking steam traps and ensuring return of steam condensate to boiler for reuse.
2. Planting of drought resistant landscaping.
3. Limiting boiler blowdown and adjusting for optimal water usage.
4. Using low flow faucets and/or aerators in casino.
5. Using pressure washers and water brooms instead of hoses for cleaning.
6. Using garbage disposal on-demand in restaurant.
7. Incorporating a re-circulating cooling loop for water cooled refrigeration and ice machines in restaurants.
8. Serving water to customers on request at restaurant.

D. A sampling and monitoring program for the WWTP shall be developed and implemented. Treated effluent shall be monitored to determine the efficacy of the treatment process.

3.11 LAND USE Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Conflict with any off-reservation land use plan, policy, or regulation of an agency adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑
b) Conflict with any applicable habitat conservation plan or natural communities conservation plan covering off-reservation lands?	☐	☐	☐	☑

The Project Site is located on the Tribe's trust land within Amador County in the northwest corner of the "Amador City" USGS Quadrangle, on the southern border of the City of Plymouth, California. Most of the Project Site is undeveloped, with the exception of the Shenandoah Inn near the entrance to the Site, unpaved roads, and the remnants of an old mining station (**Figure 4**). The Project Site is accessible from Village Drive, via SR 49. Site topography on the site of the Reduced Project is irregular, with elevations ranging between approximately 1,000 to 1,175 feet above mean sea level (amsl).

A gas station, a donut shop, and a Mexican restaurant are located on the east side of SR 49, immediately to the west of the reservation.

Question A

The reservation is bordered by areas under the jurisdiction of both the City of Plymouth and Amador County. Land use designations within the City of Plymouth near the Project Site include "HC – Highway Commercial" (City of Plymouth, 2014). County land use designations for off-reservation land in the vicinity of the Project Site include "RR- Rural Residential", Industrial (I), Agricultural General (AG) and "Federal Land" (Amador County, 2016). A portion of the Project Site is zoned as Highway Commercial under the City of Plymouth's General Plan (City of Plymouth, 2014). The Reduced Project would be largely consistent with the zoning within its vicinity.

The development of the Project Site would not convert designated on or off-reservation forest or farmland as the land within the vicinity of the Project Site and the Project Site itself is not reserved for agricultural or forestry uses. Consequently, development of the Reduced Project would not conflict with Amador County's General Plan (including policies outlined in its Economic Development or Conservation Chapters) with respect to impacts on agricultural resources.

For these reasons, the Reduced Project would not conflict with any off-reservation land use plan, policy, or agency adopted for the purpose of avoiding or mitigating an environmental effect.

Question B

Amador County Resource Conservation District (ARCD) has several programs that have the potential to apply throughout the County (ARCD, 2023). These programs include Forest Health and Landowner

Assistance, Chipping Program (for reduction of roadside and residential fuels), Carbon Farm Plan (for soil health and carbon sequestration), On Farm Assistance, and the Irrigated Lands Regulatory Program. The Reduced Project will not conflict with these programs off-reservation, as the land within the vicinity of the Reduced Project is not used for farming or forestry-related operations. No other HCP or NCCP has been approved that would apply to the Reduced Project (California Department of Fish and Wildlife, 2023). There would be no impact.

Mitigation Measures

None.

3.12 MINERAL RESOURCES Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Result in the loss of availability of a known off-reservation mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state?	☐	☐	☐	☑
b) Result in the loss of availability of an off-reservation locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☑

Questions A and B

According to the Amador County General Plan Figure LU-1 the nearest MRZ is northeast of the Project Site (Amador County, 2016). The Mineral Resources Data System returns several listings for gold ore which appear to occur both on the Project Site and its vicinity (USGS, 2011). There is a mine located southwest of the Site. However, there is no evidence of recent mining activity at any of these locations. Construction and operation of the Reduced Project would have minimal effect to off-reservation mineral resources. Thus, the Reduced Project would not result in losses in the availability of any off-reservation mineral resources classified as MRZ-2. The Reduced Project would also have no impact on the availability of an off-reservation locally important mineral resource recovery site.

Mitigation Measures

None.

3.13 NOISE Would the project result in:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Exposure of off-reservation persons to noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☑	☐	☐
b) Exposure of off-reservation persons to excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☑
c) A substantial permanent Increase in ambient noise levels in the off-reservation vicinity of the project?	☐	☑	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the off-reservation vicinity of the project?	☐	☑	☐	☐

The Federal Highway Administration (FHWA) is a division of the United States Department of Transportation, and provides guidance over the construction, maintenance, and preservation of the Nation's Highways. The FWHA outlines construction thresholds for noise receptor locations and land uses, which are summarized below in **Table 7.**

TABLE 7: FEDERAL CONSTRUCTION NOISE THRESHOLDS

Noise Receptor Locations and Land Uses	Daytime (7 AM - 6 PM)	Evening (6 PM - 10 PM)	Nighttime (10 PM - 7 AM)
	dBA, Leq1		
Noise Sensitive Locations (residences, institutions, hotels, etc.)	75 or Baseline + 5 (whichever is louder)	Baseline + 5	Baseline + 5 (if Baseline < 70 or Baseline + 3 (if Baseline > 70)
Commercial Areas (businesses, offices, stores, etc.)	80 or Baseline + 5	None	None
Industrial Areas (factories, plants, etc.)	85 or Baseline + 5	None	None
Note: 1 Leq thresholds were empirically determined (FHWA, 2006). Source: FHWA, 2006.			

The FHWA also establishes Noise Abatement Criteria (NAC) for traffic noise. These criteria are based on land uses, which the FHWA defines as "activities." These criteria are outlined below In Table 8. The NAC for residential receptors is 67 dBA (FHWA, 2018).

TABLE 8: FEDERAL NOISE ABATEMENT CRITERIA HOURLY A-WEIGHTED SOUND LEVEL DECIBELS[1]

Activity Category	Activity Criteria Leq (h), dBA	Evaluation Location	Activity Category Description
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67	Exterior	Residential.
C	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails and trail crossings.
D	52	Interior	Auditoriums, daycare centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, schools, and television studios.
E[1]	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, shipyards, utilities (water resources, water treatment, electricity), and warehousing.
G	--	--	Undeveloped lands that are not permitted.
1. Source: FHWA, 2018. Includes undeveloped lands permitted for this activity category.			

Construction noise has the potential to reach 85 to 88 L_{max} within 50 feet of activity (**Table 9**). Stationary point sources of construction noise decrease at a rate between 0 and 10 dBA per doubling of distance from the source, depending on environmental conditions.

TABLE 9: STANDARD CONSTRUCTION EQUIPMENT NOISE

Type of Equipment	Maximim Level, DB at 50 Feet
Backhoe	80
Compactor	80
Air Compressor	80
Dozer	85
Dump Truck	84
Excavator	85
Generator	82
Jackhammer	85
Pneumatic Tools	85
SOURCE: FHWA, 2006.	

Amador County regulations categorize noise thresholds from stationary sources (i.e., operational noise levels) based on land use compatibility and exterior/interior thresholds. These noise levels are measured in Community Noise Equivalent Level (CNEL). CNEL is measured at a location over 24 hour periods and assesses a 10 dBA “penalty” in the noise-sensitive hours of 10:00 p.m. and 7:00 a.m. The Thresholds for single-family and duplex land uses are defined as 45 dBA noise levels for interior and 60 dBA for exterior (Amador County, 2016). The interior thresholds for noise generated by auditoriums, concert halls, and amphitheaters are 45 dBA.

Sensitive receptors include land uses that house or attract individuals susceptible to adverse impacts from noise pollution and should be given special consideration when evaluating the noise impacts of projects. Hospitals, schools, convalescent homes, parks, and residential areas are examples of sensitive receptors. Other land uses near the Project Site include commercial and rural residential.

Questions A, C and D

The nearest sensitive receptors to the Project Site are two single-family residences that are located approximately 200 feet from the western boundary of the reservation, and approximately 400 feet from the western edge of the grade that would support the casino parking lot. SR 49 is located between these two houses and the casino. Thus, SR 49 traffic would be the most notable source of noise to these two houses.

Construction

Project construction would consist of earthwork, foundation construction, erection of buildings, and finishing work. All construction would be conducted on-reservation using standard construction equipment. Construction activities associated with the Reduced Project would be intermittent and temporary. Construction of the Reduced Project would result in temporary maximum noise levels of less than or equal to approximately 67 dBA at the two nearest noise-sensitive receptors, which was calculated based on a distance of 400 feet. These noise levels are less than the Federal thresholds listed in **Table 7**. Effects would be less than significant.

Construction Traffic

Construction traffic-related noise would likely be temporary and generated from construction workers and deliveries to the Project Site. These trips have the potential to increase noise on SR 49 within the immediate vicinity of the Project Site. Construction employees would be expected to conduct work between the hours of 7:00 a.m. and 4:00 p.m. As described in **Appendix E**, 15 heavy equipment truck trips are estimated throughout the demolition and construction of the Reduced Project. Construction material import and export would produce approximately 10 truck trips per day. Construction would generate approximately 130 vehicle trips during peak construction. Non-worker visits generated by deliveries or other visits would be approximately 20 to 30 trucks and automobiles per day.

There are currently approximately 14,000 daily trips on SR 49 (**Appendix E**). Hourly traffic is highest during peak PM commute hours (**Appendix E**, Table 3). Because the level of construction traffic would be relatively small in the context of baseline traffic levels, and because the construction traffic would be concentrated before peak PM traffic level, noise impacts from construction traffic would be less than significant.

Operations Traffic

Noise levels related to the operation of the Reduced Project would be limited to traffic-related noise, noise generated from building operations (mostly HVAC units) and noise generated by events held at the outdoor entertainment venue. Given that the speed limit on SR 49 is 50 to 55 miles per hour, automobiles would generate estimated noise levels of up to 72 dB at a distance of 50 feet (Noise Pollution Clearinghouse, 2023). The Final EIS analyzed the operational traffic noise for Alternative A, and concluded that post-project traffic noise levels would be 63 Leq at a distance of 100 feet, and the change in noise stimulated by Alternative A would be 2 Leq (BIA, 2009). These levels are below the Noise Abatement Criteria identified by FHWA (**Table 8**). Traffic generated by the Reduced Project would be substantially less than that generated by EIS Alternative A. For these reasons, noise generated by operations traffic would be less than significant.

Operations – Mechanical Equipment

A combination of chillers, compressors, fans, condensers, and pumps would be needed to meet the refrigeration and HVAC requirements of the Reduced Project. The Final EIS estimated noise levels from mechanical sources. Noise levels for Final EIS were estimated at 49 L_{max} at a distance of 400 feet to the two nearest sensitive receptors (BIA, 2009). Because the Reduced Project is substantially smaller in size that Final EIS Alternative A, noise levels would be lower. This noise level is lower than the 60 dBA exterior noise threshold established by Amador County. In addition, as described above, SR 49 is located between these two houses and the casino. Thus, SR 49 traffic would be the most notable noise source to these two houses. Any intervening structures or rooftop shielding would further reduce this predicted noise level. Nonetheless, because mechanical equipment noise levels can be variable, this is considered to be a potentially significant impact. The mitigation identified below is proposed to reduce impacts to less than significant levels.

Operations – Loading Dock

Operation of the Reduced Project loading dock has the potential to create noise. However, the loading dock would be positioned on the east side of the casino structure, which would be approximately 800 feet from the two nearest sensitive receptors to the west. In addition, because of its location, the entire casino structure would shield the loading dock from the sensitive receptors. Loading dock activities would generate noise levels that would barely be perceptible to the sensitive receptors.

Operations – Other Sources

The outdoor entertainment venue would be capable of seating 320 individuals. The noise generated from events at this venue would consist of entertainment noise (outdoor music) and talking. The County's exterior 60 dBA noise threshold for residential receptors (see above) would apply. The distance from the outdoor entertainment venue to the two residential receptors to the west is estimated at 800 feet. Noise measurements at a 2008 outdoor rock concert estimated noise levels of approximately 94 dBA Leq at a distance of 100 feet from the stage, and 56 dBA Leq at a distance of 800 feet (MEC, 2008). The latter would be below County noise threshold of 60 dBA, but in excess of the post 10:00 p.m. threshold, which is when the 10 dBA penalty applies. It should be noted that the Reduced Project outdoor entertainment venue would seat substantially less patrons than the rock concert described above. In addition, the outdoor entertainment venue is located on the north side of the casino building, and thus the sensitive receptors are partially shielded. For these reasons, noise impacts would be less than significant prior to 10:00 p.m., but potentially significant after 10:00 p.m. Mitigation listed below would reduce noise levels to less than significant levels.

Question B

As described above, the two nearest sensitive receptors are located approximately 200 feet to the west of the western boundary of the reservation and approximately 400 feet west to the earthworks that support the closest on-reservation parking lot. Parking lot construction would be the source of potentially significant vibration inducing construction activities. Thus, given the distance between sensitive receptors and sources of groundborne vibration and groundborne noise, groundborne vibration and groundborne noise levels would be negligible. There would be no impact.

Mitigation Measures

A. Outdoor construction activities shall be limited to the hours of 6 a.m. to 6 p.m., Monday through Saturday.

B. Between the hours of 10:00 p.m. and 7:00 a.m., music sound generated at the outdoor entertainment venue shall be reduced to levels that are only audible to persons present at the venue.

C. Roof mounted mechanical equipment shall be designed and installed so that noise levels from the mechanical equipment shall not exceed 60 Leq at existing residential property lines.

3.14 POPULATION AND HOUSING Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Induce substantial off-reservation population growth?	☐	☐	☑	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere off-reservation?	☐	☐	☑	☐

As described in **Section 2.1**, the Reduced Project would be constructed within the Tribe's reservation, which is in Amador County (County) and located on the southern border of the City of Plymouth. The 2020 County population was estimated at 39,023 residents (US Census Bureau, 2020) and the 2021 population was an estimated 40,095 residents (US Census Bureau, 2021a). This represents an approximate 1,072 increase since 2020. According to the Amador County General Plan's Housing Element, the County population is expected to increase to approximately 45,100 by the year 2060 (Amador County, 2015). The City of Plymouth estimated population was 1,138 in 2021 (US Census Bureau, 2021a). Population and employment data is summarized in **Table 10**.

TABLE 10: 2021 CENSUS AND EMPLOYMENT DATA

Location	Population	Labor Force	Labor Force Participation	Unemployment Rate
Amador County	40,095	16,213	15,114	3.2%
City of Plymouth	1,138	622	593	2.9%
Source: U.S. Census Bureau, 2021a; U.S. Census Bureau, 2021b.				

As shown in **Table 11**, there were approximately 18,708 total housing units in the County in 2021. Of these total housing units, approximately 3,311 were vacant.

TABLE 11: 2021 REGIONAL HOUSING DATA

Location	Total Housing Units	Percent Vacant	Estimated Vacant Units
Amador County	18,708	17,7%	3,311
City of Plymouth	524	11.8%	62
Source: U.S. Census Bureau, 2021c, with the exception of Estimate Vacant Units, where were calculated by multiplying the Housing Units by the Estimated Percent Vacant.			

The Regional Housing Needs Allocation (RHNA) process identifies the total number of housing units, separated into four affordability levels, that local governments must plan to accommodate. As part of this process, a Housing Element is a required component of the General Plan, requiring updates with the State Housing Cycle. Amador County is currently leading the effort, in coordination with the cities of Amador City, Ione, Plymouth, Jackson, and Sutter Creek to prepare the Countywide 6th Cycle Housing Element Update (Amador County, 2023b).

The Housing Element includes a Housing Plan, which lists specific quantified objectives. These are summarized in **Table 12** for the Project Site and general vicinity.

TABLE 12: 2021-2029 QUANTIFIED OBJECTIVES

Jurisdiction	Extremely Low: <30% AMI	Very Low: 30-50% AMI	Low: 50-80% AMI	Moderate: 80-120% AMI	Above Moderate: 120% + AMI	TOTAL
Amador County:						
New Construction	25	25	50	60	134	294
Rehabilitation and Maintenance	15	15	10	20	100	180
Conservation/Preservation	809	1,072	1,671			
City of Plymouth:						
New Construction	10	10	20	5	13	58
Rehabilitation and Maintenance	3	3	2	5	25	34
Conservation/Preservation	8	65	70			
SOURCE: Amador County, 2023b. Housing Plan Table 2. AMI is an abbreviation for Area Median Income.						

Question A

The Reduced Project would be a source of temporary employment during construction. The majority of workers are expected to reside locally or stay at regional hotels. Construction of the Proposed Project would generate approximately 300 temporary jobs (**Section 2.1**), although these employment positions would not occur simultaneously, as construction would be phased. Operation of the Reduced Project would occur once construction is largely complete, and would employ approximately 240 staff on a part-time to full-time basis (**Section 2.1**).

The 2021 unemployment rate for Amador County was 3.2 percent (**Table 10**), which equates to approximately 520 persons. Many or most operational employees would be comprised of permanent residents who currently live in Amador County. Many individuals seeking employment associated with the Reduced Project would likely be unemployed or underemployed. As described in **Section 1.1**, it is estimated that operations of the Reduced Project would employ approximately 240 persons. Although it is anticipated that the majority of these employees would already reside locally, there is room for accommodation to the extent that some relocation occurs. The anticipated number of employees constitutes approximately 0.6 percent of the population of Amador County. The Proposed Project would not Induce substantial off-reservation population growth. There would be a be less than significant impact.

Question B

The Reduced Project does not include the construction, demolition, or displacement of housing. It is expected that most of the approximately 240 Reduced Project employees already reside in the County.

Some number of employees may commute to work from outside of Amador County, especially during construction of the Reduced Project, although construction would be temporary. However, some individuals may permanently relocate to the area to reduce the amount of time spent commuting. These employees and their families could be accommodated by existing vacant housing within the county.

The planned number of new low, very low and extremely low housing units in Amador County, as set forth in the Amador County Housing Plan, is 50, 25 and 25, respectively (**Table 12**). These 100 new housing units would comprise approximately 0.5 percent of the 18,708 current Amador County Housing units (**Table 11**). This is a relatively small percentage. Because of the moderate-income levels of typical casino employees, most of these workers would not be classified as low income. Thus, any in-migrating employees would not stimulate significant new demand for low-income housing. On average, employment at the Reduced Project would cause their income to increase, and their need for low income housing would stay the same or decrease.

For these reasons, the Reduced Project would not displace substantial numbers of existing housing (including affordable housing), necessitating the construction of replacement housing elsewhere off-reservation. There would be a be less than significant impact.

Mitigation Measures

None.

3.15 PUBLIC SERVICES Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered off-reservation governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the off-reservation public services:				
i) Fire protection?	☐	☑	☐	☐
ii) Police protection?	☐	☑	☐	☐
iii) Schools?	☐	☐	☑	☐
iv) Parks?	☐	☐	☑	☐
v) Other public facilities?	☐	☐	☑	☐

Fire Protection and Emergency Medical Services

The Amador Fire Protection District provides fire and emergency medical services (EMS) in the vicinity of the Project Site. The Amador Fire Protection District provides service to over 20,000 residents and 491 square miles of unincorporated Amador County and the City of Plymouth (Amador Fire Protection District, 2023). Fire resources are dispatched through CalFire ECC in Camino (Mountain Valley Emergency Services, 2023). The closest fire station to the Project Site is Fire Station 122, which is located about 1.0 mile to the north.

The Project Site is located in an area of high wildfire threat and the Project Site contains grassland, which is a wildfire threat in the area (COSFM, 2023). The California Department of Forestry and Fire Protection (CAL FIRE) aids local fire departments in wildfire situations. All the areas immediately outside of the reservation boundary are served by fire protection agencies. Lands within the City of Plymouth boundaries are served by the Amador Fire Protection District. Lands outside of the City limits and off-reservation are located within the State Responsibility Area (CBFFP, 2023) where CAL FIRE has a responsibility to provide wildland fire protection services. Because the reservation is federal land, the Project Site is not located in a State Responsibility Area (CBFFP, 2023). However, CAL FIRE is responsible for wildland fire protection, via a cooperative agreement with the Federal Government (CAL FIRE, 2023).

The exclusive provider of ambulance services within the County is American Legion Ambulance, which receives calls dispatched from the Amador County Sheriff’s Department. Air ambulance service within Amador County is provided by several providers (Mountain Valley Emergency Services, 2023).

The nearest hospital to the Reduced Project is the Sutter-Amador Hospital located at 200 Mission Boulevard in Jackson, California.

Law Enforcement

The Project Site is located within the service area of the Amador County Sheriff's Office (ACSO), which has jurisdiction to enforce criminal laws on the Reservation as authorized by Public Law 280. ACSO has various divisions (Amador County Sheriff's Office, 2023):

- **Administration** – Administrative functions, records request, process services and permits.
- **Corrections** – Operates the Amador County Correctional Facility. Also provides security services to the Amador Superior Court.
- **Operations** – Includes the Patrol Bureau, Investigation Bureau and Coroner. Approximately 27 deputies are assigned to the Patrol Bureau.

The ACSO is located at 700 Court Street Jackson, California. ACSO law enforcement activities are integrated with police departments of Amador County cities that maintain their own law enforcement presence. Police departments within the County are the Jackson Police Department, Sutter Creek Police Department, and the Ione Police Department.

The Amador County District Attorney prosecutes cases that result from law enforcement actions in the County. The California Highway Patrol (CHP) has jurisdiction for traffic enforcement in the vicinity of the Project Site.

Schools

The Amador County School District is comprised of 13 schools, six elementary schools, one primary school, two junior high schools, three high schools, one independent study, and one continuing high school (Amador County Unified School District, 2018). There are approximately 4,016 students enrolled in the district, with a student to teacher ratio of 20.09 (National center for Education Statistics, 2022). As described in **Section 3.9**, the closest school is Plymouth Elementary School, located approximately 0.7 miles to the north of the northern border of the Project Site and Shenandoah Middle School, which is located approximately 1.0 mile to the northwest of the reservation border.

Parks

The nearest park is approximately 1.0 mile to northwest of the Reduced Project.

Other Public Facilities

As described in the Final EIS, waste originating from Amador County that cannot be recycled is disposed of at the Sacramento County Landfill (Kiefer Landfill), which is located at 12701 Kiefer Boulevard in Sloughhouse. The landfill is approximately 1,084 acres (660 disposal acres), and is located approximately 20 miles west of the Reduced Project. The Kiefer Landfill is classified as a solid waste disposal facility with a permitted capacity of 10,815 tons/day, with an average day receiving rate of 2,050 tons/day. This facility has an estimated closure date of 2064 (CalRecycle, 2023), which is approximately 40 years in the future. Solid waste would be generated during the construction of the Reduced Project.

Question A

Fire Protection and Emergency Medical Services

As described in **Section 2.1**, construction and operation of the Reduced Project would occur within the reservation boundaries. CAL FIRE would continue to provide protection from wildfires, during both construction and operations of the Reduced Project. More typical fire protection and EMS services would likely be provided by the Amador Fire Protection District. EMS services would be provided by both the Amador Fire Protection District and American Legion Ambulance.

Construction-related impacts include the potential fire threat associated with equipment and vehicles coming into contact with vegetated areas. Construction vehicles and equipment such as welders, torches, and grinders may accidentally spark and ignite vegetation or building materials. The increased risks of fire during the construction of the Reduced Project would be similar to that found at other construction sites in the area. Mitigation measures listed in **Section 3.9** would reduce the risk of fires started by construction to less than significant levels. Potential for calls for EMS generated by construction would be similar to that of demands placed by the construction of other projects constructed within the vicinity of the Reduced Project and would be minimal and temporary.

The operation of the Reduced Project would result in casino patronage, which would cause an increase in demand for fire and emergency services. The Reduced Project is substantially smaller than any of the alternatives analyzed in the EIS (see **Section 2.2**) and would not generate the need for existing infrastructure to be expanded or entirely new facilities to be built. However, the increase in demand for services would cause the Amador County Fire District to incur additional costs. In the absence of mitigation payments, the level of services provided by the Amador Fire Protection District could be affected. Impacts would be less than significant, with the implementation of the mitigation measures listed below.

Law Enforcement

The ACSD would continue to provide services to the Project Site, once construction and operations commence. The operation of the Reduced Project would result in casino patronage, which would cause an increase in law enforcement services. The Reduced Project is substantially smaller than any of the alternatives analyzed in the EIS (see **Section 2.2**) and would not generate the need for existing infrastructure to be expanded or entirely new facilities to be built. However, the increase in demand for services would cause the ACSD to incur additional costs. In the absence of mitigation payments, the level of services provided by the ACSD could be affected. Impacts would be less than significant, with the implementation of the mitigation measures listed below.

Schools

Similar to housing, potential effects to schools relate to the number of workers who in-migrate to the local area. As described in **Section 3.14**, a small number of workers may relocate to Amador County to fill open jobs. It is not anticipated that there will be enough employees with children who in-migrate to make a significant impact on the number of students in the Amador County School District. There would be a less than significant impact.

Parks

Because the number of workers who in-migrate to the local area would be small in the context of the existing population, the Reduced Project would have a minimal impact on parks and other off-reservation public recreation facilities. There would be a less than significant impact.

Other Public Facilities

Potential solid waste from construction are expected to include paper, wood, glass, plastics from packing materials, waste lumber, excess concrete, excess metal, insulation, and empty non-hazardous chemical containers. Production of construction waste would be limited and temporary in nature and would not exceed capacity of waste collection facilities. Generation of solid waste during the operation of the Reduced Project would be similar to other commercial enterprises. Because the Kiefer Landfill has an estimated remaining life of 40 years, the landfill has adequate capacity to absorb solid waste generated by the Reduced Project.

Mitigation Measures

Construction Related Solid Waste

A. The Tribe shall create and maintain an aggressive Waste Management Plan that implements recycling strategies to voluntarily meet State recycling and diversion requirements. The Waste Management Plan shall include the installation of a trash compactor for cardboard and paper products, and the placement of recycling bins throughout the construction area and facilities for glass, cans and paper products.

B. Environmentally preferable materials shall be acquired to the extent practical for construction of facilities.

Operational Solid Waste

C. A trash compactor shall be installed for cardboard and paper products.

D. Recycling bins shall be installed throughout the facilities for glass, cans and paper products.

E. The Tribe shall adopt universal waste recycling requirements similar to California's Universal Waste Rule.

Public Health and Safety

Law Enforcement

F. The Tribe shall adopt a Responsible Alcoholic Beverage Policy that shall include, but not be limited to, requesting identification and refusing service to those who have had enough to drink. This policy shall be discussed with the California Highway Patrol and the ACSO.

G. All parking areas shall be well lit to prevent areas that would not be visible by patrolling security guards, and monitored by parking staff, and/or roving security guards at all times during operation. This will aid in the prevention of auto theft and other related criminal activity.

H. Exterior areas surrounding the gaming facilities not designed as patron waiting areas shall have "No Loitering" signs in place, shall be well lit to increase the visibility of security features (cameras and guards), and shall be patrolled regularly by roving security guards. This will aid in the prevention of illegal loitering and all crimes that relate to, or require, illegal loitering.

I. The Tribe shall provide traffic control with appropriate signage and the presence of traffic control staff when appropriate. This will aid in the prevention of off-site parking, which could create possible security issues.

J. The Tribe shall provide payments to Amador County to mitigate increased costs related to law enforcement actions generated by the Reduced Project. Prior to commencement of operations, the Tribe shall negotiate in good faith to provide reasonable payment for services with Amador County. As described in **Section 1.2**, if such an agreement is not entered into, the Tribe will enter into an enforceable binding letter agreement with the State of California under which the Tribe shall agree to perform the required mitigation pursuant to section 11.5(c) of the Compact.

Emergency Call Taking and Dispatching

K. The Tribe shall negotiate in good faith to make a reasonable contribution to Amador County to cover increased operating costs of emergency dispatching in Amador County including dispatching contracted through the State that is attributable to the operation of the Reduced Project. As described in **Section 1.2**, if such an agreement is not entered into, the Tribe will enter into an enforceable binding letter agreement with the State of California under which the Tribe shall agree to perform the required mitigation pursuant to section 11.5(c) of the Compact.

Fire and EMS

L. The Tribe shall provide payments to Amador Fire Protection District (District) to mitigate increased costs to the District as they relate to fire protection and emergency medical services generated by the Reduced Project. Prior to commencement of operations, the Tribe shall negotiate in good faith to provide reasonable payment for services with the District. As described in **Section 1.2**, if such an agreement is not entered into, the Tribe will enter into an enforceable binding letter agreement with the State of California under which the Tribe shall agree to perform the required mitigation pursuant to section 11.5(c) of the Compact.

3.16 RECREATION Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Increase the use of existing off-reservation neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☑	☐

Question A

As described above in **Section 3.15**, the Reduced Project would not result in a significant increase in the use of off-reservation recreational facilities nor require the construction or expansion of other recreational facilities that could result in adverse physical effects on the environment. There would be a less than significant impact.

Mitigation Measures

None.

3.17 TRANSPORTATION / TRAFFIC Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the off-reservation circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☑	☐
b) Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated off-reservation roads or highways?	☐	☑	☐	☐
c) Substantially increase hazards to an off-reservation design feature (e g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☑	☐	☐
d) Result in inadequate emergency access for off-reservation responders?	☐	☑	☐	☐

A transportation impact study (TIS) was prepared for the Project (**Appendix E**). The TIS describes the existing and future conditions for transportation with and without the Project.

Standards and Objective

Caltrans - The California Department of Transportation (Caltrans) has jurisdiction over State highways. Therefore, Caltrans controls all construction, modification, and maintenance of State highways, such as State Route 49 (SR 49). Any improvements to these roadways would require Caltrans' approval.

Amador County Transportation Commission (ACTC) - Amador County has designated the ACTC as the agency responsible for monitoring the network of key roadways that carry the majority of the County's traffic. This network, the Congestion Management Plan (CMP) network, was created to monitor roadway performance in relation to established LOS standards and recommend improvement when LOS is found to be deficient. The Highway Capacity Manual's (HCM) recommended practice for evaluation of traffic operations on urban streets involves calculating free-flow speeds of the roadway and assigning a LOS.

Amador County General Plan - The Transportation and Circulation Element included in the Amador County General Plan was prepared pursuant to Section 65302(b) of the California Government Code. The Transportation and Circulation Element addresses the location and extent of existing and planned transportation routes, terminals, and other local public utilities and facilities. The General Plan identifies roadway and transit goals and policies that have been adopted to ensure that the transportation system of the County will have adequate capacity to serve planned growth. These goals and policies are intended to provide a plan and implementation measures for an integrated, multi-modal transportation system that will safely and efficiently meet the transportation needs of all economic and social segments of the County.

City of Plymouth General Plan - The Circulation Element included in the City of Plymouth General Plan also identifies roadway and transit goals and policies that have been adopted to ensure that the transportation system of the City will continue to have adequate capacity to serve planned growth.

Existing Conditions

The primary basis of the analysis is the peak hour level of service for the key intersections. The hours identified as the "peak" hours are generally between 7:15 a.m. and 8:15 a.m. and 4:00 p.m. and 5:00 p.m. for the transportation facilities described, based on the intersection turning movement counts collected for this analysis. These peak hours will be identified as the AM and PM peak hours. These volumes represent the conditions on a typical weekday (Tuesday through Thursday). The peak hour of casino traffic generally occurs after the PM peak hour of adjacent street traffic but to be conservative the analysis assumes the peak hour of casino traffic combined with the peak hour street traffic in the afternoon (4:00 p.m. and 5:00 p.m.). An analysis of project impacts on Friday evening traffic conditions (the worst-case scenario) is presented in **Appendix E**.

It should be noted that the final traffic study prepared for the Final EIS clearly indicated the Friday plus project scenario was essentially the worst-case scenario at all of the project study intersections. Although the casino would generate slightly higher volumes on a Saturday afternoon, the Saturday afternoon background traffic is so much lower than Friday afternoon traffic that Saturday conditions come out substantially better than Friday conditions in all cases. Therefore, the Friday analysis is considered the worst-case scenario and no additional useful information about the potential for project impacts would be anticipated even if additional analysis of Saturday afternoon conditions was conducted.

Bicycle and pedestrian facilities in the project study area are currently very limited with no bike lanes or sidewalks provided in the vicinity of the project. Bicycle paths, lanes and routes are typical examples of bicycle transportation facilities, which are defined by Caltrans as being in one of the four classes.

Bus transit service in the project area is provided by Amador Transit. Amador Transit operates local bus route 3 within the City of Plymouth. The route operates twice a day with stops near the project site Monday through Friday from about 8:30 a.m. to 4:00 p.m. Limited Saturday service is also offered. The routes provide connections to regional transit via intercity routes 1, 2, and 7. The nearest bus stops to the project are located adjacent to the site at the intersection of Village Drive at SR 49.

Intersection Analysis Methodology

Existing operational conditions at the eleven (11) study intersections have been evaluated according to the requirements set forth by the Amador County and City of Plymouth General Plans. Analysis of traffic operations was conducted using the 6th Edition of the *Highway Capacity Manual* (*HCM*) Level of Service

(LOS) methodology with Synchro software. Level of service is an expression, in the form of a scale, of the relationship between the capacity of an intersection (or roadway segment) to accommodate the volume of traffic moving through it at any given time.

The level of service scale describes traffic flow with six ratings ranging from A to F, with "A" indicating relatively free flow of traffic and "F" indicating stop-and-go traffic characterized by traffic jams. As the amount of traffic moving through a given intersection or roadway segment increases, the traffic flow conditions that motorists experience rapidly deteriorate as the capacity of the intersection or roadway segment is reached. Under such conditions, there is general instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays that lead to traffic congestion. This near-capacity situation is labeled level of service (LOS) E. Beyond LOS E, the intersection or roadway segment capacity has been exceeded, and arriving traffic will generally exceed the ability of the intersection to accommodate it.

Existing Conditions

Existing traffic conditions are shown below in **Table 13**.

TABLE 13: EXISTING INTERSECTION LEVEL OF SERVICE CONDITIONS

INTERSECTION		CONTROL	PEAK HOUR	EXISTING	
				Delay	LOS
1	GOLDEN CHAIN HWY (SR 49) & MILLER WAY	Side Street Stop	AM	9.0	A
			PM	9.1	A
2	GOLDEN CHAIN HWY (SR 49) & MAIN STREET	Roundabout	AM	4.4	A
			PM	4.9	A
3	GOLDEN CHAIN HWY (SR 49) & POPLAR STREET	Side Street Stop	AM	10.0	B
			PM	10.1	B
4	GOLDEN CHAIN HWY (SR 49) & PACIFIC STREET / EMPIRE STREET	Side Street Stop	AM	15.9	C
			PM	14.8	B
5	GOLDEN CHAIN HWY (SR 49) & 49ER VILLAGE / EMPIRE STREET	Side Street Stop	AM	12.1	B
			PM	13.0	B
6	GOLDEN CHAIN HIGHWAY (SR 49) & RANDOLPH DRIVE / VILLAGE DRIVE (THE PROJECT ENTRANCE)	Side Street Stop	AM	13.5	B
			PM	15.7	C
7	GOLDEN CHAIN HIGHWAY (SR 49) & SR16	Signalized	AM	11.9	B
			PM	11.9	B
8	SR 16 & PLYMOUTH HIGHWAY (SR 124)	Side Street Stop	AM	12.6	B
			PM	14.5	B
9	SR 16 & LATROBE ROAD	Side Street Stop	AM	15.2	C
			PM	19.7	C
10	JACKSON ROAD (SR 16) & IONE ROAD	Side Street Stop	AM	15.2	C
			PM	17.4	C
11	JACKSON ROAD (SR 16) & GRANT LINE ROAD	Signalized	AM	**57.9**	**E**
			PM	**77.5**	**E**

Source: **Appendix E**, Table 3.

Project Trip Generation

The peak-hour trip generation of the proposed casino was reviewed based on information published in Institute of Transportation Engineers (ITE) Trip Generation Manual (Eleventh Edition, 2021). The trip generation forecasts include all traffic in and out of the site including patrons, employees, vendors, and deliveries. The trip generation forecasts are presented in **Table 14**.

TABLE 14: PROJECT TRIP GENERATION CALCULATIONS

Land Use	Size	ADT	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Indian Casino Trip Rates - Trips per Square Feet		98.21	1.78	1.64	3.42	3.10	3.64	6.74
Proposed Casino Expansion Trip Generation	**25,200 sq. ft.**	**2,475**	**45**	**41**	**86**	**78**	**92**	**170**
ITE Hotel Trip Rates - Trips per Room		7.99	0.26	0.20	0.46	0.30	0.29	0.59
Shenandoah Inn Trip Generation (To be demolished)	**46 rooms**	**368**	**12**	**9**	**21**	**14**	**13**	**27**
Net New Project Trip Generation		**2,108**	**33**	**32**	**65**	**64**	**79**	**143**
Source: **Appendix E**, Table 4.								

Question A

Baseline Plus Project Traffic Capacity

The Baseline plus project traffic forecasts were developed by adding traffic from the Project to the baseline traffic volumes. The traffic volumes for each of the study intersections for the Baseline Plus Project scenario are shown in Figure 8 of **Appendix E**. As shown in **Table 15**, all of the study intersections would continue to have acceptable conditions under the Baseline Plus Project scenario during the weekday AM and PM peak hours, with the exception of Jackson Road (SR 16) at Grant Line Road. The intersection of Jackson Road (SR 16) and Grant Line Road is forecast to exceed the LOS standards regardless of whether or not the Reduced Project is implemented and the Project would not increase the average delay by more than five seconds per vehicle.

TABLE 15: BASELINE PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS

INTERSECTION	CONTROL	PEAK HOUR	BASELINE		BASELINE PLUS PROJECT	
			Delay	LOS	Delay	LOS
GOLDEN CHAIN HWY (SR 49) & MILLER WAY	Side Street Stop	AM	9.3	A	9.3	A
		PM	9.4	A	9.5	A
GOLDEN CHAIN HWY (SR 49) & MAIN STREET	Roundabout	AM	4.9	A	5.0	A
		PM	5.7	A	5.9	A
GOLDEN CHAIN HWY (SR 49) & POPLAR STREET	Side Street Stop	AM	10.6	B	10.7	B
		PM	10.9	B	11.0	B
GOLDEN CHAIN HWY (SR 49) & PACIFIC STREET / EMPIRE STREET	Side Street Stop	AM	19.5	C	20.0	C
		PM	18.2	C	19.0	C
GOLDEN CHAIN HWY (SR 49) & 49ER VILLAGE / EMPIRE STREET	Side Street Stop	AM	14.5	B	14.8	B
		PM	16.8	C	17.5	C
GOLDEN CHAIN HIGHWAY (SR 49) & RANDOLPH DRIVE / VILLAGE DRIVE (THE PROJECT ENTRANCE)	Side Street Stop	AM	18.0	C	19.6	C
		PM	24.1	C	32.4	D
GOLDEN CHAIN HIGHWAY (SR 49) & SR 16	Signalized	AM	19.2	B	19.6	B
		PM	19.7	B	20.2	C
SR 16 & PLYMOUTH HIGHWAY (SR 124)	Side Street Stop	AM	13.8	B	14.1	B
		PM	17.2	C	18.6	C
SR 16 & LATROBE ROAD	Side Street Stop	AM	17.8	C	18.6	C
		PM	29.2	D	34.7	D
JACKSON ROAD (SR 16) & IONE ROAD	Side Street Stop	AM	16.9	C	17.4	C
		PM	20.3	C	21.7	C
JACKSON ROAD (SR 16) & GRANT LINE ROAD	Signalized	AM	**68.1**	**E**	**69.7**	**E**
		PM	**> 80.0**	**F**	**> 80.0**	**F**
Source: **Appendix E**, Table 6.						

Vehicle Miles Traveled

The TIS analyzed the extent of the Vehicle Miles Travelled (VMT)-related transportation impacts caused by the Project. The Governor's Office of Planning and Research (OPR) recommends that VMT thresholds for residential and employment-based land use projects be set at fifteen percent below the baseline VMT/capita or VMT/employee. The Project is not located in a Transit Priority Area and, subject to Amador County approval, would not otherwise be screened out from VMT analysis because of its location in a relatively high VMT generating area.

For this analysis, the California Statewide Travel Demand Model (CSTDM) was used. The model calculates VMT based on the number of vehicles multiplied by the typical distance traveled by each vehicle originating from or driving to a certain area. The volume of traffic and distance traveled depends on mix of land use types, density, and location as well as the existing and planned transportation system, including availability of public transportation. The model divides areas within the County into transportation analysis zones, or TAZs, which are used for transportation analysis and other planning purposes. The conclusions would be expected to be the same using the Amador County Transportation

Commission's Travel Demand Model due to the project's location on SR 49 directly adjacent to the city limits of one of Amador County's five unincorporated Cities.

Based on the CSTDM Travel Demand Model the County's average VMT per employee is estimated to be 17.9 miles. The employees of the Project would be expected to have similar VMT to existing employees within the TAZ where the project is located, and in other surrounding TAZ's with similar land uses. the Project is forecast to have an average Near-Term Plus Project VMT per employee of 13.2 miles. Thus, Data from the CSTDM model indicates that the project would not have a significant impact on VMT in the County.

Transit Impacts

The Project would not result in degradation of the level of service (or a significant increase in delay) on any roadway segments currently being utilized by bus transit in the area and, as such, no significant impacts to bus transit are expected. The Project is not expected to significantly impact the operating capacity any existing Amador Transit bus routes. The Project could potentially help support existing bus services with additional transit ridership and would not conflict with any transit plans or goals of the County or Amador Transit. Although the Project does have the potential to increase patronage on bus lines in the area, no significant effects on transit capacity are anticipated given that the additional ridership would be added primarily in the non-peak directions. As a result, the Project would not be expected to result in any significant impacts to bus transit service in the area.

Pedestrians, Bicycles and Non-Motorized Vehicular Travel

The County does not have level of service standards for pedestrian or bicycle facilities. Nevertheless, use of existing facilities by the users of the Project would not be expected to overcrowd those facilities or decrease their performance or safety. The project will add some pedestrians and bicyclists in the area but the volumes added would not be expected to significantly impact any existing facilities. In relation to the existing conditions, the Project would not cause substantial changes to the pedestrian or bicycle traffic in the area and would not significantly impact or require changes to the design of any existing bicycle or pedestrian facilities.

For the reasons described above, conflicts with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the off-reservation circulation system would be less than significant.

Question B

Heavy Equipment

Approximately 15 truck trips per day are estimated throughout the demolition and construction of the Project. Heavy equipment transport to and from the site could cause traffic impacts in the vicinity of the project site during construction. The Project would implement a Traffic Control Plan.

The requirements within the Traffic Control Plan include, but are not limited to, the following: truck drivers would be notified of and required to use the most direct routes; all site ingress and egress would occur only at the main driveways to the project site and construction activities may require installation of temporary traffic signals; specifically designated travel routes for large vehicles would be monitored and controlled by flaggers for large construction vehicle ingress and egress; warning signs indicating frequent truck entry and exit would be posted on SR 49; and any debris and mud on nearby streets caused by trucks would be monitored daily and may require instituting a street cleaning program. In addition, the ten loads of heavy equipment being hauled to and from the site each month would be short-term and temporary.

Employees

The weekday work is expected to begin around 7:00 a.m. and end around 4:00 p.m. The construction worker arrival peak would occur between 6:30 a.m. and 7:30 a.m., and the departure peak would occur between 4:00 p.m. and 5:00 p.m. These peak hours are slightly before the countywide commute peaks. It should be noted that the number of trips generated during construction would not only be temporary, but would also be substantially less than the Reduced Project at buildout. Based on estimates of the number of construction workers, the project could require parking for up to 300 vehicles during the peak construction period. Additionally, deliveries, visits, and other activities may generate peak non-worker parking demand of 40 to 50 trucks and automobiles per day. Therefore, up to 350 vehicle parking spaces may be required during the peak construction period for the construction employees. Because the construction of the project can be staged so that employee parking demand is met by using on-site parking, the impacts of construction-related employee traffic and parking are considered less than significant.

Construction Material Import/Export

The Project would also require removal of existing debris as well as the importation of construction material, including raw materials for the building pads, the buildings, the parking area, and landscaping. During the maximum peak construction period, it is estimated material import and export could generate approximately 150 truck trips per day.

Traffic Control Plan

The Traffic Control Plan listed in **Mitigation Measure 3.17-B** would indicate how parking for construction workers would be provided during construction on adjacent land currently held in trust by the Tribe to ensure a safe flow of traffic in the project area during construction. This analysis assumed construction of the entire project in one phase to identify the potential worst-case traffic effects. If the project is built in phases over time, the effects of each phase will be the same or less. Therefore, the demolition and construction activities associated with the Reduced Project or its individual phases would not lead to noticeable congestion in the vicinity of the site or the perception of decreased traffic safety resulting in a less than significant impact with the implementation of the Traffic Control Plan.

Question C

The TIS did not identify any on-site circulation issues that would cause a traffic safety problem or any unusual traffic congestion or delay. However, current Project Site access via the northern intersection of SR 49 with Village Drive could potentially result in safety impacts due to potential conflicts in the two-way left turn lane with left turns into Randolph Drive. This is an existing safety issue due to the off-set of the two approaches but it currently operates acceptably because of the low volume of left turns into the two side streets. With the higher left turn volumes from the Project, this configuration could have increased left turn conflicts in the center two-way left-turn with an increased potential for head-on collisions. **Mitigation Measure 3.17-E** would reduce impacts to less than significant levels.

Question D

Sufficient emergency access is determined by factors such as number of access points, roadway width, and proximity to fire stations. Project Site access would be via the main entrance on SR 49 and will include a secondary emergency vehicle access. All lane widths within the Project Site would meet the minimum width that can accommodate an emergency vehicle; therefore, the width of the internal roadways would be adequate. In addition, with the proposed mitigation measures, the addition of Project traffic would not result in any significant changes to emergency vehicle response times in the area. Therefore, the Project is expected to have a less than significant impact regarding emergency vehicle access for off-reservation responders.

Mitigation Measures

Access

A. The Tribe shall require at least three Tribal security personnel to be educated in traffic control procedures. These security personnel will perform traffic control at the access roads during special events at the event center to make sure that when fire/emergency vehicles need to leave the site, traffic control is provided at the exit of the service entrance to allow smooth movement of emergency vehicles.

Construction

B. A Traffic Management Plan (TMP) shall be prepared to identify which lanes require closure, where night construction is proposed, and other standards set forth in the *Manual on Uniform Traffic Control Devices for Streets and Highways* (US DOT FHWA, 2003). The TMP shall be submitted to each affected local jurisdiction and/or agency.

C. Prior to the finalization of construction plans, the Tribe shall notify potentially affected parties in the immediate vicinity of the project site. Notification shall include a construction schedule, locations of construction activities, duration of construction period, and alternative access provisions.

D. Also prior to the finalization of construction plans, the Tribe shall consult with emergency service providers to avoid restricting emergency response service. Police, fire, ambulance, and other emergency response providers shall be notified in advance of the construction schedule, locations of construction activities, duration of construction period, and any access restrictions that could impact emergency response services. Traffic Management Plans shall include details regarding emergency service coordination. Copies of the TMPs shall be provided to affected emergency service providers.

Operation

E. SR 49 at Village Drive (the Project Site entrance) – Relocate Project access to one of two other recommended locations:

    1. Line up the Project entrance with Randolph Street.
    2. Design the Project access to connect only to the other (southern) intersection of Village Drive with SR 49.

3.18 UTILITIES AND SERVICE SYSTEMS Would the project:	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Exceed off-reservation wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☑
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant off-reservation environmental effects?	☐	☑	☐	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant off-reservation environmental effects?	☐	☑	☐	☐
d) Result in a determination by an off-reservation wastewater treatment provider (if applicable), which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☑

Question A

As described in **Section 2.1**, all Reduced Project wastewater would be treated on-reservation. There would be no impact.

Question B

As described in **Section 2.1,** all water and wastewater would be treated on-reservation. Consequently, the Reduced Project would not stimulate the construction of new water or wastewater facilities off-reservation. The construction process of the on-reservation water and wastewater facilities is described in **Section 2.1**, and are an integral part of the Reduced Project. The construction process would not cause off-reservation environmental effects, other than those already described in this document, including those listed in **Sections 3.4**, **3.8**, **3.17** and **3.19**. Impacts would be less than significant, with the implementation of mitigation measures.

Question C

As described in **Section 3.10**, the Reduced Project would not require or result in the construction of new off-reservation stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant off-reservation environmental effects. The construction process of the on-reservation stormwater drainage facilities is described in **Section 2.1**, and are an integral part of the Reduced Project. The construction process would not cause off-reservation environmental effects, other than those already described in this document, including those listed in **Sections 3.4**, **3.8**, **3.17** and **3.19**. Impacts would be less than significant, with the implementation of mitigation measures.

Question D

As described in **Section 2.1**, all Reduced Project wastewater would be treated on-reservation. There would be no impact.

Mitigation Measures

None.

3.19 CUMULATIVE EFFECTS	POTENTIALLY SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a) Have impacts that are individually limited, but cumulatively considerable off-reservation? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past, current, or probable future projects.	☐	☑	☐	☐

Question A

Transportation / Traffic

TABLE 16: FRIDAY EVENING CUMULATIVE PLUS PROJECT INTERSECTION LOS CONDITIONS

INTERSECTION		CONTROL	CUMULATIVE		CUMULATIVE PLUS PROJECT	
			Delay	LOS	Delay	LOS
1	GOLDEN CHAIN HWY (SR 49) & MILLER WAY	Side Street Stop	9.9	A	10.1	B
2	GOLDEN CHAIN HWY (SR 49) & MAIN STREET	Roundabout	7.2	A	7.6	A
3	GOLDEN CHAIN HWY (SR 49) & POPLAR STREET	Side Street Stop	12.3	B	12.7	B
4	GOLDEN CHAIN HWY (SR 49) & PACIFIC STREET / EMPIRE STREET	Side Street Stop	15.9	C	16.9	C
5	GOLDEN CHAIN HWY (SR 49) & 49ER VILLAGE / EMPIRE STREET	Side Street Stop	23.4	C	26.1	D
6	GOLDEN CHAIN HIGHWAY (SR 49) & RANDOLPH DRIVE / VILLAGE DRIVE (THE PROJECT ENTRANCE)	Side Street Stop	**39.4**	**E**	**> 50.0**	**F**
7	GOLDEN CHAIN HIGHWAY (SR 49) & SR 16	Signalized	23.5	C	25.6	C
8	SR 16 & PLYMOUTH HIGHWAY (SR 124)	Side Street Stop	19.5	C	23.6	C
9	SR 16 & LATROBE ROAD	Side Street Stop	**> 50.0**	**F**	**> 50.0**	**F**
10	JACKSON ROAD (SR 16) & IONE ROAD	Side Street Stop	23.6	C	27.2	D
11	JACKSON ROAD (SR 16) & GRANT LINE ROAD	Signalized	24.7	C	25.7	C
Source: **Appendix E**, Table 8.						

Cumulative Plus Project Traffic Capacity

Friday evening cumulative and cumulative plus Project conditions are presented in **Table 16**. As described in the TIS (**Appendix E)**, Friday evening traffic flows represent the worst-case scenario. As shown in the table, all of the project study intersections would continue to have acceptable operations (LOS D or better) under cumulative plus project conditions during the Friday PM peak hours, except for the intersection of SR 16 with Latrobe Road and also the intersection of SR 49 with Village Drive (the Proposed entrance). Cumulative impacts would be reduced to less than significant levels, with implementation of the Mitigation Measures listed below.

Vehicle Miles Traveled

The Project was not found to have a significant impact on VMT in the near-term scenario (**Appendix E**). Therefore, the Reduced Project's cumulative VMT impacts would be less than significant.

Transit, Pedestrians, Bicycles and Non-Motorized Vehicular Travel

As described in the TIS (**Appendix E**, cumulative effects to transit, pedestrians, bicycles and non-motorized vehicular travel would be less than significant.

Mitigation Measures

A. State Route 16 at Latrobe Road – Payment of a proportionate share of the cost to install a traffic signal, meeting the County's requirements. Using Caltrans' methodology and the volume forecasts in the TIS, the estimated proportional share contribution from the Project for this improvement would be 55%.

B. SR 49 at Village Drive (the Project Site entrance) – Payment of a proportionate share of the cost to widen Village Drive to allow for separate right and left turn lanes on the westbound approach to SR 49 (i.e., two lanes for traffic exiting the Project Site at SR 49). With this improvement the intersection would meet the established standards. Using Caltrans' methodology and the volume forecasts in the TIS, the estimated proportional share contribution from the Project for this improvement would be 81%.

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APPENDIX A

AIR QUALITY MODELING OUTPUT FILES AND CALCULATIONS

Project in Amador County Custom Report

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2.1. Construction Emissions Compared Against Thresholds

2.2. Construction Emissions by Year, Unmitigated

2.3. Construction Emissions by Year, Mitigated

2.4. Operations Emissions Compared Against Thresholds

2.5. Operations Emissions by Sector, Unmitigated

2.6. Operations Emissions by Sector, Mitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.1.2. Mitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.2. Electricity Emissions By Land Use - Mitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.2.4. Natural Gas Emissions By Land Use - Mitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.3.2. Mitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.4.2. Mitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.5.2. Mitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.6.2. Mitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.7.2. Mitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.8.2. Mitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.9.2. Mitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.2.2. Mitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.3.2. Mitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.9.2. Mitigated

5.10. Operational Area Sources

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.10.4. Landscape Equipment - Mitigated

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.11.2. Mitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.12.2. Mitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.13.2. Mitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.14.2. Mitigated

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.1.2. Mitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Project in Amador County
Construction Start Date	1/1/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	21.2
Location	38.46570305052646, -120.85329250452098
County	Amador
City	Unincorporated
Air District	Amador County APCD
Air Basin	Mountain Counties
TAZ	3003
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

User Defined Recreational	25.2	User Defined Unit	7.16	25,205	87,120	—	—	—
High Turnover (Sit Down Restaurant)	4.03	1000sqft	0.00	4,034	0.00	—	—	—
Fast Food Restaurant w/o Drive Thru	4.46	1000sqft	0.00	4,457	0.00	—	—	—
User Defined Commercial	17.6	User Defined Unit	0.00	17,614	0.00	—	—	—
Parking Lot	672	Space	6.05	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Water	W-1	Use Reclaimed Non-Potable Water

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.63	68.8	11.9	15.5	0.03	0.50	0.26	0.76	0.46	0.06	0.53	—	2,881	2,881	0.11	0.07	1.64	2,906
Mit.	1.63	68.8	11.9	15.5	0.03	0.50	0.26	0.76	0.46	0.06	0.53	—	2,881	2,881	0.11	0.07	1.64	2,906
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.19	4.35	90.0	36.1	0.33	1.85	19.8	21.4	1.74	10.1	11.6	—	31,840	31,840	0.29	3.97	1.07	33,032
Mit.	5.19	4.35	90.0	36.1	0.33	1.85	19.8	21.4	1.74	10.1	11.6	—	31,840	31,840	0.29	3.97	1.07	33,032
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.61	4.22	16.4	13.4	0.04	0.53	2.00	2.53	0.49	0.76	1.25	—	4,586	4,586	0.10	0.38	1.92	4,704
Mit.	1.61	4.22	16.4	13.4	0.04	0.53	2.00	2.53	0.49	0.76	1.25	—	4,586	4,586	0.10	0.38	1.92	4,704
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.29	0.77	2.98	2.44	0.01	0.10	0.37	0.46	0.09	0.14	0.23	—	759	759	0.02	0.06	0.32	779
Mit.	0.29	0.77	2.98	2.44	0.01	0.10	0.37	0.46	0.09	0.14	0.23	—	759	759	0.02	0.06	0.32	779
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.63	1.38	11.9	15.5	0.03	0.50	0.26	0.76	0.46	0.06	0.53	—	2,881	2,881	0.11	0.07	1.64	2,906
2025	1.53	68.8	11.1	15.3	0.03	0.44	0.26	0.70	0.40	0.06	0.46	—	2,874	2,874	0.11	0.07	1.59	2,898
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	5.19	4.35	90.0	36.1	0.33	1.85	19.8	21.4	1.74	10.1	11.6	—	31,840	31,840	0.29	3.97	1.07	33,032
2025	1.51	1.27	11.1	14.7	0.03	0.44	0.26	0.70	0.40	0.06	0.46	—	2,850	2,850	0.11	0.07	0.04	2,874
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.61	1.36	16.4	13.4	0.04	0.53	2.00	2.53	0.49	0.76	1.25	—	4,586	4,586	0.10	0.38	1.92	4,704
2025	0.49	4.22	3.55	4.81	0.01	0.14	0.08	0.22	0.13	0.02	0.15	—	894	894	0.03	0.02	0.21	901
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.29	0.25	2.98	2.44	0.01	0.10	0.37	0.46	0.09	0.14	0.23	—	759	759	0.02	0.06	0.32	779
2025	0.09	0.77	0.65	0.88	< 0.005	0.03	0.01	0.04	0.02	< 0.005	0.03	—	148	148	0.01	< 0.005	0.04	149

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.63	1.38	11.9	15.5	0.03	0.50	0.26	0.76	0.46	0.06	0.53	—	2,881	2,881	0.11	0.07	1.64	2,906
2025	1.53	68.8	11.1	15.3	0.03	0.44	0.26	0.70	0.40	0.06	0.46	—	2,874	2,874	0.11	0.07	1.59	2,898
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	5.19	4.35	90.0	36.1	0.33	1.85	19.8	21.4	1.74	10.1	11.6	—	31,840	31,840	0.29	3.97	1.07	33,032
2025	1.51	1.27	11.1	14.7	0.03	0.44	0.26	0.70	0.40	0.06	0.46	—	2,850	2,850	0.11	0.07	0.04	2,874
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.61	1.36	16.4	13.4	0.04	0.53	2.00	2.53	0.49	0.76	1.25	—	4,586	4,586	0.10	0.38	1.92	4,704
2025	0.49	4.22	3.55	4.81	0.01	0.14	0.08	0.22	0.13	0.02	0.15	—	894	894	0.03	0.02	0.21	901
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.29	0.25	2.98	2.44	0.01	0.10	0.37	0.46	0.09	0.14	0.23	—	759	759	0.02	0.06	0.32	779

2025	0.09	0.77	0.65	0.88	< 0.005	0.03	0.01	0.04	0.02	< 0.005	0.03	—	148	148	0.01	< 0.005	0.04	149

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	24.3	24.2	24.4	154	0.23	0.42	17.7	18.1	0.40	4.52	4.92	114	25,035	25,149	46.1	1.49	114	26,859
Mit.	24.3	24.2	24.4	154	0.23	0.42	17.7	18.1	0.40	4.52	4.92	114	25,035	25,149	46.1	1.49	114	26,859
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	20.8	20.7	27.5	132	0.22	0.41	17.7	18.1	0.39	4.52	4.92	114	23,391	23,504	46.3	1.61	15.9	25,155
Mit.	20.8	20.7	27.5	132	0.22	0.41	17.7	18.1	0.39	4.52	4.92	114	23,391	23,504	46.3	1.61	15.9	25,155
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	21.3	21.2	26.6	133	0.22	0.41	17.5	17.9	0.40	4.46	4.86	114	23,769	23,883	46.2	1.56	56.6	25,560
Mit.	21.3	21.2	26.6	133	0.22	0.41	17.5	17.9	0.40	4.46	4.86	114	23,769	23,883	46.2	1.56	56.6	25,560
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.89	3.87	4.85	24.3	0.04	0.08	3.19	3.27	0.07	0.81	0.89	18.8	3,935	3,954	7.65	0.26	9.38	4,232
Mit.	3.89	3.87	4.85	24.3	0.04	0.08	3.19	3.27	0.07	0.81	0.89	18.8	3,935	3,954	7.65	0.26	9.38	4,232

% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	23.9	22.4	23.8	151	0.23	0.36	17.7	18.1	0.35	4.52	4.87	—	23,390	23,390	1.26	1.40	100	23,939
Area	0.40	1.86	0.02	2.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.18	9.18	< 0.005	< 0.005	—	9.21
Energy	0.07	0.03	0.62	0.52	< 0.005	0.05	—	0.05	0.05	—	0.05	—	1,336	1,336	0.16	0.01	—	1,344
Water	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
Waste	—	—	—	—	—	—	—	—	—	—	—	77.8	0.00	77.8	7.77	0.00	—	272
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	13.3
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	266	266	—	—	—	266
Total	24.3	24.2	24.4	154	0.23	0.42	17.7	18.1	0.40	4.52	4.92	114	25,035	25,149	46.1	1.49	114	26,859
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	20.7	19.1	26.9	131	0.21	0.37	17.7	18.1	0.35	4.52	4.87	—	21,754	21,754	1.42	1.51	2.60	22,244
Area	—	1.49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.07	0.03	0.62	0.52	< 0.005	0.05	—	0.05	0.05	—	0.05	—	1,336	1,336	0.16	0.01	—	1,344
Water	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
Waste	—	—	—	—	—	—	—	—	—	—	—	77.8	0.00	77.8	7.77	0.00	—	272
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	13.3
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	266	266	—	—	—	266
Total	20.8	20.7	27.5	132	0.22	0.41	17.7	18.1	0.39	4.52	4.92	114	23,391	23,504	46.3	1.61	15.9	25,155

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	21.0	19.5	25.9	132	0.22	0.36	17.5	17.8	0.35	4.46	4.81	—	22,129	22,129	1.34	1.47	43.4	22,644
Area	0.20	1.68	0.01	1.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.53	4.53	< 0.005	< 0.005	—	4.54
Energy	0.07	0.03	0.62	0.52	< 0.005	0.05	—	0.05	0.05	—	0.05	—	1,336	1,336	0.16	0.01	—	1,344
Water	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
Waste	—	—	—	—	—	—	—	—	—	—	—	77.8	0.00	77.8	7.77	0.00	—	272
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	13.3
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	266	266	—	—	—	266
Total	21.3	21.2	26.6	133	0.22	0.41	17.5	17.9	0.40	4.46	4.86	114	23,769	23,883	46.2	1.56	56.6	25,560
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.84	3.56	4.74	24.0	0.04	0.07	3.19	3.26	0.06	0.81	0.88	—	3,664	3,664	0.22	0.24	7.18	3,749
Area	0.04	0.31	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.75	0.75	< 0.005	< 0.005	—	0.75
Energy	0.01	0.01	0.11	0.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	221	221	0.03	< 0.005	—	222
Water	—	—	—	—	—	—	—	—	—	—	—	5.94	5.65	11.6	6.11	0.01	—	168
Waste	—	—	—	—	—	—	—	—	—	—	—	12.9	0.00	12.9	1.29	0.00	—	45.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.20	2.20
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	44.1	44.1	—	—	—	44.1
Total	3.89	3.87	4.85	24.3	0.04	0.08	3.19	3.27	0.07	0.81	0.89	18.8	3,935	3,954	7.65	0.26	9.38	4,232

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	23.9	22.4	23.8	151	0.23	0.36	17.7	18.1	0.35	4.52	4.87	—	23,390	23,390	1.26	1.40	100	23,939

Area	0.40	1.86	0.02	2.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.18	9.18	< 0.005	< 0.005	—	9.21
Energy	0.07	0.03	0.62	0.52	< 0.005	0.05	—	0.05	0.05	—	0.05	—	1,336	1,336	0.16	0.01	—	1,344
Water	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
Waste	—	—	—	—	—	—	—	—	—	—	—	77.8	0.00	77.8	7.77	0.00	—	272
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	13.3
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	266	266	—	—	—	266
Total	24.3	24.2	24.4	154	0.23	0.42	17.7	18.1	0.40	4.52	4.92	114	25,035	25,149	46.1	1.49	114	26,859
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	20.7	19.1	26.9	131	0.21	0.37	17.7	18.1	0.35	4.52	4.87	—	21,754	21,754	1.42	1.51	2.60	22,244
Area	—	1.49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.07	0.03	0.62	0.52	< 0.005	0.05	—	0.05	0.05	—	0.05	—	1,336	1,336	0.16	0.01	—	1,344
Water	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
Waste	—	—	—	—	—	—	—	—	—	—	—	77.8	0.00	77.8	7.77	0.00	—	272
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	13.3
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	266	266	—	—	—	266
Total	20.8	20.7	27.5	132	0.22	0.41	17.7	18.1	0.39	4.52	4.92	114	23,391	23,504	46.3	1.61	15.9	25,155
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	21.0	19.5	25.9	132	0.22	0.36	17.5	17.8	0.35	4.46	4.81	—	22,129	22,129	1.34	1.47	43.4	22,644
Area	0.20	1.68	0.01	1.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.53	4.53	< 0.005	< 0.005	—	4.54
Energy	0.07	0.03	0.62	0.52	< 0.005	0.05	—	0.05	0.05	—	0.05	—	1,336	1,336	0.16	0.01	—	1,344
Water	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
Waste	—	—	—	—	—	—	—	—	—	—	—	77.8	0.00	77.8	7.77	0.00	—	272
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	13.3
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	266	266	—	—	—	266

Total	21.3	21.2	26.6	133	0.22	0.41	17.5	17.9	0.40	4.46	4.86	114	23,769	23,883	46.2	1.56	56.6	25,560
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.84	3.56	4.74	24.0	0.04	0.07	3.19	3.26	0.06	0.81	0.88	—	3,664	3,664	0.22	0.24	7.18	3,749
Area	0.04	0.31	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.75	0.75	< 0.005	< 0.005	—	0.75
Energy	0.01	0.01	0.11	0.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	221	221	0.03	< 0.005	—	222
Water	—	—	—	—	—	—	—	—	—	—	—	5.94	5.65	11.6	6.11	0.01	—	168
Waste	—	—	—	—	—	—	—	—	—	—	—	12.9	0.00	12.9	1.29	0.00	—	45.0
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.20	2.20
Vegetation	—	—	—	—	—	—	—	—	—	—	—	—	44.1	44.1	—	—	—	44.1
Total	3.89	3.87	4.85	24.3	0.04	0.08	3.19	3.27	0.07	0.81	0.89	18.8	3,935	3,954	7.65	0.26	9.38	4,232

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	23.9	22.4	23.8	151	0.23	0.36	17.7	18.1	0.35	4.52	4.87	—	23,390	23,390	1.26	1.40	100	23,939
High Turnover (Sit Down Restaurant)	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	0.00

Fast Food Restaurant w/o Drive Thru	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	0.00
User Defined Commercial	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	0.00
Parking Lot	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	0.00
Total	23.9	22.4	23.8	151	0.23	0.36	17.7	18.1	0.35	4.52	4.87	—	23,390	23,390	1.26	1.40	100	23,939
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	20.7	19.1	26.9	131	0.21	0.37	17.7	18.1	0.35	4.52	4.87	—	21,754	21,754	1.42	1.51	2.60	22,244
High Turnover (Sit Down Restaurant)	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	0.00
Fast Food Restaurant w/o Drive Thru	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	0.00
User Defined Commercial	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	0.00
Parking Lot	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	0.00
Total	20.7	19.1	26.9	131	0.21	0.37	17.7	18.1	0.35	4.52	4.87	—	21,754	21,754	1.42	1.51	2.60	22,244
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	3.84	3.56	4.74	24.0	0.04	0.07	3.19	3.26	0.06	0.81	0.88	—	3,664	3,664	0.22	0.24	7.18	3,749

High Turnover (Sit Down Restaurant)	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	0.00
Fast Food Restaurant w/o Drive Thru	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	0.00
User Defined Commercial	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	0.00
Parking Lot	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	0.00
Total	3.84	3.56	4.74	24.0	0.04	0.07	3.19	3.26	0.06	0.81	0.88	—	3,664	3,664	0.22	0.24	7.18	3,749

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	23.9	22.4	23.8	151	0.23	0.36	17.7	18.1	0.35	4.52	4.87	—	23,390	23,390	1.26	1.40	100	23,939
High Turnover (Sit Down Restaurant)	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	0.00
Fast Food Restaurant w/o Drive Thru	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	0.00

User Defined Commercial	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	0.00
Parking Lot	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	0.00
Total	23.9	22.4	23.8	151	0.23	0.36	17.7	18.1	0.35	4.52	4.87	—	23,390	23,390	1.26	1.40	100	23,939
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	20.7	19.1	26.9	131	0.21	0.37	17.7	18.1	0.35	4.52	4.87	—	21,754	21,754	1.42	1.51	2.60	22,244
High Turnover (Sit Down Restaurant)	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	0.00
Fast Food Restaurant w/o Drive Thru	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	0.00
User Defined Commercial	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	0.00
Parking Lot	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	0.00
Total	20.7	19.1	26.9	131	0.21	0.37	17.7	18.1	0.35	4.52	4.87	—	21,754	21,754	1.42	1.51	2.60	22,244
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	3.84	3.56	4.74	24.0	0.04	0.07	3.19	3.26	0.06	0.81	0.88	—	3,664	3,664	0.22	0.24	7.18	3,749
High Turnover (Sit Down Restaurant)	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	0.00

Fast Food Restaurant w/o Drive Thru	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	0.00
User Defined Commercial	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	0.00
Parking Lot	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	0.00
Total	3.84	3.56	4.74	24.0	0.04	0.07	3.19	3.26	0.06	0.81	0.88	—	3,664	3,664	0.22	0.24	7.18	3,749

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	273	273	0.04	0.01	—	276
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	90.5	90.5	0.01	< 0.005	—	91.4
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	100	100	0.02	< 0.005	—	101

User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	129	129	0.02	< 0.005	—	130
Total	—	—	—	—	—	—	—	—	—	—	—	—	592	592	0.10	0.01	—	598
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	273	273	0.04	0.01	—	276
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	90.5	90.5	0.01	< 0.005	—	91.4
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	100	100	0.02	< 0.005	—	101
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	129	129	0.02	< 0.005	—	130
Total	—	—	—	—	—	—	—	—	—	—	—	—	592	592	0.10	0.01	—	598
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	45.2	45.2	0.01	< 0.005	—	45.6
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	15.0	15.0	< 0.005	< 0.005	—	15.1

Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	16.6	16.6	< 0.005	< 0.005	—	16.7
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	21.4	21.4	< 0.005	< 0.005	—	21.6
Total	—	—	—	—	—	—	—	—	—	—	—	—	98.1	98.1	0.02	< 0.005	—	99.0

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	273	273	0.04	0.01	—	276
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	90.5	90.5	0.01	< 0.005	—	91.4
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	100	100	0.02	< 0.005	—	101
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	129	129	0.02	< 0.005	—	130
Total	—	—	—	—	—	—	—	—	—	—	—	—	592	592	0.10	0.01	—	598
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	273	273	0.04	0.01	—	276
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	90.5	90.5	0.01	< 0.005	—	91.4
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	100	100	0.02	< 0.005	—	101
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	129	129	0.02	< 0.005	—	130
Total	—	—	—	—	—	—	—	—	—	—	—	—	592	592	0.10	0.01	—	598
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	45.2	45.2	0.01	< 0.005	—	45.6
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	15.0	15.0	< 0.005	< 0.005	—	15.1

Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	16.6	16.6	< 0.005	< 0.005	—	16.7
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	21.4	21.4	< 0.005	< 0.005	—	21.6
Total	—	—	—	—	—	—	—	—	—	—	—	—	98.1	98.1	0.02	< 0.005	—	99.0

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.04	0.02	0.35	0.29	< 0.005	0.03	—	0.03	0.03	—	0.03	—	412	412	0.04	< 0.005	—	413
High Turnover (Sit Down Restaurant)	0.01	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	158	158	0.01	< 0.005	—	158
Fast Food Restaurant w/o Drive Thru	0.02	0.01	0.15	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	174	174	0.02	< 0.005	—	175
User Defined Commercial	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

Parking Lot	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
Total	0.07	0.03	0.62	0.52	< 0.005	0.05	—	0.05	0.05	—	0.05	—	743	743	0.07	< 0.005	—	745
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.04	0.02	0.35	0.29	< 0.005	0.03	—	0.03	0.03	—	0.03	—	412	412	0.04	< 0.005	—	413
High Turnover (Sit Down Restaurant)	0.01	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	158	158	0.01	< 0.005	—	158
Fast Food Restaurant w/o Drive Thru	0.02	0.01	0.15	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	174	174	0.02	< 0.005	—	175
User Defined Commercial	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
Parking Lot	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
Total	0.07	0.03	0.62	0.52	< 0.005	0.05	—	0.05	0.05	—	0.05	—	743	743	0.07	< 0.005	—	745
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	68.2	68.2	0.01	< 0.005	—	68.4
High Turnover (Sit Down Restaurant)	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.1	26.1	< 0.005	< 0.005	—	26.2

Fast Food Restaurant w/o Drive Thru	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.8	28.8	< 0.005	< 0.005	—	28.9
User Defined Commercial	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
Parking Lot	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
Total	0.01	0.01	0.11	0.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	123	123	0.01	< 0.005	—	123

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.04	0.02	0.35	0.29	< 0.005	0.03	—	0.03	0.03	—	0.03	—	412	412	0.04	< 0.005	—	413
High Turnover (Sit Down Restaurant)	0.01	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	158	158	0.01	< 0.005	—	158
Fast Food Restaurant w/o Drive Thru	0.02	0.01	0.15	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	174	174	0.02	< 0.005	—	175
User Defined Commercial	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

Parking Lot	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
Total	0.07	0.03	0.62	0.52	< 0.005	0.05	—	0.05	0.05	—	0.05	—	743	743	0.07	< 0.005	—	745
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.04	0.02	0.35	0.29	< 0.005	0.03	—	0.03	0.03	—	0.03	—	412	412	0.04	< 0.005	—	413
High Turnover (Sit Down Restaurant)	0.01	0.01	0.13	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	158	158	0.01	< 0.005	—	158
Fast Food Restaurant w/o Drive Thru	0.02	0.01	0.15	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	174	174	0.02	< 0.005	—	175
User Defined Commercial	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
Parking Lot	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
Total	0.07	0.03	0.62	0.52	< 0.005	0.05	—	0.05	0.05	—	0.05	—	743	743	0.07	< 0.005	—	745
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	0.01	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	68.2	68.2	0.01	< 0.005	—	68.4
High Turnover (Sit Down Restaurant)	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.1	26.1	< 0.005	< 0.005	—	26.2

Fast Food Restaurant w/o Drive Thru	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	28.8	28.8	< 0.005	< 0.005	—	28.9
User Defined Commercial	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
Parking Lot	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
Total	0.01	0.01	0.11	0.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	123	123	0.01	< 0.005	—	123

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.40	0.37	0.02	2.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.18	9.18	< 0.005	< 0.005	—	9.21
Total	0.40	1.86	0.02	2.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.18	9.18	< 0.005	< 0.005	—	9.21
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consum Products	—	1.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	1.49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	0.03	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.75	0.75	< 0.005	< 0.005	—	0.75
Total	0.04	0.31	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.75	0.75	< 0.005	< 0.005	—	0.75

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipment	0.40	0.37	0.02	2.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.18	9.18	< 0.005	< 0.005	—	9.21
Total	0.40	1.86	0.02	2.23	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.18	9.18	< 0.005	< 0.005	—	9.21
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	1.49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	0.03	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.75	0.75	< 0.005	< 0.005	—	0.75
Total	0.04	0.31	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.75	0.75	< 0.005	< 0.005	—	0.75

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	5.94	5.65	11.6	6.11	0.01	—	168
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	5.94	5.65	11.6	6.11	0.01	—	168

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	35.9	34.1	70.0	36.9	0.08	—	1,016
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	5.94	5.65	11.6	6.11	0.01	—	168
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	5.94	5.65	11.6	6.11	0.01	—	168

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	49.9
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	25.9	0.00	25.9	2.59	0.00	—	90.5
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	27.7	0.00	27.7	2.77	0.00	—	96.8
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	9.97	0.00	9.97	1.00	0.00	—	34.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	77.8	0.00	77.8	7.77	0.00	—	272
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	49.9
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	25.9	0.00	25.9	2.59	0.00	—	90.5
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	27.7	0.00	27.7	2.77	0.00	—	96.8
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	9.97	0.00	9.97	1.00	0.00	—	34.9

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	77.8	0.00	77.8	7.77	0.00	—	272
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	2.36	0.00	2.36	0.24	0.00	—	8.26
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	4.28	0.00	4.28	0.43	0.00	—	15.0
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	4.58	0.00	4.58	0.46	0.00	—	16.0
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	1.65	0.00	1.65	0.16	0.00	—	5.77
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	12.9	0.00	12.9	1.29	0.00	—	45.0

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	49.9

High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	25.9	0.00	25.9	2.59	0.00	—	90.5
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	27.7	0.00	27.7	2.77	0.00	—	96.8
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	9.97	0.00	9.97	1.00	0.00	—	34.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	77.8	0.00	77.8	7.77	0.00	—	272
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	14.3	0.00	14.3	1.43	0.00	—	49.9
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	25.9	0.00	25.9	2.59	0.00	—	90.5
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	27.7	0.00	27.7	2.77	0.00	—	96.8
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	9.97	0.00	9.97	1.00	0.00	—	34.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	77.8	0.00	77.8	7.77	0.00	—	272

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	2.36	0.00	2.36	0.24	0.00	—	8.26
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	4.28	0.00	4.28	0.43	0.00	—	15.0
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	4.58	0.00	4.58	0.46	0.00	—	16.0
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	1.65	0.00	1.65	0.16	0.00	—	5.77
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	12.9	0.00	12.9	1.29	0.00	—	45.0

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.31	6.31

Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.97	6.97
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	13.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.31	6.31
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.97	6.97
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	13.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.04	1.04

Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.15	1.15
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.20	2.20

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.31	6.31
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.97	6.97
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	13.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.31	6.31
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.97	6.97
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	13.3	13.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
High Turnover (Sit Down Restaurant)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.04	1.04
Fast Food Restaurant w/o Drive Thru	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.15	1.15
User Defined Recreational	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
User Defined Commercial	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.20	2.20

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grazing	—	—	—	—	—	—	—	—	—	—	—	—	56.7	56.7	—	—	—	56.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	56.7	56.7	—	—	—	56.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grazing	—	—	—	—	—	—	—	—	—	—	—	—	56.7	56.7	—	—	—	56.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	56.7	56.7	—	—	—	56.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grazing	—	—	—	—	—	—	—	—	—	—	—	—	9.38	9.38	—	—	—	9.38
Total	—	—	—	—	—	—	—	—	—	—	—	—	9.38	9.38	—	—	—	9.38

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shrubland	—	—	—	—	—	—	—	—	—	—	—	—	210	210	—	—	—	210
Total	—	—	—	—	—	—	—	—	—	—	—	—	210	210	—	—	—	210
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shrubland	—	—	—	—	—	—	—	—	—	—	—	—	210	210	—	—	—	210
Total	—	—	—	—	—	—	—	—	—	—	—	—	210	210	—	—	—	210
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shrubland	—	—	—	—	—	—	—	—	—	—	—	—	34.7	34.7	—	—	—	34.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	34.7	34.7	—	—	—	34.7

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetatio	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grazing	—	—	—	—	—	—	—	—	—	—	—	—	56.7	56.7	—	—	—	56.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	56.7	56.7	—	—	—	56.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grazing	—	—	—	—	—	—	—	—	—	—	—	—	56.7	56.7	—	—	—	56.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	56.7	56.7	—	—	—	56.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grazing	—	—	—	—	—	—	—	—	—	—	—	—	9.38	9.38	—	—	—	9.38
Total	—	—	—	—	—	—	—	—	—	—	—	—	9.38	9.38	—	—	—	9.38

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shrubland	—	—	—	—	—	—	—	—	—	—	—	—	210	210	—	—	—	210
Total	—	—	—	—	—	—	—	—	—	—	—	—	210	210	—	—	—	210
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shrubland	—	—	—	—	—	—	—	—	—	—	—	—	210	210	—	—	—	210
Total	—	—	—	—	—	—	—	—	—	—	—	—	210	210	—	—	—	210

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Shrubland	—	—	—	—	—	—	—	—	—	—	—	—	34.7	34.7	—	—	—	34.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	34.7	34.7	—	—	—	34.7

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2024	1/29/2024	5.00	20.0	—
Site Preparation	Site Preparation	1/30/2024	2/13/2024	5.00	10.0	—
Grading	Grading	2/14/2024	3/27/2024	5.00	30.0	—
Building Construction	Building Construction	3/28/2024	5/22/2025	5.00	300	—
Paving	Paving	5/23/2025	6/20/2025	5.00	20.0	—
Architectural Coating	Architectural Coating	6/21/2025	7/19/2025	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38

Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	14.1	LDA,LDT1,LDT2
Demolition	Vendor	—	8.98	HHDT,MHDT

Demolition	Hauling	13.0	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	14.1	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.98	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	14.1	LDA,LDT1,LDT2
Grading	Vendor	—	8.98	HHDT,MHDT
Grading	Hauling	300	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	19.8	14.1	LDA,LDT1,LDT2
Building Construction	Vendor	8.41	8.98	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	14.1	LDA,LDT1,LDT2
Paving	Vendor	—	8.98	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	3.96	14.1	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.98	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	14.1	LDA,LDT1,LDT2
Demolition	Vendor	—	8.98	HHDT,MHDT
Demolition	Hauling	13.0	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	14.1	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.98	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	14.1	LDA,LDT1,LDT2
Grading	Vendor	—	8.98	HHDT,MHDT
Grading	Hauling	300	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	19.8	14.1	LDA,LDT1,LDT2
Building Construction	Vendor	8.41	8.98	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	14.1	LDA,LDT1,LDT2
Paving	Vendor	—	8.98	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT

Architectural Coating	—	—	—	—
Architectural Coating	Worker	3.96	14.1	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.98	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	76,965	25,655	15,807

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	22,526	—
Site Preparation	—	—	15.0	0.00	—
Grading	36,009	36,042	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	6.05

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Recreational	0.00	0%
High Turnover (Sit Down Restaurant)	0.00	0%
Fast Food Restaurant w/o Drive Thru	0.00	0%
User Defined Commercial	0.00	0%
Parking Lot	6.05	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
User Defined Recreational	2,475	2,475	2,475	903,515	24,676	24,676	24,676	9,006,649
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Commercial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
User Defined Recreational	2,475	2,475	2,475	903,515	24,676	24,676	24,676	9,006,649
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fast Food Restaurant w/o Drive Thru	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User Defined Commercial	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	76,965	25,655	15,807

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00

Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO_2 and CH_4 and N_2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defined Recreational	488,171	204	0.0330	0.0040	1,284,660
High Turnover (Sit Down Restaurant)	161,980	204	0.0330	0.0040	491,546
Fast Food Restaurant w/o Drive Thru	178,965	204	0.0330	0.0040	543,089
User Defined Commercial	0.00	204	0.0330	0.0040	0.00
Parking Lot	230,783	204	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO_2 and CH_4 and N_2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defined Recreational	488,171	204	0.0330	0.0040	1,284,660
High Turnover (Sit Down Restaurant)	161,980	204	0.0330	0.0040	491,546
Fast Food Restaurant w/o Drive Thru	178,965	204	0.0330	0.0040	543,089
User Defined Commercial	0.00	204	0.0330	0.0040	0.00
Parking Lot	230,783	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
User Defined Recreational	16,790,000	3,650,000
High Turnover (Sit Down Restaurant)	0.00	0.00
Fast Food Restaurant w/o Drive Thru	0.00	0.00
User Defined Commercial	0.00	0.00
Parking Lot	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
User Defined Recreational	16,790,000	3,650,000
High Turnover (Sit Down Restaurant)	0.00	0.00
Fast Food Restaurant w/o Drive Thru	0.00	0.00
User Defined Commercial	0.00	0.00
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Recreational	26.5	—
High Turnover (Sit Down Restaurant)	48.0	—
Fast Food Restaurant w/o Drive Thru	51.3	—
User Defined Commercial	18.5	—
Parking Lot	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Recreational	26.5	—
High Turnover (Sit Down Restaurant)	48.0	—
Fast Food Restaurant w/o Drive Thru	51.3	—
User Defined Commercial	18.5	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High Turnover (Sit Down Restaurant)	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
High Turnover (Sit Down Restaurant)	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Fast Food Restaurant w/o Drive Thru	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Fast Food Restaurant w/o Drive Thru	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Fast Food Restaurant w/o Drive Thru	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
User Defined Recreational	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	0.04	0.04	18.0
User Defined Commercial	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	0.04	0.04	18.0
User Defined Commercial	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	0.01	0.00	1.00

User Defined Recreational	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	0.01	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
High Turnover (Sit Down Restaurant)	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
High Turnover (Sit Down Restaurant)	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
High Turnover (Sit Down Restaurant)	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Fast Food Restaurant w/o Drive Thru	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Fast Food Restaurant w/o Drive Thru	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Fast Food Restaurant w/o Drive Thru	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
User Defined Recreational	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	0.04	0.04	18.0
User Defined Commercial	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	0.04	0.04	18.0
User Defined Commercial	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	0.01	0.00	1.00
User Defined Recreational	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	0.01	0.00	1.00

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
Grazing	Entisols	13.2	0.00

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
Grazing	Entisols	13.2	0.00

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
Shrubland	13.2	0.00

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres
Shrubland	13.2	0.00

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Land Use	site specific information. Recreational user defined is casino floor, commercial user defined is back of house. High turnover is bar and fast food is cafe. It was assumed all acreage to the first land use and parking. Assumed 2 acres of landscaping.
Operations: Vehicle Data	used the traffic report ADT of 2475. Assumed all trips were primary trips since this is a destination.
Operations: Energy Use	Used data from EIA 2018 CBECS study for Other Public Assembly 11.4kWh/sqft and kbtu/sqft and combined casino and back of floor square footage. Others are default. Used T24 and NonT24 from Movie theater for casino splits.
Operations: Water and Waste Water	Based on estimate of 46,000 gpd inside and 10,000 gpd exterior. Project is building membrane bioreactor and will process solids offsite. Recycled water will be used which is assumed to be up to 17,000 gpd. Water is allocated to first land use but includes all from project.
Operations: Solid Waste	Estimated casino similar to regional shopping center.
Operations: Refrigerants	Added other commercial A/C heat pumps and stand alone refrigeration at rates similar to shopping center.

Amador Hotel Custom Report

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4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Amador Hotel
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	21.2
Location	38.46655475780352, -120.85385747969197
County	Amador
City	Plymouth
Air District	Amador County APCD
Air Basin	Mountain Counties
TAZ	3003
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Hotel	46.0	Room	1.53	22,526	0.20	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.74	4.12	3.73	23.6	0.04	0.07	2.63	2.70	0.07	0.67	0.74	15.8	3,787	3,803	1.81	0.22	50.1	3,962
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.10	3.48	4.19	19.6	0.03	0.07	2.63	2.70	0.07	0.67	0.74	15.8	3,540	3,556	1.83	0.23	35.6	3,706
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.23	3.61	4.05	20.2	0.03	0.07	2.60	2.67	0.07	0.66	0.73	15.8	3,598	3,613	1.82	0.23	41.7	3,768
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.59	0.66	0.74	3.68	0.01	0.01	0.47	0.49	0.01	0.12	0.13	2.62	596	598	0.30	0.04	6.90	624

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	3.54	3.32	3.53	22.5	0.03	0.05	2.63	2.69	0.05	0.67	0.72	—	3,473	3,473	0.19	0.21	14.9	3,554
Area	0.17	0.79	0.01	0.98	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.03	4.03	< 0.005	< 0.005	—	4.04
Energy	0.02	0.01	0.19	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	308	308	0.03	< 0.005	—	309
Water	—	—	—	—	—	—	—	—	—	—	—	2.24	2.13	4.36	0.23	0.01	—	11.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.6	0.00	13.6	1.36	0.00	—	47.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35.2	35.2
Total	3.74	4.12	3.73	23.6	0.04	0.07	2.63	2.70	0.07	0.67	0.74	15.8	3,787	3,803	1.81	0.22	50.1	3,962
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.08	2.84	4.00	19.5	0.03	0.05	2.63	2.69	0.05	0.67	0.72	—	3,230	3,230	0.21	0.22	0.39	3,303
Area	—	0.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.02	0.01	0.19	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	308	308	0.03	< 0.005	—	309
Water	—	—	—	—	—	—	—	—	—	—	—	2.24	2.13	4.36	0.23	0.01	—	11.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.6	0.00	13.6	1.36	0.00	—	47.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35.2	35.2
Total	3.10	3.48	4.19	19.6	0.03	0.07	2.63	2.70	0.07	0.67	0.74	15.8	3,540	3,556	1.83	0.23	35.6	3,706
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.12	2.90	3.85	19.5	0.03	0.05	2.60	2.65	0.05	0.66	0.71	—	3,286	3,286	0.20	0.22	6.44	3,362
Area	0.09	0.70	< 0.005	0.48	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.99	1.99	< 0.005	< 0.005	—	1.99
Energy	0.02	0.01	0.19	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	308	308	0.03	< 0.005	—	309
Water	—	—	—	—	—	—	—	—	—	—	—	2.24	2.13	4.36	0.23	0.01	—	11.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.6	0.00	13.6	1.36	0.00	—	47.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35.2	35.2
Total	3.23	3.61	4.05	20.2	0.03	0.07	2.60	2.67	0.07	0.66	0.73	15.8	3,598	3,613	1.82	0.23	41.7	3,768
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.57	0.53	0.70	3.56	0.01	0.01	0.47	0.48	0.01	0.12	0.13	—	544	544	0.03	0.04	1.07	557
Area	0.02	0.13	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.33	0.33	< 0.005	< 0.005	—	0.33

Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	51.0	51.0	0.01	< 0.005	—	51.2
Water	—	—	—	—	—	—	—	—	—	—	—	0.37	0.35	0.72	0.04	< 0.005	—	1.94
Waste	—	—	—	—	—	—	—	—	—	—	—	2.25	0.00	2.25	0.22	0.00	—	7.86
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.83	5.83
Total	0.59	0.66	0.74	3.68	0.01	0.01	0.47	0.49	0.01	0.12	0.13	2.62	596	598	0.30	0.04	6.90	624

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	3.54	3.32	3.53	22.5	0.03	0.05	2.63	2.69	0.05	0.67	0.72	—	3,473	3,473	0.19	0.21	14.9	3,554
Total	3.54	3.32	3.53	22.5	0.03	0.05	2.63	2.69	0.05	0.67	0.72	—	3,473	3,473	0.19	0.21	14.9	3,554
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	3.08	2.84	4.00	19.5	0.03	0.05	2.63	2.69	0.05	0.67	0.72	—	3,230	3,230	0.21	0.22	0.39	3,303
Total	3.08	2.84	4.00	19.5	0.03	0.05	2.63	2.69	0.05	0.67	0.72	—	3,230	3,230	0.21	0.22	0.39	3,303
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	0.57	0.53	0.70	3.56	0.01	0.01	0.47	0.48	0.01	0.12	0.13	—	544	544	0.03	0.04	1.07	557
Total	0.57	0.53	0.70	3.56	0.01	0.01	0.47	0.48	0.01	0.12	0.13	—	544	544	0.03	0.04	1.07	557

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	77.1	77.1	0.01	< 0.005	—	77.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	77.1	77.1	0.01	< 0.005	—	77.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	77.1	77.1	0.01	< 0.005	—	77.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	77.1	77.1	0.01	< 0.005	—	77.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	12.8	12.8	< 0.005	< 0.005	—	12.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	12.8	12.8	< 0.005	< 0.005	—	12.9

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	0.02	0.01	0.19	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	231	231	0.02	< 0.005	—	231
Total	0.02	0.01	0.19	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	231	231	0.02	< 0.005	—	231
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Hotel	0.02	0.01	0.19	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	231	231	0.02	< 0.005	—	231
Total	0.02	0.01	0.19	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	231	231	0.02	< 0.005	—	231
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.2	38.2	< 0.005	< 0.005	—	38.3
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.2	38.2	< 0.005	< 0.005	—	38.3

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.17	0.16	0.01	0.98	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.03	4.03	< 0.005	< 0.005	—	4.04
Total	0.17	0.79	0.01	0.98	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.03	4.03	< 0.005	< 0.005	—	4.04
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	—	0.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.09	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.01	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.33	0.33	< 0.005	< 0.005	—	0.33
Total	0.02	0.13	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.33	0.33	< 0.005	< 0.005	—	0.33

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	2.24	2.13	4.36	0.23	0.01	—	11.7
Total	—	—	—	—	—	—	—	—	—	—	—	2.24	2.13	4.36	0.23	0.01	—	11.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	2.24	2.13	4.36	0.23	0.01	—	11.7
Total	—	—	—	—	—	—	—	—	—	—	—	2.24	2.13	4.36	0.23	0.01	—	11.7

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	0.37	0.35	0.72	0.04	< 0.005	—	1.94
Total	—	—	—	—	—	—	—	—	—	—	—	0.37	0.35	0.72	0.04	< 0.005	—	1.94

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	13.6	0.00	13.6	1.36	0.00	—	47.5
Total	—	—	—	—	—	—	—	—	—	—	—	13.6	0.00	13.6	1.36	0.00	—	47.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	13.6	0.00	13.6	1.36	0.00	—	47.5
Total	—	—	—	—	—	—	—	—	—	—	—	13.6	0.00	13.6	1.36	0.00	—	47.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	2.25	0.00	2.25	0.22	0.00	—	7.86
Total	—	—	—	—	—	—	—	—	—	—	—	2.25	0.00	2.25	0.22	0.00	—	7.86

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35.2	35.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35.2	35.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35.2	35.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	35.2	35.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.83	5.83
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5.83	5.83

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Hotel	368	368	368	134,152	3,664	3,664	3,664	1,337,290

5.10. Operational Area Sources

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	33,789	11,263	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Hotel	138,041	204	0.0330	0.0040	719,863

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Hotel	1,166,871	2.38

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Hotel	25.2	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Hotel	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Hotel	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Hotel	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

8. User Changes to Default Data

Screen	Justification
Land Use	This is the hotel to be demolished as part of the project. This is to determine emissions that will be netted out.
Operations: Vehicle Data	Value adjusted to match traffic study ADT

APPENDIX B

BIOLOGICAL RESOURCES DOCUMENTS

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: December 06, 2023
Project Code: 2024-0023851
Project Name: IONE PLYMOUTH CASINO PROJECT

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service (fws.gov).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2024-0023851
Project Name: IONE PLYMOUTH CASINO PROJECT
Project Type: Commercial Development
Project Description: Casino Project
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.46561625,-120.85052905125497,14z

Counties: Amador County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

REPTILES

NAME	STATUS
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
Foothill Yellow-legged Frog *Rana boylii* Population: South Sierra Distinct Population Segment (South Sierra DPS) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5133	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Ione Band of Miwok Indians of California
Name: Cedrick Villasenor
Address: 1801 7th Street, Suite 100
City: Sacramento
State: CA
Zip: 95811
Email cvillasenor@montrose-env.com
Phone: 9164473479

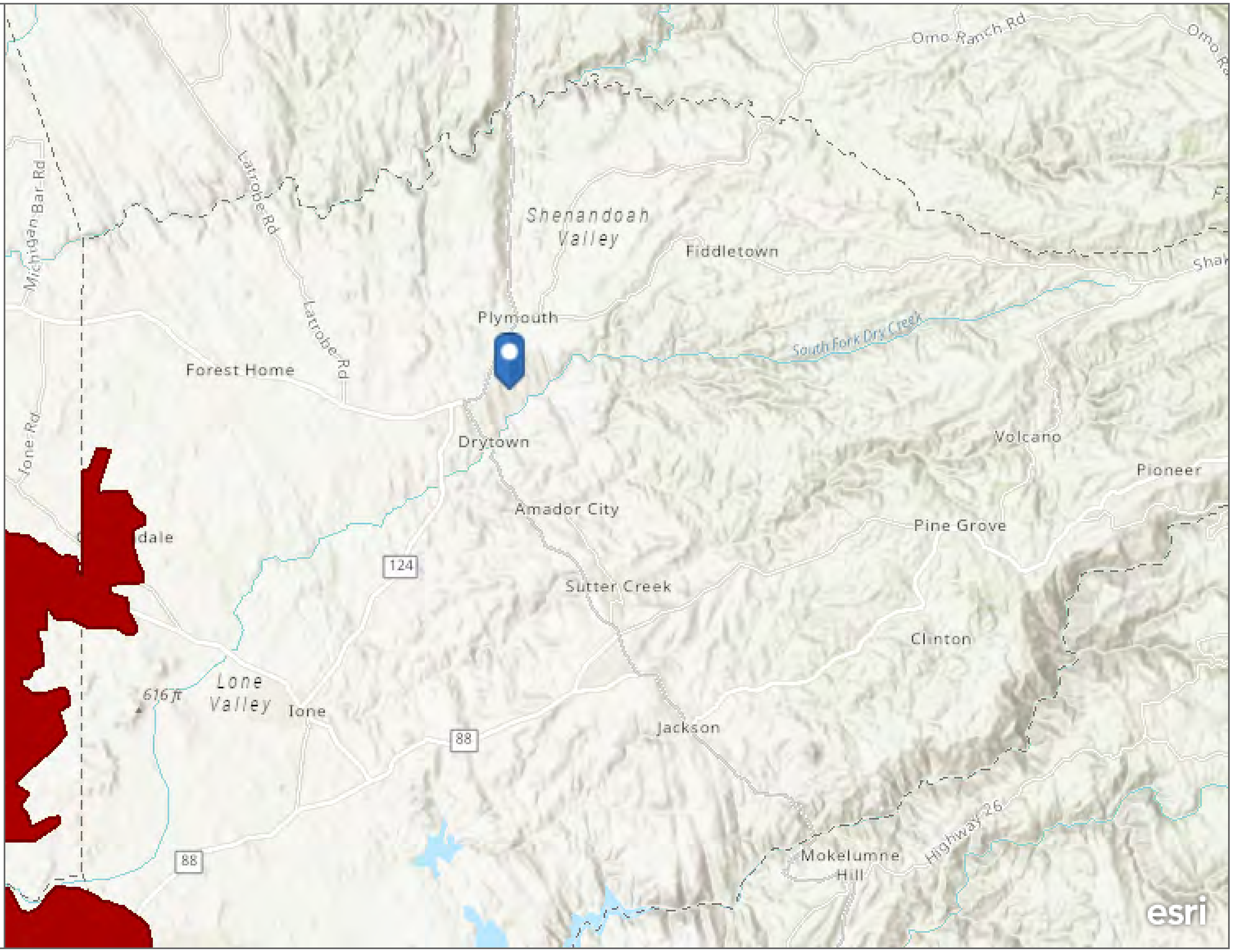
My Map

USFWS_Critical_Habitat - Critical Habitat - Polygon Features - Final

USFWS_Critical_Habitat - Critical Habitat - Linear Features - Final

USFWS_Critical_Habitat - Critical Habitat - Polygon Features - Proposed

USFWS_Critical_Habitat - Critical Habitat - Linear Features - Proposed



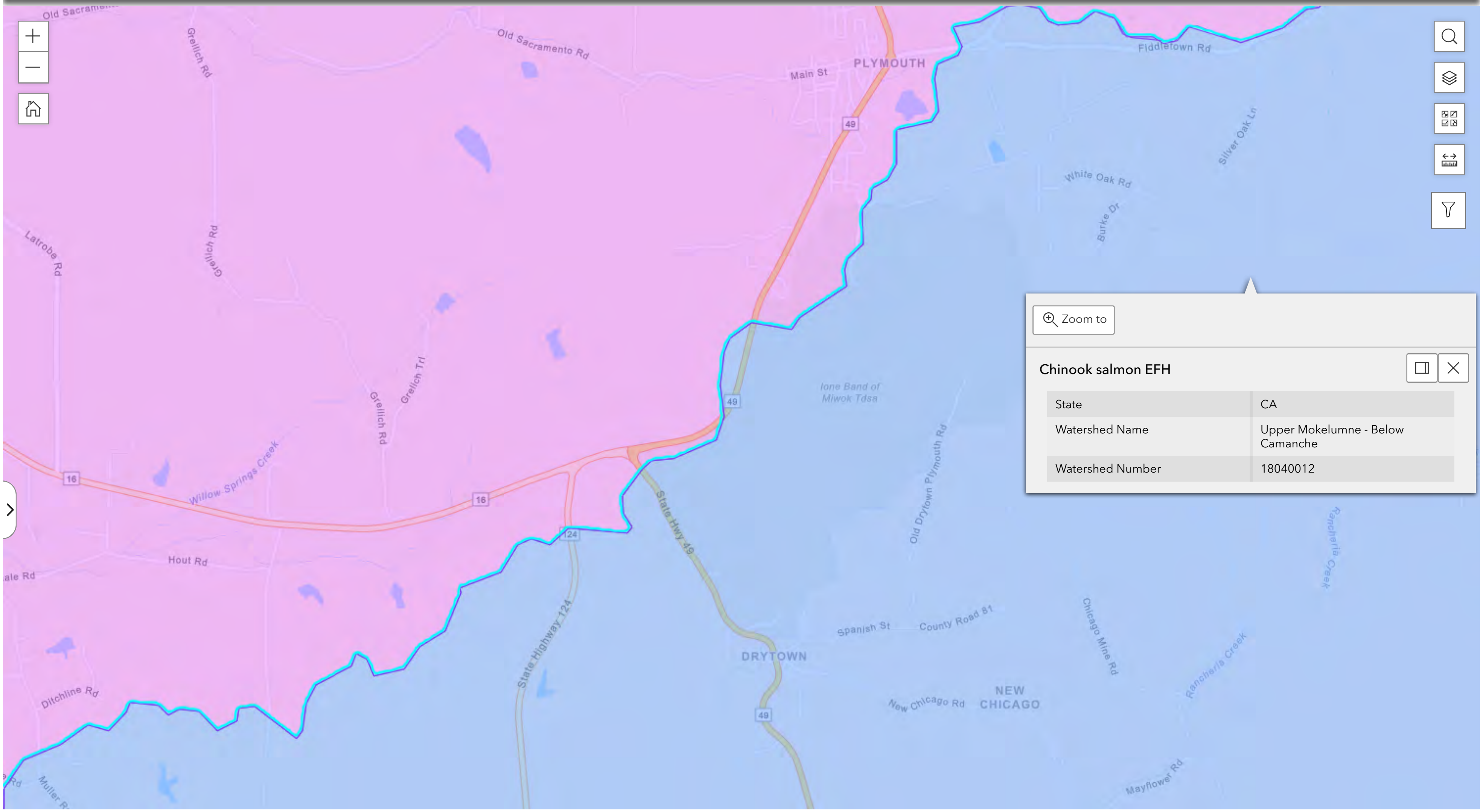
Esri, NASA, NGA, USGS | California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA

NOAA FISHERIES
National Oceanic and Atmospheric Administration

QR code Share link

☰ MENU

Essential Fish Habitat Mapper



Zoom to

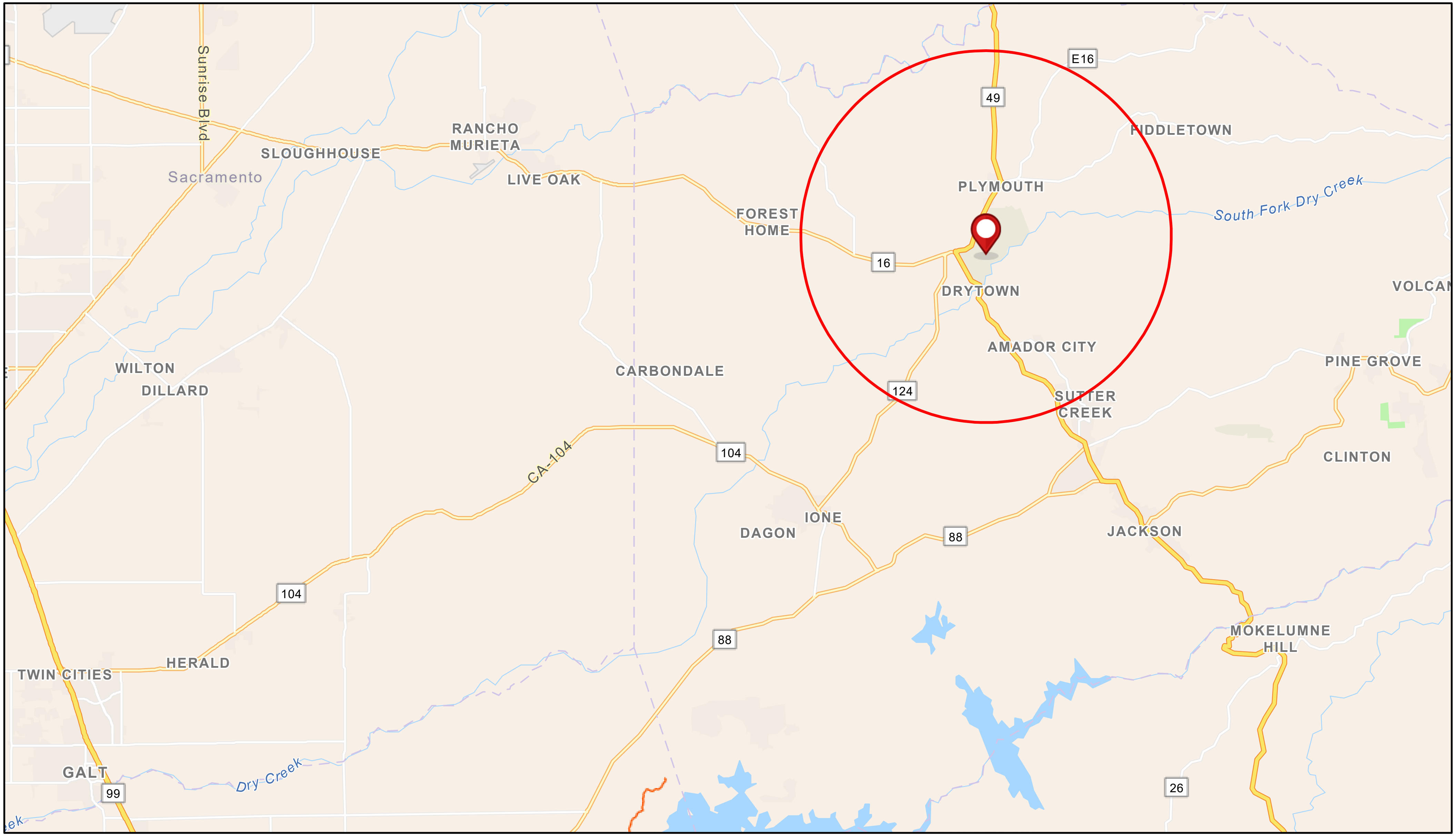
Chinook salmon EFH

State	CA
Watershed Name	Upper Mokelumne - Below Camanche
Watershed Number	18040012

0.6 km
0.4 mi

California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Ce… Powered by Esri

NMFS ESA Critical Habitat Mapper



12/6/2023, 4:17:37 PM

All_critical_habitat_line_20220404

1:288,895

0 2 4 8 mi

0 3 6 12 km

California State Parks, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, NOAA National Marine Fisheries Service

NOAA Fisheries

NOAA National Marine Fisheries Service | National Marine Fisheries Service | California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA |

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Fiddletown (3812057) OR Latrobe (3812058) OR Aukum (3812056) OR Irish Hill (3812048) OR Amador City (3812047) OR Pine Grove (3812046) OR Ione (3812038) OR Jackson (3812037) OR Mokelumne Hill (3812036))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAA01181	***Ambystoma californiense pop. 1*** California tiger salamander - central California DPS	Threatened	Threatened	G2G3T3	S3	WL
AAABH01022	***Rana draytonii*** California red-legged frog	Threatened	None	G2G3	S2S3	SSC
AAABH01055	***Rana boylii pop. 5*** foothill yellow-legged frog - south Sierra DPS	Endangered	Endangered	G3T2	S2	
ABNGA04010	***Ardea herodias*** great blue heron	None	None	G5	S4	
ABNSB12040	***Strix nebulosa*** great gray owl	None	Endangered	G5	S1	
ABPBXB0020	***Agelaius tricolor*** tricolored blackbird	None	Threatened	G1G2	S2	SSC
AMACC08010	***Corynorhinus townsendii*** Townsend's big-eared bat	None	None	G4	S2	SSC
AMACC10010	***Antrozous pallidus*** pallid bat	None	None	G4	S3	SSC
AMAFJ01010	***Erethizon dorsatum*** North American porcupine	None	None	G5	S3	
ARAAD02030	***Emys marmorata*** western pond turtle	Proposed Threatened	None	G3G4	S3	SSC
CARA2443CA	***Central Valley Drainage Hardhead/Squawfish Stream*** Central Valley Drainage Hardhead/Squawfish Stream	None	None	GNR	SNR	
CTT37D00CA	***Ione Chaparral*** Ione Chaparral	None	None	G1	S1.1	
ICMAL05460	***Stygobromus gradyi*** Grady's Cave amphipod	None	None	G1	S1	
ICMAL05920	***Stygobromus grahami*** Graham's Cave amphipod	None	None	G2	S2	
IICOL48011	***Desmocerus californicus dimorphus*** valley elderberry longhorn beetle	Threatened	None	G3T3	S3	
IICOL55040	***Hydroporus leechi*** Leech's skyline diving beetle	None	None	G1?	S2S3	
IIHYM24260	***Bombus pensylvanicus*** American bumble bee	None	None	G3G4	S2	
IIHYM24480	***Bombus crotchii*** Crotch bumble bee	None	Candidate Endangered	G2	S2	
IIHYM72010	***Chrysis tularensis*** Tulare cuckoo wasp	None	None	G1G2	S2	

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
IIPLE23020	***Cosumnoperla hypocrena*** Cosumnes stripetail	None	None	G2	S2	
ILARA14080	***Banksula rudolphi*** Rudolph's cave harvestman	None	None	G1	S1	
PDAPI0Z0P0	***Eryngium pinnatisectum*** Tuolumne button-celery	None	None	G2	S2	1B.2
PDAST11061	***Balsamorhiza macrolepis*** big-scale balsamroot	None	None	G2	S2	1B.2
PDCIS020F0	***Crocanthemum suffrutescens*** Bisbee Peak rush-rose	None	None	G2?Q	S2?	3.2
PDERI04240	***Arctostaphylos myrtifolia*** Ione manzanita	Threatened	None	G1	S1	1B.2
PDONA05053	***Clarkia biloba ssp. brandegeeae*** Brandegee's clarkia	None	None	G4G5T4	S4	4.2
PDPGN080F1	***Eriogonum apricum var. apricum*** Ione buckwheat	Endangered	Endangered	G2T1	S1	1B.1
PDPGN080F2	***Eriogonum apricum var. prostratum*** Irish Hill buckwheat	Endangered	Endangered	G2T1	S1	1B.1
PDPHR01130	***Erythranthe marmorata*** Stanislaus monkeyflower	None	None	G2?	S2?	1B.1
PDPLM0C0X1	***Navarretia myersii ssp. myersii*** pincushion navarretia	None	None	G2T2	S2	1B.1
PDROS0W0C0	***Horkelia parryi*** Parry's horkelia	None	None	G2	S2	1B.2
PMLIL0G020	***Chlorogalum grandiflorum*** Red Hills soaproot	None	None	G3	S3	1B.2
PMPOA5T030	***Sphenopholis obtusata*** prairie wedge grass	None	None	G5	S2	2B.2

Record Count: 33

CNPS Rare Plant Inventory

CALIFORNIA NATIVE PLANT SOCIETY

Search Results

23 matches found. Click on scientific name for details

Search Criteria: Quad is one of [3812058:3812057:3812056:3812048:3812046:3812038:3812037:3812036]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	OTHER STATUS
Arctostaphylos myrtifolia	Ione manzanita	Ericaceae	FT	None	G1	S1	1B.2	SB_UCBG
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	None	None	G2	S2	1B.2	BLM_S; USFS_S
Bryum chryseum	brassy bryum	Bryaceae	None	None	G5	S3	4.3	
Chlorogalum grandiflorum	Red Hills soaproot	Agavaceae	None	None	G3	S3	1B.2	BLM_S; SB_SBBG
Clarkia biloba ssp. brandegeeae	Brandegee's clarkia	Onagraceae	None	None	G4G5T4	S4	4.2	SB_UCSC
Clarkia virgata	Sierra clarkia	Onagraceae	None	None	G3	S3	4.3	SB_CalBG/RSABG
Claytonia parviflora ssp. grandiflora	streambank spring beauty	Montiaceae	None	None	G5T3	S3	4.2	
Crocanthemum suffrutescens	Bisbee Peak rush-rose	Cistaceae	None	None	G2?Q	S2?	3.2	
Eriogonum apricum var. apricum	Ione buckwheat	Polygonaceae	FE	CE	G2T1	S1	1B.1	SB_UCBG
Eriogonum apricum var. prostratum	Irish Hill buckwheat	Polygonaceae	FE	CE	G2T1	S1	1B.1	
Eriogonum tripodum	tripod buckwheat	Polygonaceae	None	None	G4	S4	4.2	USFS_S
Eriophyllum confertiflorum var. tanacetiflorum	tansy-flowered woolly sunflower	Asteraceae	None	None	G5T2?Q	S2?	4.3	SB_CalBG/RSABG
Eryngium pinnatisectum	Tuolumne button-celery	Apiaceae	None	None	G2	S2	1B.2	SB_UCSC
Erythranthe inconspicua	small-flowered monkeyflower	Phrymaceae	None	None	G4	S4	4.3	
Erythranthe marmorata	Stanislaus monkeyflower	Phrymaceae	None	None	G2?	S2?	1B.1	
Githopsis pulchella ssp. serpentinicola	serpentine bluecup	Campanulaceae	None	None	G4T3	S3	4.3	
Horkelia parryi	Parry's horkelia	Rosaceae	None	None	G2	S2	1B.2	BLM_S; USFS_S
Jepsonia heterandra	foothill jepsonia	Saxifragaceae	None	None	G3	S3	4.3	
Lilium humboldtii ssp. humboldtii	Humboldt lily	Liliaceae	None	None	G4T3	S3	4.2	SB_UCSC
Navarretia myersii ssp. myersii	pincushion navarretia	Polemoniaceae	None	None	G2T2	S2	1B.1	
Perideridia bacigalupii	Bacigalupi's yampah	Apiaceae	None	None	G3	S3	4.2	
Sphenopholis obtusata	prairie wedge grass	Poaceae	None	None	G5	S2	2B.2	
Trichostema rubisepalum	Hernandez bluecurls	Lamiaceae	None	None	G4	S4	4.3	SB_CalBG/RSABG

Showing 1 to 23 of 23 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 7 December 2023].

U.S. Fish and Wildlife Service

National Wetlands Inventory

Ione Band of Miwok

December 19, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

APPENDIX C

PRELIMINARY DRAINAGE ANALYSIS

TECHNICAL MEMORANDUM

TO:	Jai Singh, PE
FROM:	Donald Jones, PE
DATE:	January 9, 2024
SUBJECT:	Preliminary Drainage Analysis
PROJECT:	Miwok Casino

BEN|EN
TRUSTED ENGINEERING ADVISORS

Bennett Engineering Services
1082 Sunrise Avenue, Suite 100
Roseville, California 95661
T 916.783.4100
F 916.783.4110
www.ben-en.com

Project Description

This Technical Memorandum (TM) assesses the drainage effects of constructing a Casino Development on the east side of State Route 49 south of the City of Plymouth, California. This commercial facility will be located as shown in Figure 1, Site Plan. The project location drains primarily to the north where it is tributary to Little Indian Creek. The portion that currently drains southerly contributes to Dry Creek. The development of the Casino site will increase the amount of runoff moving both north to Little Indian Creek and south to Dry Creek. A large area west of SR 49 also contributes runoff to both the north and south.

The limits of the drainage areas were chosen to compare peak flows in both the existing, developed, and proposed conditions. The Existing Condition analysis includes establishing a “baseline” condition to determine peak flows leaving the project site and combining with other offsite areas. The Developed Condition scenario includes the proposed improvements to allow a comparison with the existing conditions. The Proposed Condition includes adding two stormwater treatment and detention ponds (extended detention) that will provide detention storage that reduce peak flows to less than the Existing Condition.

The intent of this memorandum is to detail the necessary improvements to mitigate increases in runoff due to the construction of the improvements necessary for the Casino. This includes verifying that the downstream hydraulic structures such as highway culverts are adequately sized to convey up to a 100-year peak flows. In addition, this report explores providing water quality treatment through post-construction Best Management Practices (BMP’s).

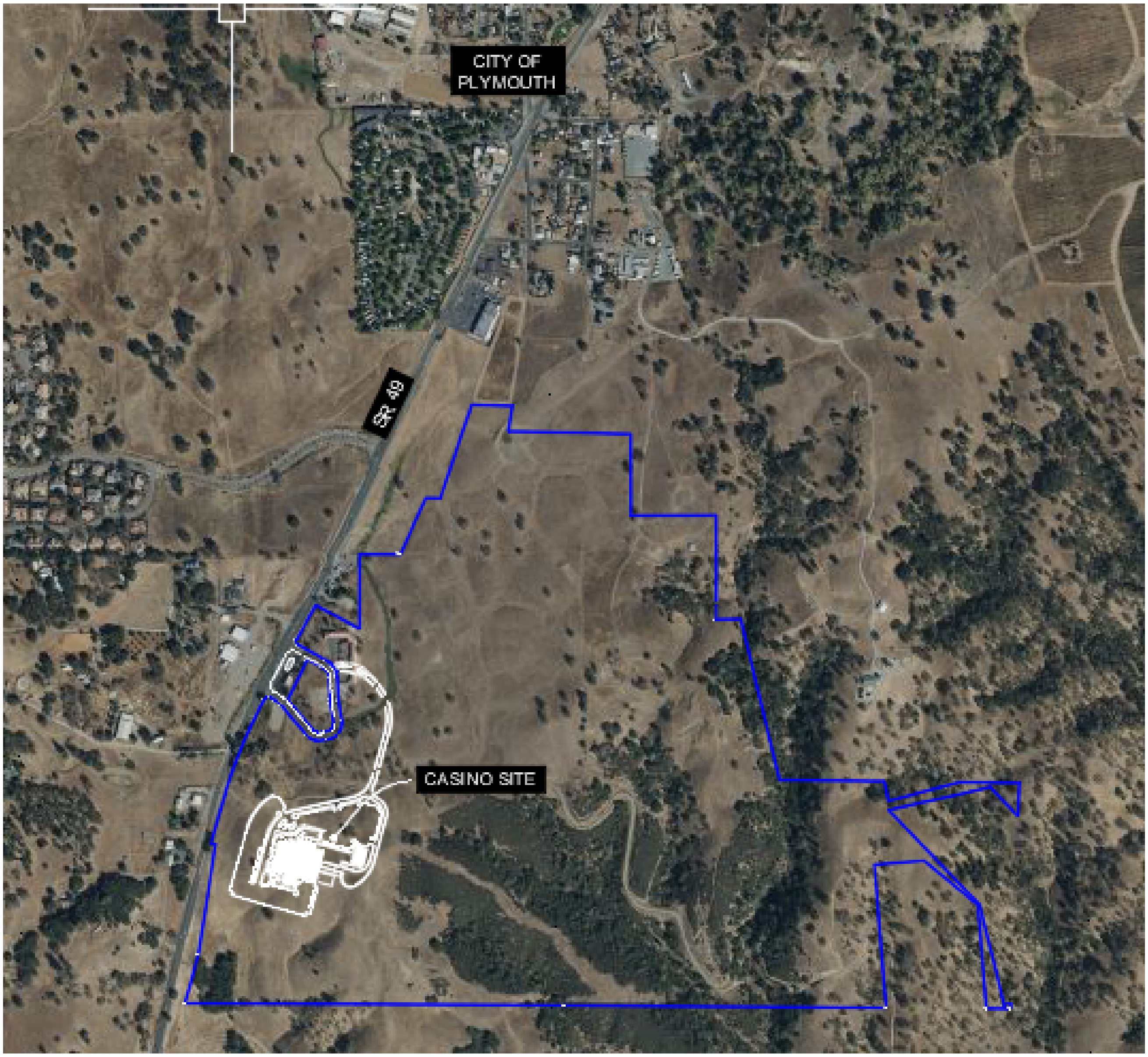


Figure 1. Site Plan

Hydrology

Figure 2, Existing Conditions Drainage Areas, shows the over 140-acre drainage area (project site) contributing to Little Indian Creek and the 8 acres contributing to Dry Creek. The development of the Casino site will increase the amount of runoff moving both north to Little Indian Creek and south to Dry Creek. A large area west of SR 49 also contributes runoff to both the north and south. As shown on Figure 2, Existing Conditions Drainage Areas, all subbasins flowing to Little Indian Creek are labeled 101, 102, 103, and 104. Those subbasins labeled 201, 202, and 203 flow south towards Dry Creek.

The drainage area delineation is based on a LiDAR dataset developed for the El Dorado National Forest in 2019 and made available by the United States Geologic Survey (USGS). This analysis is based on the horizontal datum of the California Coordinate System, Zone 2. The vertical datum used was the North American Vertical Datum of 1988 (NAVD 88).

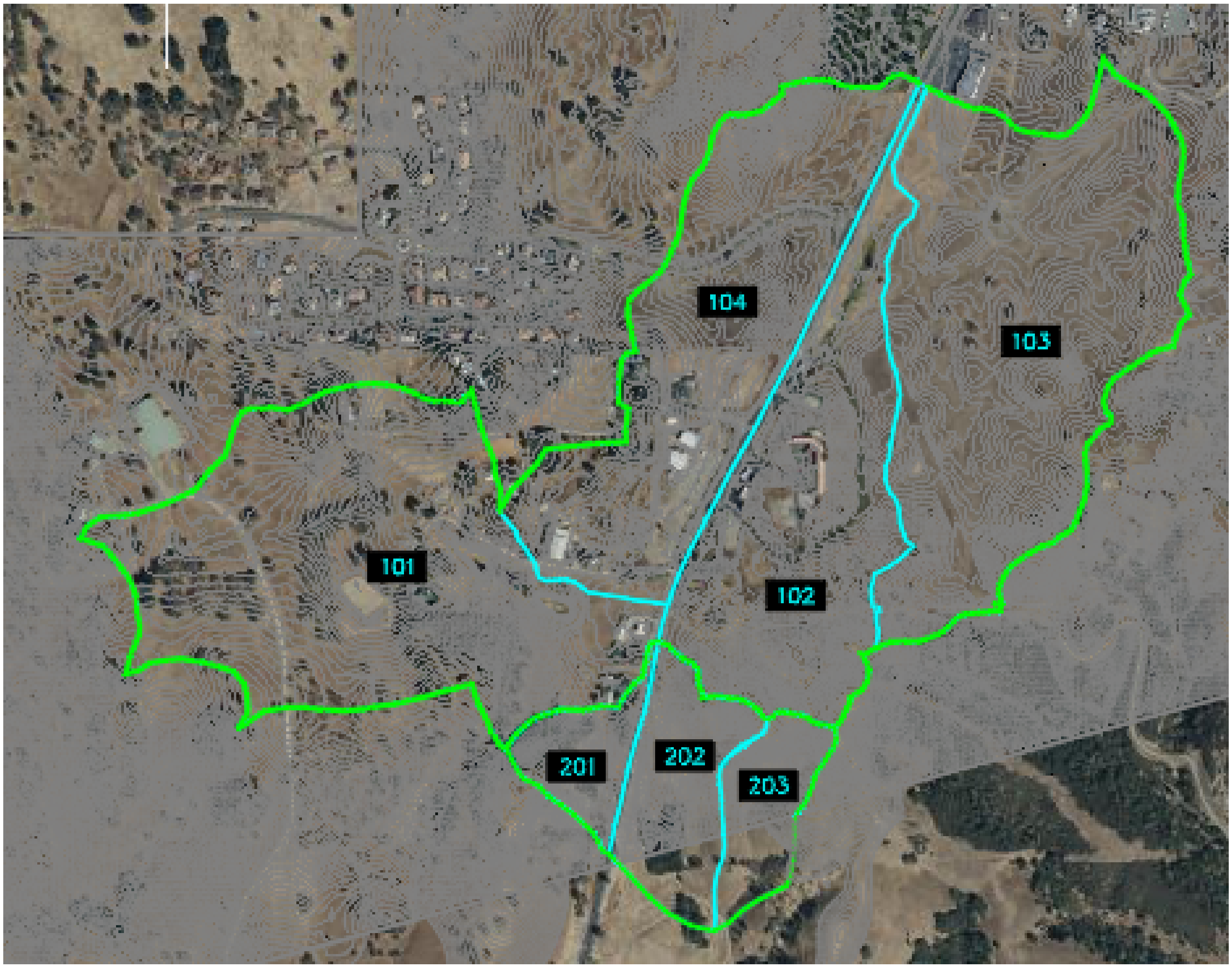


Figure 2. Existing Conditions Drainage Areas

The hydrologic model developed for this analysis utilized the United States Natural Resource Conservation Service's (NRCS) Technical Release 55, Urban Hydrology for Small Watersheds, manual for determining runoff. The United States Corps of Engineers' Hydrologic Modeling System (HEC-HMS Version 4.11 Beta 16) software program was used to analyze the existing drainage watershed and the planned impacts from the proposed project. Rainfall depths were established based on the National Oceanic and Atmospheric Administration's (NOAA) Atlas 14 and the use of a SCS Type 1 rainfall distribution. Table 1, Rainfall Depths, shows the rainfall depths for return periods from 2-year to 100-year.

Table 1. Rainfall Depths

Precipitation (in)	
100-yr/24-hr	5.53
50-yr/24-hr	5.02
25-yr/24-hr	4.51
10-yr/24-hr	3.83
2-yr/24-hr	2.68

Soils information was developed using the USGS Soil Survey website to determine hydrologic soil groups. Figure 3 shows the extent of soil types in the watershed. A composite runoff curve number (RCN) was chosen based on the hydrologic soils groups, vegetated cover type, and impervious surface amount.

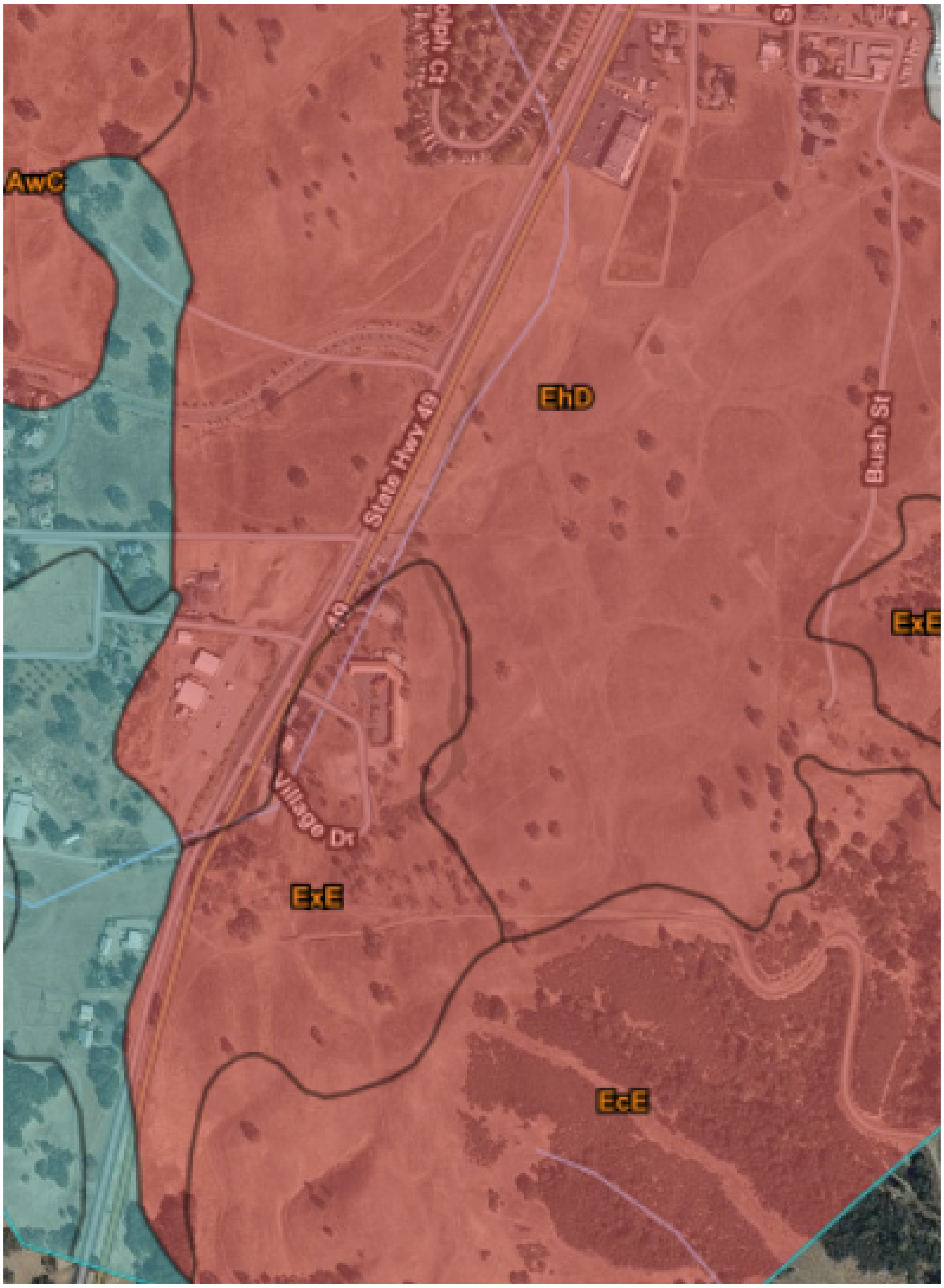


Figure 3. Hydrologic Group Soils Map

The rainfall to runoff transformation was based on determining a lag time for each catchment and applying a USGS TR-55 standard unit hydrograph. A complete list of inputs for this analysis is included in Table 2, Existing Conditions Hydrologic Model Inputs.

Table 2. Existing Conditions Hydrologic Model Inputs

Catchment	Area (acres)	Land Use	Hydrologic Soil Group	% Impervious	RCN	Lag Time (Minutes)
101	73.0	Rural with some Highway Commercial	D	2%	80	15.4
102	43.9	Rural with some Highway Commercial	D	8%	80	16.9
103	72.2	Rural	D	0%	80	14.9
104	53.0	Rural with some Highway Commercial	D	4%	80	24.3
201	7.5	Rural with some Highway Commercial	D	4%	80	11.3
202	14.5	Rural with some Highway Commercial	D	3%	80	8.8
203	9.1	Rural	D	0%	80	11.1

The existing conditions drainage catchments were updated to use in the Developed Conditions model as shown on Figure 4, Developed Conditions Drainage Areas.

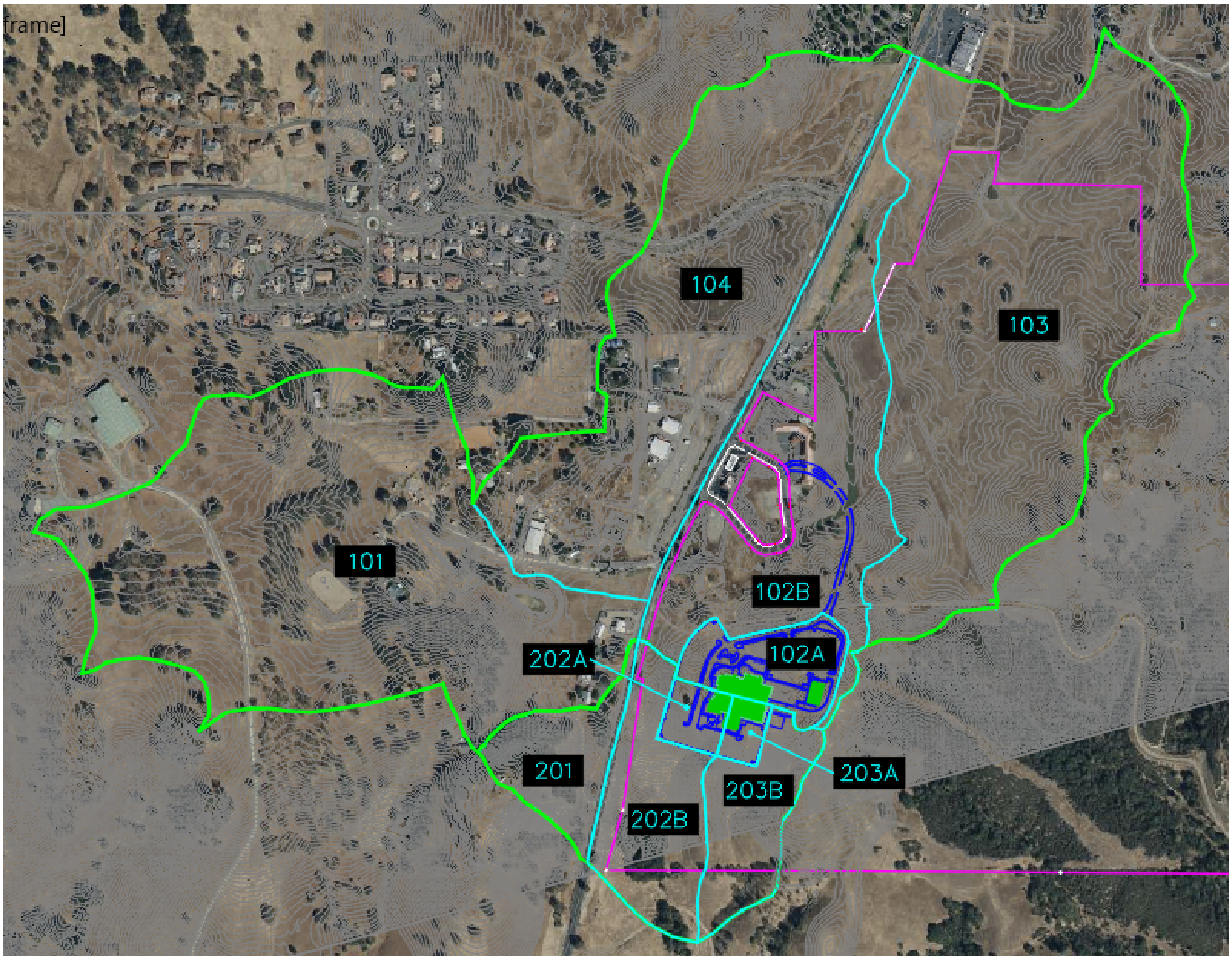


Figure 4. Developed Conditions Drainage Areas

The existing conditions drainage catchments, impervious surface delineation, and lag times were then updated to use in the Developed conditions model as shown in Table 3, Developed Conditions Model Inputs.

Table 3. Developed Conditions Hydrologic Model Inputs

Catchment	Area (acres)	Land Use	Hydrologic Soil Group	% Impervious	RCN	Lag Time (Minutes)
101	73.0	Rural with some Highway Commercial	D	2%	80	15.4
102A	6.8	Casino Site	D	90%	80	1.4
102B	36.5	Rural with some Highway Commercial	D	8%	80	16.9
103	72.2	Rural	D	0%	80	14.9
104	53.0	Rural with some Highway Commercial	D	4%	80	24.3

Catchment	Area (acres)	Land Use	Hydrologic Soil Group	% Impervious	RCN	Lag Time (Minutes)
201	7.5	Rural with some Highway Commercial	D	4%	80	11.3
202A	2.2	Casino Site	D	90%	80	1.5
202B	12.1	Rural with some Highway Commercial	D	3%	80	8.8
203A	1.4	Casino Site	D	90%	80	1.4
203B	8.5	Rural	D	0%	80	11.1

The comparison of existing versus developed shows an increase in the peak, 100-year events ranging from 3.0 cfs at the north end of the project (Junction 3) and 0.9 cfs at the south end of the project (Junction 2) as shown in Table 4, Hydrologic Model Results (without detention).

Table 4. Hydrologic Model Results (without detention)

Results Comparison				
	10-Year		100-Year	
Hydrologic Node	Existing	Developed	Existing	Developed
101	29.7	29.7	56.1	56.1
102	18.8	#N/A	34.5	#N/A
102A	#N/A	6.2	#N/A	9.1
102B	#N/A	15.5	#N/A	28.5
103	29.0	29.0	55.3	55.3
Junction-3	47.8	50.7	89.7	92.7
Reach-1	29.6	29.6	55.8	55.8
104	19.6	19.6	36.7	36.7
Junction-1	93.1	96.0	177.0	180.1
201	3.4	3.4	6.3	6.3
202	6.6	#N/A	12.3	#N/A
202A	#N/A	1.7	#N/A	2.5
202B	#N/A	5.5	#N/A	10.2
203	3.8	#N/A	7.2	#N/A
203A	#N/A	1.1	#N/A	1.7
203B	#N/A	3.5	#N/A	6.7
Junction-2	13.7	14.7	25.8	26.7

Note: Highlighted cells indicate an increase in peak flow due to planned improvements

To reduce peak flows at Junctions 2 and 3 two multi-purpose stormwater ponds were added as shown on Figure 5, Proposed Improvements. Each pond has storage for water quality in the form of an extended detention pond. The remaining pond capacity will be used to attenuate peak flows to at or less than under Existing Conditions. Table 5, Stormwater Ponds Stage-Storage-Discharge Inputs shows each proposed pond's design data for inclusion in the hydrology model.

Table 5. Stormwater Ponds Stage-Storage-Discharge Inputs

Proposed Stormwater Pond #1						
Elevation	Area		Volume	Cumulative Volume		Peak Out-Flow
(ft) NAVD88	(ft^2)	(Acres)	(ft^3)	(ft^3)	(Acre-Feet)	(cfs)
1087	3,416	0.078	-	-	0.000	0.0
1088	4,982	0.114	4,199	4,199	0.096	0.0
1089	6,826	0.157	5,904	10,103	0.232	0.0
1090	8,943	0.205	7,885	17,987	0.413	0.0
1090.5	10,140	0.233	4,771	22,758	0.522	0.5
1091	11,337	0.260	5,369	28,127	0.646	2.0
1092	14,284	0.328	12,811	40,938	0.940	6.0
Proposed Stormwater Pond #2						
Elevation	**Area**		**Volume**	**Cumulative Volume**		**Peak Out-Flow**
(ft) NAVD88	**(ft^2)**	**(Acres)**	**(ft^3)**	**(ft^3)**	**(Acre-Feet)**	**(cfs)**
1046	8,064	0.185	-	-	0.000	0.0
1047	9,550	0.219	8,807	8,807	0.202	0.0
1048	11,097	0.255	10,324	19,131	0.439	0.1
1049	12,707	0.292	11,902	31,033	0.712	0.2
1050	14,377	0.330	13,542	44,575	1.023	0.3
1051	16,109	0.370	15,243	59,818	1.373	0.4

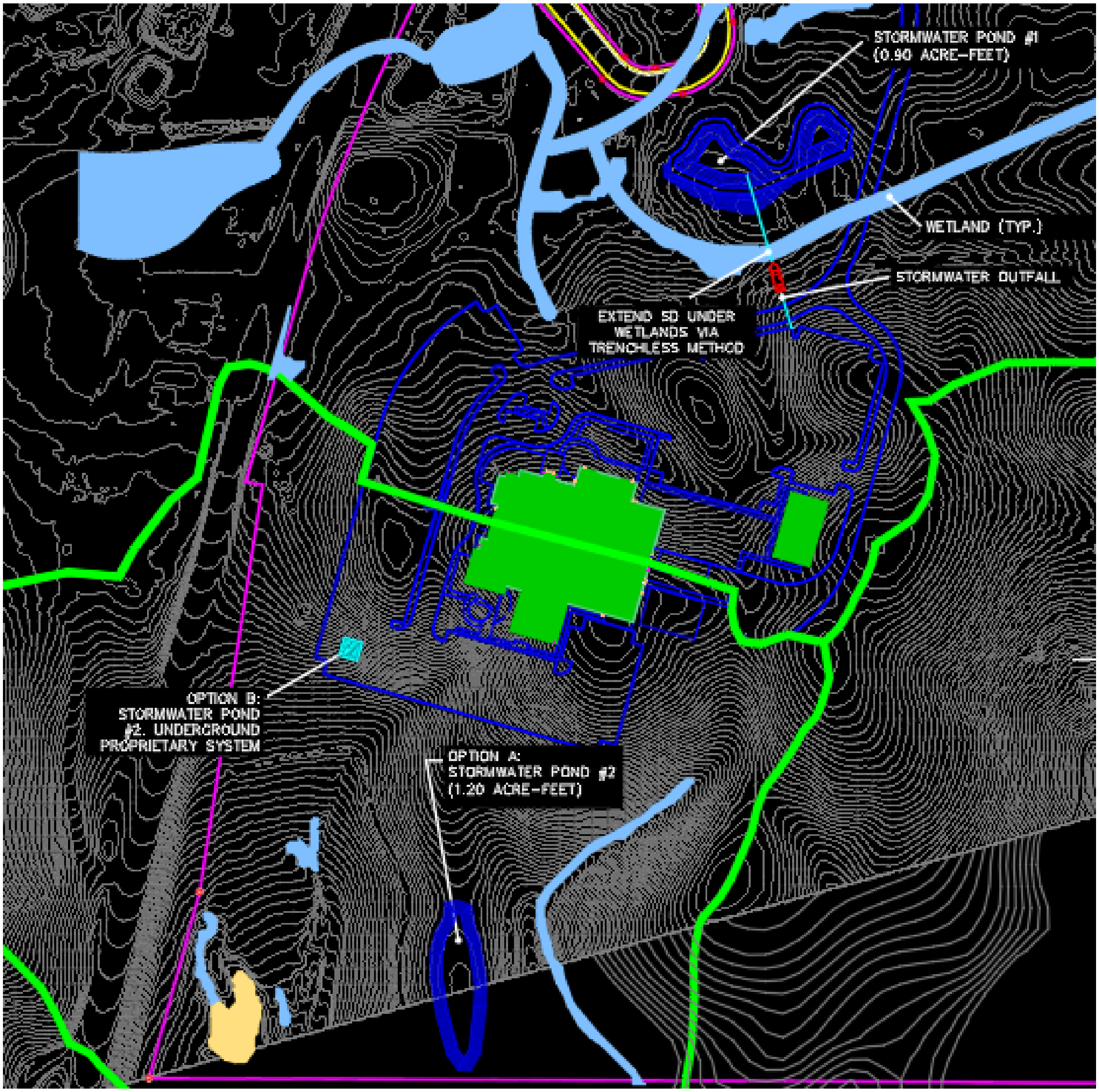


Figure 5. Proposed Improvements

The proposed conditions peak flows are shown in Table 6, Peak Flow Comparison (with detention). The peaks have been reduced at Junctions 2 and 3 to at or less than the existing conditions peak flows. The location of these ponds is based on locating them as near to the project location a possible to more efficiently reduce downstream peaks and provide water quality benefits.

The northerly pond (Pond #1) should be located at the northeast end of the site as shown in Figure 5, Proposed Improvements, which will place it near the receiving water body for the shed. The location is also best suited to avoid encroachment into adjacent wetlands. A storm drain pipe from the northeast corner of the site will convey drainage to the pond and will cross an existing wetland. To avoid disturbance of the wetland, the storm drain pipe should be bored underneath the wetlands. The pond is intended to be placed in excavation such that earthen berms are avoided. Should earthen berms be required, such embankments will be engineered in consultation with a Geotechnical Engineer.

The southerly pond (Pond #2) will be located down-hill from the site as shown. This location may be challenging from a constructability standpoint due to difficulties posed by excavating through rock, the remoteness of the location, and steep topography of the general area. As noted in Figure 5, Proposed Improvements, on-site underground proprietary systems are a viable alternative.

Table 6. Peak Flow Comparison (with detention)

Results Comparison				
	10-Year		100-Year	
Hydrologic Node	Existing	Proposed	Existing	Proposed
101	29.7	29.7	56.1	56.1
102	18.8	#N/A	34.5	#N/A
102A	#N/A	6.2	#N/A	9.1
102B	#N/A	15.5	#N/A	28.5
103	29.0	29.0	55.3	55.3
Junction-3	47.8	47.1	89.7	87.8
Reach-1	29.6	29.6	55.8	55.8
104	19.6	19.6	36.7	36.7
Junction-1	93.1	92.9	177.0	175.6
201	3.4	3.4	6.3	6.3
202	6.6	#N/A	12.3	#N/A
202A	#N/A	1.7	#N/A	2.5
202B	#N/A	5.5	#N/A	10.2
203	3.8	#N/A	7.2	#N/A
203A	#N/A	1.1	#N/A	1.7
203B	#N/A	3.5	#N/A	6.7
Junction-2	13.7	12.5	25.8	23.4

<u>Hydraulics</u>

To evaluate the existing SR 49 culvert crossing at the north end of the property a hydraulic model was developed using the Corps of Engineers' Hydraulic Engineering Center River Analysis System (HEC-RAS Version 6.3.1) software. A one-dimensional, steady state model was developed using the topographic information from the USGS. The existing culvert crossing of SR 49 is comprised of three 36-inch by 22-inch corrugated metal arch culverts as shown in Figure 6, Existing Culvert Crossing. This plan was provided by Caltrans as an As-Built Drawing.

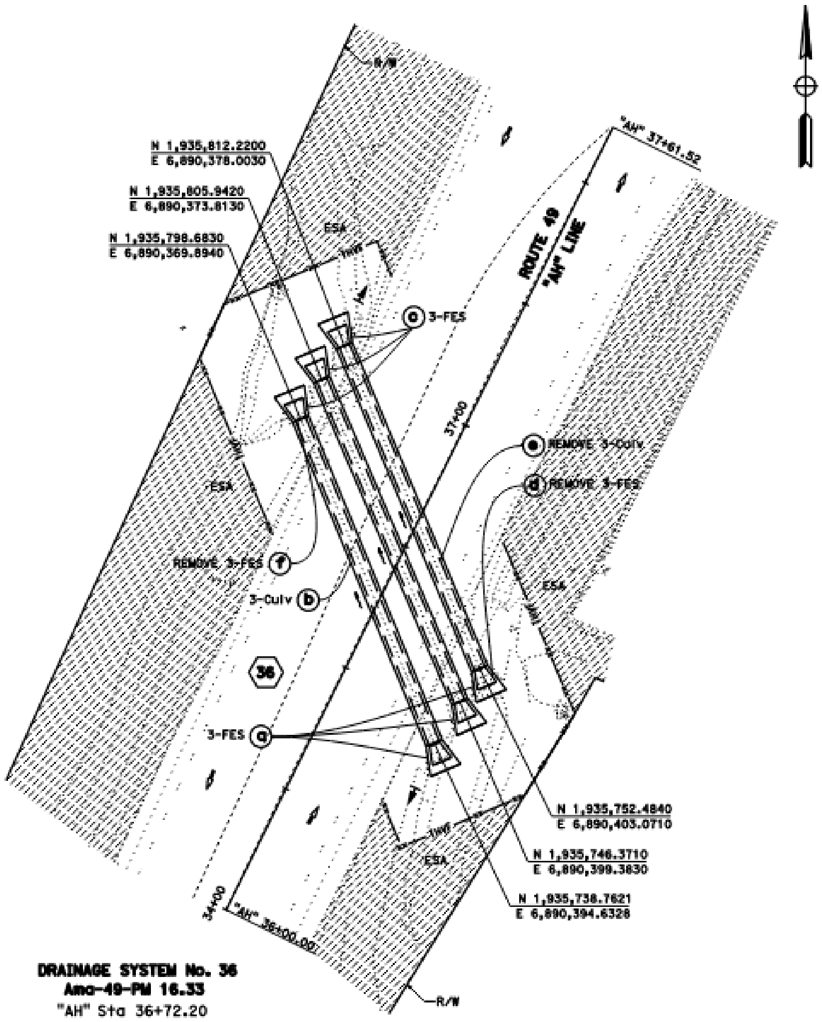


Figure 6. Existing Culvert Crossing

The existing culverts have the capacity to pass a 10-year event without overtopping the road, however, a 100-year event would overtop the highway as shown on Figure 7, 100-Year Hydraulic Profile.

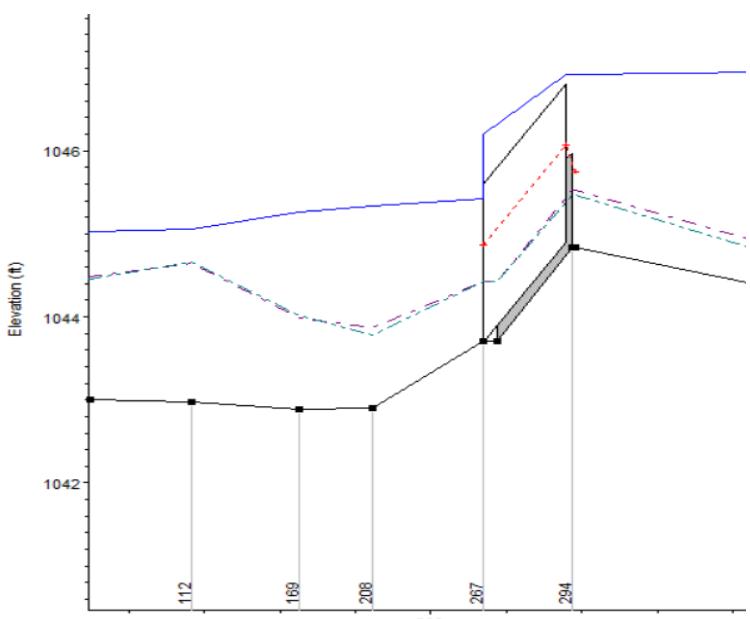


Figure 7. 100-Year Hydraulic Profile

Stormwater Quality

Post construction BMP's have been included in this study to treat stormwater runoff prior to discharging downstream. Two extended detention ponds were chosen to both treat runoff and attenuate peak flows for both the north and south drainage areas. These extended detention ponds capture the water quality volume based on the 85th percentile, 24-hour storm event (Water Quality event). The 85th percentile rainfall depth used in this analysis for a 24-hour storm is 0.90-inches per the State of California Water Quality Control Board's water quality website. This rainfall amount is based on the following gauge results:

Placerville rain gauge 1.13-inches
Sonora rain gauge site is 1.01-inches
Sacramento rain gauge is 0.64-inches
Lodi gauge shows 0.59-inches

To provide water quality treatment of runoff leaving the site the two, multi-purpose stormwater ponds proposed provide enough capacity to allow the water quality volume to infiltrate. This required volume is shown in Table 7, Required Water Quality Volumes.

If Option B for Stormwater Pond #2 is the chosen option, it will be an underground detention system where be the post stormwater quality may be achieved via proprietary stormwater quality devices. The final construction of the ponds or proprietary systems should be located at or near those locations shown on Figure 5, Proposed Improvements.

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Table 7. Required Water Quality Volumes

Stormwater Pond #	Contributing Catchment (s)	Water Quality Runoff Volume
		(Acre-Feet)
1	102A	0.5
2	202A and 203A	0.2

Conclusions

The development of this Casino project will increase the volume and peak flow of runoff from the site. Currently, the existing culvert crossing of SR 49 near the north end of the project boundary does not have the capacity to convey the 100-year peak flow without overtopping the road. The culvert crossing has the capacity to safely pass an approximately 50-year peak flow.

The increase in runoff due to this development can be mitigated with detention storage. A 0.90-acre-foot multi-purpose stormwater pond just north of the Casino will attenuate peak, 100-year flows to less than existing conditions. A 1.20-acre-foot multi-purpose stormwater pond is proposed south of the project that will reduce peak flows to less than existing conditions, assuring that downstream impacts from the project are mitigated.

APPENDIX D

REPORT FOR WATER AND WASTE WATER

TECHNICAL MEMORANDUM

TO:	Jai Singh, PE – RSC Engineering, Inc.
FROM:	Mike Massaro, PE
DATE:	December 14, 2023 - REVISED
SUBJECT:	Basis of Design Report for Water and Wastewater Treatment
PROJECT:	Ione Band of Miwok Indian's Casino and Hotel Project

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I. Project Background

This project was first conceptualized in 2005-2007 and an Environmental Impact Statement (EIS) was prepared. The EIS evaluated 5 alternatives of a project to develop a casino, hotel, and event center on Tribal land. Appendix B of the 2007 EIS titled "Water and Wastewater Feasibility Study for the Ione Casino and Hotel – Final Report" was completed by HydroScience Engineers, Inc. in July of 2005. This memorandum builds upon the analysis, evaluation, and assumptions of this prior report. Appendix B of the original EIS is attached for reference.

Based on 2023 changes for the Casino development and updated flow demands provided by Cuningham, BEN|EN has updated treatment calculations, sizing, and cost estimates for revised water treatment, storage, and wastewater treatment facilities for the project.

The potable water demand is estimated at 22,463 gpd. Note that well capacity is not affirmed as part of this evaluation. On-site wells are currently being evaluated and rehabilitated for production and this analysis assumes the necessary demands will be met with on-site wells. Note also that the original EIS evaluates the use of recycled water to offset irrigation demands and for potential use in casino and hotel for non-potable demands. Recycled water is not evaluated for use or potable water offset in this analysis. Although the effluent water quality of Membrane Bio Reactor (MBR) systems allows opportunities for reuse and maximizing the amount of treated effluent for re-use (landscape irrigation, fodder crops, construction water/dust control) decreases the demand for effluent storage and disposal.

Wastewater treatment and disposal demand is estimated at a daily flow of 36,315 gpd for preliminary design purposes and evaluation of treatment facilities. This flow is estimated from return sewer flow from the casino + filter backwash flow from the water treatment facilities.

II. Water Treatment and Storage

Based on the flow estimate of potable water demand (22,463 gpd) and the water quality data provided from the 2004 well assessment and we recommend an Anthracite/Green Sand Filter followed by a Reverse Osmosis (RO) membrane filter for raw water treatment. This will be followed by a Chlorine injection system (NaOCl - hypochlorite) ahead of the water tank storage. Hypochlorite dosing will also be used ahead of a greensand filter to improve efficiency of the filter and reduce filter fouling. It is important to note that due to a typical 60% throughput flow for RO treatment (40% sent to reject/concentrate waste), the raw water required from the wells on site will be 37,438 gpd to achieve the 22,463 gpd demanded by the Casino. Therefore, on-site well(s) will need to produce 26 gpm.

A. Storage

Based on a potable daily demand of 22,463 gpd, we would recommend a steel water tank that holds 90,000 gallons to support the casino. This would provide 4 days of water storage to support fire flow demands if wells or treatment system were off-line for any reason. Tank would be 30-ft in diameter and 19-ft tall. This sizing assumes 2-ft of freeboard in the tank and no unusable space at the tank bottom because the water system plumbed to the tank would be gravity fed from the tank.

B. Treatment

While not specifically measured in the water quality analysis, most groundwater wells in the region require treatment for Iron and Manganese. Treating these constituents will require an Anthracite and Green Sand filter system. These are supplied as a pressure filter and for the estimated potable water demand, the filter would be 40-inches in diameter and 72-inches tall and have a filter loading rate of 3 gpm/SF of filter. 2004 water quality data demonstrated some elevated levels of Total Dissolved Solids which would need to be removed via membranes for potable standards. A reverse osmosis (RO) system will remove TDS although less expensive systems like micro-filtration (MF) membranes can sometimes be applied instead of the higher energy demand RO systems. Updated water quality data from the on-site wells will help address the consistency of high TDS raw water and assist in the coordination with membrane system vendors to source the most economically appropriate system.

We evaluated the water quality data provided in 2023 and the older well data from 2004 to assess treatment requirements. The data is summarized below.

Table 1 – Water Quality Summary – Analytes Requiring Treatment for Potable Use

Required treatment (2005)	Additional analytes requiring treatment (2023)	Analytes that required treatment in 2005 but **do not** require treatment in 2023
Cadmium	Antimony	Barium
Calcium	Beryllium	Copper
Chloride	Thallium	Fluoride
Magnesium		
Potassium		
Silver		
Sodium		
Specific Conductance		
Sulfate as SO4		
Total Alkalinity		
TDS		
Total Sulfides		
Zinc		
Hardness as CaCO3		
Bicarbonate as CaCO3		

Potential vendors of anthracite/green sand filters and skid mounted membrane filtration systems are: Pure Water Guys, Crystal Quest, Lenntech, Pure Aqua, Inc, among others. They sell complete packaged systems.

Note that the packaged wastewater treatment plant (WWTP) should be sited adjacent to the Potable Water treatment area and storage tank so that the backwash and reject water from the Greensand filter and RO treatment can be disposed of via the WWTP.

III. Wastewater Treatment and Disposal

The loading assumptions from the 2005 study (EIS Appendix B) are still valid for the updated Casino Project. The anticipated flow rate of 36,315 gpd is consistent with other Casino developments that have effectively utilized packaged Membrane Bioreactor (MBR) systems for treatment and reuse. See section 5.2.2 of EIS Appendix B (attached for reference).

Treatment sizing and disposal estimates have been updated for the 2023 project. We are recommending a bermed equalization storage pond for the treated wastewater effluent. The geometry of the pond is adjustable to site impacts and availability, but it will need to store 8.53 MG. The pond surface area will be 5 acres in area.

Additional area will be required for berm volume and ramp access into and out of the pond. Based on these calculations the maximum pond depth will be 5.3 feet deep. Typically, 2-feet of freeboard is required to prevent sloshing due to wind, so the berms will need to be 7.5 feet tall. Typically, the pond will be lined to prevent infiltration. However, due to the high quality of the MBR effluent the EPA may grant a waiver to leave the pond un-lined and some infiltration would reduce storage and disposal demands.

We are also recommending 4 acres of irrigation field to be installed adjacent to the flow equalization pond. This will create a disposal pathway via infiltration and evapotranspiration. A 350 ft x 500 ft irrigation field is assumed. This field will be plumbed to the effluent piping and storage pond for disposal of wastewater effluent. No flow would be sent to the irrigation field from November (or start of rainy season) until March. The irrigation field will receive flow from April to October from the treatment plant and the seasonally stored equalization pond.

The cost of these facilities is primarily site civil earthwork, pond lining, and piping, valves, gates, and turnouts for irrigation ditches on the irrigation field. This approach and these sizes of facilities will avoid the cost of sprayer systems. Although spray irrigation systems could be added to improve evapotranspiration during the dryer months to improve disposal efficiency.

Construction cost for equivalent sized packaged MBR systems (30,000 – 50,000 gpd) can range from $3.5 to $5.0M in 2023. However, this cost would include all controls, buildings, site development, storage tanks (equalization and effluent storage for re-use), and subsurface disposal systems.

The 2004 Geotechnical Report demonstrated a wide variability in infiltration rates, making the effectiveness of subsurface infiltration difficult to predict. Fractured rock in the area created these inconsistencies. Therefore, the previous study utilized mostly spray field and evapotranspiration as the primary disposal method. Wet weather seasonal storage is required, because irrigation fields and spray fields cannot be utilized within 24-hours of rainfall events. Contractor will acquire multiple subcontracted WWTP bids from various suppliers of packaged MBR systems (i.e., Evoqua, ClearLogic MBR, Titan MBR, and Ovivo).

Note that water and wastewater systems will require full time maintenance operators for monitoring, maintenance, and compliance sampling depending on EPA requirements for the systems and disposal methods included in the project.

Appendices:
Appendix A – Preliminary Opinion of Probable Construction Cost – Water System
Appendix B - Water and Wastewater Feasibility Study for the Ione Casino and Hotel – Final Report, HSe 2005
Appendix C - Wastewater Water Balance and Storage Calculations

CALCULATIONS

Job No. 23-114
Project Miwok Casino Development
Subject Preliminary Wastewater Storage and Disposal Calculations
Calc. by M. Massaro Date 12/13/2023
Chkd. By D. Harden Date 12/14/2023

Table 2: Annual flow distribution

Month	Est WW[1] (gal)	Avg. Rainfall[2] (in.)	monthly distribution %	100-yr rainfall[2] (in.)	ET[3] (in)
Jan	1,125,765	5.50	18.33%	8.25	1.5
Feb	1,016,820	5.10	17.00%	7.65	2.1
Mar	1,125,765	4.70	15.67%	7.05	3.1
Apr	1,089,450	2.40	8.00%	3.60	4.5
May	1,125,765	1.30	4.33%	1.95	5.7
June	1,089,450	0.30	1.00%	0.45	7.2
Jul	1,125,765	0.00	0.00%	0.00	7.7
Aug	1,125,765	0.00	0.00%	0.00	7.0
Sep	1,089,450	0.50	1.67%	0.75	4.9
Oct	1,125,765	1.70	5.67%	2.55	3.1
Nov	1,089,450	3.50	11.67%	5.25	1.7
Dec	1,125,765	5.00	16.67%	7.50	1.2
Total:	13,254,975	30.00	100.00%	45.00	49.5

	MGD	gal/day	Flow per Month
October	0.03	36315	1,125,765
November	0.03	36315	1,089,450
December	0.03	36315	1,125,765
January	0.03	36315	1,125,765
February	0.03	36315	1,016,820
March	0.03	36315	1,125,765
April	0.03	36315	1,089,450
May	0.03	36315	1,125,765
June	0.03	36315	1,089,450
July	0.03	36315	1,125,765
August	0.03	36315	1,125,765
September	0.03	36315	1,089,450

Notes
1) based on typical annual water use
2) Plymouth, CA Weather Station Information
3) CIMIS

Total field Area (ft^2): **174,240**

acres: **4.00**

Table 3: Assimilitive Capacity: irrigation field

Month	Irrigation Field Kc[1] const	ET_o[2] in	ET[3] in	rainfall[4] in	Irrigation Demand[5] Field in	max percolation[6] Field in	Assimilative capacity[7] Field in	MG
Sep	0.9	4.85	4.37	0.50	3.87	3.0	6.87	0.75
Oct	0.9	3.13	2.82	1.70	1.12	3.0	4.12	0.45
Nov	0.9	1.66	1.49	3.50	0.00	3.0	3.00	0.33
Dec	0.9	1.19	1.07	5.00	0.00	3.0	3.00	0.33
Jan	0.9	1.50	1.35	5.50	0.00	3.0	3.00	0.33
Feb	0.9	2.06	1.85	5.10	0.00	3.0	3.00	0.33
Mar	0.9	3.09	2.78	4.70	0.00	3.0	3.00	0.33
Apr	0.9	4.45	4.01	2.40	1.61	3.0	4.61	0.50
May	0.9	5.68	5.11	1.30	3.81	3.0	6.81	0.74
Jun	0.9	7.21	6.49	0.30	6.19	3.0	9.19	1.00
Jul	0.9	7.66	6.89	0.00	6.89	3.0	9.89	1.07
Aug	0.9	6.97	6.27	0.00	6.27	3.0	9.27	1.01
Totals		49	45	30	30	36	66	7

notes: 1) K_c coefficients for old field FAO-56 Crop Coefficients by Richard Allen

2) ETo is potential evapotranspiration
3) ET is the product of Kc and ETo
4) Average annual recurrance distributed monthly
5) Irrigation demand is ET-rainfall
6) Max. allowable applied percolation during Dec-March is the conductivity of non tilled clay loam soils ($4*10^{-6}$ cm/d), as a conservative estimate. (0.136 in/d)
7) Assimilitive capacity is the sum of irrigation demand and percolation.
8) Volume estimates of capacity are based on the assimilative capacity by the acreage available for irrigation

		(ft^2)	(acres)
Pond Surface Area	Catchment	217,800	5.00
	Nominal Water Surface	213,444	4.90

Table 4 - Flow Equalization Pond Sizing using Average Annual Precipitation

Month	Est WW[1] MG	Field Disposal capacity MG	Difference WW vs Disposal MG	Rainfall Contribution MG	Carryover Vol w/o evap MG	Pond Evap Losses MG	Pond Vol w/ evap MG	Pond Vol w/ evap ac-ft	Pond Depth ft
Jan	1.1	0.75	0.38	0.75	2.77	0.20	1.84	5.64	1.2
Feb	1.0	0.45	0.57	0.69	4.03	0.27	2.82	8.67	1.8
Mar	1.1	0.33	0.80	0.64	5.47	0.41	3.85	11.82	2.4
Apr	1.1	0.33	0.76	0.33	6.56	0.59	4.35	13.35	2.7
May	1.1	0.33	0.80	0.18	7.54	0.76	4.57	14.03	2.9
Jun	1.1	0.33	0.76	0.04	8.34	0.96	4.41	13.55	2.8
Jul	1.1	0.33	0.80	0.00	9.14	1.02	4.19	12.88	2.6
Aug	1.1	0.50	0.63	0.00	9.77	0.93	3.89	11.95	2.4
Sep	1.1	0.74	0.35	0.07	0.00	0.65	0.00	0.00	0.0
Oct	1.1	1.00	0.13	0.23	0.36	0.42	0.00	0.00	0.0
Nov	1.1	1.07	0.01	0.48	0.85	0.22	0.27	0.83	0.2
Dec	1.1	1.01	0.12	0.68	1.65	0.16	0.91	2.79	0.6
Totals	13.3	7.14		4.07		6.58			
						Maximum:	4.57	14.03	2.86
							MG	ac-ft	ft
							Vol	Vol	Depth

Table 5 - Flow Equalization Pond Sizing using 100-year Precipitation on Pond

Month	Est WW[1] MG	Field Disposal capacity MG	Difference WW vs Disposal MG	Rainfall Contribution MG	Carryover Vol w/o evap MG	Pond Evap Losses MG	Pond Vol w/ evap MG	Pond Vol w/ evap ac-ft	Pond Depth ft
Jan	1.1	0.33	0.80	1.12	6.24	0.20	5.24	16.10	3.3
Feb	1.0	0.33	0.69	1.04	7.97	0.27	6.70	20.57	4.2
Mar	1.1	0.33	0.80	0.96	9.73	0.41	8.05	24.70	5.0
Apr	1.1	0.50	0.59	0.49	10.80	0.59	**8.53**	**26.19**	**5.3**
May	1.1	0.74	0.39	0.26	11.45	0.76	8.43	25.87	**5.3**
Jun	1.1	1.00	0.09	0.06	11.61	0.96	7.62	23.39	4.8
Jul	1.1	1.07	0.05	0.00	11.66	1.02	6.65	20.42	4.2
Aug	1.1	1.01	0.12	0.00	11.78	0.93	5.84	17.94	3.7
Sep	1.1	0.75	0.34	0.10	0.00	0.65	0.00	0.00	0.0
Oct	1.1	0.45	0.68	0.35	1.02	0.42	0.61	1.87	0.4
Nov	1.1	0.33	0.76	0.71	2.50	0.22	1.86	5.72	1.2
Dec	1.1	0.33	0.80	1.02	4.32	0.16	3.52	10.82	2.2
Totals	13.3	7.14		6.11		6.58			
						Maximum:	8.53	26.19	5.35
							MG	ac-ft	ft
							Vol	Vol	Depth

Table 1: **Rainfall and avg ET, by month: Plymouth, CA**

month	Avg rainfall (in)	100-yr rainfall (in)	percent	ET (in)
Jan	5.50	8.25	18.33%	1.50
Feb	5.10	7.65	17.00%	2.06
Mar	4.70	7.05	15.67%	3.09
Apr	2.40	3.60	8.00%	4.45
May	1.30	1.95	4.33%	5.68
Jun	0.30	0.45	1.00%	7.21
Jul	0.00	0.00	0.00%	7.66
Aug	0.00	0.00	0.00%	6.97
Sep	0.50	0.75	1.67%	4.85
Oct	1.70	2.55	5.67%	3.13
Nov	3.50	5.25	11.67%	1.66
Dec	5.00	7.50	16.67%	1.19
total	30.0	45.00	100%	49.45

100-yr Multiplier = 1.5

APPENDIX E

TRANSPORTATION IMPACT STUDY

Transportation Impact Study

Ione Casino Project

Amador County

Prepared by:
Abrams Associates
1875 Olympic Boulevard, Suite 210
Walnut Creek CA 94596

Abrams Associates
TRAFFIC ENGINEERING, INC.

November 29, 2023

Ione Casino Project

Amador County

TRANSPORTATION IMPACT STUDY

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1) INTRODUCTION

This traffic impact study describes the existing and future conditions for transportation with and without the proposed Ione Casino Project in Amador County. The project would include the following components which would be constructed on the Tribe's Reservation, which is currently held in federal trust:

1) Construction of a casino with 25,200 square feet of gaming area.
2) Demolition of the existing Shenandoah Inn, which has 46 guest rooms.

This study also describes the regulatory setting; the criterion used for determining the significance of environmental impacts; and summarizes potential environmental impacts and appropriate mitigation measures. This study has been conducted in accordance with the requirements and methodologies set forth by Amador County, the City of Plymouth, and Caltrans. This report has been prepared to assess off-reservation impacts of the project in accordance with Appendix B of the Tribe's Tribal-State Compact.

Summary of Required Mitigations and Recommended Improvement Measures - The following is a summary of the proposed mitigation measures to address the transportation impacts of the project. Based on a detailed analysis of traffic operations with and without each of the proposed mitigations, implementation of the following mitigation measures would reduce some of the project impacts to a *less-than-significant* level.

Impact #1 **Impacts to Intersection Operations - The project would result in a significant contribution (greater than 5 seconds delay) to the LOS operations at two intersections that would exceed the established standards under future weekday and Friday conditions:**

1) State Route 16 at Latrobe Road (Intersection #9)
2) Golden Chain Highway (SR 49) and the Project Entrance (Intersection #6)
The addition of traffic from the proposed project would result in an increase in delay of more than five seconds to these two intersections that are forecast to

exceed the established LOS standards. Please note that one of the impacted intersections (Intersection #6) is within the City of Plymouth. The following mitigation measures would be forecast to reduce the impacts to a less-than-significant level in all of the plus project scenarios.

Mitigation Measures

MM 1 (a) *<u>State Route 16 at Latrobe Road</u> – Payment of a proportionate share of the cost to install a traffic signal, meeting the County's requirements. Using Caltrans' methodology and the volume forecasts in this TIS, the estimated proportional share contribution from the project for this improvement would be 55%.*

MM 1 (b) *<u>Golden Chain Highway (SR 49) at Village Drive (the proposed project entrance)</u> – Widening of Village Drive to allow for separate right and left turn lanes on the westbound approach to SR 49 (i.e., two lanes for traffic exiting the project at SR 49). With this improvement the intersection would meet the established standards with the proposed casino. Using Caltrans' methodology and the volume forecasts in this TIS, the estimated proportional share contribution from the project for this improvement would be 81%.*

Impact #2 Impacts related to site access and circulation.

The current plan to provide access to the site via the northern intersection of SR 49 with Village Drive could result in safety impacts due to potential conflicts in the two-way left turn lane with left turns into Randolph Drive. It is our understanding that with the addition of traffic from the proposed project this off-set configuration with the two-way left turn lane may no longer be acceptable to Caltrans.

Regardless of the location. the LOS analysis indicates the project's intersection with SR 49 will exceed the LOS standards under cumulative conditions if the project exit has only one lane on its approach to SR 49. Therefore, under any of the above access alternatives the recommended mitigation for cumulative plus project conditions described previously, MM 1(b), would also need to be implemented. No other site circulation or access issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. Detailed LOS calculations for each of the project entrances under all scenarios are included in the technical appendix.

Mitigation Measure

MM 2 (a) Golden Chain Highway (SR 49) at Village Drive (the proposed project entrance) – Relocate the project access to one of two other recommended locations:

1) Line up the project entrance with Randolph Street.
2) Design the project access to connect only to the other (southern) intersection of Village Drive with SR 49.

2) PROJECT DESCRIPTION

As noted above, the project would include the following traffic-generating components:

1) Construction of a casino with 25,200 square feet of gaming.
2) Demolition of the existing Shenandoah Inn, which has 46 guest rooms.

All access to the project is currently proposed to occur via the existing intersection of Village Drive (north) with SR 49. **Figure 1** shows the project location and the surrounding roadway network. **Figures 2** presents the site plan for the project.

3) EXISTING CONDITIONS

This section of the report describes the roadways, traffic conditions and other existing transportation characteristics in the vicinity of the project. The primary basis of the analysis is the peak hour level of service for the key intersections. The hours identified as the "peak" hours are generally between 7:15 a.m. and 8:15 a.m. and 4:00 p.m. and 5:00 p.m. for the transportation facilities described, based on the intersection turning movement counts collected for this analysis. These peak hours will be identified as the AM and PM peak hours. These volumes represent the conditions on a typical weekday (Tuesday through Thursday). An analysis of project impacts on Friday evening traffic conditions is presented in Section 4.8.

The peak hour of casino traffic generally occurs after the PM peak hour of adjacent street traffic but to be conservative the analysis assumes the peak hour of casino traffic combined with the peak hour street traffic in the afternoon (4:00 p.m. and 5:00 p.m.) It should be noted that the final traffic study prepared for the previous casino proposal clearly indicated the Friday plus project scenario was the essentially the worst-case scenario at all of the project study intersections.[1] Although the casino would generate slightly higher volumes on a Saturday afternoon, the Saturday afternoon background traffic is so much lower than Friday afternoon traffic that Saturday conditions come out substantially better than Friday conditions in all cases.

[1] *Final Traffic Study for the Ione Band of Miwok Indians Casino/Hotel Proposal,* Dowling Asssociates, Sacramento, CA, November 7, 2008.

Therefore, the Friday analysis is considered the worst-case scenario and no additional useful information about the potential for project impacts would be anticipated even if additional analysis of Saturday afternoon conditions was conducted.

3.1 Project Study Intersections

Figure 1 shows the location of the project study intersections included in the analysis. As mentioned above, all access to the site would be via the northern Village Drive intersection with SR 49. Eleven study intersections were analyzed in this study.

3.2 Traffic Analysis Scenarios

The study intersections were evaluated for the six scenarios described below:

- Scenario 1: *Existing Conditions* – Level of Service (LOS) based on the existing weekday peak hour volumes and existing intersection configurations.
- Scenario 2: *Existing Plus Project Conditions* – Existing traffic volumes plus the trips forecast to be generated by the proposed project.
- Scenario 3: *Baseline (No Project) Conditions* – The Baseline scenario is based on the existing volumes plus growth in background traffic (for two years) plus the traffic from all reasonably foreseeable developments that could substantially affect the volumes at the project study intersections.
- Scenario 4: *Baseline Plus Project Conditions* – This scenario is based on the Baseline traffic volumes plus the trips from the proposed project.
- Scenario 5: *Cumulative Conditions* – This scenario includes year 2040 cumulative volumes based on planned and approved projects and the Amador County Travel Demand Model.
- Scenario 6: *Cumulative Plus Project Conditions* – This scenario includes year 2040 cumulative volumes based on the Amador County Travel Demand Model plus the forecast trips from proposed project.

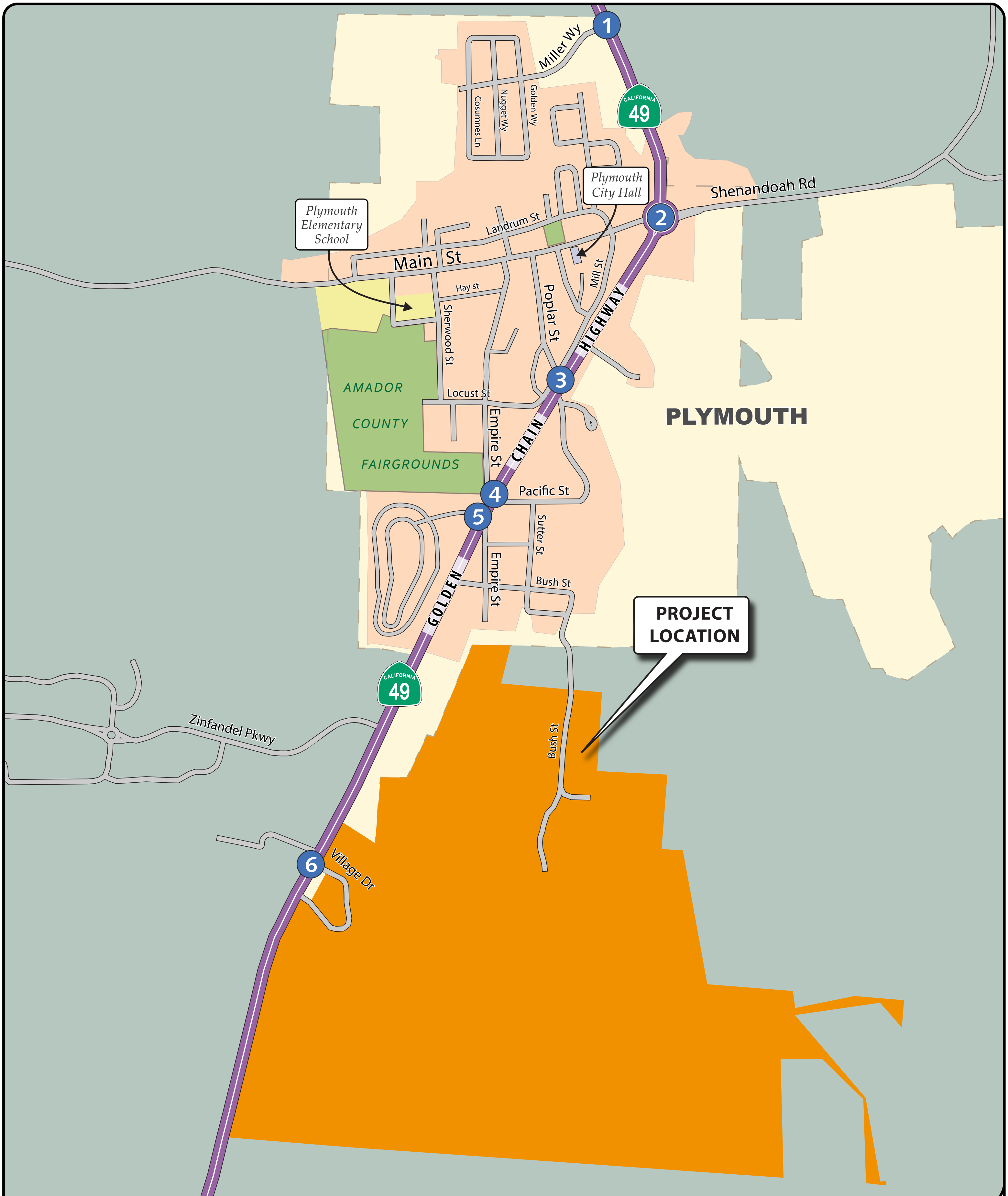

FIGURE 1A | PROJECT LOCATION AND STUDY INTERSECTIONS

TRANSPORTATION IMPACT STUDY

Ione Casino Project

Amador County

Abrams Associates
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FIGURE 1B | PROJECT LOCATION AND STUDY INTERSECTIONS

TRANSPORTATION IMPACT STUDY

Ione Casino Project

Amador County

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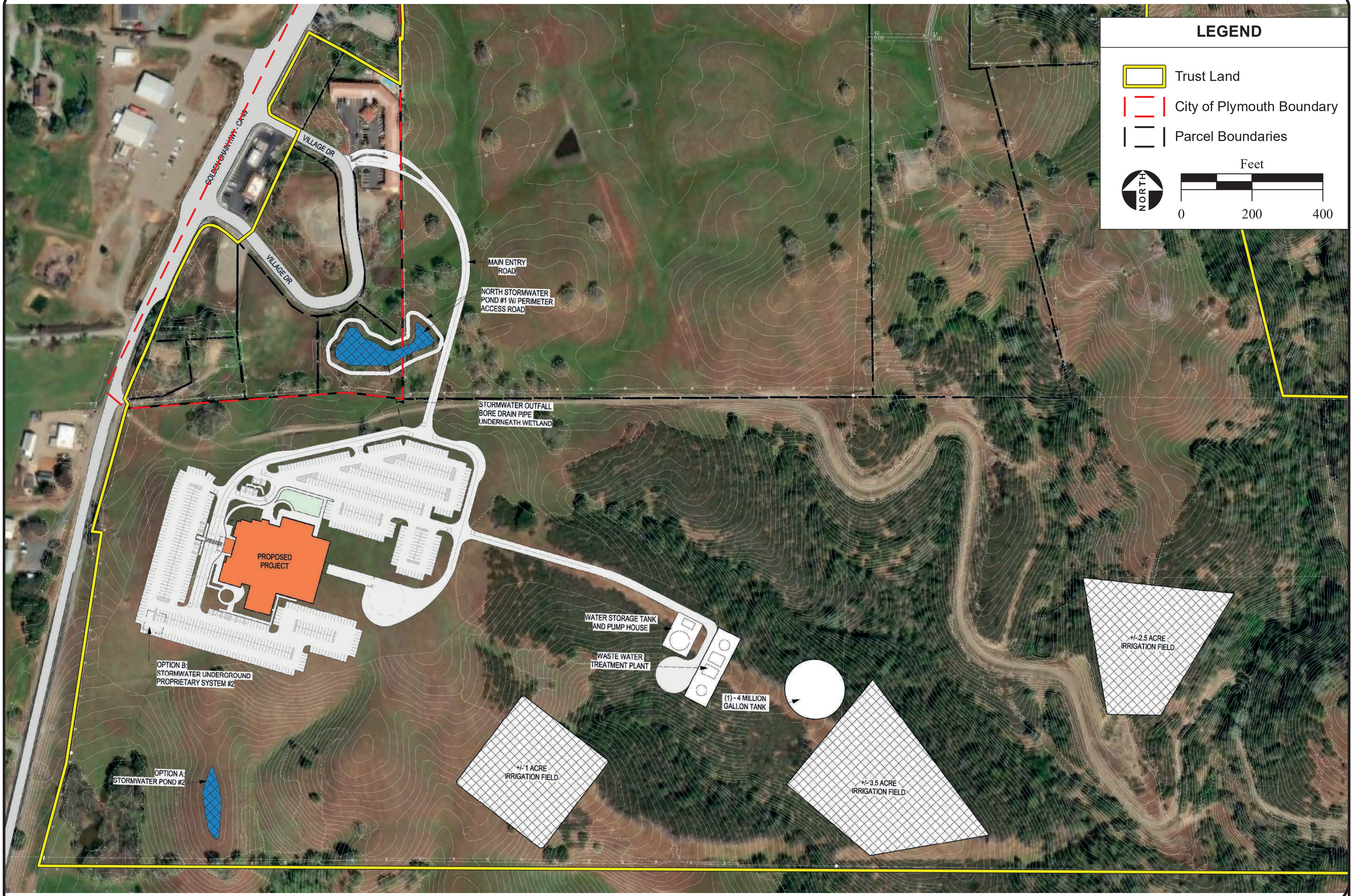

FIGURE 2 | SITE PLAN
TRANSPORTATION IMPACT STUDY
Ione Casino Project
Amador County

Abrams Associates
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3.3 Existing Roadway Network

As discussed previously, the project location and the surrounding roadway network are illustrated in **Figure 1**. The following is a more detailed description of some of the main roadways in the area that could be affected by the project:

- **State Route 49 -** State Route is a north-south primarily two-lane road extending nearly 300 miles between SR 70 in Plumas County to SR 41 in Oakhurst. The route serves residential and retail development and lacks curb, gutter, and sidewalk near the project site. SR 49 has a posted speed of 45 mph. In the vicinity of the project site, SR 49 has a center two-way left turn lane.

- **Jackson Highway (SR 16)** - Jackson Highway (SR 16) is a major arterial that traverses in the east-west direction, providing connection between Folsom Boulevard in the City of Sacramento and SR 49 in Amador County. Jackson Highway has two 12-foot travel lanes with 8-foot paved shoulders in the vicinity of the project site. The speed limit along Jackson Highway is posted at 55 miles per hour (mph).

- **State Route 88** - State Route 88 (SR 88) begins in San Joaquin County at SR 99 and terminates at the California/Nevada border. In the vicinity of the project site, SR 88 is a two-lane conventional highway and is classified as a principal arterial. The posted speed limit is 55 mph. SR 88 also has paved shoulders on each side. A segment of SR 88 passing through the communities of Lockeford and Clemens is designated as both SR 88 and SR 12. The posted speed limit in these areas ranges from 25 to 40 mph. There is also a center two-way left-turn lane along SR 88 in Lockeford.

- **State Route 124** - State Route 124 (SR 124) is a 2-lane rural road extending from SR 88 south of Ione to SR 49. It is also known as Church Street in the City of Ione and Plymouth Highway north of the City of Ione. Outside of the City of Ione, it has a posted speed limit that varies from 55 to 65 mph.

- **Grant Line Road** - Grant Line Road is a 2-lane thoroughfare which begins at State Route 99 (SR 99) and continues in a northeast direction into the County of Sacramento where it terminates at White Rock Road. It has a full access interchange at SR 99. In the vicinity of the project site, Grant Line Road has two 12-foot travel lanes with 6-foot paved shoulders and a posted speed limit of 55 mph. The facility generally lacks curbs, gutters, and sidewalks.

- **Latrobe Road** – Latrobe Road (Amador County) is a 2-lane roadway which begins at SR 16 in Amador County and continues north into El Dorado County where it terminates with US 50. Latrobe Road provides access to rural residential areas in Amador County. North of US 50, Latrobe Road is also known as El Dorado Hills

Boulevard. It has a full access interchange with US 50.

- **Main Street** – Main Street is a 2-lane arterial in the City of Plymouth. It has a posted speed limit of 25 mph. It is also known as Shenandoah Road east of SR 49. The roadway primarily serves residential and retail development.

- **Randolph Drive** – Randolph Drive is a 2-lane roadway which begins at SR 49 and continues east until its terminus with Randolph Court. The main project driveway will become the fourth leg of its intersection with SR 49.

- **Empire Drive** – Empire Street is a 2-lane collector which runs between SR 49 and Church Street in the City of Plymouth. It has a posted speed limit of 25 mph. The roadway primarily serves residential development.

- **Poplar Street** - Poplar Street is a 2-lane collector which generally lacks curbs, gutters, and sidewalks. The roadway primarily serves residential development. The posted speed limit is 25 mph.

- **Miller Way** - Miller Way is a local roadway in the City of Plymouth. It is an east-west roadway which extends west from SR 49. The roadway has a speed limit of 25 mph.

3.4 Intersection Analysis Methodology

Existing operational conditions at the eleven (11) study intersections have been evaluated according to the requirements set forth by the Amador County and City of Plymouth General Plans. Analysis of traffic operations was conducted using the 6th Edition of the *Highway Capacity Manual* (*HCM*) Level of Service (LOS) methodology with Synchro software.[2] Level of service is an expression, in the form of a scale, of the relationship between the capacity of an intersection (or roadway segment) to accommodate the volume of traffic moving through it at any given time.

The level of service scale describes traffic flow with six ratings ranging from A to F, with "A" indicating relatively free flow of traffic and "F" indicating stop-and-go traffic characterized by traffic jams. As the amount of traffic moving through a given intersection or roadway segment increases, the traffic flow conditions that motorists experience rapidly deteriorate as the capacity of the intersection or roadway segment is reached. Under such conditions, there is general instability in the traffic flow, which means that relatively small incidents (e.g., momentary engine stall) can cause considerable fluctuations in speeds and delays that lead to traffic congestion. This near-capacity situation is labeled level of service (LOS) E. Beyond LOS E, the intersection or roadway segment capacity has been exceeded, and arriving traffic will generally exceed the ability of the intersection to accommodate it.

[2] *6th Edition of Highway Capacity Manual*, Transportation Research Board, Washington D.C., 2016

For signalized intersections, The *HCM* methodology determines the capacity of each lane group approaching the intersection. The LOS is then based on average control delay (in seconds per vehicle) for the various movements within the intersection. A combined weighted average control delay and LOS are presented for the intersection. A summary of the HCM results and copies of the detailed HCM LOS calculations are included in the appendix to this report. **Table 1** summarizes the relationship between LOS, average control delay, and the volume to capacity ratio at signalized intersections. **Table 2** summarizes the relationship between LOS and average control delay at unsignalized intersections.

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

3.5 Roadway Segment Analysis Methodology

Amador County has designated the Amador County Transportation Commission (ACTC) as the agency responsible for monitoring the network of key roadways that carry the majority of the County's traffic. This network, the Congestion Management Plan (CMP) network, was created to monitor roadway performance in relation to established level-of-service (LOS) standards and recommend improvement when LOS is found to be deficient. The Highway Capacity Manual's (HCM) recommended practice for evaluation of traffic operations on urban streets involves calculating free-flow speeds of the roadway and assigning a LOS.

Since study roadways are rural roadways the average daily traffic (ADT) conditions have been used as the operations measure to evaluate traffic operations along the roadways, consistent with the requirements of Amador and Sacramento Counties. Tables presenting the volume thresholds for road segment LOS in Amador County and Sacramento County that are applicable for the study roadway network are included in the technical appendix to this report.

Level of service is an expression, in the form of a scale, of the relationship between the capacity of a roadway segment to accommodate the volume of traffic moving through it at any given time. The level of service scale describes traffic flow with six ratings ranging from A to F, with "A" indicating relatively free flow of traffic and "F" indicating stop-and-go traffic characterized by traffic jams. As the amount of traffic moving through a given roadway segment increases, the traffic flow conditions that motorists experience rapidly deteriorate as the capacity of the roadway segment is reached.

TABLE 1
SIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description of Operations	Average Delay (sec/veh)	Volume to Capacity Ratio
A	Insignificant Delays: No approach phase is fully used and no vehicle waits longer than one red indication.	≤ 10	< 0.60
B	Minimal Delays: An occasional approach phase is fully used. Drivers begin to feel restricted.	> 10 to 20	> 0.61 to 0.70
C	Acceptable Delays: Major approach phase may become fully used. Most drivers feel somewhat restricted.	> 20 to 35	> 0.71 to 0.80
D	Tolerable Delays: Drivers may wait through no more than one red indication. Queues may develop but dissipate rapidly without excessive delays.	> 35 to 55	> 0.81 to 0.90
E	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long vehicle queues from upstream.	> 55 to 80	> 0.91 to 1.00
F	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.	> 80	> 1.00

SOURCES: 6th Edition of the *Highway Capacity Manual*, Transportation Research Board, 2016.

TABLE 2
UNSIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description of Operations	Average Delay (seconds/vehicle)
A	No delay for stop-controlled approaches.	0 to 10
B	Operations with minor delays.	> 10 to 15
C	Operations with moderate delays.	> 15 to 25
D	Operations with some delays.	> 25 to 35
E	Operations with high delays and long queues.	> 35 to 50
F	Operation with extreme congestion, with very high delays and long queues unacceptable to most drivers.	> 50

SOURCE: 6th Edition of the *Highway Capacity Manual*, Transportation Research Board, 2016.

3.6 Existing Intersection Capacity Conditions (Scenario 1)

The existing intersection geometry at each of the project study intersections can be seen in **Figure 3** and the existing traffic volumes at each are presented in **Figure 4.** Traffic counts at the study intersections were conducted in May of 2023 at times when local schools were in session. **Table 3** summarizes the associated LOS computation results for the existing weekday AM and PM peak hour conditions. Please note that the corresponding LOS analysis calculation sheets are presented in the appendix to this report. As shown in **Table 3**, all of the project study intersections currently have acceptable conditions (LOS D or better) during the weekday AM and PM peak hours, with the exception of Jackson Road (SR 16) at Grant Line Road, which would operate at LOS E in the AM peak hour and LOS in the PM peak hour. See Section 3.8 for a description of the applicable intersection thresholds.

3.7 Pedestrian and Bicycle Facilities

Bicycle and pedestrian facilities in the project study area are currently very limited with no bike lanes or sidewalks provided in the vicinity of the project. Bicycle paths, lanes and routes are typical examples of bicycle transportation facilities, which are defined by Caltrans as being in one of the four classes:

Class I – Provides a completely separated facility designed for the exclusive use of bicyclists and pedestrians with crossing points minimized.
Class II – Provides a restricted right-of-way designated lane for the exclusive or semi-exclusive use of bicycles with through travel by motor vehicles or pedestrians prohibited, but with vehicle parking and cross-flows by pedestrians and motorists permitted.
Class III – Provides a route designated by signs or permanent markings and shared with pedestrians and motorists.
Class IV – Provides an adjacent bike lane or bikeway that is physically separated from motor vehicle traffic.

Field observations indicate that walking and bicycling activity is limited in the immediate vicinity of the proposed project site. This is primarily due to the lack of existing bicycle and pedestrian traffic generators in the vicinity of the project site. However, there is a lack of curbs, gutters, and sidewalks along SR 49 to accommodate pedestrian activity. On most of the roadways in the study area, bicyclists must ride in the roadway and share the travel lane with vehicular traffic.

3.7 Transit Service

Bus Transit - Bus transit service in the project area is provided by Amador Transit. Amador Transit operates local bus route 3 within the City of Plymouth. The route operates twice a day with stops near the project site Monday through Friday from about 8:30 AM to 4:00 PM. Limited Saturday service is also offered. The routes provide connections to regional transit via intercity routes 1, 2, and 7. The nearest bus stops to the project are located adjacent to the site at the intersection of Village Drive at SR 49.

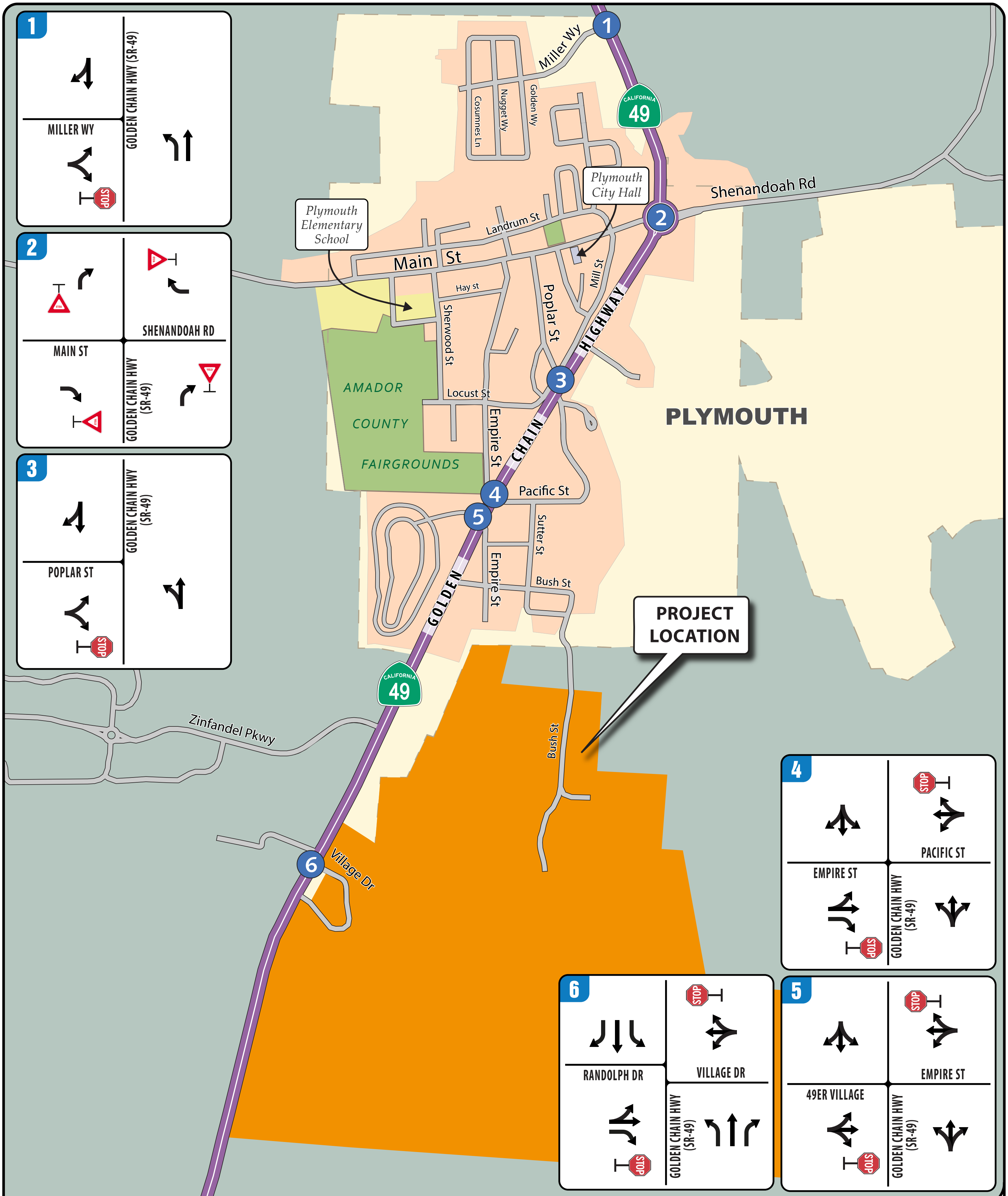

FIGURE 3A | EXISTING LANE CONFIGURATION
TRANSPORTATION IMPACT STUDY
Ione Casino Project
Amador County

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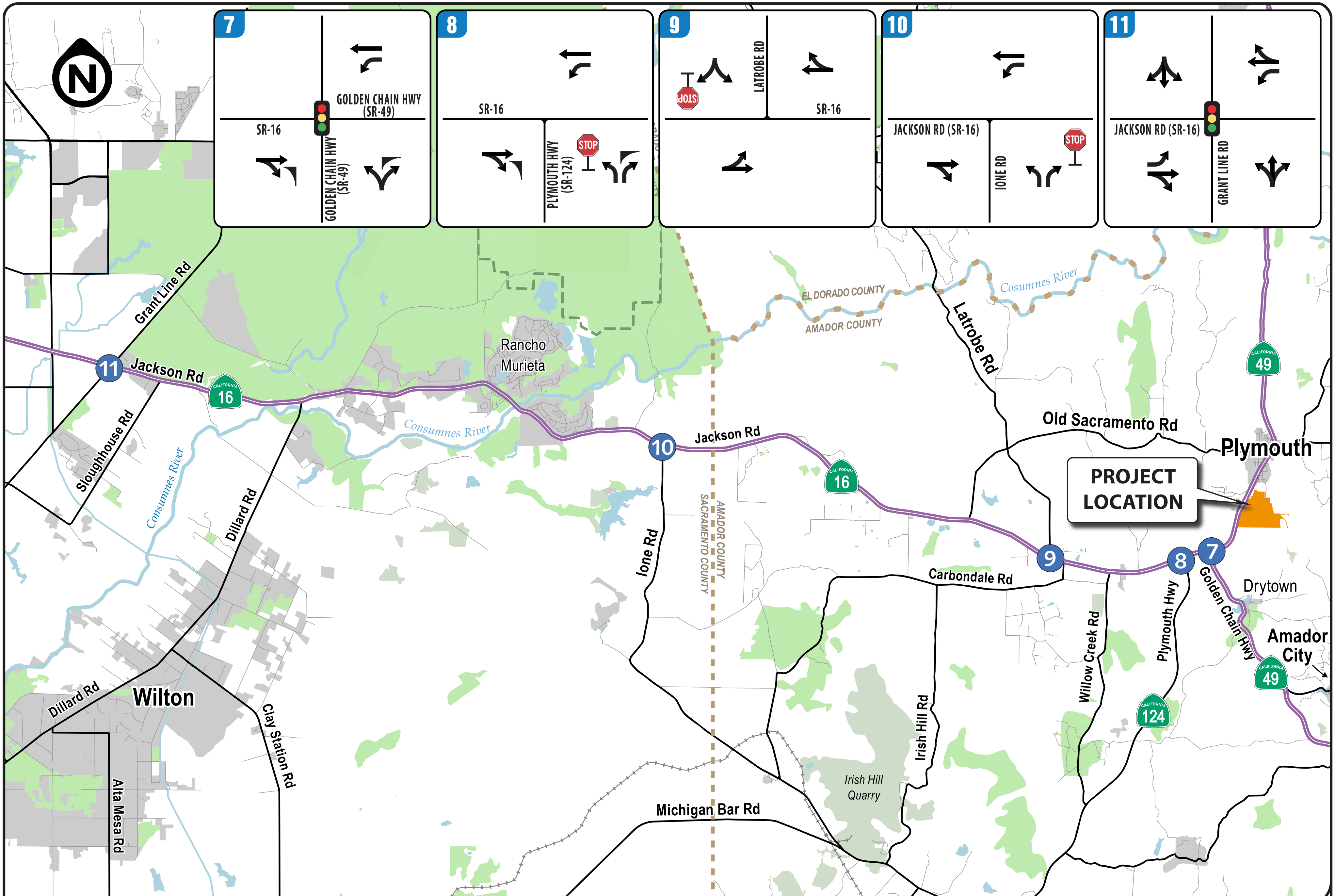

FIGURE 3B | EXISTING LANE CONFIGURATION

TRANSPORTATION IMPACT STUDY

Ione Casino Project

Amador County

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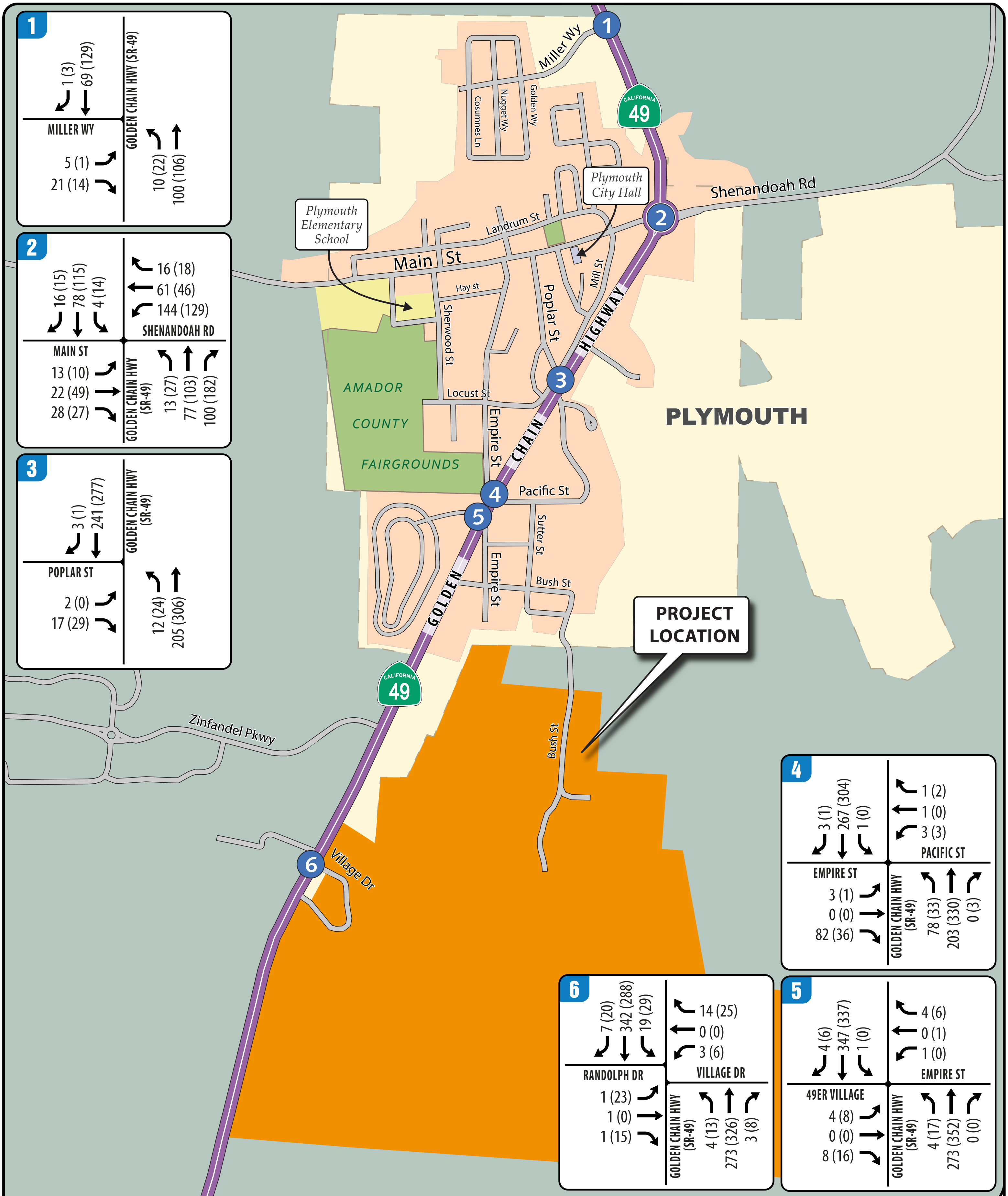

FIGURE 4A | EXISTING WEEKDAY AM(PM) PEAK HOUR TRAFFIC VOLUMES

TRANSPORTATION IMPACT STUDY

Ione Casino Project

Amador County

Abrams Associates
TRAFFIC ENGINEERING, INC.

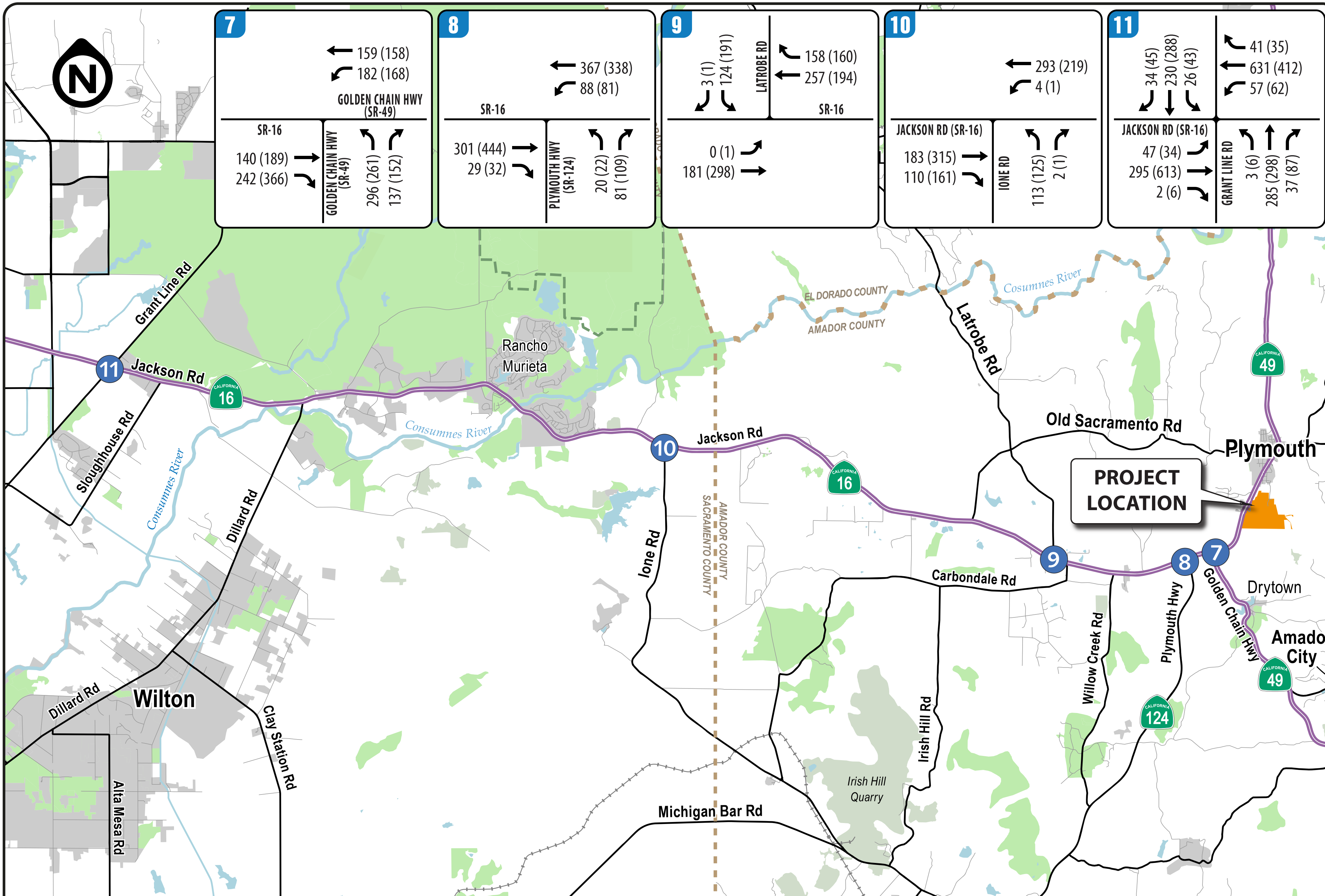

FIGURE 4B | EXISTING WEEKDAY AM(PM) PEAK HOUR TRAFFIC VOLUMES

TRANSPORTATION IMPACT STUDY

Ione Casino Project

Amador County

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TABLE 3
EXISTING INTERSECTION LEVEL OF SERVICE CONDITIONS

	INTERSECTION	CONTROL	PEAK HOUR	EXISTING	
				Delay	LOS
1	GOLDEN CHAIN HWY (SR-49) & MILLER WAY	Side Street Stop	AM	9.0	A
			PM	9.1	A
2	GOLDEN CHAIN HWY (SR-49) & MAIN STREET	Roundabout	AM	4.4	A
			PM	4.9	A
3	GOLDEN CHAIN HWY (SR-49) & POPLAR STREET	Side Street Stop	AM	10.0	B
			PM	10.1	B
4	GOLDEN CHAIN HWY (SR-49) & PACIFIC STREET / EMPIRE STREET	Side Street Stop	AM	15.9	C
			PM	14.8	B
5	GOLDEN CHAIN HWY (SR-49) & 49ER VILLAGE / EMPIRE STREET	Side Street Stop	AM	12.1	B
			PM	13.0	B
6	GOLDEN CHAIN HIGHWAY (SR-49) & RANDOLPH DRIVE / VILLAGE DRIVE (THE PROJECT ENTRANCE)	Side Street Stop	AM	13.5	B
			PM	15.7	C
7	GOLDEN CHAIN HIGHWAY (SR-49) & SR-16	Signalized	AM	11.9	B
			PM	11.9	B
8	SR-16 & PLYMOUTH HIGHWAY (SR-124)	Side Street Stop	AM	12.6	B
			PM	14.5	B
9	SR-16 & LATROBE ROAD	Side Street Stop	AM	15.2	C
			PM	19.7	C
10	JACKSON ROAD (SR-16) & IONE ROAD	Side Street Stop	AM	15.2	C
			PM	17.4	C
11	JACKSON ROAD (SR-16) & GRANT LINE ROAD	Signalized	AM	**57.9**	**E**
			PM	**77.5**	**E**

SOURCE: Abrams Associates, 2023 **NOTE:** Delay results are presented in terms of seconds per vehicle.

3.8 Standards and Objectives

Existing policies, laws and regulations that apply to the proposed project are summarized below.

Tribal-State Compact - The Tribal-State Compact Between the State of California and the Ione Band of Miwok Indians specifies that a Mitigated Negative Declaration shall include:
"*a description of proposed mitigation measures included in the Project to reduce the potential Significant Effects on the Off-Reservation Environment to a less-than-significant level; and The Tribe's commitment to enter into an enforceable binding* letter agreement with the State under which the Tribe shall agree to perform the required mitigation."

Caltrans - The California Department of Transportation (Caltrans) has jurisdiction over State highways. Therefore, Caltrans controls all construction, modification, and maintenance of State highways, such as U.S. 101. Any improvements to these roadways would require Caltrans' approval.

Amador County General Plan - The Transportation and Circulation Element included in the Amador County General Plan was prepared pursuant to Section 65302(b) of the California Government Code. The Transportation and Circulation Element addresses the location and extent of existing and planned transportation routes, terminals, and other local public utilities and facilities. The General Plan identifies roadway and transit goals and policies that have been adopted to ensure that the transportation system of the County will have adequate capacity to serve planned growth. These goals and policies are intended to provide a plan and implementation measures for an integrated, multi-modal transportation system that will safely and efficiently meet the transportation needs of all economic and social segments of the County.

City of Plymouth General Plan - The Circulation Element included in the City of Plymouth General also identifies roadway and transit goals and policies that have been adopted to ensure that the transportation system of the City will continue to have adequate capacity to serve planned growth.

Significance Criteria – For the purposes of this analysis a project would have a significant impact if it would:

- Conflict with an applicable program, plan, ordinance or policy establishing measures of effectiveness for the performance of addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian facilities/paths?

  The goal of Amador County is to maintain a Level of Service (LOS) C during the peak hours, while the goal of the City of Plymouth and Sacramento County is to maintain a Level of Service (LOS) D during the peak hours. The County does not have plans, ordinances, or policies establishing measures of effectiveness for the performance of other parts of its circulation system. The applicable measures of effectiveness are summarized below:

  <u>Signalized Intersections</u> - Project-related operational impacts on the signalized study intersections in the Amador County are considered significant if project-related traffic causes the Level of Service (LOS) rating to deteriorate from LOS C to LOS D, E or F. In addition, in Amador County project impacts are also considered significant if a roadway or signalized intersection already exceeds the standards without project trips, and the project causes the average delay to increase by five seconds or more. Project-related operational impacts on signalized study intersections in the Sacramento County are considered significant if project-related traffic causes the Level of Service (LOS) rating to deteriorate from LOS D to LOS E, or F. In Sacramento County project impacts are also considered significant if a roadway or signalized intersection already exceeds the standards without project trips, and the project causes the volume to capacity (V/C) ratio to increase by more that 0.05.

  <u>Unsignalized Intersections</u> - Project-related operational impacts on unsignalized intersections in Amador County are considered significant if project generated traffic causes a movement/approach to deteriorate from LOS C or better to LOS D, E or F. In Sacramento County impacts are considered significant if project generated traffic causes a movement/approach to deteriorate from LOS D or better to LOS E or F. For unsignalized intersections where the LOS would already exceed Amador County or

Sacramento County standards it is considered a significant impact if the project increases the delay by more than 5 seconds.

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the off-reservation circulation system, taking into account all modes of transportation including mass transit and nonmotorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?
- Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated off-reservation roads or highways?
- Substantially increase hazards to an off-reservation design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access for off-reservation responders?

4) TRANSPORTATION IMPACT ANALYSIS

4.1 Project Trip Generation

Casino Trip Generation - The peak-hour trip generation of the proposed casino was reviewed based on information published in Institute of Transportation Engineers (ITE) Trip Generation Manual (Eleventh Edition, 2021). The trip generation forecasts include all traffic in and out of the site including patrons, employees, vendors, and deliveries. The trip generation forecasts are presented below in **Table 4**.

TABLE 4
PROJECT TRIP GENERATION CALCULATIONS

Land Use	Size	ADT	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Indian Casino Trip Rates - Trips per Square Feet		98.21	1.78	1.64	3.42	3.10	3.64	6.74
Proposed Casino Expansion Trip Generation	**25,200 sq. ft.**	**2,475**	**45**	**41**	**86**	**78**	**92**	**170**
ITE Hotel Trip Rates - Trips per Room		7.99	0.26	0.20	0.46	0.30	0.29	0.59
Shenandoah Inn Trip Generation (To be demolished)	**46 rooms**	**368**	**12**	**9**	**21**	**14**	**13**	**27**
Net New Project Trip Generation		**2,108**	**33**	**32**	**65**	**64**	**79**	**143**

As described below, more recent trip generation data is available from surveys of existing Indian casinos, and this data was used to estimate the traffic that would be produced by the project. The ITE Trip Generation Manual is generally the standard reference from which to determine trip generation rates. However, the rates for a casino included in the latest edition of the ITE Trip Generation Manual are based on surveys of six casino/video lottery establishments taken in South Dakota in the 1990's. The square footages of the surveyed facilities ranged from 600 to 2,400 square feet. Based on preliminary calculations and a comparison of this rate with other studies (described below) it was found that use of the ITE rate produced results that did not compare with the expected traffic of the proposed project. This was verified based on trip generation surveys conducted at the Graton Resort & Casino.

The approach used for establishing trip generation rates for the casino was to investigate trip generation characteristics at other similar casinos based on the results of trip generation surveys and validate the results with traffic counts taken at other existing casinos. For this project additional data on casino trip generation rates were obtained from the transportation impact analysis prepared for the Tejon Casino in Kern County.[3] The trip generation rates were based on the average of the traffic surveys conducted at three similar Indian casinos as part of the Tejon Casino Transportation Impact Analysis. This document includes extensive discussions on the research performed to determine an appropriate trip generation rate for Indian gaming facilities and on the actually developed trip rates for weekday daily, AM and PM peak of the street, as well as Saturday peak hour of the generator conditions. A review of other more recent casino traffic impact studies indicates this data can still be considered conservative. Traffic from the existing 46-room Shenandoah Inn (to be demolished) was subtracted from the casino trip generation. During the normal weekday commute peak hours the project is estimated to generate a total of approximately 65 AM peak hour trips (33 inbound and 32 outbound) and 143 PM peak hour trips (64 inbound and 78 outbound).

4.2 Project Trip Distribution

The trip distribution assumptions have been based on the project's proximity to the access freeway and other key travel routes in Amador County, the existing directional split at nearby intersections, and the overall land use patterns in the area. **Figure 5** shows the project trips that would be added at the study intersections.

4.3 Existing Plus Project Traffic Capacity Conditions (Scenario 2)

This scenario evaluates the existing conditions with the addition of traffic from the proposed project. The traffic volumes for each of the study intersections for Existing Plus Project conditions are shown in **Figure 6**. The capacity calculations for the Existing Plus Project scenario are shown in **Table 5**. The corresponding LOS analysis calculation sheets are presented in the appendix to this report. The proposed project access would be via Village Drive at Intersection #6. Village Drive is currently has one lane in each direction with side street stop control at its intersection with State Route 49 (Golden Chain Highway). Village Drive currently has 15 foot lanes in the vicinity of State Route 49. Based on the existing and forecast volumes, Section 301.1. of Caltrans' Highway Design Manual specifies that the minimum lane width for Village Drive is 11 feet and the minimum lane width for State Route 49 is 12 feet.

As shown in **Table 5**, all of the project study intersections would continue to have acceptable conditions (LOS D or better) during the weekday AM and PM peak hours with the exception all of the project study intersections currently have acceptable conditions (LOS D or better) during the weekday AM and PM peak hours, with the exception of Jackson Road (SR 16) at Grant Line Road and also the main project entrance intersection (Village Drive) with State Route 49. The intersection of Jackson Road (SR 16) and Grant Line Road is forecast to exceed the LOS standards regardless of whether or not the proposed project is implemented and the project would not increase the average delay by more than five seconds per vehicle.

[3] *Transportation Impact Analysis of the Tejon Casino*, Linscott, Law, & Greenspan Engineers, San Diego, CA, October 30, 2019.

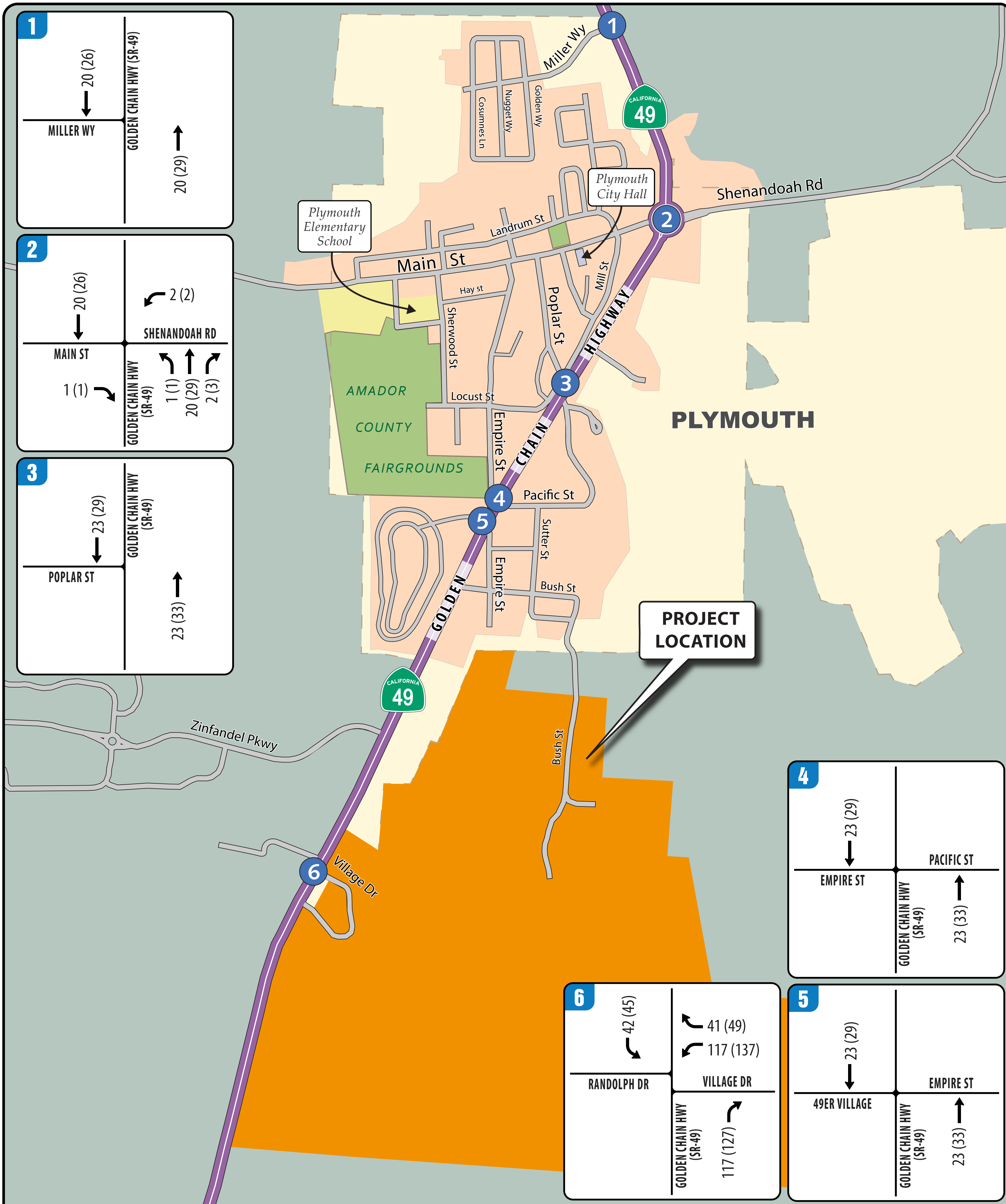

FIGURE 5A | PROJECT WEEKDAY AM(PM) PEAK HOUR TRIPS

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Ione Casino Project

Amador County

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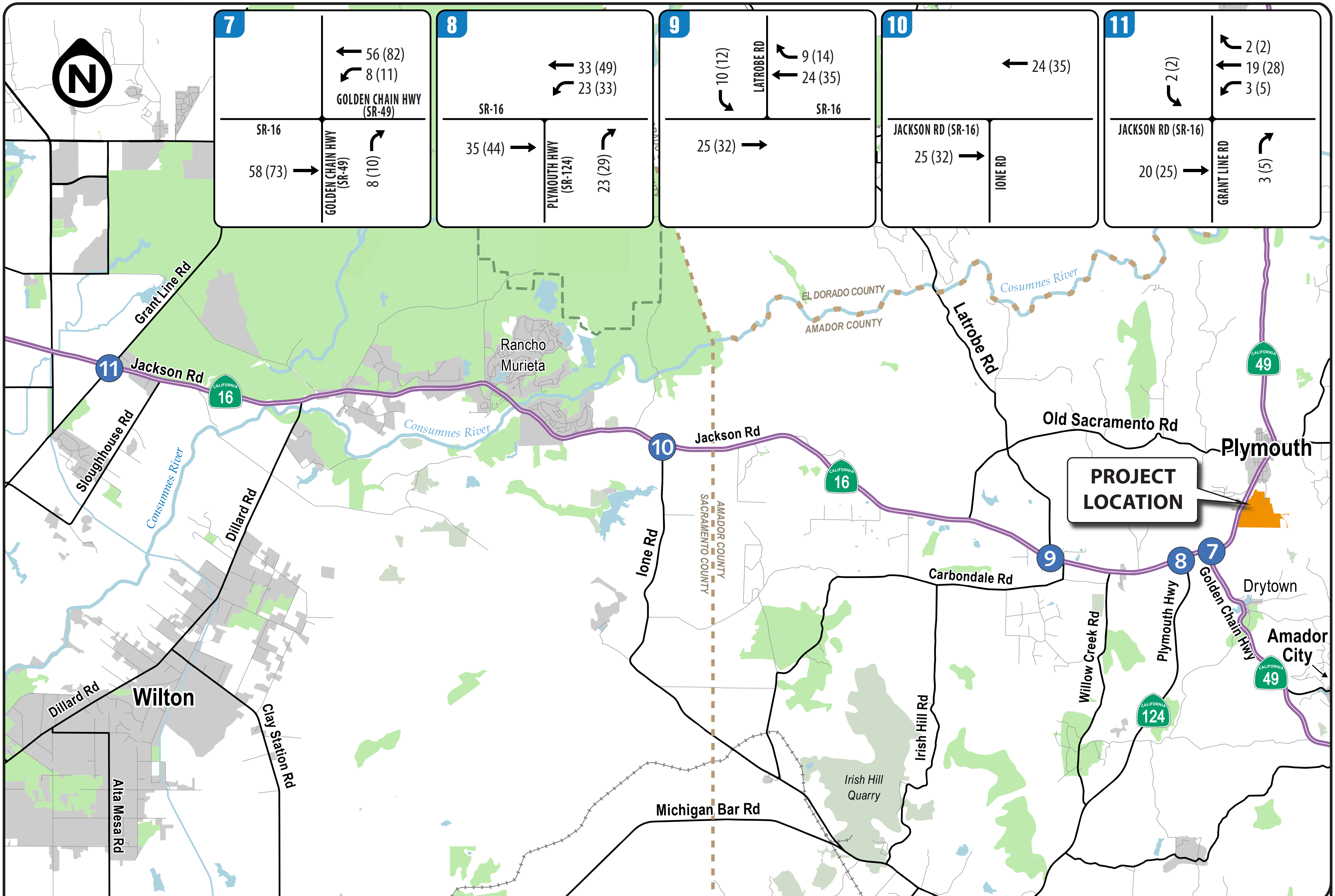

FIGURE 5B | PROJECT WEEKDAY AM(PM) PEAK HOUR TRIPS

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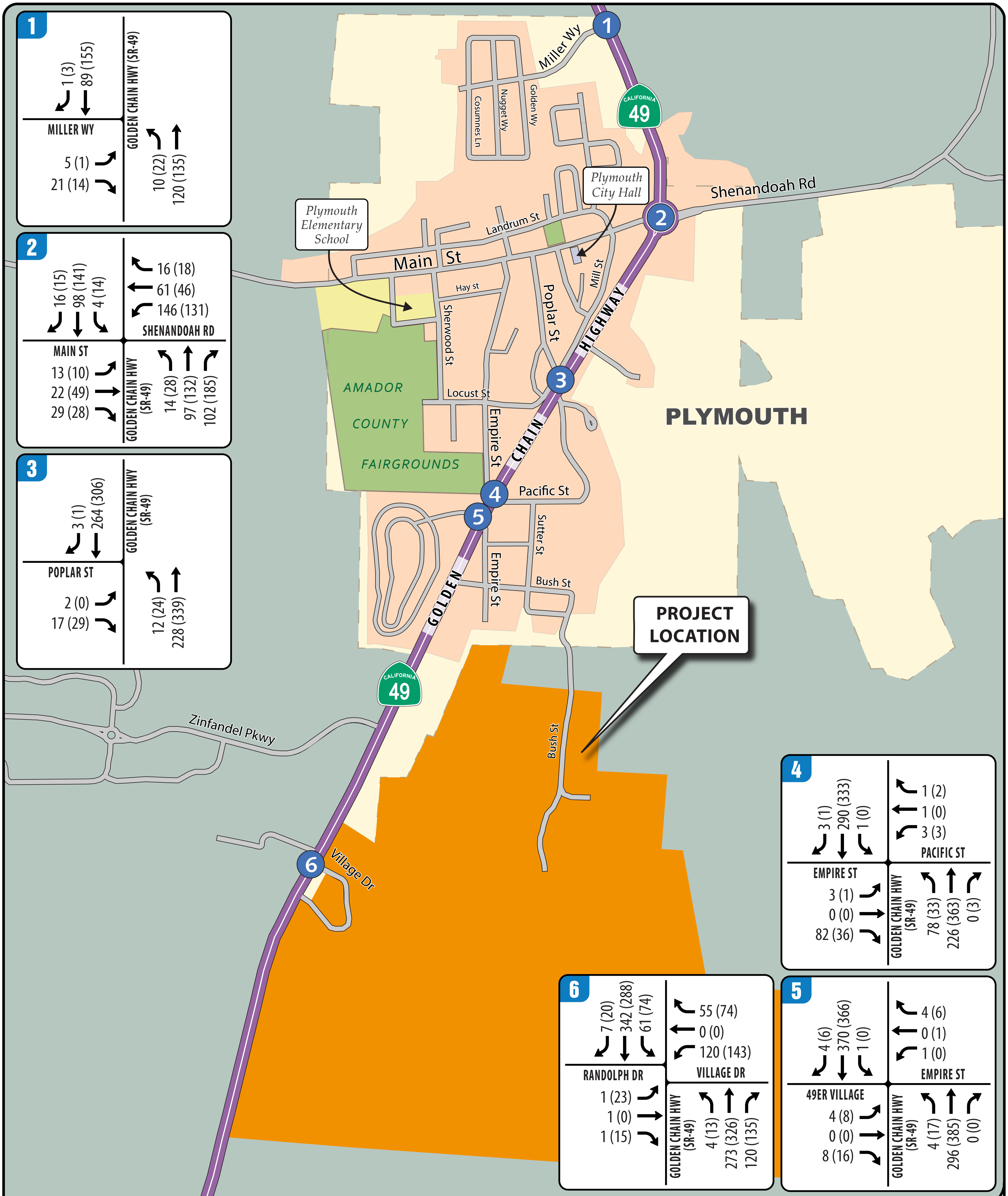

FIGURE 6A | EXISTING PLUS PROJECT WEEKDAY AM(PM) PEAK HOUR TRAFFIC VOLUMES

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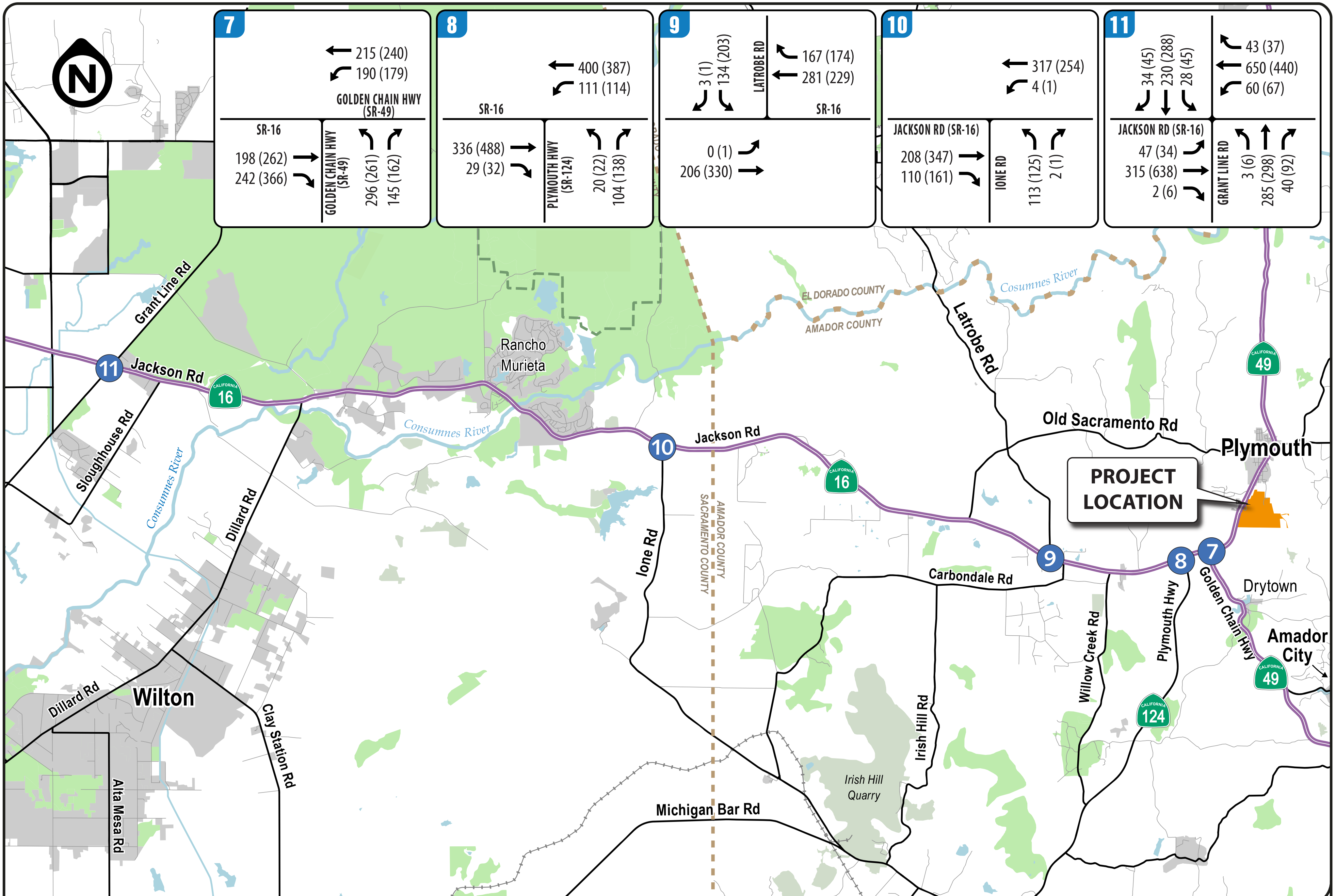

FIGURE 6B | EXISTING PLUS PROJECT WEEKDAY AM(PM) PEAK HOUR TRAFFIC VOLUMES

TRANSPORTATION IMPACT STUDY

Ione Casino Project

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TABLE 5
EXISTING PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS

	INTERSECTION	CONTROL	PEAK HOUR	EXISTING		EXISTING PLUS PROJECT	
				Delay	LOS	Delay	LOS
1	GOLDEN CHAIN HWY (SR-49) & MILLER WAY	Side Street Stop	AM	9.0	A	9.0	A
			PM	9.1	A	9.2	A
2	GOLDEN CHAIN HWY (SR-49) & MAIN STREET	Roundabout	AM	4.4	A	4.4	A
			PM	4.9	A	5.1	A
3	GOLDEN CHAIN HWY (SR-49) & POPLAR STREET	Side Street Stop	AM	10.0	B	10.1	B
			PM	10.1	B	10.2	B
4	GOLDEN CHAIN HWY (SR-49) & PACIFIC STREET / EMPIRE STREET	Side Street Stop	AM	15.9	C	16.2	C
			PM	14.8	B	15.4	C
5	GOLDEN CHAIN HWY (SR-49) & 49ER VILLAGE / EMPIRE STREET	Side Street Stop	AM	12.1	B	12.3	B
			PM	13.0	B	13.4	B
6	GOLDEN CHAIN HIGHWAY (SR-49) & RANDOLPH DRIVE / VILLAGE DRIVE (THE PROJECT ENTRANCE)	Side Street Stop	AM	13.5	B	14.5	B
			PM	15.7	C	18.1	C
7	GOLDEN CHAIN HIGHWAY (SR-49) & SR-16	Signalized	AM	11.9	B	11.9	B
			PM	11.9	B	12.0	B
8	SR-16 & PLYMOUTH HIGHWAY (SR-124)	Side Street Stop	AM	12.6	B	12.8	B
			PM	14.5	B	15.5	C
9	SR-16 & LATROBE ROAD	Side Street Stop	AM	15.2	C	15.7	C
			PM	19.7	C	22.1	C
10	JACKSON ROAD (SR-16) & IONE ROAD	Side Street Stop	AM	15.2	C	15.6	C
			PM	17.4	C	18.6	C
11	JACKSON ROAD (SR-16) & GRANT LINE ROAD	Signalized	AM	**57.9**	**E**	**59.0**	**E**
			PM	**77.5**	**E**	**> 80.0**	**F**

SOURCE: Abrams Associates, 2023 **NOTE:** Delay results are presented in terms of seconds per vehicle.

4.4 Baseline Traffic Capacity Conditions (Scenario 3)

The Baseline scenario evaluates the existing conditions with the addition of traffic from reasonably foreseeable projects in the area and general baseline growth in traffic. For this analysis the baseline volumes were developed based on the assumption that the project completion date would be 2025 with a 1% per year growth in background traffic plus the addition of traffic from approved projects. The trip generation for the approved and/or reasonably foreseeable projects was derived from the Putnam Ranch Draft Transportation Analysis Report.[4] The five projects include Putnam Ranch, Zinfandel Ridge, Shenandoah Ridge, the Greilich Ranch Subdivision, and the 49er RV Park Expansion. The traffic volumes for each of the study intersections for the Baseline scenario are shown in **Figure 7**. **Table 6** summarizes the associated LOS computation results for the Baseline weekday AM and PM peak hour conditions. As shown in **Table 6**, all of the study intersections would continue to have acceptable conditions under the Baseline scenario during the weekday AM and PM peak hours, with the exception of Jackson Road (SR 16) at Grant Line Road which would operate at LOS E in the AM and PM peak hours.

[4] Putnam Ranch Development Project, Draft Transportation Analysis Report, Fehr & Peers Associates, Roseville, CA, May 11, 2023.

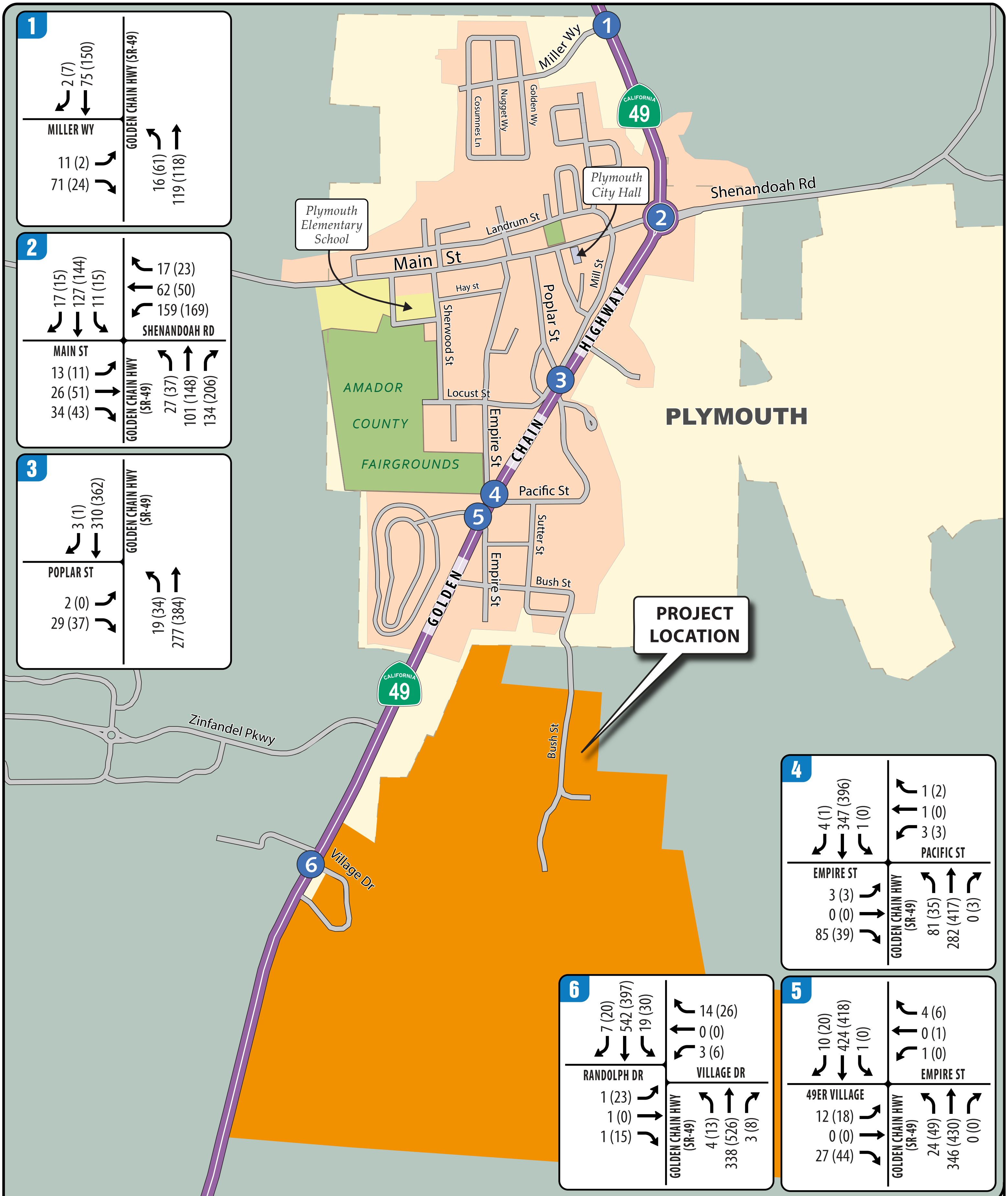

FIGURE 7A | BASELINE WEEKDAY AM(PM) PEAK HOUR TRAFFIC VOLUMES

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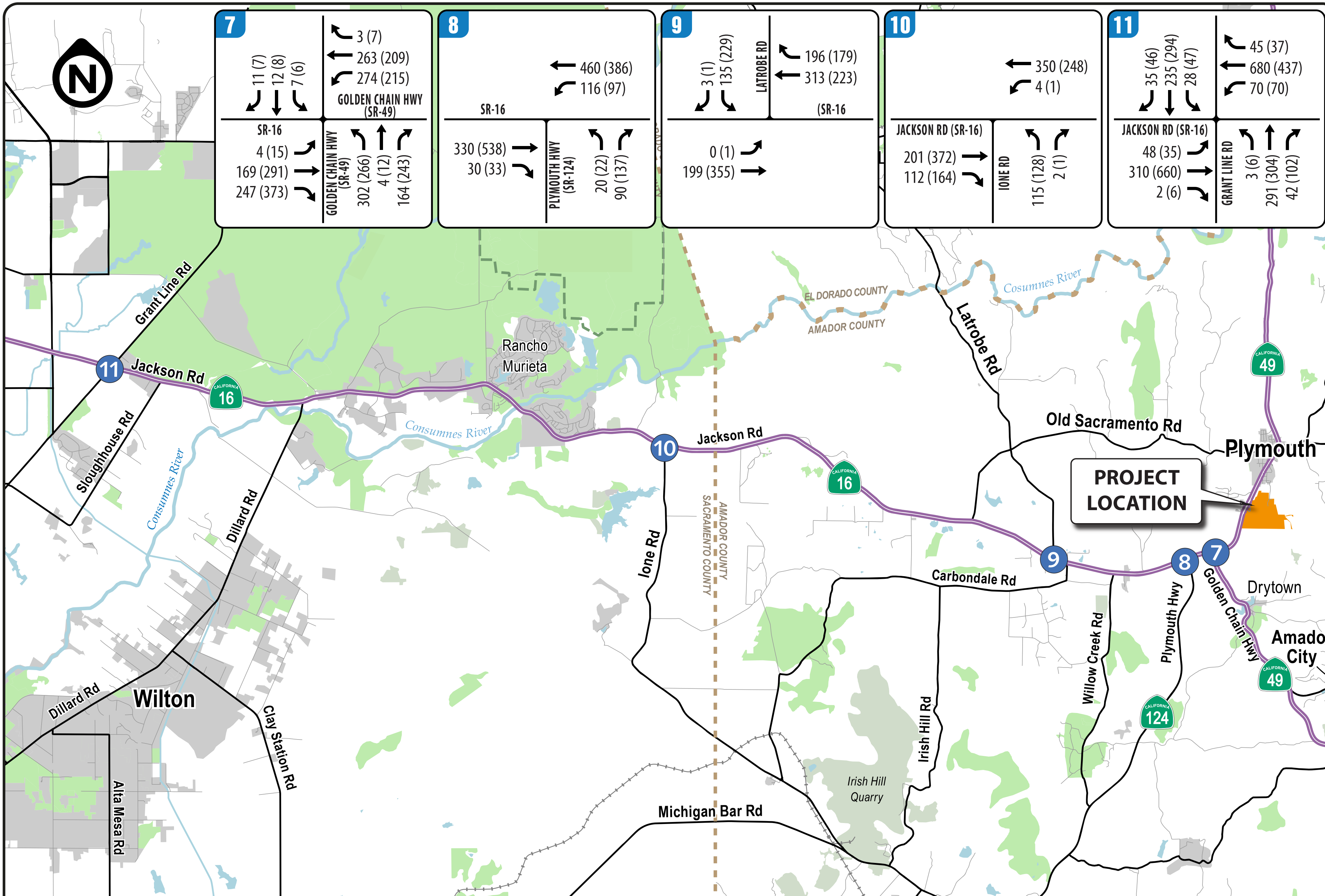

FIGURE 7B | BASELINE WEEKDAY AM(PM) PEAK HOUR TRAFFIC VOLUMES
TRANSPORTATION IMPACT STUDY
Ione Casino Project
Amador County

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TABLE 6
BASELINE PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS

	INTERSECTION	CONTROL	PEAK HOUR	BASELINE		BASELINE PLUS PROJECT	
				Delay	LOS	Delay	LOS
1	GOLDEN CHAIN HWY (SR-49) & MILLER WAY	Side Street Stop	AM	9.3	A	9.3	A
			PM	9.4	A	9.5	A
2	GOLDEN CHAIN HWY (SR-49) & MAIN STREET	Roundabout	AM	4.9	A	5.0	A
			PM	5.7	A	5.9	A
3	GOLDEN CHAIN HWY (SR-49) & POPLAR STREET	Side Street Stop	AM	10.6	B	10.7	B
			PM	10.9	B	11.0	B
4	GOLDEN CHAIN HWY (SR-49) & PACIFIC STREET / EMPIRE STREET	Side Street Stop	AM	19.5	C	20.0	C
			PM	18.2	C	19.0	C
5	GOLDEN CHAIN HWY (SR-49) & 49ER VILLAGE / EMPIRE STREET	Side Street Stop	AM	14.5	B	14.8	B
			PM	16.8	C	17.5	C
6	GOLDEN CHAIN HIGHWAY (SR-49) & RANDOLPH DRIVE / VILLAGE DRIVE (THE PROJECT ENTRANCE)	Side Street Stop	AM	18.0	C	19.6	C
			PM	24.1	C	32.4	D
7	GOLDEN CHAIN HIGHWAY (SR-49) & SR-16	Signalized	AM	19.2	B	19.6	B
			PM	19.7	B	20.2	C
8	SR-16 & PLYMOUTH HIGHWAY (SR-124)	Side Street Stop	AM	13.8	B	14.1	B
			PM	17.2	C	18.6	C
9	SR-16 & LATROBE ROAD	Side Street Stop	AM	17.8	C	18.6	C
			PM	29.2	D	34.7	D
10	JACKSON ROAD (SR-16) & IONE ROAD	Side Street Stop	AM	16.9	C	17.4	C
			PM	20.3	C	21.7	C
11	JACKSON ROAD (SR-16) & GRANT LINE ROAD	Signalized	AM	**68.1**	**E**	**69.7**	**E**
			PM	**> 80.0**	**F**	**> 80.0**	**F**

SOURCE: Abrams Associates, 2020 **NOTE:** Delay results are presented in terms of seconds per vehicle.

4.5 Baseline Plus Project Traffic Capacity Conditions (Scenario 4)

The Baseline plus proposed project traffic forecasts were developed by adding traffic from the project to the baseline traffic volumes. The traffic volumes for each of the study intersections for the Baseline Plus Project scenario are shown in **Figure 8**. **Table 6** summarizes the LOS results for the Baseline and Baseline Plus Project weekday AM and PM peak hour conditions. The corresponding LOS analysis calculation sheets are presented in the appendix to this report. As shown in **Table 6**, all of the study intersections would continue to have acceptable conditions under the Baseline Plus Project scenario during the weekday AM and PM peak hours, with the exception of Jackson Road (SR 16) at Grant Line Road. The intersection of Jackson Road (SR 16) and Grant Line Road is forecast to exceed the LOS standards regardless of whether or not the proposed project is implemented and the project would not increase the average delay by more than five seconds per vehicle. Mitigations to improve the operations at these intersections are discussed in Section 5.

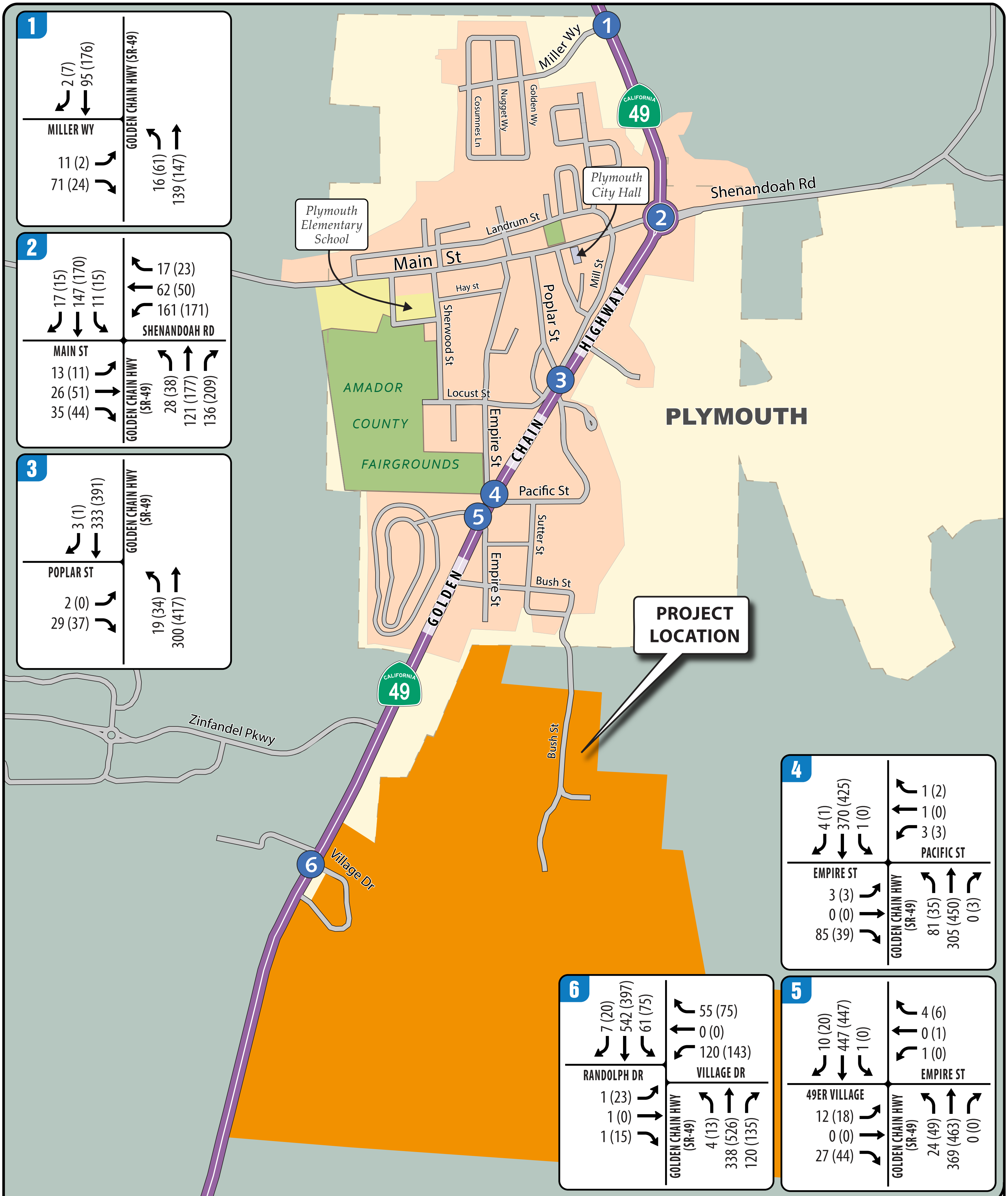

FIGURE 8A | BASELINE PLUS PROJECT WEEKDAY AM(PM) PEAK HOUR TRAFFIC VOLUMES

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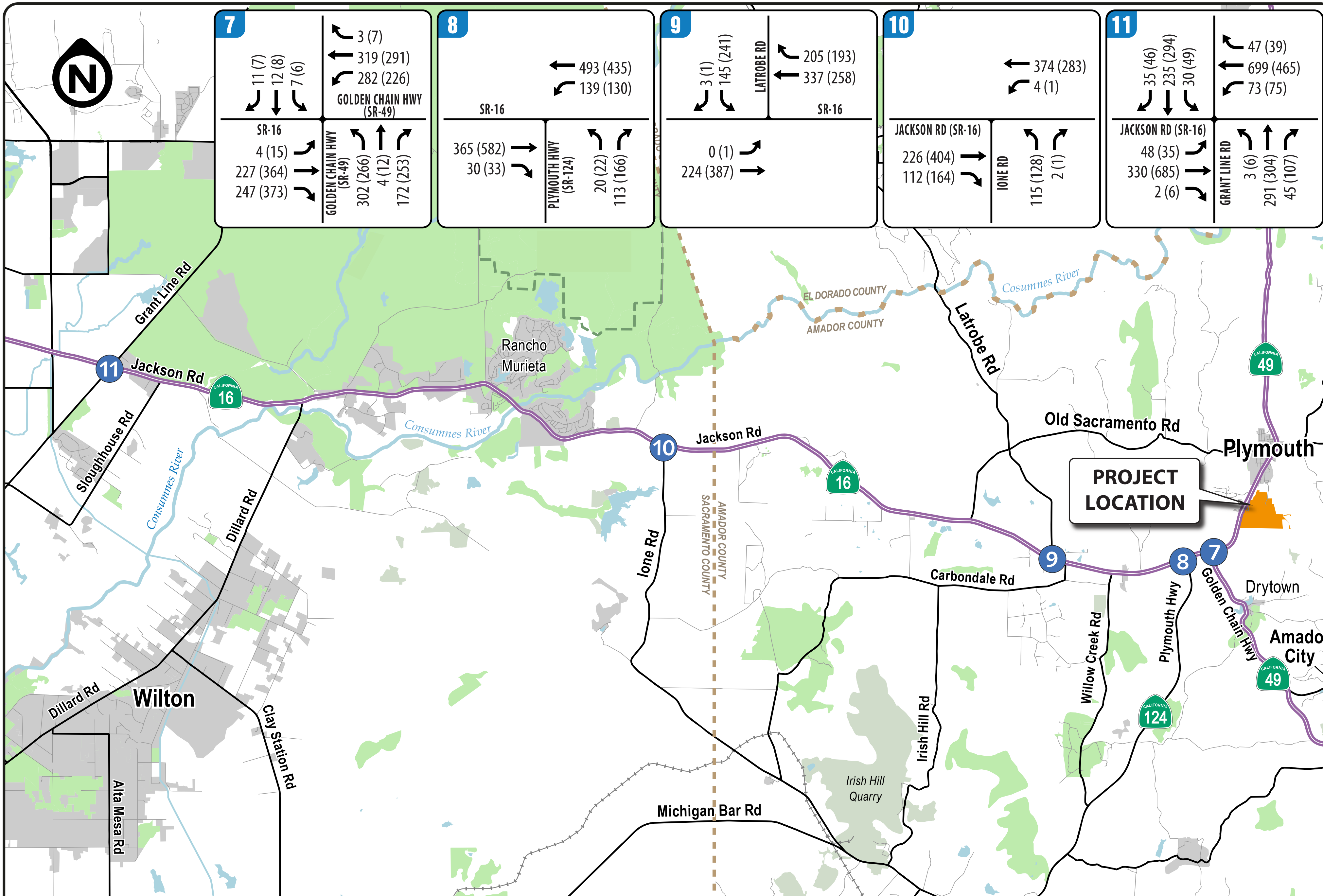

FIGURE 8B | BASELINE PLUS PROJECT WEEKDAY AM(PM) PEAK HOUR TRAFFIC VOLUMES

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Ione Casino Project

Amador County

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4.6 Cumulative Traffic Capacity Conditions (Scenario 5)

For the cumulative conditions, the intersection traffic volumes were based on the existing turning movements plus incremental growth of 0.5% per year in background traffic based on the Amador County Travel Demand Model. In addition to background growth, this scenario includes traffic from the following five projects: Putnam Ranch, Zinfandel Ridge, Shenandoah Ridge, the Greilich Ranch Subdivision, and the 49er RV Park Expansion. This scenario also includes the planned widening of Grant Line Road to four lanes. **Figure 9** presents the cumulative build-out traffic volumes for the project study intersections. **Table 7** summarizes the LOS results for the Cumulative (Year 2040) traffic conditions at each of the project study intersections. As shown on this table, the project study intersections would be forecast to continue to have acceptable conditions during the weekday AM and PM peak commute hours, with the exception of the intersection of SR 16 with Latrobe Road. There are planned left turn lanes identified for this intersection in the Amador County Regional Traffic Mitigation Fee Project List. However, even assuming the additional left turn lanes this intersection is still forecast to operate at LOS E in the PM peak hour.

TABLE 7
CUMULATIVE PLUS PROJECT INTERSECTION LEVEL OF SERVICE CONDITIONS

	INTERSECTION	CONTROL	PEAK HOUR	CUMULATIVE		CUMULATIVE PLUS PROJECT	
				Delay	LOS	Delay	LOS
1	GOLDEN CHAIN HWY (SR-49) & MILLER WAY	Side Street Stop	AM	9.3	A	9.4	A
			PM	9.5	A	9.6	A
2	GOLDEN CHAIN HWY (SR-49) & MAIN STREET	Roundabout	AM	5.1	A	5.2	A
			PM	6.0	A	6.2	A
3	GOLDEN CHAIN HWY (SR-49) & POPLAR STREET	Side Street Stop	AM	10.9	B	11.0	B
			PM	11.1	B	11.3	B
4	GOLDEN CHAIN HWY (SR-49) & PACIFIC STREET / EMPIRE STREET	Side Street Stop	AM	21.5	C	22.1	C
			PM	19.9	C	20.9	C
5	GOLDEN CHAIN HWY (SR-49) & 49ER VILLAGE / EMPIRE STREET	Side Street Stop	AM	15.6	C	15.9	C
			PM	18.4	C	19.4	C
6	GOLDEN CHAIN HIGHWAY (SR-49) & VILLAGE DRIVE	Side Street Stop	AM	19.8	C	21.6	C
			PM	27.9	D	**40.0**	**E**
7	GOLDEN CHAIN HIGHWAY (SR-49) & SR-16	Signalized	AM	20.4	C	20.9	C
			PM	21.1	C	21.8	C
8	SR-16 & PLYMOUTH HIGHWAY (SR-124)	Side Street Stop	AM	14.8	B	15.1	C
			PM	19.0	C	21.0	C
9	SR-16 & LATROBE ROAD	Side Street Stop	AM	19.7	C	20.6	C
			PM	**38.6**	**E**	**48.4**	**E**
10	JACKSON ROAD (SR-16) & IONE ROAD	Side Street Stop	AM	18.7	C	19.3	C
			PM	23.3	C	25.2	D
11	JACKSON ROAD (SR-16) & GRANT LINE ROAD	Signalized	AM	25.5	C	25.7	C
			PM	24.5	C	25.0	C

SOURCE: Abrams Associates, 2023 **NOTE:** Delay results are presented in terms of seconds per vehicle.

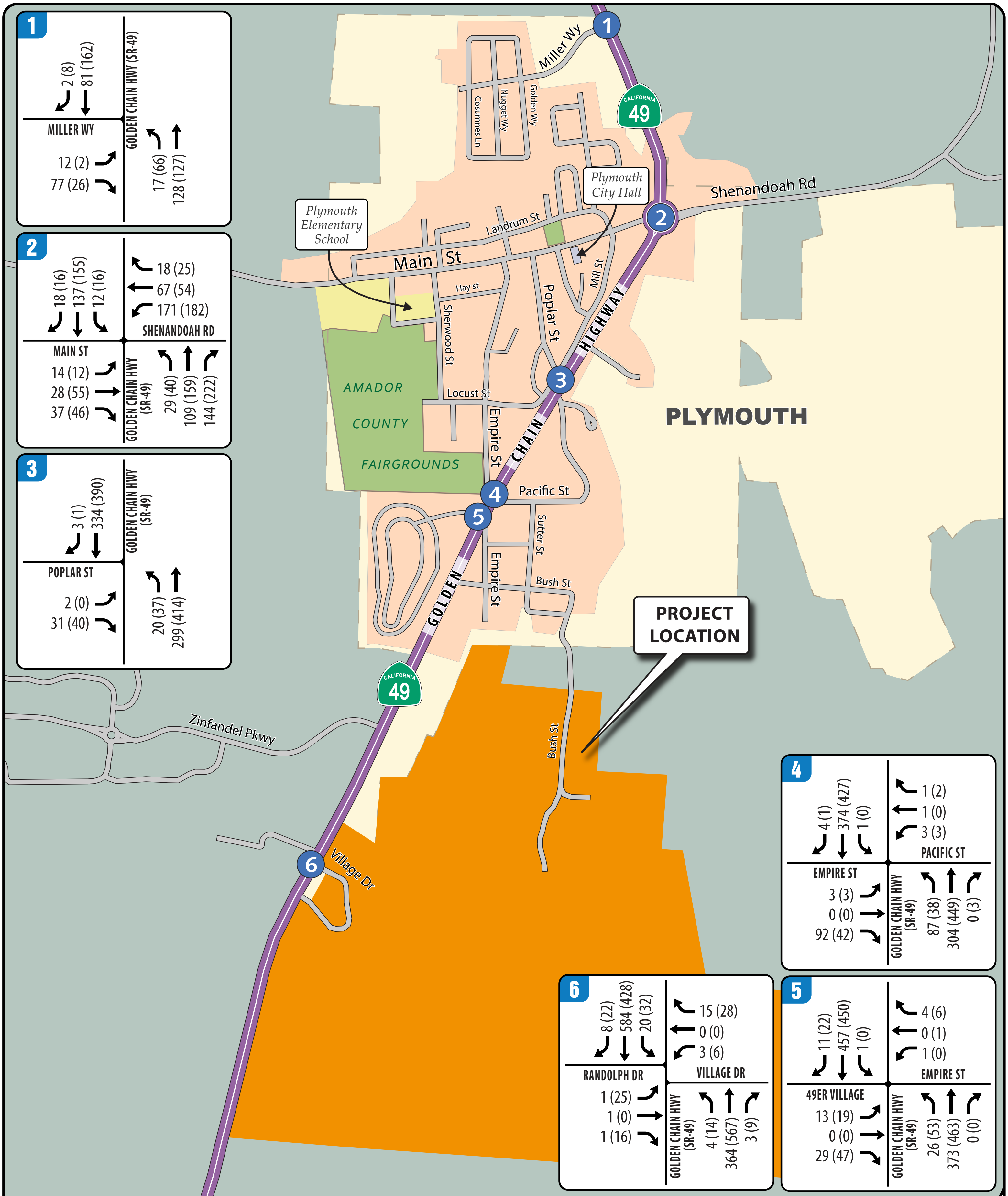

FIGURE 9A | CUMULATIVE WEEKDAY AM(PM) PEAK HOUR TRAFFIC VOLUMES

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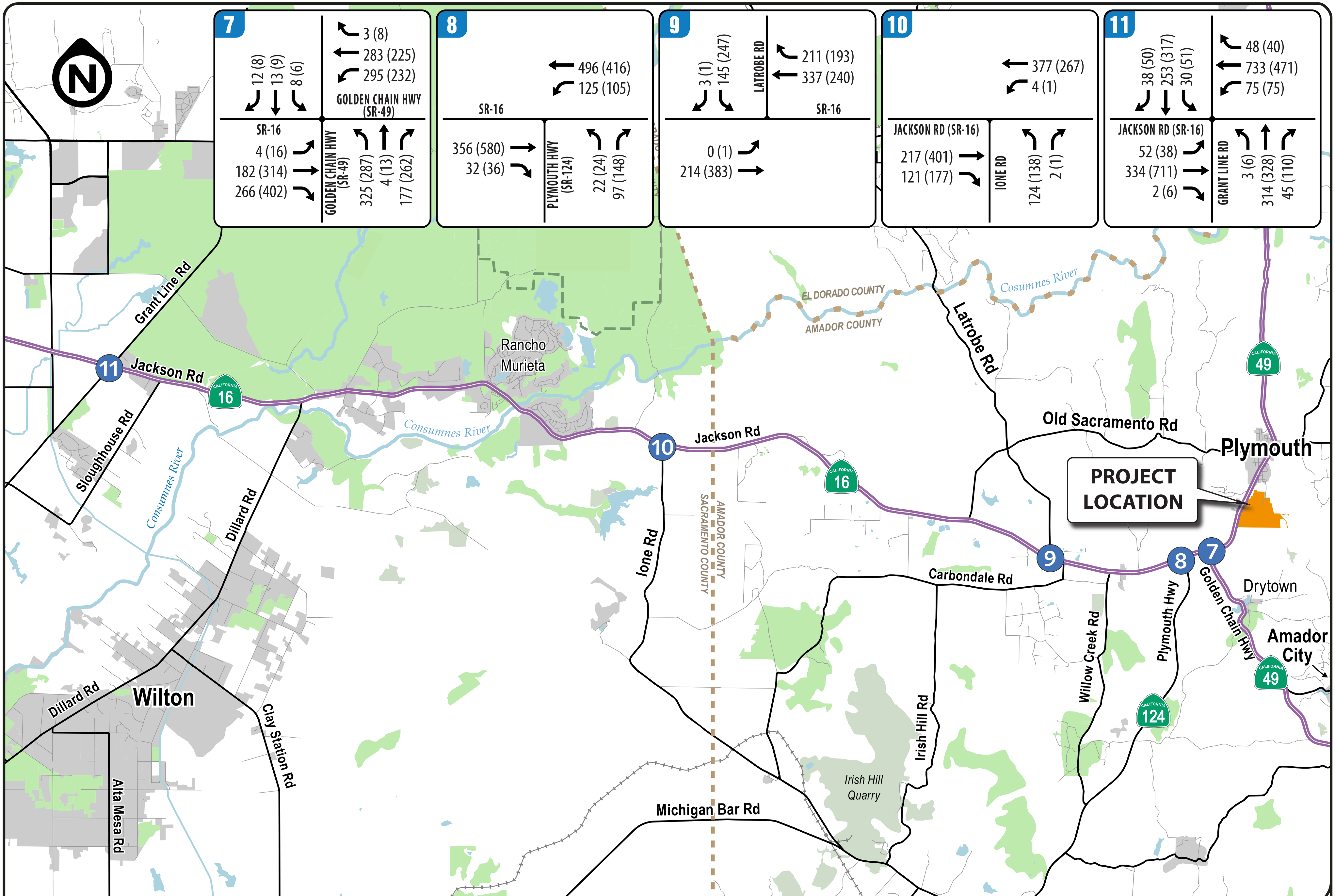

FIGURE 9B | CUMULATIVE WEEKDAY AM(PM) PEAK HOUR TRAFFIC VOLUMES

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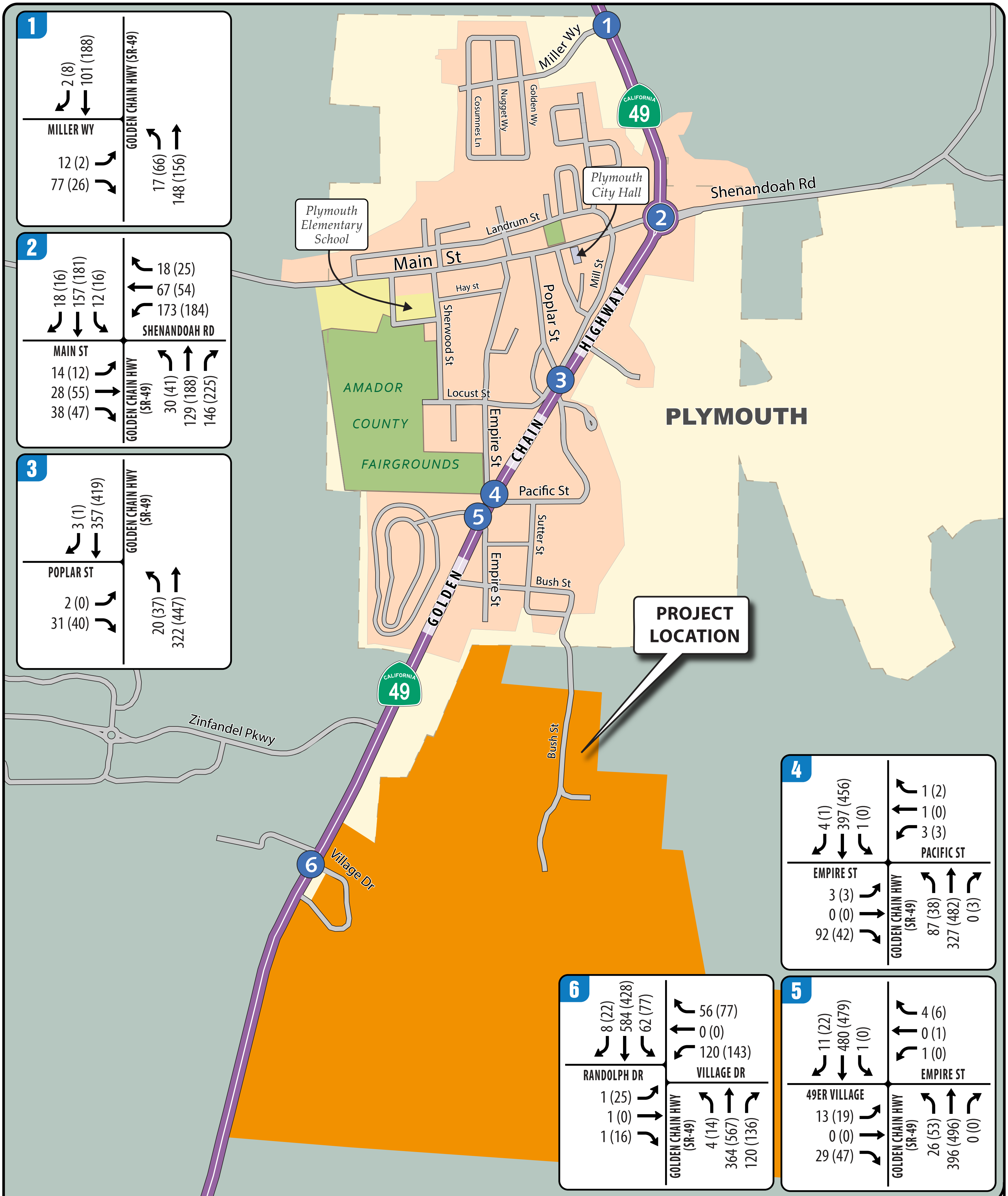

FIGURE 10A | CUMULATIVE PLUS PROJECT WEEKDAY AM(PM) PEAK HOUR TRAFFIC VOLUMES

TRANSPORTATION IMPACT STUDY

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Amador County

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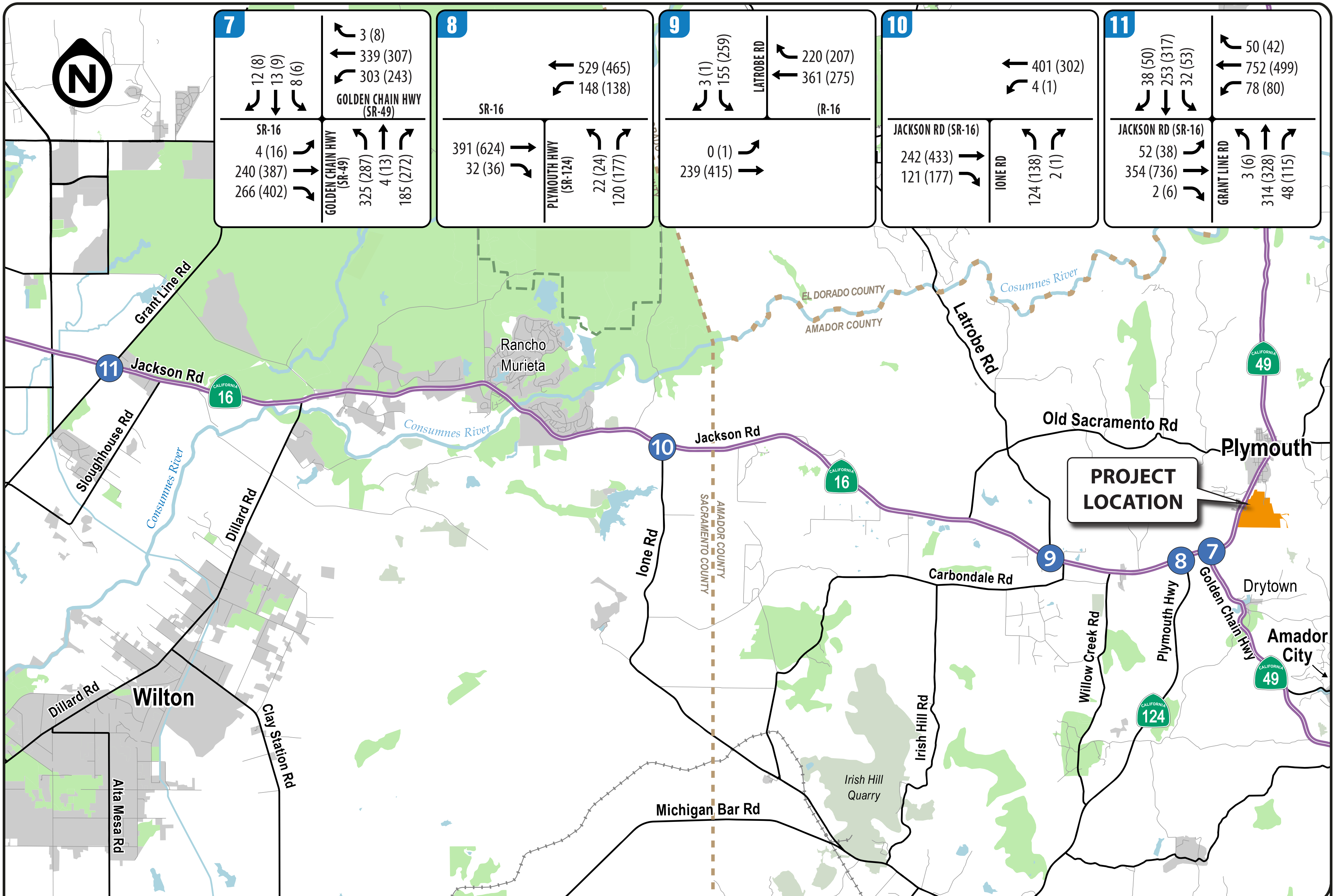

FIGURE 10B | CUMULATIVE PLUS PROJECT WEEKDAY AM(PM) PEAK HOUR TRAFFIC VOLUMES

TRANSPORTATION IMPACT STUDY

Ione Casino Project

Amador County

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4.7 Cumulative Plus Project Traffic Capacity Conditions (Scenario 6)

Table 7 summarizes the LOS results for the Cumulative Plus Project (Year 2040) traffic conditions at each of the project study intersection. **Figure 10** presents the cumulative build-out traffic volumes including the traffic from the proposed project. As shown on this table, all of the signalized study intersections would continue to have acceptable conditions during the weekday peak hours, with the exception of the intersection of SR 16 with Latrobe Road and also Golden Chain Highway (SR 49) with Village Drive (the proposed project entrance). Mitigations to improve the operations at these intersections are discussed in Section 5.

4.8 Friday Evening Cumulative Traffic Capacity Conditions

Traffic counts at all of the project study intersections were conducted on Friday, May 12th, 2023. **Table 8** summarizes the associated LOS computation results for cumulative Friday PM peak hour conditions. Please note that the corresponding LOS analysis calculation sheets for all analysis scenarios are presented in the appendix to this report. For this analysis the Friday evening cumulative and cumulative plus project conditions are presented in **Table 8**. As shown in **Table 8**, all of the project study intersections would continue to have acceptable operations (LOS D or better) under cumulative plus project conditions during the Friday PM peak hours except for the intersection of SR 16 with Latrobe Road and also the intersection of Golden Chain Highway (SR 49) with Village Drive (the proposed project entrance). Mitigations to improve the operations at these intersections are discussed in Section 5.

4.9 Roadway Segment Capacity Conditions

The average daily traffic (ADT) along with the capacity and worst-case Cumulative LOS (with and without the project) is shown in **Table 9**. The resulting volume to capacity (V/C) ratios with and without the proposed project and the resulting project change for the two segments exceeding the standards are shown in **Table 10.** The LOS standards were not exceeded on any segments in the existing segment analysis, which was based on 24-hour traffic counts that were conducted on each roadway segment in May of 2023. As shown in **Table 9**, all of the study segments are forecast to continue to have acceptable operations under cumulative conditions with the exception of the segments of SR 16 from Stonehouse Road to Dillard Road and from Dillard Road to Grant Line Road. Please note these roadway segments are forecast to exceed the LOS standard (LOS D) regardless of whether or not the proposed project is implemented. As shown in **Table 10**, the maximum increase in the V/C ratio on either of the two roadway segments exceeding the standards was 0.03, which is below the established standard of significance, which is an increase in the V/C ratio of 0.05 or more. Therefore, there would be no significant project impacts on any study roadway segments under cumulative plus project conditions.

TABLE 8
FRIDAY EVENING CUMULATIVE PLUS PROJECT INTERSECTION
LEVEL OF SERVICE CONDITIONS

INTERSECTION		CONTROL	CUMULATIVE		CUMULATIVE PLUS PROJECT	
			Delay	LOS	Delay	LOS
1	GOLDEN CHAIN HWY (SR-49) & MILLER WAY	Side Street Stop	9.9	A	10.1	B
2	GOLDEN CHAIN HWY (SR-49) & MAIN STREET	Roundabout	7.2	A	7.6	A
3	GOLDEN CHAIN HWY (SR-49) & POPLAR STREET	Side Street Stop	12.3	B	12.7	B
4	GOLDEN CHAIN HWY (SR-49) & PACIFIC STREET / EMPIRE STREET	Side Street Stop	15.9	C	16.9	C
5	GOLDEN CHAIN HWY (SR-49) & 49ER VILLAGE / EMPIRE STREET	Side Street Stop	23.4	C	26.1	D
6	GOLDEN CHAIN HIGHWAY (SR-49) & RANDOLPH DRIVE / VILLAGE DRIVE (THE PROJECT ENTRANCE)	Side Street Stop	**39.4**	**E**	**> 50.0**	**F**
7	GOLDEN CHAIN HIGHWAY (SR-49) & SR-16	Signalized	23.5	C	25.6	C
8	SR-16 & PLYMOUTH HIGHWAY (SR-124)	Side Street Stop	19.5	C	23.6	C
9	SR-16 & LATROBE ROAD	Side Street Stop	**> 50.0**	**F**	**> 50.0**	**F**
10	JACKSON ROAD (SR-16) & IONE ROAD	Side Street Stop	23.6	C	27.2	D
11	JACKSON ROAD (SR-16) & GRANT LINE ROAD	Signalized	24.7	C	25.7	C

SOURCE: Abrams Associates, 2023 **NOTE:** Delay results are presented in terms of seconds per vehicle.

4.10 Vehicle Miles Traveled

One performance measure that can be used to quantify the transportation impacts of a project is vehicle miles traveled (VMT). This section presents an analysis of the extent of the VMT-related transportation impacts caused by the Project. OPR recommends that VMT thresholds for residential and employment-based land use projects be set at fifteen percent below the baseline VMT/capita or VMT/employee.[5] The Project is not located in a Transit Priority Area and, subject to County approval, would not otherwise be screened out from VMT analysis because of its location in a relatively high VMT generating area.

[5] *Technical Advisory on Evaluating Transportation Impacts in CEQA*, Governor's Office of Planning and Research, Sacramento, CA, December, 2018.

TABLE 9
CUMULATIVE PLUS PROJECT ROADWAY SEGMENT
LEVEL OF SERVICE CONDITIONS

From	To	Location	Classification	Capacity	Impact Threshold	Cumulative ADT	CU+PR ADT	CU+PR LOS
Village Drive (SR-49)	SR-16	Amador	Arterial w/clmb lane	22,200	D	12,253	13,738	B
SR-49	SR-124	Amador	Class I Arterial	16,900	C	14,707	16,007	B
SR-124	Latrobe Road	Amador	Class I Arterial	16,900	C	12,530	13,302	B
Old Sacramento Road	Ione Road	Amador	Class I Arterial	16,900	C	8,000	8,557	B
Stonehouse Road	Dillard Road	Sacramento	2 Lane Arterial	18,000	**D**	**18,049**	**18,607**	**D**
Dillard Road	Grant Line Road	Sacramento	2 Lane Arterial	18,000	**D**	**19,410**	**19,968**	**D**

TABLE 10
CUMULATIVE CONDITIONS ROADWAY SEGMENT
V/C RATIO ANALYSIS

SEGMENT	CUMULATIVE		CUMULATIVE +PROJECT		PROJECT CHANGE
	Volume	V/C Ratio	Volume	V/C Ratio	
Stonehouse Road to Dillard Road	18,049	0.90	18,607	0.93	0.03
Dillard Road to Grant Line Road	19,410	0.97	19,968	1.00	0.03

For this analysis, the California Statewide Travel Demand Model (CSTDM) was used. The model calculates VMT based on the number of vehicles multiplied by the typical distance traveled by each vehicle originating from or driving to a certain area. The volume of traffic and distance traveled depends on mix of land use types, density, and location as well as the existing and planned transportation system, including availability of public transportation. The model divides areas within the County into transportation analysis zones, or TAZs, which are used for transportation analysis and other planning purposes. It should be noted that the conclusions would be expected to be the same using the Amador County Transportation Commission's Travel Demand Model due to the project's location on SR 49 directly adjacent to the city limits of one of Amador County's five unincorporated Cities.

Near-Term Plus Project VMT Analysis - Based on the CSTDM Travel Demand Model the County's average VMT per employee is estimated to be 17.9 miles. The employees of the proposed project would be expected to have similar VMT to existing employees within the TAZ where the project is located, and in other surrounding TAZ's with similar land uses. The VMT per employee estimated by the CSTDM Travel Model for the project area would therefore be assumed represent the approximate VMT per employee that would be generated by the proposed project as well. The project site is located in TAZ 3003. **Table 11** summarizes the existing VMT per employee for the project and provides a comparison to the County average VMT per employee. As seen in **Table 11**, the proposed project is forecast to have an average VMT per employee of 13.2 miles. Data from the CSTDM model indicates the project would not have a significant impact on VMT in the County.

TABLE 11
NEAR-TERM PLUS PROJECT VMT RESULTS

Scenario	*Project Average VMT Per Employee*	*VMT Impact Threshold* [1]	*Impact?*
2023 Plus Project	**13.2 miles**	**17.9 miles**	**No**

NOTE: [1] *The existing plus project VMT impact threshold for commercial projects in Amador County is a VMT per employee that is no higher than the Countywide average VMT per employee which is 17.9 miles.*

Cumulative Plus Project VMT Analysis - Since the project was not found to have a significant impact on VMT in the near-term scenario, a detailed evaluation of the project's cumulative VMT impacts was not conducted. The cumulative analysis is for determining if the Countywide VMT increases or decreases with the proposed project, relative to the VMT generated that would otherwise be generated by full General Plan buildout. Based on the data described above, the project's cumulative VMT impacts would also be assumed to be less-than-significant.

4.11 Transit Impacts

The project would not result in degradation of the level of service (or a significant increase in delay) on any roadway segments currently being utilized by bus transit in the area and, as such, no significant impacts to bus transit are expected. The proposed project is not be expected to significantly impact the operating capacity any existing Amador Transit bus routes. The proposed project could potentially help support existing bus services with additional transit ridership and would not conflict with any transit plans or goals of the County or Amador Transit. Although the proposed project does have the potential to increase patronage on bus lines in the area, no significant effects on transit capacity are anticipated given that the additional ridership would be added primarily in the non-peak directions. As a result, the project would not be expected to result in any significant impacts to bus transit service in the area.

4.12 Pedestrians, Bicycles and Non-Motorized Vehicular Travel

The County does not have level of service standards for pedestrian or bicycle facilities. Nevertheless, use of existing facilities by the users of the project would not be expected to overcrowd those facilities or decrease their performance or safety. The project will add some pedestrians and bicyclists in the area but the volumes added would not be expected to significantly impact any existing facilities. In relation to the existing conditions, the proposed project would not cause substantial changes to the pedestrian or bicycle traffic in the area and would not significantly impact or require changes to the design of any existing bicycle or pedestrian facilities. However, consistent with the County General Plan, the project could be asked to contribute to pedestrian and bicycle improvement measures in the project vicinity.

4.13 Site Access and Circulation

Based on the analysis of the proposed project no on-site circulation issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. However, the current plan to provide access to the site via the northern intersection of SR 49 with Village Drive could potentially result in safety impacts due to potential conflicts in the two-way left turn lane with left turns into Randolph Drive. This is an existing safety issue due to the off-set of the two approaches but it currently operates acceptably because of the low volume of left turns into the two side streets. With the higher left turn volumes from the proposed project this configuration could have increased left turn conflicts in the center two-way left-turn with an increased potential for head-on collisions. It is recommended that the project access be relocated to one of two other locations:

1) Line up the project entrance with Randolph Street.
2) Design the project access to connect only to the other (southern) intersection of Village Drive with SR 49.

At any of these locations the LOS analysis indicates the project's intersection with SR 49 will exceed the LOS standards under cumulative conditions if the project exit has only one lane on its approach to SR 49. Therefore, under any of the above access alternatives a recommended mitigation for cumulative plus project conditions will be to provide separate right and left turn lanes at the project exit (i.e., a two-lane approach).

4.14 Parking

The proposed project would provide an adequate supply of off-street parking based on the County's requirements. The project is currently proposing to meet the County's parking requirements and based on a review of the proposed parking plan there would be no significant parking impacts expected to the surrounding properties.

5) MITIGATION

The following is a summary of the proposed mitigation measures to address the transportation impacts of the project. Based on a detailed analysis of traffic operations with and without each of the proposed mitigations, implementation of the following mitigation measures would reduce some of the project impacts to a *less-than-significant* level.

Impact #1 Impacts to intersection operations - The project would result in a significant contribution (greater than 5 seconds delay) to the LOS operations at two intersections that would exceed the established standards under future weekday and Friday conditions:

1) State Route 16 at Latrobe Road (Intersection #9)
2) Golden Chain Highway (SR 49) and the Project Entrance (Intersection #6)

The addition of traffic from the proposed project would result in an increase in delay of more than five seconds to these two intersections that are forecast to exceed the established LOS standards. Please note that one of the impacted intersections (Intersection #6) is within the City of Plymouth. The following mitigation measures would be forecast to reduce the impacts to a less-than-significant level in all of the plus project scenarios.

<u>Mitigation Measures</u>

MM 1 (a) *<u>State Route 16 at Latrobe Road</u> – Payment of a proportionate share of the cost to install a traffic signal, meeting the County's requirements. Using Caltrans' methodology and the volume forecasts in this TIS, the estimated proportional share contribution from the project for this improvement would be 55%.*

MM 1 (b) *<u>Golden Chain Highway (SR 49) at Village Drive (the proposed project entrance)</u> – Widening of Village Drive to allow for separate right and left turn lanes on the westbound approach to SR 49 (i.e., two lanes for traffic exiting the project at SR 49). With this improvement the intersection would meet the established standards with the proposed casino. Using Caltrans' methodology and the volume forecasts in this TIS, the estimated proportional share contribution from the project for this improvement would be 81%.*

Impact #2 Impacts related to site access and circulation.

The current plan to provide access to the site via the northern intersection of SR 49 with Village Drive could result in safety impacts due to potential conflicts in the two-way left turn lane with left turns into Randolph Drive. It is our understanding that with the addition of traffic from the proposed project this off-set configuration with the two-way left turn lane may no longer be acceptable to Caltrans.

Regardless of the location. the LOS analysis indicates the project's intersection with SR 49 will exceed the LOS standards under cumulative conditions if the project exit has only one lane on its approach to SR 49. Therefore, under any of the above access alternatives the recommended mitigation for cumulative plus project conditions described previously, MM 1(b), would also need to be implemented. No other site circulation or access issues have been identified that would cause a traffic safety problem or any unusual traffic congestion or delay. Detailed LOS calculations for each of the project entrances under all scenarios are included in the technical appendix.

<u>Mitigation Measure</u>

MM 2 (a) <u>Golden Chain Highway (SR 49) at Village Drive (the proposed project entrance)</u> – Relocate the project access to one of two other recommended locations:

1) Line up the project entrance with Randolph Street.
2) Design the project access to connect only to the other (southern) intersection of Village Drive with SR 49.

Impact #3 Impacts related to conflicts with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or potential decreases to the performance or safety of such facilities.

The project would not result in degradation of the level of service (or a significant increase in delay) on any roadway segments currently being utilized by bus transit in the area and would not increase ridership beyond existing capacity. As such, no significant impacts to bus transit are expected. In addition, the project would not significantly impact or change the design of any existing transportation facility or create any new safety problems in the area. Therefore, based on the County's significance criteria the project's impacts on alternative transportation would be considered less than significant and no mitigations would be required.

<u>Mitigation Measures</u>
None required.

Impact #4 Demolition and construction activities associated with the proposed project would result in an increase in traffic to and from the site and could lead to unsafe conditions near the project site.

The increase in traffic as a result of demolition and construction activities associated with the proposed project has been quantified assuming a worst-case single phase construction period of 24 months.

Heavy Equipment

Approximately 15 truck trips per day are estimated throughout the demolition and construction of the proposed project. Heavy equipment transport to and from the site could cause traffic impacts in the vicinity of the project site during construction. The project would implement a Traffic Control Plan to address this truck traffic.

The requirements within the Traffic Control Plan will include, but are not limited to, the following: truck drivers would be notified of and required to use the most direct routes; all site ingress and egress would occur only at the main driveways to the project site and construction activities may require installation of temporary traffic signals; specifically designated travel routes for large vehicles would be monitored and controlled by flaggers for large construction vehicle ingress and egress; warning signs indicating frequent truck entry and exit would be posted on State Route 49; and any debris and mud on nearby streets caused by trucks would be monitored daily and may require instituting a street cleaning program. In addition, the ten loads of heavy equipment being hauled to and from the site each month would be short-term and temporary.

Employees

The weekday work is expected to begin around 7:00 AM and end around 4:00 PM. The construction worker arrival peak would occur between 6:30 AM and 7:30 AM, and the departure peak would occur between 4:00 PM and 5:00 PM. These peak hours are slightly before the countywide commute peaks. It should be noted that the number of trips generated during construction would not only be temporary, but would also be substantially less than the proposed project at buildout. Based on estimates of the number of construction workers, the project could require parking for up to 100 vehicles during the peak construction period. Additionally, deliveries, visits, and other activities may generate peak non-worker parking demand of 20 to 30 trucks and automobiles per day. Therefore, up to 130 vehicle parking spaces may be required during the peak construction period for the construction employees. Because the construction of the project can be staged so that employee parking demand is met by using on-site parking, the impacts of construction-related employee traffic and parking are considered less-than-significant.

Construction Material Import/Export

The project would also require removal of existing debris as well as the importation of construction material, including raw materials for the building pads, the buildings, the parking area, and landscaping. During the maximum peak construction period, it is estimated material import and export could generate approximately 10 truck trips per day.

Traffic Control Plan

The Traffic Control Plan would indicate how parking for construction workers would be provided during construction on adjacent land currently held in trust by the Tribe to ensure a safe flow of traffic in the project area during construction. This analysis assumed construction of the entire project in one phase to identify the potential worst-case traffic effects. If the project is built in phases over time, the effects of each phase will be the same or less. Therefore, the demolition and construction activities associated with the proposed project or its individual phases would not lead to noticeable congestion in the vicinity of the site or the perception of decreased traffic safety resulting in a ***less-than-significant*** impact.

Mitigation Measures
None required.

Impact #5 Impacts regarding emergency vehicle access on and surrounding the proposed project site.

Sufficient emergency access is determined by factors such as number of access points, roadway width, and proximity to fire stations. The land use plan for the proposed project includes the main entrance on SR 49 and will include a secondary emergency vehicle access. All lane widths within the project would meet the minimum width that can accommodate an emergency vehicle; therefore, the width of the internal roadways would be adequate. In addition, with the proposed mitigations the addition of project traffic would not result in any significant changes to emergency vehicle response times in the area. Therefore, development of the project is expected to have ***less-than-significant*** impacts regarding emergency vehicle access.

Mitigation Measures
None required.

Transportation Impact Study Technical Appendix

Ione Casino Project

Amador County

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Abrams Associates
TRAFFIC ENGINEERING, INC.

November 29, 2023

Appendix
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1.) Accident Summary (5 Years)

2.) Warrants

3.) HCM 6th Edition Level of Service (LOS) Results

Ione Casino Project
Amador County

Collision Data
2022-2017

CASE ID	COLLISION DATE	COLLISION TIME	PRIMARY RD	SECONDARY RD	DISTANCE	DIRECTION	INTERSECTION	WEATHER 1	TYPE OF COLLISION	COLLISION SEVERITY	NUMBER KILLED	NUMBER INJURED	PCF VIOLATION CATEGORY	MOTOR VEHICLE INVOLVED WITH	ALCOHOL INVOLVED
2022															
91883294	20220923	1203	SR-49	MAIN STREET	0	0	Y	Clear	Rear End	Injury (Other Visible)	0	2	Unsafe Starting or Backing	Other Motor Vehicle	0
91886196	20220927	625	SR-49	MAIN STREET	0	0	Y	Clear	Broadside	Property Damage Only	0	0	Automobile Right of Way	Other Motor Vehicle	0
91955641	20221201	1010	SR-49 NORTHBOUND	MAIN STREET	40	N	N	Cloudy	Rear End	Property Damage Only	0	0	Automobile Right of Way	Other Motor Vehicle	0
91740420	20220324	930	SR-49	SR-16	0	0	Y	Clear	Overturned	Property Damage Only	0	0	Unsafe Speed	Non-Collision	0
91927190	20221117	1650	SR-49	SR-16	230	S	N	Clear	Hit Object	Injury (Severe)	0	1	Wrong Side of Road	Fixed Object	0
91956582	20221220	1405	SR-16	SR-49	0	0	Y	Clear	Rear End	Injury (Other Visible)	0	2	Unsafe Speed	Other Motor Vehicle	0
91788240	20220525	830	SR-16	SR-124	0	0	Y	Clear	Broadside	Injury (Other Visible)	0	1	Automobile Right of Way	Other Motor Vehicle	0
91847769	20220822	820	SR-16	SR-124	0	0	Y	Clear	Broadside	Injury (Complaint of Pain)	0	2	Automobile Right of Way	Other Motor Vehicle	0
91905261	20221022	2145	SR-16	SR-124	135	W	N	Clear	Hit Object	Injury (Severe)	0	1	DUI	#N/A	Y
91833440	20220731	1230	SR-16	LATROBE RD	0	0	Y	Clear	Rear End	Injury (Other Visible)	0	2	Automobile Right of Way	Other Motor Vehicle	0
91958784	20221227	520	SR-16	IONE RD	0	0	Y	Cloudy	Broadside	Property Damage Only	0	0	Automobile Right of Way	Other Motor Vehicle	0
91694200	20220205	1045	SR-16	GRANT LINE RD	45	E	N	Clear	Rear End	Property Damage Only	0	0	Unsafe Starting or Backing	Other Motor Vehicle	0
91762539	20220423	1725	SR-16	GRANTLINE RD.	150	E	N	Clear	Rear End	Property Damage Only	0	0	Unsafe Speed	Other Motor Vehicle	0
91787975	20220525	1130	SR-16	GRANT LINE RD.	30	E	N	Clear	Rear End	Property Damage Only	0	0	Unsafe Starting or Backing	Other Motor Vehicle	0

Collision Data
2022-2017

CASE ID	COLLISION DATE	COLLISION TIME	PRIMARY RD	SECONDARY RD	DISTANCE	DIRECTION	INTERSECTION	WEATHER 1	TYPE OF COLLISION	COLLISION SEVERITY	NUMBER KILLED	NUMBER INJURED	PCF VIOLATION CATEGORY	MOTOR VEHICLE INVOLVED WITH	ALCOHOL INVOLVED
2021															
91522388	20210708	2150	SR-49	MILLER RD	150	S	N	Clear	Hit Object	Property Damage Only	0	0	Unknown	Other Object	0
91388027	20210111	2150	MAIN ST	SR-49	15	E	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0
91389916	20210111	1700	SR-49	MAIN ST	0	0	Y	Clear	Rear End	Property Damage Only	0	0	Unsafe Speed	Other Motor Vehicle	0
91403468	20210203	1335	SR-49	MAIN STREET	0	0	Y	Clear	Broadside	Property Damage Only	0	0	Automobile Right of Way	Other Motor Vehicle	0
91406807	20210122	2315	SR-49 N/B	MAIN ST	39	S	N	Cloudy	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0
91464182	20210426	400	SR-49	MAIN ST	67	N	N	Cloudy	Hit Object	Injury (Other Visible)	0	2	Unsafe Speed	Fixed Object	0
91483140	20210512	715	SR-49	SR-16	50	S	N	Clear	Rear End	Injury (Complaint of Pain)	0	1	Unsafe Speed	Other Motor Vehicle	0
91661473	20211220	1810	SR-16	SR-49	0	0	Y	Cloudy	Broadside	Property Damage Only	0	0	Traffic Signals and Signs	Other Motor Vehicle	0
91497783	20210613	1440	SR-16	IONE ROAD	0	0	Y	Clear	Broadside	Injury (Severe)	0	1	Automobile Right of Way	Other Motor Vehicle	0
91505617	20210620	1805	IONE ROAD	SR-16	20	S	N	Clear	Rear End	Injury (Complaint of Pain)	0	2	Unsafe Speed	Other Motor Vehicle	0
91385349	20210109	800	SR-16 (JACKSON ROA	GRANT LINE ROAD	0	0	Y	Fog	Broadside	Property Damage Only	0	0	Traffic Signals and Signs	Other Motor Vehicle	0
91425500	20210304	1820	GRANT LINE RD	SR-16	150	S	N	Clear	Rear End	Property Damage Only	0	0	Unsafe Speed	Other Motor Vehicle	0

Ione Casino Project
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Collision Data
2022-2017

CASE ID	COLLISION DATE	COLLISION TIME	PRIMARY RD	SECONDARY RD	DISTANCE	DIRECTION	INTERSECTION	WEATHER 1	TYPE OF COLLISION	COLLISION SEVERITY	NUMBER KILLED	NUMBER INJURED	PCF VIOLATION CATEGORY	MOTOR VEHICLE INVOLVED WITH	ALCOHOL INVOLVED
2020															
91194749	20200220	2320	SR-49	MILLER WAY	7920	N	N	Clear	Hit Object	Property Damage Only	0	0	DUI	Fixed Object	Y
91236051	20200426	700	MAIN ST.	SR-49	0	0	Y	Clear	Vehicle/Pedı	Injury (Other Visible)	0	1	Automobile Right of Way	Pedestrian	0
91263117	20200626	2010	SR-49	MAIN STREET	0	0	Y	Clear	Vehicle/Pedı	Injury (Severe)	0	1	Pedestrian Violation	Pedestrian	0
91286180	20200807	1535	MAIN STREET	SR-49	20	E	N	Clear	Rear End	Injury (Complaint of Pain)	0	1	Unknown	Other Motor Vehicle	0
91346234	20201104	1425	MAIN STREET	SR-49	6	S	N	Clear	Rear End	Injury (Severe)	0	1	Unsafe Starting or Backing	Other Motor Vehicle	0
91374729	20201215	1530	MAIN STREET	SR-49	30	E	N	Cloudy	Rear End	Property Damage Only	0	0	Unsafe Starting or Backing	Other Motor Vehicle	0
91223253	20200405	2000	SR-16	SR-49	100	W	N	Raining	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0
91235965	20200506	1212	SR-16	SR-49	0	0	Y	Clear	Broadside	Injury (Other Visible)	0	1	Automobile Right of Way	Other Motor Vehicle	0
91236663	20200504	540	SR-49	SR-16	0	0	Y	Clear	Sideswipe	Property Damage Only	0	0	Improper Turning	Other Motor Vehicle	0
91296375	20200829	1255	SR-49	SR-16	90	N	N	Clear	Sideswipe	Property Damage Only	0	0	Unsafe Lane Change	Other Motor Vehicle	0
91375069	20201210	1200	SR-16 EASTBOUND T	SR-16	0	0	Y	Clear	Rear End	Property Damage Only	0	0	Unsafe Speed	Other Motor Vehicle	0
91388984	20201231	2255	SR-16 W/B	SR-49	120	W	N	Clear	Hit Object	Property Damage Only	0	0	DUI	Fixed Object	Y
91266177	20200701	1200	SR-16	LATROBE RD	100	E	N	Clear	Hit Object	Injury (Complaint of Pain)	0	2	Automobile Right of Wav	Fixed Object	0
91306030	20200915	625	SR-16	LATROBE RD	0	0	Y	Clear	Head On	Injury (Complaint of Pain)	0	2	Automobile Right of Way	Other Motor Vehicle	0
91331186	20201016	1055	SR-16	LATROBE RD	0	0	Y	Clear	Broadside	Injury (Complaint of Pain)	0	3	Automobile Right of Way	Other Motor Vehicle	0
91371286	20201208	1730	SR-16	LATROBE RD	0	0	Y	Clear	Rear End	Injury (Other Visible)	0	1	Automobile Right of Way	Other Motor Vehicle	0
91324051	20200930	2117	SR-16	IONE RD	12	E	N	Clear	Broadside	Property Damage Only	0	0	DUI	Parked Motor Vehicle	Y
91265064	20200701	2025	SR-16	GRANT LINE RD	25	W	N	Clear	Rear End	Property Damage Only	0	0	Unsafe Speed	Other Motor Vehicle	0
91287178	20200805	1659	SR-16	GRANT LINE RD	150	E	N	Clear	Rear End	Property Damage Only	0	0	Unsafe Speed	Other Motor Vehicle	0
91357755	20201125	1830	GRANT LINE ROAD	SR-16	200	S	N	Clear	Rear End	Injury (Complaint of Pain)	0	1	Unsafe Speed	Other Motor Vehicle	0

Collision Data
2022-2017

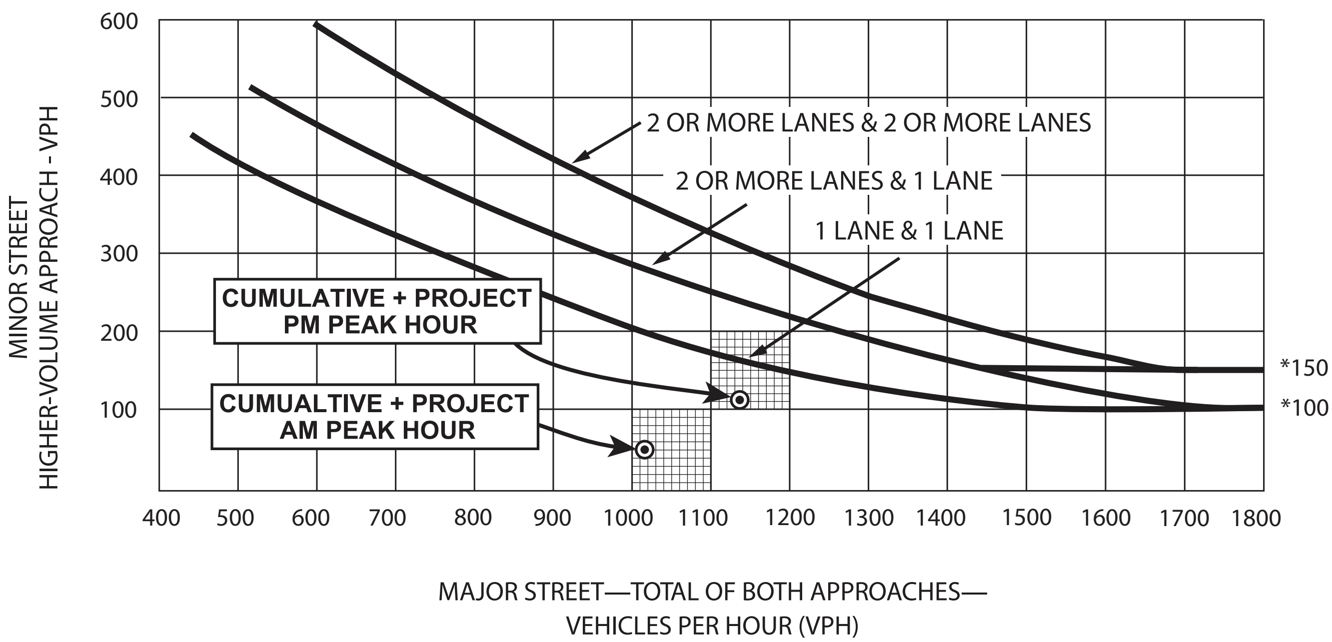
CASE ID	COLLISION DATE	COLLISION TIME	PRIMARY RD	SECONDARY RD	DISTANCE	DIRECTION	INTERSECTION	WEATHER 1	TYPE OF COLLISION	COLLISION SEVERITY	NUMBER KILLED	NUMBER INJURED	PCF VIOLATION CATEGORY	MOTOR VEHICLE INVOLVED WITH	ALCOHOL INVOLVED
2019															
91109706	20191018	1428	SR-49	MILLER WAY	0	0	Y	Clear	Broadside	Injury (Complaint of Pain)	0	2	Automobile Right of Way	Other Motor Vehicle	0
90938675	20190224	520	SR-16 E/B TO SR-49 S	SR-16	200	S	N	Cloudy	Hit Object	Injury (Other Visible)	0	1	DUI	Fixed Object	Y
91009343	20190607	540	SR-49	SR-16	18	S	N	Clear	Overturned	Property Damage Only	0	0	Unsafe Speed	Non-Collision	0
91097715	20191011	600	SR-16	SR-49	0	0	Y	Clear	Broadside	Property Damage Only	0	0	Traffic Signals and Signs	Other Motor Vehicle	0
91112971	20191030	1520	SR-16	SR-49	0	0	Y	Clear	Broadside	Property Damage Only	0	0	Traffic Signals and Signs	Other Motor Vehicle	0
91153180	20191224	1120	SR-49	SR-16	60	S	N	Cloudy	Rear End	Injury (Complaint of Pain)	0	1	Unsafe Starting or Backing	Other Motor Vehicle	0
90954069	20190319	1045	SR-16 (JACKSON HIGI	IONE RD	32	W	N	Cloudy	Broadside	Injury (Severe)	0	1	Automobile Right of Way	Other Motor Vehicle	0
90954333	20190320	630	IONE RD	SR-16	0	0	Y	Cloudy	Broadside	Injury (Complaint of Pain)	0	1	Automobile Right of Way	Other Motor Vehicle	0
91137157	20191127	1700	SR-16	IONE RD	150	E	N	Cloudy	Hit Object	Injury (Complaint of Pain)	0	1	Improper Turning	Fixed Object	0
91097483	20191006	1830	SR-16	GRANT LINE RD	50	W	N	Clear	Rear End	Property Damage Only	0	0	Unsafe Starting or Backing	Other Motor Vehicle	0
91114761	20191026	745	SR-16	GRANT LINE RD	75	W	N	Clear	Rear End	Injury (Complaint of Pain)	0	1	Unsafe Starting or Backing	Other Motor Vehicle	0
91121608	20191109	1335	SR-16	GRANT LINE RD	0	0	Y	Clear	Sideswipe	Property Damage Only	0	0	Traffic Signals and Signs	Other Motor Vehicle	0
91142876	20191210	1910	SR-16	GRANT LINE RD	50	W	N	Cloudy	Rear End	Property Damage Only	0	0	DUI	Other Motor Vehicle	Y

Ione Casino Project
Amador County

Collision Data
2022-2017

CASE ID	COLLISION DATE	COLLISION TIME	PRIMARY RD	SECONDARY RD	DISTANCE	DIRECTION	INTERSECTION	WEATHER 1	TYPE OF COLLISION	COLLISION SEVERITY	NUMBER KILLED	NUMBER INJURED	PCF VIOLATION CATEGORY	MOTOR VEHICLE INVOLVED WITH	ALCOHOL INVOLVED
2018															
90871858	20181121	10	SR-49 N/B	EMPIRE ST	328	S	N	Clear	Hit Object	Injury (Other Visible)	0	1	DUI	Fixed Object	Y
90762980	20180630	652	SR-16 E/B TO SR-49 S	SR-49	40	W	N	Clear	Hit Object	Property Damage Only	0	0	Improper Turning	Fixed Object	0
90804973	20180830	1750	SR-16 (JACKSON RD)	GRANT LINE RD	45	E	N	Clear	Rear End	Property Damage Only	0	0	Unsafe Starting or Backing	Other Motor Vehicle	0
2017															
90403982	20170227	1550	SR-49	MAIN STREET	0	0	Y	Cloudy	Sideswipe	Property Damage Only	0	0	Automobile Right of Way	Other Motor Vehicle	0
90486355	20170613	1525	SR-49 SOUTHBOUND	MAIN STREET	150	S	N	Clear	Rear End	Property Damage Only	0	0	Following too Closely	Other Motor Vehicle	0
90487764	20170613	1445	SR-49	S. MAIN ST.	0	0	Y	Clear	Broadside	Property Damage Only	0	0	Automobile Right of Way	Other Motor Vehicle	0
90511820	20170723	2015	SR-49	MAIN ST	0	0	Y	Clear	Broadside	Property Damage Only	0	0	Automobile Right of Way	Other Motor Vehicle	0
90583521	20171029	2325	SR-49	MAIN ST	28	S	N	Clear	Rear End	Injury (Severe)	0	3	DUI	Other Motor Vehicle	Y
90588924	20171026	1655	SR-49	MAIN ST	194	N	N	Clear	Rear End	Property Damage Only	0	0	Unsafe Speed	Other Motor Vehicle	0
90621214	20171130	1445	SR-49	MAIN ST	0	0	Y	Clear	Overturned	Injury (Severe)	0	1	Improper Turning	Non-Collision	0
90595097	20171113	1920	SR-49 N/B TO EMPIRI	EMPIRE ST.	30	S	N	Raining	Rear End	Property Damage Only	0	0	Unsafe Speed	Other Motor Vehicle	0
90612105	20171130	700	SR-49	VILLAGE DRIVE	1056	S	N	Clear	Hit Object	Property Damage Only	0	0	Wrong Side of Road	Fixed Object	0
90370772	20170110	1548	SR-49	SR-16	72	S	N	Raining	Overturned	Property Damage Only	0	0	Unsafe Speed	Non-Collision	0
90539900	20170827	1913	SR-49	SR-16	0	0	N	Clear	Hit Object	Injury (Other Visible)	0	1	Wrong Side of Road	Fixed Object	0
90476068	20170607	1300	SR-16	IONE ROAD	0	0	Y	Clear	Broadside	Injury (Other Visible)	0	4	Automobile Right of Way	Other Motor Vehicle	0
90416200	20170314	915	SR-16 E/B	GRANT LINE RD	30	W	N	Clear	Rear End	Property Damage Only	0	0	Unsafe Starting or Backing	Other Motor Vehicle	0
90519718	20170727	1705	SR-16 (JACKSON RD.)	GRANT LINE RD	106	E	N	Clear	Rear End	Injury (Other Visible)	0	5	DUI	Other Motor Vehicle	Y

PEAK HOUR VOLUME WARRANT
(Urban Areas)



* **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:
MUTCD, CHAPTER 4
(FIGURE 4C-3)

#6 - GOLDEN CHAIN HIGHWAY (SR-49) & VILLAGE DRIVE - CUMULATIVE PLUS PROJECT

Ione Casino Project

City of Plymouth

Abrams Associates
TRAFFIC ENGINEERING, INC.

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	21	10	100	69	1
Future Vol, veh/h	5	21	10	100	69	1
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	23	11	109	75	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	207	76	76	0	-	0
Stage 1	76	-	-	-	-	-
Stage 2	131	-	-	-	-	-
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	781	985	1523	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	776	985	1523	-	-	-
Mov Cap-2 Maneuver	776	-	-	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	895	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1523	-	936	-	-
HCM Lane V/C Ratio	0.007	-	0.03	-	-
HCM Control Delay (s)	7.4	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	4.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	68	240	207	106
Demand Flow Rate, veh/h	69	244	211	108
Vehicles Circulating, veh/h	251	114	42	241
Vehicles Exiting, veh/h	98	139	278	117
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.0	4.7	4.1	4.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	69	244	211	108
Cap Entry Lane, veh/h	1068	1228	1322	1079
Entry HV Adj Factor	0.979	0.982	0.983	0.984
Flow Entry, veh/h	68	240	207	106
Cap Entry, veh/h	1045	1207	1299	1062
V/C Ratio	0.065	0.199	0.160	0.100
Control Delay, s/veh	4.0	4.7	4.1	4.3
LOS	A	A	A	A
95th %tile Queue, veh	0	1	1	0

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	17	12	205	241	3
Future Vol, veh/h	2	17	12	205	241	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	18	13	223	262	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	513	264	265	0	-	0
Stage 1	264	-	-	-	-	-
Stage 2	249	-	-	-	-	-
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	521	775	1299	-	-	-
Stage 1	780	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	515	775	1299	-	-	-
Mov Cap-2 Maneuver	515	-	-	-	-	-
Stage 1	771	-	-	-	-	-
Stage 2	792	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1299	-	736	-	-
HCM Lane V/C Ratio	0.01	-	0.028	-	-
HCM Control Delay (s)	7.8	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	82	3	1	1	78	203	0	1	267	3
Future Vol, veh/h	3	0	82	3	1	1	78	203	0	1	267	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	89	3	1	1	85	221	0	1	290	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	686	685	292	729	686	221	293	0	0	221	0	0
Stage 1	294	294	-	391	391	-	-	-	-	-	-	-
Stage 2	392	391	-	338	295	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	362	371	747	338	370	819	1269	-	-	1348	-	-
Stage 1	714	670	-	633	607	-	-	-	-	-	-	-
Stage 2	633	607	-	676	669	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	340	342	747	280	342	819	1269	-	-	1348	-	-
Mov Cap-2 Maneuver	340	342	-	280	342	-	-	-	-	-	-	-
Stage 1	660	669	-	585	561	-	-	-	-	-	-	-
Stage 2	583	561	-	595	668	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	15.9	2.2	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1269	-	-	717	336	1348	-	-
HCM Lane V/C Ratio	0.067	-	-	0.129	0.016	0.001	-	-
HCM Control Delay (s)	8	0	-	10.8	15.9	7.7	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	8	1	0	4	4	273	0	1	347	4
Future Vol, veh/h	4	0	8	1	0	4	4	273	0	1	347	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	9	1	0	4	4	297	0	1	377	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	688	686	379	691	688	297	381	0	0	297	0	0
Stage 1	381	381	-	305	305	-	-	-	-	-	-	-
Stage 2	307	305	-	386	383	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	360	370	668	359	369	742	1177	-	-	1264	-	-
Stage 1	641	613	-	705	662	-	-	-	-	-	-	-
Stage 2	703	662	-	637	612	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	356	368	668	353	367	742	1177	-	-	1264	-	-
Mov Cap-2 Maneuver	356	368	-	353	367	-	-	-	-	-	-	-
Stage 1	638	612	-	702	659	-	-	-	-	-	-	-
Stage 2	696	659	-	628	611	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	11	0.1	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1177	-	-	517	608	1264	-	-
HCM Lane V/C Ratio	0.004	-	-	0.025	0.009	0.001	-	-
HCM Control Delay (s)	8.1	0	-	12.1	11	7.9	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	3	0	14	4	273	3	19	342	7
Future Vol, veh/h	1	1	1	3	0	14	4	273	3	19	342	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	1	3	0	15	4	297	3	21	372	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	728	722	372	724	727	297	380	0	0	300	0	0
Stage 1	414	414	-	305	305	-	-	-	-	-	-	-
Stage 2	314	308	-	419	422	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	339	353	674	341	351	742	1178	-	-	1261	-	-
Stage 1	616	593	-	705	662	-	-	-	-	-	-	-
Stage 2	697	660	-	612	588	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	327	346	674	335	344	742	1178	-	-	1261	-	-
Mov Cap-2 Maneuver	327	346	-	335	344	-	-	-	-	-	-	-
Stage 1	614	583	-	703	660	-	-	-	-	-	-	-
Stage 2	680	658	-	600	578	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.5	11.1	0.1	0.4
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1178	-	-	327	504	611	1261	-	-
HCM Lane V/C Ratio	0.004	-	-	0.003	0.004	0.03	0.016	-	-
HCM Control Delay (s)	8.1	-	-	16	12.2	11.1	7.9	-	-
HCM Lane LOS	A	-	-	C	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.1	0.1	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	140	242	182	159	296	137
Future Volume (veh/h)	140	242	182	159	296	137
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	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	144	0	188	164	305	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	291		257	846	419	
Arrive On Green	0.16	0.00	0.15	0.46	0.24	0.00
Sat Flow, veh/h	1856	1572	1767	1856	1767	1572
Grp Volume(v), veh/h	144	0	188	164	305	0
Grp Sat Flow(s),veh/h/ln	1856	1572	1767	1856	1767	1572
Q Serve(g_s), s	2.1	0.0	3.0	1.5	4.7	0.0
Cycle Q Clear(g_c), s	2.1	0.0	3.0	1.5	4.7	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	291		257	846	419	
V/C Ratio(X)	0.49		0.73	0.19	0.73	
Avail Cap(c_a), veh/h	1489		1297	3137	1901	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.3	0.0	12.0	4.8	10.3	0.0
Incr Delay (d2), s/veh	1.3	0.0	4.0	0.1	2.4	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	0.7	0.0	1.1	0.3	1.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.6	0.0	16.0	4.9	12.7	0.0
LnGrp LOS	B		B	A	B	
Approach Vol, veh/h	144			352	305	
Approach Delay, s/veh	12.6			10.8	12.7	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.8	9.1				17.8		11.4
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	21.5	23.5				49.5		31.5
Max Q Clear Time (g_c+I1), s	5.0	4.1				3.5		6.7
Green Ext Time (p_c), s	0.5	0.7				1.0		0.9

Intersection Summary			
HCM 6th Ctrl Delay			11.9
HCM 6th LOS			B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	301	29	88	367	20	81
Future Vol, veh/h	301	29	88	367	20	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	327	32	96	399	22	88

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	327	0	934	343
Stage 1	-	-	-	-	343	-
Stage 2	-	-	-	-	591	-
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	-	-	1233	-	295	700
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	553	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1233	-	272	700
Mov Cap-2 Maneuver	-	-	-	-	272	-
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	510	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	272	700	-	-	1233	-
HCM Lane V/C Ratio	0.08	0.126	-	-	0.078	-
HCM Control Delay (s)	19.4	10.9	-	-	8.2	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0.3	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	181	257	158	124	3
Future Vol, veh/h	0	181	257	158	124	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	197	279	172	135	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	451	0	-	0	562	365
Stage 1	-	-	-	-	365	-
Stage 2	-	-	-	-	197	-
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	1109	-	-	-	488	680
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1109	-	-	-	488	680
Mov Cap-2 Maneuver	-	-	-	-	488	-
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	836	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1109	-	-	-	491
HCM Lane V/C Ratio	-	-	-	-	0.281
HCM Control Delay (s)	0	-	-	-	15.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.1

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	183	110	4	293	113	2
Future Vol, veh/h	183	110	4	293	113	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	199	120	4	318	123	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	319	0	585	259
Stage 1	-	-	-	-	259	-
Stage 2	-	-	-	-	326	-
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	-	-	1241	-	473	780
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	731	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1241	-	472	780
Mov Cap-2 Maneuver	-	-	-	-	472	-
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	729	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	472	780	-	-	1241	-
HCM Lane V/C Ratio	0.26	0.003	-	-	0.004	-
HCM Control Delay (s)	15.3	9.6	-	-	7.9	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	1	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	295	2	57	631	41	3	285	37	26	230	34
Future Volume (veh/h)	47	295	2	57	631	41	3	285	37	26	230	34
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	51	321	2	62	686	45	3	310	40	28	250	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	759	5	80	724	48	3	331	43	30	268	40
Arrive On Green	0.04	0.41	0.41	0.05	0.42	0.42	0.21	0.21	0.21	0.19	0.19	0.19
Sat Flow, veh/h	1781	1857	12	1781	1736	114	16	1609	208	162	1447	214
Grp Volume(v), veh/h	51	0	323	62	0	731	353	0	0	315	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1868	1781	0	1850	1832	0	0	1824	0	0
Q Serve(g_s), s	3.3	0.0	14.3	4.0	0.0	44.2	22.0	0.0	0.0	19.8	0.0	0.0
Cycle Q Clear(g_c), s	3.3	0.0	14.3	4.0	0.0	44.2	22.0	0.0	0.0	19.8	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.06	0.01		0.11	0.09		0.12
Lane Grp Cap(c), veh/h	66	0	764	80	0	772	377	0	0	338	0	0
V/C Ratio(X)	0.78	0.00	0.42	0.77	0.00	0.95	0.94	0.00	0.00	0.93	0.00	0.00
Avail Cap(c_a), veh/h	81	0	764	189	0	817	377	0	0	338	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	55.5	0.0	24.5	54.9	0.0	32.6	45.4	0.0	0.0	46.6	0.0	0.0
Incr Delay (d2), s/veh	30.6	0.0	0.4	14.5	0.0	19.3	30.5	0.0	0.0	32.2	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	2.0	0.0	6.4	2.1	0.0	23.4	13.1	0.0	0.0	11.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.0	0.0	24.9	69.3	0.0	51.9	75.9	0.0	0.0	78.8	0.0	0.0
LnGrp LOS	F	A	C	E	A	D	E	A	A	E	A	A
Approach Vol, veh/h		374			793			353			315	
Approach Delay, s/veh		33.2			53.2			75.9			78.8	
Approach LOS		C			D			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	52.0		26.0	8.8	53.0		28.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	12.3	44.3		21.5	5.3	51.3		23.9				
Max Q Clear Time (g_c+I1), s	6.0	16.3		21.8	5.3	46.2		24.0				
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	2.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			57.9									
HCM 6th LOS			E									

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	14	22	106	129	3
Future Vol, veh/h	1	14	22	106	129	3
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	15	24	115	140	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	305	142	143	0	-	0
Stage 1	142	-	-	-	-	-
Stage 2	163	-	-	-	-	-
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	687	906	1440	-	-	-
Stage 1	885	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	675	906	1440	-	-	-
Mov Cap-2 Maneuver	675	-	-	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	866	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1440	-	886	-	-
HCM Lane V/C Ratio	0.017	-	0.018	-	-
HCM Control Delay (s)	7.5	-	9.1	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	93	210	339	156
Demand Flow Rate, veh/h	95	214	346	159
Vehicles Circulating, veh/h	285	155	80	224
Vehicles Exiting, veh/h	97	271	300	145
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.4	4.7	5.3	4.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	95	214	346	159
Cap Entry Lane, veh/h	1032	1178	1272	1098
Entry HV Adj Factor	0.978	0.981	0.979	0.984
Flow Entry, veh/h	93	210	339	156
Cap Entry, veh/h	1009	1156	1245	1081
V/C Ratio	0.092	0.182	0.272	0.145
Control Delay, s/veh	4.4	4.7	5.3	4.6
LOS	A	A	A	A
95th %tile Queue, veh	0	1	1	1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	29	24	306	277	1
Future Vol, veh/h	0	29	24	306	277	1
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	32	26	333	301	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	687	302	302	0	-	0
Stage 1	302	-	-	-	-	-
Stage 2	385	-	-	-	-	-
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	413	738	1259	-	-	-
Stage 1	750	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	403	738	1259	-	-	-
Mov Cap-2 Maneuver	403	-	-	-	-	-
Stage 1	731	-	-	-	-	-
Stage 2	688	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1259	-	738	-	-
HCM Lane V/C Ratio	0.021	-	0.043	-	-
HCM Control Delay (s)	7.9	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	36	3	0	2	33	330	3	0	304	1
Future Vol, veh/h	1	0	36	3	0	2	33	330	3	0	304	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	39	3	0	2	36	359	3	0	330	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	765	765	331	783	764	361	331	0	0	362	0	0
Stage 1	331	331	-	433	433	-	-	-	-	-	-	-
Stage 2	434	434	-	350	331	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	320	333	711	311	334	684	1228	-	-	1197	-	-
Stage 1	682	645	-	601	582	-	-	-	-	-	-	-
Stage 2	600	581	-	666	645	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	310	321	711	285	322	684	1228	-	-	1197	-	-
Mov Cap-2 Maneuver	310	321	-	285	322	-	-	-	-	-	-	-
Stage 1	657	645	-	579	560	-	-	-	-	-	-	-
Stage 2	576	560	-	629	645	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	10.6			14.8			0.7			0		
HCM LOS	B			B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1228	-	-	687	372	1197	-	-
HCM Lane V/C Ratio	0.029	-	-	0.059	0.015	-	-	-
HCM Control Delay (s)	8	0	-	10.6	14.8	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	16	0	1	6	17	352	0	0	337	6
Future Vol, veh/h	8	0	16	0	1	6	17	352	0	0	337	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	0	17	0	1	7	18	383	0	0	366	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	793	789	370	797	792	383	373	0	0	383	0	0
Stage 1	370	370	-	419	419	-	-	-	-	-	-	-
Stage 2	423	419	-	378	373	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	306	323	676	305	322	664	1185	-	-	1175	-	-
Stage 1	650	620	-	612	590	-	-	-	-	-	-	-
Stage 2	609	590	-	644	618	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	298	317	676	293	316	664	1185	-	-	1175	-	-
Mov Cap-2 Maneuver	298	317	-	293	316	-	-	-	-	-	-	-
Stage 1	638	620	-	600	579	-	-	-	-	-	-	-
Stage 2	590	579	-	627	618	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13	11.4	0.4	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1185	-	-	475	574	1175	-	-
HCM Lane V/C Ratio	0.016	-	-	0.055	0.013	-	-	-
HCM Control Delay (s)	8.1	0	-	13	11.4	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	0	15	6	0	25	13	326	8	29	288	20
Future Vol, veh/h	23	0	15	6	0	25	13	326	8	29	288	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	0	16	6	0	26	14	343	8	31	303	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	753	744	303	747	757	343	324	0	0	351	0	0
Stage 1	365	365	-	371	371	-	-	-	-	-	-	-
Stage 2	388	379	-	376	386	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	326	343	737	329	337	700	1236	-	-	1208	-	-
Stage 1	654	623	-	649	620	-	-	-	-	-	-	-
Stage 2	636	615	-	645	610	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	305	330	737	313	325	700	1236	-	-	1208	-	-
Mov Cap-2 Maneuver	305	330	-	313	325	-	-	-	-	-	-	-
Stage 1	647	607	-	642	613	-	-	-	-	-	-	-
Stage 2	605	608	-	615	594	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.7	11.8	0.3	0.7
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1236	-	-	305	504	565	1208	-	-
HCM Lane V/C Ratio	0.011	-	-	0.079	0.031	0.058	0.025	-	-
HCM Control Delay (s)	7.9	-	-	17.8	12.4	11.8	8.1	-	-
HCM Lane LOS	A	-	-	C	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0.2	0.1	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	189	366	168	158	261	152
Future Volume (veh/h)	189	366	168	158	261	152
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	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	195	0	173	163	269	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	353		234	888	371	
Arrive On Green	0.19	0.00	0.13	0.48	0.21	0.00
Sat Flow, veh/h	1856	1572	1767	1856	1767	1572
Grp Volume(v), veh/h	195	0	173	163	269	0
Grp Sat Flow(s),veh/h/ln	1856	1572	1767	1856	1767	1572
Q Serve(g_s), s	2.7	0.0	2.7	1.5	4.1	0.0
Cycle Q Clear(g_c), s	2.7	0.0	2.7	1.5	4.1	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	353		234	888	371	
V/C Ratio(X)	0.55		0.74	0.18	0.72	
Avail Cap(c_a), veh/h	1895		1193	3436	1682	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.6	0.0	12.0	4.3	10.6	0.0
Incr Delay (d2), s/veh	1.4	0.0	4.5	0.1	2.7	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	0.0	1.1	0.3	1.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.9	0.0	16.5	4.4	13.3	0.0
LnGrp LOS	B		B	A	B	
Approach Vol, veh/h	195			336	269	
Approach Delay, s/veh	11.9			10.7	13.3	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.3	10.0				18.3		10.6
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	19.5	29.5				53.5		27.5
Max Q Clear Time (g_c+I1), s	4.7	4.7				3.5		6.1
Green Ext Time (p_c), s	0.4	1.1				1.0		0.8

Intersection Summary			
HCM 6th Ctrl Delay			11.9
HCM 6th LOS			B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	444	32	81	338	22	109
Future Vol, veh/h	444	32	81	338	22	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	483	35	88	367	24	118

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	483	0	1044	501
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	543	-
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	-	-	1080	-	254	570
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	582	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1080	-	233	570
Mov Cap-2 Maneuver	-	-	-	-	233	-
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	535	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	233	570	-	-	1080	-
HCM Lane V/C Ratio	0.103	0.208	-	-	0.082	-
HCM Control Delay (s)	22.2	13	-	-	8.6	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.8	-	-	0.3	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	298	194	160	191	1
Future Vol, veh/h	1	298	194	160	191	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	324	211	174	208	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	385	0	-	0	624	298
Stage 1	-	-	-	-	298	-
Stage 2	-	-	-	-	326	-
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	1173	-	-	-	449	741
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	731	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1173	-	-	-	449	741
Mov Cap-2 Maneuver	-	-	-	-	449	-
Stage 1	-	-	-	-	752	-
Stage 2	-	-	-	-	731	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	19.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1173	-	-	-	450
HCM Lane V/C Ratio	0.001	-	-	-	0.464
HCM Control Delay (s)	8.1	0	-	-	19.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	2.4

Intersection						
Int Delay, s/veh	2.7					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	315	161	1	219	125	1
Future Vol, veh/h	315	161	1	219	125	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	342	175	1	238	136	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	517	0	670	430
Stage 1	-	-	-	-	430	-
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	-	-	1049	-	422	625
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	800	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1049	-	422	625
Mov Cap-2 Maneuver	-	-	-	-	422	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	799	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	422	625	-	-	1049	-
HCM Lane V/C Ratio	0.322	0.002	-	-	0.001	-
HCM Control Delay (s)	17.5	10.8	-	-	8.4	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.4	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	613	6	62	412	35	6	298	87	43	288	45
Future Volume (veh/h)	34	613	6	62	412	35	6	298	87	43	288	45
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	37	666	7	67	448	38	7	324	95	47	313	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	693	7	82	666	56	7	304	89	43	286	45
Arrive On Green	0.03	0.37	0.37	0.05	0.39	0.39	0.22	0.22	0.22	0.21	0.21	0.21
Sat Flow, veh/h	1781	1847	19	1781	1700	144	30	1367	401	209	1393	218
Grp Volume(v), veh/h	37	0	673	67	0	486	426	0	0	409	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1867	1781	0	1844	1797	0	0	1821	0	0
Q Serve(g_s), s	2.5	0.0	42.0	4.4	0.0	25.9	26.5	0.0	0.0	24.5	0.0	0.0
Cycle Q Clear(g_c), s	2.5	0.0	42.0	4.4	0.0	25.9	26.5	0.0	0.0	24.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.08	0.02		0.22	0.11		0.12
Lane Grp Cap(c), veh/h	53	0	700	82	0	722	399	0	0	374	0	0
V/C Ratio(X)	0.70	0.00	0.96	0.82	0.00	0.67	1.07	0.00	0.00	1.09	0.00	0.00
Avail Cap(c_a), veh/h	76	0	713	82	0	722	399	0	0	374	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.3	0.0	36.4	56.3	0.0	30.0	46.3	0.0	0.0	47.3	0.0	0.0
Incr Delay (d2), s/veh	15.5	0.0	24.3	44.6	0.0	2.5	63.8	0.0	0.0	73.8	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	1.3	0.0	23.5	3.0	0.0	11.9	18.8	0.0	0.0	18.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.8	0.0	60.8	101.0	0.0	32.4	110.1	0.0	0.0	121.2	0.0	0.0
LnGrp LOS	E	A	E	F	A	C	F	A	A	F	A	A
Approach Vol, veh/h		710			553			426			409	
Approach Delay, s/veh		61.4			40.7			110.1			121.2	
Approach LOS		E			D			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	49.2		29.0	8.0	51.2		31.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	45.5		24.5	5.1	45.9		26.5				
Max Q Clear Time (g_c+I1), s	6.4	44.0		26.5	4.5	27.9		28.5				
Green Ext Time (p_c), s	0.0	0.7		0.0	0.0	3.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			77.5									
HCM 6th LOS			E									

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	21	10	107	77	1
Future Vol, veh/h	5	21	10	107	77	1
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	23	11	116	84	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	223	85	85	0	-	0
Stage 1	85	-	-	-	-	-
Stage 2	138	-	-	-	-	-
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	765	974	1512	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	760	974	1512	-	-	-
Mov Cap-2 Maneuver	760	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	889	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1512	-	924	-	-
HCM Lane V/C Ratio	0.007	-	0.031	-	-
HCM Control Delay (s)	7.4	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection				
Intersection Delay, s/veh	4.4			
Intersection LOS	A			

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	68	241	215	114
Demand Flow Rate, veh/h	69	245	219	116
Vehicles Circulating, veh/h	260	121	42	242
Vehicles Exiting, veh/h	98	140	287	124
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.0	4.8	4.1	4.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	69	245	219	116
Cap Entry Lane, veh/h	1058	1220	1322	1078
Entry HV Adj Factor	0.979	0.982	0.983	0.984
Flow Entry, veh/h	68	241	215	114
Cap Entry, veh/h	1036	1198	1299	1061
V/C Ratio	0.065	0.201	0.166	0.108
Control Delay, s/veh	4.0	4.8	4.1	4.3
LOS	A	A	A	A
95th %tile Queue, veh	0	1	1	0

Intersection						
Int Delay, s/veh	0.6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	17	12	213	250	3
Future Vol, veh/h	2	17	12	213	250	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	18	13	232	272	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	532	274	275	0	-	0
Stage 1	274	-	-	-	-	-
Stage 2	258	-	-	-	-	-
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	508	765	1288	-	-	-
Stage 1	772	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	502	765	1288	-	-	-
Mov Cap-2 Maneuver	502	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	785	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1288	-	725	-	-
HCM Lane V/C Ratio	0.01	-	0.028	-	-
HCM Control Delay (s)	7.8	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	82	3	1	1	78	211	0	1	276	3
Future Vol, veh/h	3	0	82	3	1	1	78	211	0	1	276	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	89	3	1	1	85	229	0	1	300	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	704	703	302	747	704	229	303	0	0	229	0	0
Stage 1	304	304	-	399	399	-	-	-	-	-	-	-
Stage 2	400	399	-	348	305	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	352	362	738	329	361	810	1258	-	-	1339	-	-
Stage 1	705	663	-	627	602	-	-	-	-	-	-	-
Stage 2	626	602	-	668	662	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	330	334	738	272	333	810	1258	-	-	1339	-	-
Mov Cap-2 Maneuver	330	334	-	272	333	-	-	-	-	-	-	-
Stage 1	651	662	-	579	556	-	-	-	-	-	-	-
Stage 2	576	556	-	587	661	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.9	16.2	2.2	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1258	-	-	707	328	1339	-	-
HCM Lane V/C Ratio	0.067	-	-	0.131	0.017	0.001	-	-
HCM Control Delay (s)	8.1	0	-	10.9	16.2	7.7	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	8	1	0	4	4	281	0	1	356	4
Future Vol, veh/h	4	0	8	1	0	4	4	281	0	1	356	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	9	1	0	4	4	305	0	1	387	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	706	704	389	709	706	305	391	0	0	305	0	0
Stage 1	391	391	-	313	313	-	-	-	-	-	-	-
Stage 2	315	313	-	396	393	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	351	361	659	349	361	735	1168	-	-	1256	-	-
Stage 1	633	607	-	698	657	-	-	-	-	-	-	-
Stage 2	696	657	-	629	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	347	359	659	343	359	735	1168	-	-	1256	-	-
Mov Cap-2 Maneuver	347	359	-	343	359	-	-	-	-	-	-	-
Stage 1	630	606	-	695	654	-	-	-	-	-	-	-
Stage 2	689	654	-	620	605	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	11.1	0.1	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1168	-	-	507	598	1256	-	-
HCM Lane V/C Ratio	0.004	-	-	0.026	0.009	0.001	-	-
HCM Control Delay (s)	8.1	0	-	12.3	11.1	7.9	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	27	0	22	4	273	27	28	342	7
Future Vol, veh/h	1	1	1	27	0	22	4	273	27	28	342	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	1	29	0	24	4	297	29	30	372	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	764	766	372	742	745	297	380	0	0	326	0	0
Stage 1	432	432	-	305	305	-	-	-	-	-	-	-
Stage 2	332	334	-	437	440	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	321	333	674	332	342	742	1178	-	-	1234	-	-
Stage 1	602	582	-	705	662	-	-	-	-	-	-	-
Stage 2	681	643	-	598	578	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	304	324	674	324	333	742	1178	-	-	1234	-	-
Mov Cap-2 Maneuver	304	324	-	324	333	-	-	-	-	-	-	-
Stage 1	600	568	-	703	660	-	-	-	-	-	-	-
Stage 2	657	641	-	581	564	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.1	14.5	0.1	0.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1178	-	-	304	471	434	1234	-	-
HCM Lane V/C Ratio	0.004	-	-	0.004	0.005	0.123	0.025	-	-
HCM Control Delay (s)	8.1	-	-	16.9	12.7	14.5	8	-	-
HCM Lane LOS	A	-	-	C	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.4	0.1	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	161	242	185	180	296	140
Future Volume (veh/h)	161	242	185	180	296	140
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	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	166	0	191	186	305	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	308		261	860	417	
Arrive On Green	0.17	0.00	0.15	0.46	0.24	0.00
Sat Flow, veh/h	1856	1572	1767	1856	1767	1572
Grp Volume(v), veh/h	166	0	191	186	305	0
Grp Sat Flow(s),veh/h/ln	1856	1572	1767	1856	1767	1572
Q Serve(g_s), s	2.5	0.0	3.1	1.8	4.8	0.0
Cycle Q Clear(g_c), s	2.5	0.0	3.1	1.8	4.8	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	308		261	860	417	
V/C Ratio(X)	0.54		0.73	0.22	0.73	
Avail Cap(c_a), veh/h	1455		1268	3064	1857	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	11.5	0.0	12.2	4.8	10.6	0.0
Incr Delay (d2), s/veh	1.5	0.0	4.0	0.1	2.5	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	0.0	1.2	0.4	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.9	0.0	16.2	4.9	13.0	0.0
LnGrp LOS	B		B	A	B	
Approach Vol, veh/h	166			377	305	
Approach Delay, s/veh	12.9			10.6	13.0	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.9	9.5				18.4		11.6
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	21.5	23.5				49.5		31.5
Max Q Clear Time (g_c+I1), s	5.1	4.5				3.8		6.8
Green Ext Time (p_c), s	0.5	0.8				1.2		0.9

Intersection Summary			
HCM 6th Ctrl Delay			11.9
HCM 6th LOS			B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection						
Int Delay, s/veh	2.4					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	314	29	96	380	20	89
Future Vol, veh/h	314	29	96	380	20	89
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	341	32	104	413	22	97

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	341	0	978	357
Stage 1	-	-	-	-	357	-
Stage 2	-	-	-	-	621	-
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	-	-	1218	-	278	687
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	536	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1218	-	254	687
Mov Cap-2 Maneuver	-	-	-	-	254	-
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	490	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	254	687	-	-	1218	-
HCM Lane V/C Ratio	0.086	0.141	-	-	0.086	-
HCM Control Delay (s)	20.5	11.1	-	-	8.2	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.5	-	-	0.3	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	190	266	162	128	3
Future Vol, veh/h	0	190	266	162	128	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	207	289	176	139	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	465	0	-	0	584	377
Stage 1	-	-	-	-	377	-
Stage 2	-	-	-	-	207	-
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	1096	-	-	-	474	670
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	828	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1096	-	-	-	474	670
Mov Cap-2 Maneuver	-	-	-	-	474	-
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	828	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1096	-	-	-	477
HCM Lane V/C Ratio	-	-	-	-	0.299
HCM Control Delay (s)	0	-	-	-	15.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.2

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	192	110	4	302	113	2
Future Vol, veh/h	192	110	4	302	113	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	209	120	4	328	123	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	329	0	605	269
Stage 1	-	-	-	-	269	-
Stage 2	-	-	-	-	336	-
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	-	-	1231	-	461	770
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	724	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1231	-	460	770
Mov Cap-2 Maneuver	-	-	-	-	460	-
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	722	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	15.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	460	770	-	-	1231	-
HCM Lane V/C Ratio	0.267	0.003	-	-	0.004	-
HCM Control Delay (s)	15.7	9.7	-	-	7.9	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	1.1	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	302	2	58	638	42	3	285	38	27	230	34
Future Volume (veh/h)	47	302	2	58	638	42	3	285	38	27	230	34
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	51	328	2	63	693	46	3	310	41	29	250	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	763	5	81	728	48	3	328	43	31	266	39
Arrive On Green	0.04	0.41	0.41	0.05	0.42	0.42	0.20	0.20	0.20	0.18	0.18	0.18
Sat Flow, veh/h	1781	1857	11	1781	1735	115	16	1604	212	167	1443	214
Grp Volume(v), veh/h	51	0	330	63	0	739	354	0	0	316	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1868	1781	0	1850	1831	0	0	1824	0	0
Q Serve(g_s), s	3.3	0.0	14.7	4.1	0.0	45.0	22.2	0.0	0.0	20.0	0.0	0.0
Cycle Q Clear(g_c), s	3.3	0.0	14.7	4.1	0.0	45.0	22.2	0.0	0.0	20.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.06	0.01		0.12	0.09		0.12
Lane Grp Cap(c), veh/h	66	0	768	81	0	777	375	0	0	336	0	0
V/C Ratio(X)	0.78	0.00	0.43	0.77	0.00	0.95	0.94	0.00	0.00	0.94	0.00	0.00
Avail Cap(c_a), veh/h	81	0	768	188	0	813	375	0	0	336	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	55.7	0.0	24.6	55.1	0.0	32.7	45.7	0.0	0.0	47.0	0.0	0.0
Incr Delay (d2), s/veh	30.9	0.0	0.4	14.3	0.0	20.2	32.3	0.0	0.0	33.9	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	2.1	0.0	6.6	2.2	0.0	23.9	13.4	0.0	0.0	12.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.6	0.0	25.0	69.4	0.0	52.9	78.0	0.0	0.0	80.9	0.0	0.0
LnGrp LOS	F	A	C	E	A	D	E	A	A	F	A	A
Approach Vol, veh/h		381			802			354			316	
Approach Delay, s/veh		33.2			54.2			78.0			80.9	
Approach LOS		C			D			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	52.5		26.0	8.8	53.5		28.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	12.3	44.3		21.5	5.3	51.3		23.9				
Max Q Clear Time (g_c+I1), s	6.1	16.7		22.0	5.3	47.0		24.2				
Green Ext Time (p_c), s	0.0	2.1		0.0	0.0	2.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			59.0
HCM 6th LOS			E

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	24	61	136	165	7
Future Vol, veh/h	2	24	61	136	165	7
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	26	66	148	179	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	463	183	187	0	-	0
Stage 1	183	-	-	-	-	-
Stage 2	280	-	-	-	-	-
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	557	859	1387	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	530	859	1387	-	-	-
Mov Cap-2 Maneuver	530	-	-	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	2.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1387	-	820	-	-
HCM Lane V/C Ratio	0.048	-	0.034	-	-
HCM Control Delay (s)	7.7	-	9.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	5.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	115	264	447	205
Demand Flow Rate, veh/h	117	270	457	208
Vehicles Circulating, veh/h	381	238	84	286
Vehicles Exiting, veh/h	113	303	414	221
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.1	5.8	6.3	5.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	117	270	457	208
Cap Entry Lane, veh/h	936	1082	1267	1031
Entry HV Adj Factor	0.982	0.977	0.979	0.983
Flow Entry, veh/h	115	264	447	205
Cap Entry, veh/h	919	1058	1240	1014
V/C Ratio	0.125	0.249	0.361	0.202
Control Delay, s/veh	5.1	5.8	6.3	5.5
LOS	A	A	A	A
95th %tile Queue, veh	0	1	2	1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	37	34	405	379	1
Future Vol, veh/h	0	37	34	405	379	1
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	40	37	440	412	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	927	413	413	0	-	0
Stage 1	413	-	-	-	-	-
Stage 2	514	-	-	-	-	-
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	298	639	1146	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	600	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	285	639	1146	-	-	-
Mov Cap-2 Maneuver	285	-	-	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	600	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1146	-	639	-	-
HCM Lane V/C Ratio	0.032	-	0.063	-	-
HCM Control Delay (s)	8.2	0	11	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	39	3	0	2	35	438	3	0	413	1
Future Vol, veh/h	3	0	39	3	0	2	35	438	3	0	413	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	42	3	0	2	38	476	3	0	449	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1005	1005	450	1025	1004	478	450	0	0	479	0	0
Stage 1	450	450	-	554	554	-	-	-	-	-	-	-
Stage 2	555	555	-	471	450	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	220	241	609	213	242	587	1110	-	-	1083	-	-
Stage 1	589	572	-	517	514	-	-	-	-	-	-	-
Stage 2	516	513	-	573	572	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	211	230	609	191	231	587	1110	-	-	1083	-	-
Mov Cap-2 Maneuver	211	230	-	191	231	-	-	-	-	-	-	-
Stage 1	561	572	-	493	490	-	-	-	-	-	-	-
Stage 2	490	489	-	533	572	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	19	0.6	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1110	-	-	537	262	1083	-	-
HCM Lane V/C Ratio	0.034	-	-	0.085	0.021	-	-	-
HCM Control Delay (s)	8.4	0	-	12.3	19	0	-	-
HCM Lane LOS	A	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	0	44	0	1	6	49	451	0	0	435	20
Future Vol, veh/h	18	0	44	0	1	6	49	451	0	0	435	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	0	48	0	1	7	53	490	0	0	473	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1084	1080	484	1104	1091	490	495	0	0	490	0	0
Stage 1	484	484	-	596	596	-	-	-	-	-	-	-
Stage 2	600	596	-	508	495	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	194	218	583	188	215	578	1069	-	-	1073	-	-
Stage 1	564	552	-	490	492	-	-	-	-	-	-	-
Stage 2	488	492	-	547	546	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	181	203	583	164	200	578	1069	-	-	1073	-	-
Mov Cap-2 Maneuver	181	203	-	164	200	-	-	-	-	-	-	-
Stage 1	526	552	-	457	459	-	-	-	-	-	-	-
Stage 2	449	459	-	502	546	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.5	13	0.8	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1069	-	-	354	455	1073	-	-
HCM Lane V/C Ratio	0.05	-	-	0.19	0.017	-	-	-
HCM Control Delay (s)	8.5	0	-	17.5	13	0	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.1	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	0	15	63	0	47	13	526	55	47	397	20
Future Vol, veh/h	23	0	15	63	0	47	13	526	55	47	397	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	0	16	66	0	49	14	554	58	49	418	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1152	1156	418	1109	1119	554	439	0	0	612	0	0
Stage 1	516	516	-	582	582	-	-	-	-	-	-	-
Stage 2	636	640	-	527	537	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	175	197	635	187	207	532	1121	-	-	967	-	-
Stage 1	542	534	-	499	499	-	-	-	-	-	-	-
Stage 2	466	470	-	535	523	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	151	185	635	174	194	532	1121	-	-	967	-	-
Mov Cap-2 Maneuver	151	185	-	174	194	-	-	-	-	-	-	-
Stage 1	535	507	-	493	493	-	-	-	-	-	-	-
Stage 2	417	464	-	495	496	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.2	32.4	0.2	0.9
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1121	-	-	151	249	244	967	-	-
HCM Lane V/C Ratio	0.012	-	-	0.16	0.063	0.475	0.051	-	-
HCM Control Delay (s)	8.3	-	-	33.3	20.4	32.4	8.9	-	-
HCM Lane LOS	A	-	-	D	C	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	2.4	0.2	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	332	373	222	259	266	249
Future Volume (veh/h)	332	373	222	259	266	249
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	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	342	0	229	267	274	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	501		306	1040	363	
Arrive On Green	0.27	0.00	0.17	0.56	0.21	0.00
Sat Flow, veh/h	1856	1572	1767	1856	1767	1572
Grp Volume(v), veh/h	342	0	229	267	274	0
Grp Sat Flow(s),veh/h/ln	1856	1572	1767	1856	1767	1572
Q Serve(g_s), s	6.3	0.0	4.7	2.8	5.6	0.0
Cycle Q Clear(g_c), s	6.3	0.0	4.7	2.8	5.6	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	501		306	1040	363	
V/C Ratio(X)	0.68		0.75	0.26	0.76	
Avail Cap(c_a), veh/h	1475		990	2732	1128	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.5	0.0	15.1	4.3	14.3	0.0
Incr Delay (d2), s/veh	1.7	0.0	3.7	0.1	3.2	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	2.3	0.0	1.9	0.6	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.2	0.0	18.7	4.5	17.6	0.0
LnGrp LOS	B		B	A	B	
Approach Vol, veh/h	342			496	274	
Approach Delay, s/veh	14.2			11.1	17.6	
Approach LOS	B			B	B	

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	11.1	14.9				26.0		12.4
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	21.5	30.5				56.5		24.5
Max Q Clear Time (g_c+I1), s	6.7	8.3				4.8		7.6
Green Ext Time (p_c), s	0.6	2.0				1.7		0.7

Intersection Summary			
HCM 6th Ctrl Delay			13.6
HCM 6th LOS			B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	562	33	117	416	22	154
Future Vol, veh/h	562	33	117	416	22	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	611	36	127	452	24	167

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	611	0	1335	629
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	706	-
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	-	-	968	-	169	482
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	489	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	968	-	147	482
Mov Cap-2 Maneuver	-	-	-	-	147	-
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	425	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	18.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	147	482	-	-	968	-
HCM Lane V/C Ratio	0.163	0.347	-	-	0.131	-
HCM Control Delay (s)	34.2	16.4	-	-	9.3	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	1.5	-	-	0.5	-

Intersection						
Int Delay, s/veh	7.9					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	372	245	187	236	1
Future Vol, veh/h	1	372	245	187	236	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	404	266	203	257	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	469	0	-	0	774	368
Stage 1	-	-	-	-	368	-
Stage 2	-	-	-	-	406	-
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	1093	-	-	-	367	677
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1093	-	-	-	367	677
Mov Cap-2 Maneuver	-	-	-	-	367	-
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	673	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	34.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1093	-	-	-	368
HCM Lane V/C Ratio	0.001	-	-	-	0.7
HCM Control Delay (s)	8.3	0	-	-	34.7
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	5.1

Intersection						
Int Delay, s/veh	2.9					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	389	164	1	270	128	1
Future Vol, veh/h	389	164	1	270	128	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	423	178	1	293	139	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	601	0	807	512
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	295	-
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	-	-	976	-	351	562
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	976	-	351	562
Mov Cap-2 Maneuver	-	-	-	-	351	-
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	754	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	351	562	-	-	976	-
HCM Lane V/C Ratio	0.396	0.002	-	-	0.001	-
HCM Control Delay (s)	21.8	11.4	-	-	8.7	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.8	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	674	6	73	454	39	6	304	104	48	294	46
Future Volume (veh/h)	35	674	6	73	454	39	6	304	104	48	294	46
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	38	733	7	79	493	42	7	330	113	52	320	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	701	7	82	671	57	6	290	99	46	282	44
Arrive On Green	0.03	0.38	0.38	0.05	0.40	0.40	0.22	0.22	0.22	0.20	0.20	0.20
Sat Flow, veh/h	1781	1850	18	1781	1700	145	28	1311	449	224	1380	216
Grp Volume(v), veh/h	38	0	740	79	0	535	450	0	0	422	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1867	1781	0	1844	1788	0	0	1820	0	0
Q Serve(g_s), s	2.5	0.0	45.5	5.3	0.0	29.7	26.5	0.0	0.0	24.5	0.0	0.0
Cycle Q Clear(g_c), s	2.5	0.0	45.5	5.3	0.0	29.7	26.5	0.0	0.0	24.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.08	0.02		0.25	0.12		0.12
Lane Grp Cap(c), veh/h	53	0	708	82	0	729	395	0	0	372	0	0
V/C Ratio(X)	0.71	0.00	1.05	0.97	0.00	0.73	1.14	0.00	0.00	1.14	0.00	0.00
Avail Cap(c_a), veh/h	76	0	708	82	0	729	395	0	0	372	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.7	0.0	37.3	57.2	0.0	30.9	46.8	0.0	0.0	47.8	0.0	0.0
Incr Delay (d2), s/veh	16.3	0.0	46.2	88.5	0.0	3.9	89.1	0.0	0.0	88.8	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	1.4	0.0	29.4	4.4	0.0	13.8	21.5	0.0	0.0	20.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.0	0.0	83.5	145.6	0.0	34.8	135.8	0.0	0.0	136.6	0.0	0.0
LnGrp LOS	E	A	F	F	A	C	F	A	A	F	A	A
Approach Vol, veh/h		778			614			450			422	
Approach Delay, s/veh		83.0			49.0			135.8			136.6	
Approach LOS		F			D			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	50.0		29.0	8.1	51.9		31.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	45.5		24.5	5.1	45.9		26.5				
Max Q Clear Time (g_c+I1), s	7.3	47.5		26.5	4.5	31.7		28.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	3.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			94.3									
HCM 6th LOS			F									

Intersection						
Int Delay, s/veh	3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	71	16	119	75	2
Future Vol, veh/h	11	71	16	119	75	2
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	77	17	129	82	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	246	83	84	0	-	0
Stage 1	83	-	-	-	-	-
Stage 2	163	-	-	-	-	-
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	742	976	1513	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	734	976	1513	-	-	-
Mov Cap-2 Maneuver	734	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	866	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1513	-	935	-	-
HCM Lane V/C Ratio	0.011	-	0.095	-	-
HCM Control Delay (s)	7.4	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	79	258	285	168
Demand Flow Rate, veh/h	81	262	291	171
Vehicles Circulating, veh/h	329	156	55	274
Vehicles Exiting, veh/h	116	190	355	144
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.5	5.1	4.7	5.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	81	262	291	171
Cap Entry Lane, veh/h	987	1177	1305	1043
Entry HV Adj Factor	0.981	0.983	0.979	0.984
Flow Entry, veh/h	79	258	285	168
Cap Entry, veh/h	967	1157	1277	1027
V/C Ratio	0.082	0.223	0.223	0.164
Control Delay, s/veh	4.5	5.1	4.7	5.0
LOS	A	A	A	A
95th %tile Queue, veh	0	1	1	1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	29	19	277	310	3
Future Vol, veh/h	2	29	19	277	310	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	32	21	301	337	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	682	339	340	0	-	0
Stage 1	339	-	-	-	-	-
Stage 2	343	-	-	-	-	-
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	415	703	1219	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	406	703	1219	-	-	-
Mov Cap-2 Maneuver	406	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1219	-	671	-	-
HCM Lane V/C Ratio	0.017	-	0.05	-	-
HCM Control Delay (s)	8	0	10.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	85	3	1	1	81	282	0	1	347	4
Future Vol, veh/h	3	0	85	3	1	1	81	282	0	1	347	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	92	3	1	1	88	307	0	1	377	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	865	864	379	910	866	307	381	0	0	307	0	0
Stage 1	381	381	-	483	483	-	-	-	-	-	-	-
Stage 2	484	483	-	427	383	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	274	292	668	255	291	733	1177	-	-	1254	-	-
Stage 1	641	613	-	565	553	-	-	-	-	-	-	-
Stage 2	564	553	-	606	612	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	254	265	668	205	265	733	1177	-	-	1254	-	-
Mov Cap-2 Maneuver	254	265	-	205	265	-	-	-	-	-	-	-
Stage 1	583	612	-	514	503	-	-	-	-	-	-	-
Stage 2	511	503	-	522	611	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	19.5	1.9	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1177	-	-	633	253	1254	-	-
HCM Lane V/C Ratio	0.075	-	-	0.151	0.021	0.001	-	-
HCM Control Delay (s)	8.3	0	-	11.7	19.5	7.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.1	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	0	27	1	0	4	24	346	0	1	424	10
Future Vol, veh/h	12	0	27	1	0	4	24	346	0	1	424	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	29	1	0	4	26	376	0	1	461	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	899	897	467	911	902	376	472	0	0	376	0	0
Stage 1	469	469	-	428	428	-	-	-	-	-	-	-
Stage 2	430	428	-	483	474	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	260	279	596	255	277	670	1090	-	-	1182	-	-
Stage 1	575	561	-	605	585	-	-	-	-	-	-	-
Stage 2	603	585	-	565	558	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	252	270	596	237	268	670	1090	-	-	1182	-	-
Mov Cap-2 Maneuver	252	270	-	237	268	-	-	-	-	-	-	-
Stage 1	558	560	-	587	567	-	-	-	-	-	-	-
Stage 2	581	567	-	537	557	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.5	12.4	0.5	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1090	-	-	420	491	1182	-	-
HCM Lane V/C Ratio	0.024	-	-	0.101	0.011	0.001	-	-
HCM Control Delay (s)	8.4	0	-	14.5	12.4	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	3	0	14	4	338	3	19	542	7
Future Vol, veh/h	1	1	1	3	0	14	4	338	3	19	542	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	1	3	0	15	4	367	3	21	589	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1015	1009	589	1011	1014	367	597	0	0	370	0	0
Stage 1	631	631	-	375	375	-	-	-	-	-	-	-
Stage 2	384	378	-	636	639	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	217	240	508	218	239	678	980	-	-	1189	-	-
Stage 1	469	474	-	646	617	-	-	-	-	-	-	-
Stage 2	639	615	-	466	470	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	209	235	508	213	234	678	980	-	-	1189	-	-
Mov Cap-2 Maneuver	209	235	-	213	234	-	-	-	-	-	-	-
Stage 1	467	465	-	643	615	-	-	-	-	-	-	-
Stage 2	622	613	-	456	462	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18	12.7	0.1	0.3
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	980	-	-	209	332	489	1189	-	-
HCM Lane V/C Ratio	0.004	-	-	0.005	0.007	0.038	0.017	-	-
HCM Control Delay (s)	8.7	-	-	22.3	15.9	12.7	8.1	-	-
HCM Lane LOS	A	-	-	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.1	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	169	247	274	263	3	302	4	164	7	12	11
Future Volume (veh/h)	4	169	247	274	263	3	302	4	164	7	12	11
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	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	4	174	0	282	271	3	311	4	0	8	13	12
Peak Hour Factor	0.92	0.97	0.97	0.97	0.97	0.92	0.97	0.92	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	10	270		361	639	546	423	5		16	25	23
Arrive On Green	0.01	0.15	0.00	0.20	0.34	0.34	0.24	0.24	0.00	0.04	0.04	0.04
Sat Flow, veh/h	1781	1856	1572	1767	1856	1585	1760	23	1572	421	684	631
Grp Volume(v), veh/h	4	174	0	282	271	3	315	0	0	33	0	0
Grp Sat Flow(s),veh/h/ln	1781	1856	1572	1767	1856	1585	1782	0	1572	1736	0	0
Q Serve(g_s), s	0.1	4.3	0.0	7.3	5.4	0.1	7.9	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.1	4.3	0.0	7.3	5.4	0.1	7.9	0.0	0.0	0.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.99		1.00	0.24		0.36
Lane Grp Cap(c), veh/h	10	270		361	639	546	429	0		64	0	0
V/C Ratio(X)	0.42	0.64		0.78	0.42	0.01	0.73	0.00		0.51	0.00	0.00
Avail Cap(c_a), veh/h	184	845		1079	1786	1526	1199	0		647	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.9	19.5	0.0	18.2	12.2	10.4	16.9	0.0	0.0	22.8	0.0	0.0
Incr Delay (d2), s/veh	26.1	2.6	0.0	3.7	0.4	0.0	2.5	0.0	0.0	6.2	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	0.1	1.8	0.0	3.0	2.0	0.0	3.1	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.0	22.0	0.0	21.9	12.6	10.4	19.4	0.0	0.0	29.0	0.0	0.0
LnGrp LOS	D	C		C	B	B	B	A		C	A	A
Approach Vol, veh/h		178			556			315			33	
Approach Delay, s/veh		22.7			17.3			19.4			29.0	
Approach LOS		C			B			B			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.4	11.5		6.3	4.8	21.1		16.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.5	22.0		18.0	5.0	46.5		32.5				
Max Q Clear Time (g_c+I1), s	9.3	6.3		2.9	2.1	7.4		9.9				
Green Ext Time (p_c), s	0.8	0.8		0.1	0.0	1.7		1.9				
Intersection Summary												
HCM 6th Ctrl Delay			19.2									
HCM 6th LOS			B									

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	330	30	116	460	20	90
Future Vol, veh/h	330	30	116	460	20	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	359	33	126	500	22	98

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	359	0	1128	376
Stage 1	-	-	-	-	376	-
Stage 2	-	-	-	-	752	-
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	-	-	1200	-	226	670
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	466	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1200	-	202	670
Mov Cap-2 Maneuver	-	-	-	-	202	-
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	417	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	13.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	202	670	-	-	1200	-
HCM Lane V/C Ratio	0.108	0.146	-	-	0.105	-
HCM Control Delay (s)	25	11.3	-	-	8.4	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0.5	-	-	0.4	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	199	313	196	135	3
Future Vol, veh/h	0	199	313	196	135	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	216	340	213	147	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	553	0	-	0	663	447
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	216	-
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	1017	-	-	-	426	612
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	820	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1017	-	-	-	426	612
Mov Cap-2 Maneuver	-	-	-	-	426	-
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	820	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	17.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1017	-	-	-	429
HCM Lane V/C Ratio	-	-	-	-	0.35
HCM Control Delay (s)	0	-	-	-	17.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.5

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	201	112	4	350	115	2
Future Vol, veh/h	201	112	4	350	115	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	218	122	4	380	125	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	340	0	667	279
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	388	-
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	-	-	1219	-	424	760
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	686	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1219	-	423	760
Mov Cap-2 Maneuver	-	-	-	-	423	-
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	684	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	16.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	423	760	-	-	1219	-
HCM Lane V/C Ratio	0.296	0.003	-	-	0.004	-
HCM Control Delay (s)	17	9.8	-	-	8	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	1.2	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	310	2	70	680	45	3	291	42	28	235	35
Future Volume (veh/h)	48	310	2	70	680	45	3	291	42	28	235	35
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	52	337	2	76	739	49	3	316	46	30	255	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	768	5	97	747	50	3	317	46	31	260	39
Arrive On Green	0.04	0.41	0.41	0.05	0.43	0.43	0.20	0.20	0.20	0.18	0.18	0.18
Sat Flow, veh/h	1781	1857	11	1781	1735	115	15	1583	230	169	1439	215
Grp Volume(v), veh/h	52	0	339	76	0	788	365	0	0	323	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1868	1781	0	1850	1828	0	0	1823	0	0
Q Serve(g_s), s	3.4	0.0	15.5	5.0	0.0	50.4	23.8	0.0	0.0	21.0	0.0	0.0
Cycle Q Clear(g_c), s	3.4	0.0	15.5	5.0	0.0	50.4	23.8	0.0	0.0	21.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.06	0.01		0.13	0.09		0.12
Lane Grp Cap(c), veh/h	67	0	772	97	0	796	367	0	0	329	0	0
V/C Ratio(X)	0.78	0.00	0.44	0.78	0.00	0.99	1.00	0.00	0.00	0.98	0.00	0.00
Avail Cap(c_a), veh/h	79	0	772	184	0	796	367	0	0	329	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.9	0.0	25.0	55.6	0.0	33.7	47.6	0.0	0.0	48.6	0.0	0.0
Incr Delay (d2), s/veh	32.7	0.0	0.4	12.7	0.0	29.2	45.7	0.0	0.0	44.6	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	2.2	0.0	6.9	2.6	0.0	28.4	15.4	0.0	0.0	13.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.6	0.0	25.4	68.3	0.0	62.9	93.3	0.0	0.0	93.2	0.0	0.0
LnGrp LOS	F	A	C	E	A	E	F	A	A	F	A	A
Approach Vol, veh/h		391			864			365			323	
Approach Delay, s/veh		34.0			63.4			93.3			93.2	
Approach LOS		C			E			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	53.8		26.0	9.0	55.8		28.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	12.3	44.3		21.5	5.3	51.3		23.9				
Max Q Clear Time (g_c+I1), s	7.0	17.5		23.0	5.4	52.4		25.8				
Green Ext Time (p_c), s	0.1	2.1		0.0	0.0	0.0		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			68.1
HCM 6th LOS			E

Intersection						
Int Delay, s/veh	2					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	24	61	118	150	7
Future Vol, veh/h	2	24	61	118	150	7
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	26	66	128	163	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	427	167	171	0	-	0
Stage 1	167	-	-	-	-	-
Stage 2	260	-	-	-	-	-
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	584	877	1406	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	783	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	557	877	1406	-	-	-
Mov Cap-2 Maneuver	557	-	-	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	783	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1406	-	840	-	-
HCM Lane V/C Ratio	0.047	-	0.034	-	-
HCM Control Delay (s)	7.7	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection				
Intersection Delay, s/veh	5.7			
Intersection LOS	A			

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	114	263	425	189
Demand Flow Rate, veh/h	116	269	433	192
Vehicles Circulating, veh/h	364	217	84	284
Vehicles Exiting, veh/h	112	300	396	201
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.0	5.6	6.1	5.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	116	269	433	192
Cap Entry Lane, veh/h	952	1106	1267	1033
Entry HV Adj Factor	0.982	0.977	0.981	0.984
Flow Entry, veh/h	114	263	425	189
Cap Entry, veh/h	935	1081	1243	1016
V/C Ratio	0.122	0.243	0.342	0.186
Control Delay, s/veh	5.0	5.6	6.1	5.3
LOS	A	A	A	A
95th %tile Queue, veh	0	1	2	1

Intersection						
Int Delay, s/veh	0.9					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	37	34	384	362	1
Future Vol, veh/h	0	37	34	384	362	1
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	40	37	417	393	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	885	394	394	0	-	0
Stage 1	394	-	-	-	-	-
Stage 2	491	-	-	-	-	-
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	315	655	1165	-	-	-
Stage 1	681	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	302	655	1165	-	-	-
Mov Cap-2 Maneuver	302	-	-	-	-	-
Stage 1	653	-	-	-	-	-
Stage 2	615	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1165	-	655	-	-
HCM Lane V/C Ratio	0.032	-	0.061	-	-
HCM Control Delay (s)	8.2	0	10.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	39	3	0	2	35	417	3	0	396	1
Future Vol, veh/h	3	0	39	3	0	2	35	417	3	0	396	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	42	3	0	2	38	453	3	0	430	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	963	963	431	983	962	455	431	0	0	456	0	0
Stage 1	431	431	-	531	531	-	-	-	-	-	-	-
Stage 2	532	532	-	452	431	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	235	256	624	228	256	605	1129	-	-	1105	-	-
Stage 1	603	583	-	532	526	-	-	-	-	-	-	-
Stage 2	531	526	-	587	583	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	226	244	624	205	244	605	1129	-	-	1105	-	-
Mov Cap-2 Maneuver	226	244	-	205	244	-	-	-	-	-	-	-
Stage 1	576	583	-	508	502	-	-	-	-	-	-	-
Stage 2	505	502	-	547	583	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	18.2	0.6	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1129	-	-	554	279	1105	-	-
HCM Lane V/C Ratio	0.034	-	-	0.082	0.019	-	-	-
HCM Control Delay (s)	8.3	0	-	12.1	18.2	0	-	-
HCM Lane LOS	A	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	0	44	0	1	6	49	430	0	0	418	20
Future Vol, veh/h	18	0	44	0	1	6	49	430	0	0	418	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	0	48	0	1	7	53	467	0	0	454	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1042	1038	465	1062	1049	467	476	0	0	467	0	0
Stage 1	465	465	-	573	573	-	-	-	-	-	-	-
Stage 2	577	573	-	489	476	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	208	231	597	201	227	596	1086	-	-	1094	-	-
Stage 1	578	563	-	505	504	-	-	-	-	-	-	-
Stage 2	502	504	-	561	557	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	195	216	597	175	212	596	1086	-	-	1094	-	-
Mov Cap-2 Maneuver	195	216	-	175	212	-	-	-	-	-	-	-
Stage 1	540	563	-	472	471	-	-	-	-	-	-	-
Stage 2	463	471	-	516	557	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.8	12.7	0.9	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1086	-	-	373	473	1094	-	-
HCM Lane V/C Ratio	0.049	-	-	0.181	0.016	-	-	-
HCM Control Delay (s)	8.5	0	-	16.8	12.7	0	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	0	15	6	0	26	13	526	8	30	397	20
Future Vol, veh/h	23	0	15	6	0	26	13	526	8	30	397	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	0	16	6	0	27	14	554	8	32	418	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1082	1072	418	1075	1085	554	439	0	0	562	0	0
Stage 1	482	482	-	582	582	-	-	-	-	-	-	-
Stage 2	600	590	-	493	503	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	195	220	635	197	217	532	1121	-	-	1009	-	-
Stage 1	565	553	-	499	499	-	-	-	-	-	-	-
Stage 2	488	495	-	558	541	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	179	210	635	186	207	532	1121	-	-	1009	-	-
Mov Cap-2 Maneuver	179	210	-	186	207	-	-	-	-	-	-	-
Stage 1	558	535	-	493	493	-	-	-	-	-	-	-
Stage 2	457	489	-	527	524	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.1	15	0.2	0.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1121	-	-	179	296	394	1009	-	-
HCM Lane V/C Ratio	0.012	-	-	0.135	0.053	0.085	0.031	-	-
HCM Control Delay (s)	8.3	-	-	28.2	17.8	15	8.7	-	-
HCM Lane LOS	A	-	-	D	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.2	0.3	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	291	373	215	209	7	266	12	243	6	8	7
Future Volume (veh/h)	15	291	373	215	209	7	266	12	243	6	8	7
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	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	16	300	0	222	215	8	274	13	0	7	9	8
Peak Hour Factor	0.92	0.97	0.97	0.97	0.97	0.92	0.97	0.92	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	36	418		289	684	584	373	18		14	19	16
Arrive On Green	0.02	0.23	0.00	0.16	0.37	0.37	0.22	0.22	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1781	1856	1572	1767	1856	1585	1704	81	1572	508	653	580
Grp Volume(v), veh/h	16	300	0	222	215	8	287	0	0	24	0	0
Grp Sat Flow(s),veh/h/ln	1781	1856	1572	1767	1856	1585	1785	0	1572	1741	0	0
Q Serve(g_s), s	0.4	7.4	0.0	5.9	4.1	0.2	7.4	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	0.4	7.4	0.0	5.9	4.1	0.2	7.4	0.0	0.0	0.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.95		1.00	0.29		0.33
Lane Grp Cap(c), veh/h	36	418		289	684	584	390	0		49	0	0
V/C Ratio(X)	0.45	0.72		0.77	0.31	0.01	0.74	0.00		0.49	0.00	0.00
Avail Cap(c_a), veh/h	195	1202		840	1881	1607	1030	0		634	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.9	17.7	0.0	19.8	11.1	9.9	18.0	0.0	0.0	23.6	0.0	0.0
Incr Delay (d2), s/veh	8.7	2.3	0.0	4.3	0.3	0.0	2.7	0.0	0.0	7.2	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	0.3	3.0	0.0	2.5	1.5	0.0	3.0	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	20.0	0.0	24.1	11.4	9.9	20.7	0.0	0.0	30.8	0.0	0.0
LnGrp LOS	C	C		C	B	A	C	A		C	A	A
Approach Vol, veh/h		316			445			287			24	
Approach Delay, s/veh		20.7			17.7			20.7			30.8	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.6	15.6		5.9	5.5	22.7		15.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5	32.0		18.0	5.4	50.1		28.5				
Max Q Clear Time (g_c+I1), s	7.9	9.4		2.7	2.4	6.1		9.4				
Green Ext Time (p_c), s	0.5	1.8		0.0	0.0	1.4		1.6				

Intersection Summary			
HCM 6th Ctrl Delay			19.7
HCM 6th LOS			B

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	538	33	97	386	22	137
Future Vol, veh/h	538	33	97	386	22	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	585	36	105	420	24	149

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	585	0	1233	603
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	630	-
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	-	-	990	-	195	499
Stage 1	-	-	-	-	546	-
Stage 2	-	-	-	-	531	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	990	-	174	499
Mov Cap-2 Maneuver	-	-	-	-	174	-
Stage 1	-	-	-	-	546	-
Stage 2	-	-	-	-	475	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	17.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	174	499	-	-	990	-
HCM Lane V/C Ratio	0.137	0.298	-	-	0.106	-
HCM Control Delay (s)	29	15.3	-	-	9.1	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	1.2	-	-	0.4	-

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	355	223	179	229	1
Future Vol, veh/h	1	355	223	179	229	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	386	242	195	249	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	437	0	-	0	728	340
Stage 1	-	-	-	-	340	-
Stage 2	-	-	-	-	388	-
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	1123	-	-	-	390	702
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	686	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1123	-	-	-	390	702
Mov Cap-2 Maneuver	-	-	-	-	390	-
Stage 1	-	-	-	-	720	-
Stage 2	-	-	-	-	686	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	29.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1123	-	-	-	391
HCM Lane V/C Ratio	0.001	-	-	-	0.639
HCM Control Delay (s)	8.2	0	-	-	29.2
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	4.3

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	372	164	1	248	128	1
Future Vol, veh/h	372	164	1	248	128	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	404	178	1	270	139	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	582	0	765	493
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	272	-
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	-	-	992	-	371	576
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	774	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	992	-	371	576
Mov Cap-2 Maneuver	-	-	-	-	371	-
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	773	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	371	576	-	-	992	-
HCM Lane V/C Ratio	0.375	0.002	-	-	0.001	-
HCM Control Delay (s)	20.4	11.3	-	-	8.6	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.7	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	660	6	70	437	37	6	304	102	47	294	46
Future Volume (veh/h)	35	660	6	70	437	37	6	304	102	47	294	46
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	38	717	7	76	475	40	7	330	111	51	320	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	701	7	82	672	57	6	291	98	45	283	44
Arrive On Green	0.03	0.38	0.38	0.05	0.40	0.40	0.22	0.22	0.22	0.20	0.20	0.20
Sat Flow, veh/h	1781	1849	18	1781	1701	143	28	1318	443	221	1384	216
Grp Volume(v), veh/h	38	0	724	76	0	515	448	0	0	421	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1867	1781	0	1845	1789	0	0	1820	0	0
Q Serve(g_s), s	2.5	0.0	45.5	5.1	0.0	28.1	26.5	0.0	0.0	24.5	0.0	0.0
Cycle Q Clear(g_c), s	2.5	0.0	45.5	5.1	0.0	28.1	26.5	0.0	0.0	24.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.08	0.02		0.25	0.12		0.12
Lane Grp Cap(c), veh/h	53	0	708	82	0	729	395	0	0	372	0	0
V/C Ratio(X)	0.71	0.00	1.02	0.93	0.00	0.71	1.13	0.00	0.00	1.13	0.00	0.00
Avail Cap(c_a), veh/h	76	0	708	82	0	729	395	0	0	372	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.7	0.0	37.3	57.1	0.0	30.5	46.8	0.0	0.0	47.8	0.0	0.0
Incr Delay (d2), s/veh	16.3	0.0	39.7	76.5	0.0	3.1	87.0	0.0	0.0	87.8	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	1.4	0.0	28.1	4.0	0.0	13.0	21.2	0.0	0.0	20.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.0	0.0	76.9	133.6	0.0	33.6	133.7	0.0	0.0	135.6	0.0	0.0
LnGrp LOS	E	A	F	F	A	C	F	A	A	F	A	A
Approach Vol, veh/h		762			591			448			421	
Approach Delay, s/veh		76.8			46.5			133.7			135.6	
Approach LOS		E			D			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	50.0		29.0	8.1	51.9		31.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	45.5		24.5	5.1	45.9		26.5				
Max Q Clear Time (g_c+I1), s	7.1	47.5		26.5	4.5	30.1		28.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	3.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			91.3									
HCM 6th LOS			F									

Intersection						
Int Delay, s/veh	2.8					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	71	16	126	83	2
Future Vol, veh/h	11	71	16	126	83	2
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	77	17	137	90	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	262	91	92	0	-	0
Stage 1	91	-	-	-	-	-
Stage 2	171	-	-	-	-	-
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	727	967	1503	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	859	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	719	967	1503	-	-	-
Mov Cap-2 Maneuver	719	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	859	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1503	-	924	-	-
HCM Lane V/C Ratio	0.012	-	0.096	-	-
HCM Control Delay (s)	7.4	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Intersection Delay, s/veh	5.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	79	259	293	177
Demand Flow Rate, veh/h	81	263	299	180
Vehicles Circulating, veh/h	339	163	55	275
Vehicles Exiting, veh/h	116	191	365	151
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.5	5.2	4.8	5.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	81	263	299	180
Cap Entry Lane, veh/h	977	1169	1305	1042
Entry HV Adj Factor	0.981	0.984	0.979	0.984
Flow Entry, veh/h	79	259	293	177
Cap Entry, veh/h	958	1149	1277	1025
V/C Ratio	0.083	0.225	0.229	0.173
Control Delay, s/veh	4.5	5.2	4.8	5.1
LOS	A	A	A	A
95th %tile Queue, veh	0	1	1	1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	29	19	285	319	3
Future Vol, veh/h	2	29	19	285	319	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	32	21	310	347	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	701	349	350	0	-	0
Stage 1	349	-	-	-	-	-
Stage 2	352	-	-	-	-	-
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	405	694	1209	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	396	694	1209	-	-	-
Mov Cap-2 Maneuver	396	-	-	-	-	-
Stage 1	699	-	-	-	-	-
Stage 2	712	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1209	-	662	-	-
HCM Lane V/C Ratio	0.017	-	0.051	-	-
HCM Control Delay (s)	8	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	85	3	1	1	81	290	0	1	356	4
Future Vol, veh/h	3	0	85	3	1	1	81	290	0	1	356	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	92	3	1	1	88	315	0	1	387	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	883	882	389	928	884	315	391	0	0	315	0	0
Stage 1	391	391	-	491	491	-	-	-	-	-	-	-
Stage 2	492	491	-	437	393	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	266	285	659	248	284	725	1168	-	-	1245	-	-
Stage 1	633	607	-	559	548	-	-	-	-	-	-	-
Stage 2	558	548	-	598	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	246	259	659	198	258	725	1168	-	-	1245	-	-
Mov Cap-2 Maneuver	246	259	-	198	258	-	-	-	-	-	-	-
Stage 1	575	606	-	508	498	-	-	-	-	-	-	-
Stage 2	505	498	-	514	605	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	20	1.8	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1168	-	-	623	245	1245	-	-
HCM Lane V/C Ratio	0.075	-	-	0.154	0.022	0.001	-	-
HCM Control Delay (s)	8.3	0	-	11.8	20	7.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.1	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	0	27	1	0	4	24	354	0	1	433	10
Future Vol, veh/h	12	0	27	1	0	4	24	354	0	1	433	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	29	1	0	4	26	385	0	1	471	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	918	916	477	930	921	385	482	0	0	385	0	0
Stage 1	479	479	-	437	437	-	-	-	-	-	-	-
Stage 2	439	437	-	493	484	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	252	272	588	248	270	663	1081	-	-	1173	-	-
Stage 1	568	555	-	598	579	-	-	-	-	-	-	-
Stage 2	597	579	-	558	552	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	244	263	588	230	261	663	1081	-	-	1173	-	-
Mov Cap-2 Maneuver	244	263	-	230	261	-	-	-	-	-	-	-
Stage 1	550	554	-	579	561	-	-	-	-	-	-	-
Stage 2	575	561	-	530	551	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.8	12.6	0.5	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1081	-	-	410	482	1173	-	-
HCM Lane V/C Ratio	0.024	-	-	0.103	0.011	0.001	-	-
HCM Control Delay (s)	8.4	0	-	14.8	12.6	8.1	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	27	0	22	4	338	27	28	542	7
Future Vol, veh/h	1	1	1	27	0	22	4	338	27	28	542	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	1	29	0	24	4	367	29	30	589	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1051	1053	589	1029	1032	367	597	0	0	396	0	0
Stage 1	649	649	-	375	375	-	-	-	-	-	-	-
Stage 2	402	404	-	654	657	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	205	226	508	212	233	678	980	-	-	1163	-	-
Stage 1	458	466	-	646	617	-	-	-	-	-	-	-
Stage 2	625	599	-	456	462	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	193	219	508	206	226	678	980	-	-	1163	-	-
Mov Cap-2 Maneuver	193	219	-	206	226	-	-	-	-	-	-	-
Stage 1	456	454	-	643	615	-	-	-	-	-	-	-
Stage 2	600	597	-	442	450	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.1	19.6	0.1	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	980	-	-	193	308	300	1163	-	-
HCM Lane V/C Ratio	0.004	-	-	0.006	0.007	0.178	0.026	-	-
HCM Control Delay (s)	8.7	-	-	23.8	16.8	19.6	8.2	-	-
HCM Lane LOS	A	-	-	C	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.6	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	190	247	277	284	3	302	4	167	7	12	11
Future Volume (veh/h)	4	190	247	277	284	3	302	4	167	7	12	11
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	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	4	196	0	286	293	3	311	4	0	8	13	12
Peak Hour Factor	0.92	0.97	0.97	0.97	0.97	0.92	0.97	0.92	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	10	292		363	663	567	420	5		15	25	23
Arrive On Green	0.01	0.16	0.00	0.21	0.36	0.36	0.24	0.24	0.00	0.04	0.04	0.04
Sat Flow, veh/h	1781	1856	1572	1767	1856	1585	1760	23	1572	421	684	631
Grp Volume(v), veh/h	4	196	0	286	293	3	315	0	0	33	0	0
Grp Sat Flow(s),veh/h/ln	1781	1856	1572	1767	1856	1585	1782	0	1572	1736	0	0
Q Serve(g_s), s	0.1	5.0	0.0	7.6	6.0	0.1	8.1	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.1	5.0	0.0	7.6	6.0	0.1	8.1	0.0	0.0	0.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.99		1.00	0.24		0.36
Lane Grp Cap(c), veh/h	10	292		363	663	567	426	0		64	0	0
V/C Ratio(X)	0.42	0.67		0.79	0.44	0.01	0.74	0.00		0.52	0.00	0.00
Avail Cap(c_a), veh/h	179	820		1047	1733	1480	1163	0		627	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.7	19.8	0.0	18.7	12.2	10.3	17.5	0.0	0.0	23.5	0.0	0.0
Incr Delay (d2), s/veh	26.1	2.7	0.0	3.8	0.5	0.0	2.5	0.0	0.0	6.3	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	0.1	2.1	0.0	3.1	2.2	0.0	3.2	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	22.5	0.0	22.5	12.7	10.3	20.1	0.0	0.0	29.9	0.0	0.0
LnGrp LOS	D	C		C	B	B	C	A		C	A	A
Approach Vol, veh/h		200			582			315			33	
Approach Delay, s/veh		23.0			17.5			20.1			29.9	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.7	12.3		6.3	4.8	22.3		16.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.5	22.0		18.0	5.0	46.5		32.5				
Max Q Clear Time (g_c+I1), s	9.6	7.0		2.9	2.1	8.0		10.1				
Green Ext Time (p_c), s	0.8	0.9		0.1	0.0	1.9		1.9				
Intersection Summary												
HCM 6th Ctrl Delay			19.6									
HCM 6th LOS			B									
Notes												

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	343	30	124	473	20	98
Future Vol, veh/h	343	30	124	473	20	98
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	373	33	135	514	22	107

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	373	0	1174	390
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	784	-
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	-	-	1185	-	212	658
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	450	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1185	-	188	658
Mov Cap-2 Maneuver	-	-	-	-	188	-
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	399	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	14.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	188	658	-	-	1185	-
HCM Lane V/C Ratio	0.116	0.162	-	-	0.114	-
HCM Control Delay (s)	26.6	11.5	-	-	8.4	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0.6	-	-	0.4	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	208	322	200	139	3
Future Vol, veh/h	0	208	322	200	139	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	226	350	217	151	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	567	0	-	0	685	459
Stage 1	-	-	-	-	459	-
Stage 2	-	-	-	-	226	-
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	1005	-	-	-	414	602
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1005	-	-	-	414	602
Mov Cap-2 Maneuver	-	-	-	-	414	-
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	18.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1005	-	-	-	417
HCM Lane V/C Ratio	-	-	-	-	0.37
HCM Control Delay (s)	0	-	-	-	18.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.7

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	210	112	4	359	115	2
Future Vol, veh/h	210	112	4	359	115	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	228	122	4	390	125	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	350	0	687	289
Stage 1	-	-	-	-	289	-
Stage 2	-	-	-	-	398	-
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	-	-	1209	-	413	750
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	678	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1209	-	412	750
Mov Cap-2 Maneuver	-	-	-	-	412	-
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	676	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	17.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	412	750	-	-	1209	-
HCM Lane V/C Ratio	0.303	0.003	-	-	0.004	-
HCM Control Delay (s)	17.5	9.8	-	-	8	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	317	2	71	687	46	3	291	43	29	235	35
Future Volume (veh/h)	48	317	2	71	687	46	3	291	43	29	235	35
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	52	345	2	77	747	50	3	316	47	32	255	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	767	4	98	746	50	3	316	47	32	258	38
Arrive On Green	0.04	0.41	0.41	0.06	0.43	0.43	0.20	0.20	0.20	0.18	0.18	0.18
Sat Flow, veh/h	1781	1858	11	1781	1733	116	15	1578	235	179	1430	213
Grp Volume(v), veh/h	52	0	347	77	0	797	366	0	0	325	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1868	1781	0	1849	1827	0	0	1823	0	0
Q Serve(g_s), s	3.4	0.0	16.0	5.1	0.0	51.3	23.9	0.0	0.0	21.2	0.0	0.0
Cycle Q Clear(g_c), s	3.4	0.0	16.0	5.1	0.0	51.3	23.9	0.0	0.0	21.2	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.06	0.01		0.13	0.10		0.12
Lane Grp Cap(c), veh/h	67	0	771	98	0	796	366	0	0	329	0	0
V/C Ratio(X)	0.78	0.00	0.45	0.78	0.00	1.00	1.00	0.00	0.00	0.99	0.00	0.00
Avail Cap(c_a), veh/h	79	0	771	184	0	796	366	0	0	329	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.9	0.0	25.2	55.6	0.0	33.9	47.6	0.0	0.0	48.7	0.0	0.0
Incr Delay (d2), s/veh	32.7	0.0	0.4	12.6	0.0	32.2	46.6	0.0	0.0	46.3	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	2.2	0.0	7.1	2.6	0.0	29.4	15.5	0.0	0.0	13.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.6	0.0	25.6	68.2	0.0	66.1	94.3	0.0	0.0	95.0	0.0	0.0
LnGrp LOS	F	A	C	E	A	F	F	A	A	F	A	A
Approach Vol, veh/h		399			874			366			325	
Approach Delay, s/veh		34.0			66.3			94.3			95.0	
Approach LOS		C			E			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.1	53.7		26.0	9.0	55.8		28.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	12.3	44.3		21.5	5.3	51.3		23.9				
Max Q Clear Time (g_c+I1), s	7.1	18.0		23.2	5.4	53.3		25.9				
Green Ext Time (p_c), s	0.1	2.2		0.0	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			69.7									
HCM 6th LOS			E									

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	24	61	136	165	7
Future Vol, veh/h	2	24	61	136	165	7
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	26	66	148	179	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	463	183	187	0	-	0
Stage 1	183	-	-	-	-	-
Stage 2	280	-	-	-	-	-
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	557	859	1387	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	530	859	1387	-	-	-
Mov Cap-2 Maneuver	530	-	-	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	767	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	2.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1387	-	820	-	-
HCM Lane V/C Ratio	0.048	-	0.034	-	-
HCM Control Delay (s)	7.7	-	9.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	5.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	115	264	447	205
Demand Flow Rate, veh/h	117	270	457	208
Vehicles Circulating, veh/h	381	238	84	286
Vehicles Exiting, veh/h	113	303	414	221
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.1	5.8	6.3	5.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	117	270	457	208
Cap Entry Lane, veh/h	936	1082	1267	1031
Entry HV Adj Factor	0.982	0.977	0.979	0.983
Flow Entry, veh/h	115	264	447	205
Cap Entry, veh/h	919	1058	1240	1014
V/C Ratio	0.125	0.249	0.361	0.202
Control Delay, s/veh	5.1	5.8	6.3	5.5
LOS	A	A	A	A
95th %tile Queue, veh	0	1	2	1

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	37	34	405	379	1
Future Vol, veh/h	0	37	34	405	379	1
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	40	37	440	412	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	927	413	413	0	-	0
Stage 1	413	-	-	-	-	-
Stage 2	514	-	-	-	-	-
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	298	639	1146	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	600	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	285	639	1146	-	-	-
Mov Cap-2 Maneuver	285	-	-	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	600	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1146	-	639	-	-
HCM Lane V/C Ratio	0.032	-	0.063	-	-
HCM Control Delay (s)	8.2	0	11	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	39	3	0	2	35	438	3	0	413	1
Future Vol, veh/h	3	0	39	3	0	2	35	438	3	0	413	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	42	3	0	2	38	476	3	0	449	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1005	1005	450	1025	1004	478	450	0	0	479	0	0
Stage 1	450	450	-	554	554	-	-	-	-	-	-	-
Stage 2	555	555	-	471	450	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	220	241	609	213	242	587	1110	-	-	1083	-	-
Stage 1	589	572	-	517	514	-	-	-	-	-	-	-
Stage 2	516	513	-	573	572	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	211	230	609	191	231	587	1110	-	-	1083	-	-
Mov Cap-2 Maneuver	211	230	-	191	231	-	-	-	-	-	-	-
Stage 1	561	572	-	493	490	-	-	-	-	-	-	-
Stage 2	490	489	-	533	572	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	19	0.6	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1110	-	-	537	262	1083	-	-
HCM Lane V/C Ratio	0.034	-	-	0.085	0.021	-	-	-
HCM Control Delay (s)	8.4	0	-	12.3	19	0	-	-
HCM Lane LOS	A	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	18	0	44	0	1	6	49	451	0	0	435	20
Future Vol, veh/h	18	0	44	0	1	6	49	451	0	0	435	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	0	48	0	1	7	53	490	0	0	473	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1084	1080	484	1104	1091	490	495	0	0	490	0	0
Stage 1	484	484	-	596	596	-	-	-	-	-	-	-
Stage 2	600	596	-	508	495	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	194	218	583	188	215	578	1069	-	-	1073	-	-
Stage 1	564	552	-	490	492	-	-	-	-	-	-	-
Stage 2	488	492	-	547	546	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	181	203	583	164	200	578	1069	-	-	1073	-	-
Mov Cap-2 Maneuver	181	203	-	164	200	-	-	-	-	-	-	-
Stage 1	526	552	-	457	459	-	-	-	-	-	-	-
Stage 2	449	459	-	502	546	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.5	13	0.8	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1069	-	-	354	455	1073	-	-
HCM Lane V/C Ratio	0.05	-	-	0.19	0.017	-	-	-
HCM Control Delay (s)	8.5	0	-	17.5	13	0	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.7	0.1	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	0	15	63	0	47	13	526	55	47	397	20
Future Vol, veh/h	23	0	15	63	0	47	13	526	55	47	397	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	0	16	66	0	49	14	554	58	49	418	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1152	1156	418	1109	1119	554	439	0	0	612	0	0
Stage 1	516	516	-	582	582	-	-	-	-	-	-	-
Stage 2	636	640	-	527	537	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	175	197	635	187	207	532	1121	-	-	967	-	-
Stage 1	542	534	-	499	499	-	-	-	-	-	-	-
Stage 2	466	470	-	535	523	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	151	185	635	174	194	532	1121	-	-	967	-	-
Mov Cap-2 Maneuver	151	185	-	174	194	-	-	-	-	-	-	-
Stage 1	535	507	-	493	493	-	-	-	-	-	-	-
Stage 2	417	464	-	495	496	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.2	32.4	0.2	0.9
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1121	-	-	151	249	244	967	-	-
HCM Lane V/C Ratio	0.012	-	-	0.16	0.063	0.475	0.051	-	-
HCM Control Delay (s)	8.3	-	-	33.3	20.4	32.4	8.9	-	-
HCM Lane LOS	A	-	-	D	C	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	2.4	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	332	373	222	259	7	266	12	249	6	8	7
Future Volume (veh/h)	15	332	373	222	259	7	266	12	249	6	8	7
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	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	16	342	0	229	267	8	274	13	0	7	9	8
Peak Hour Factor	0.92	0.97	0.97	0.97	0.97	0.92	0.97	0.92	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	35	458		295	730	624	367	17		14	18	16
Arrive On Green	0.02	0.25	0.00	0.17	0.39	0.39	0.22	0.22	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1781	1856	1572	1767	1856	1585	1704	81	1572	508	653	580
Grp Volume(v), veh/h	16	342	0	229	267	8	287	0	0	24	0	0
Grp Sat Flow(s),veh/h/ln	1781	1856	1572	1767	1856	1585	1785	0	1572	1741	0	0
Q Serve(g_s), s	0.5	8.9	0.0	6.5	5.3	0.2	7.9	0.0	0.0	0.7	0.0	0.0
Cycle Q Clear(g_c), s	0.5	8.9	0.0	6.5	5.3	0.2	7.9	0.0	0.0	0.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.95		1.00	0.29		0.33
Lane Grp Cap(c), veh/h	35	458		295	730	624	385	0		49	0	0
V/C Ratio(X)	0.45	0.75		0.78	0.37	0.01	0.75	0.00		0.49	0.00	0.00
Avail Cap(c_a), veh/h	183	1132		791	1772	1513	970	0		597	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.4	18.3	0.0	20.9	11.3	9.7	19.2	0.0	0.0	25.1	0.0	0.0
Incr Delay (d2), s/veh	8.8	2.5	0.0	4.4	0.3	0.0	2.9	0.0	0.0	7.4	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	0.3	3.7	0.0	2.8	1.9	0.0	3.2	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.2	20.7	0.0	25.4	11.6	9.7	22.1	0.0	0.0	32.5	0.0	0.0
LnGrp LOS	C	C		C	B	A	C	A		C	A	A
Approach Vol, veh/h		358			504			287			24	
Approach Delay, s/veh		21.3			17.8			22.1			32.5	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.2	17.4		6.0	5.5	25.1		15.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5	32.0		18.0	5.4	50.1		28.5				
Max Q Clear Time (g_c+I1), s	8.5	10.9		2.7	2.5	7.3		9.9				
Green Ext Time (p_c), s	0.6	2.0		0.0	0.0	1.7		1.6				
Intersection Summary												
HCM 6th Ctrl Delay			20.2									
HCM 6th LOS			C									
Notes												

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	562	33	117	416	22	154
Future Vol, veh/h	562	33	117	416	22	154
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	611	36	127	452	24	167

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	611	0	1335	629
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	706	-
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	-	-	968	-	169	482
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	489	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	968	-	147	482
Mov Cap-2 Maneuver	-	-	-	-	147	-
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	425	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	18.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	147	482	-	-	968	-
HCM Lane V/C Ratio	0.163	0.347	-	-	0.131	-
HCM Control Delay (s)	34.2	16.4	-	-	9.3	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	1.5	-	-	0.5	-

Intersection						
Int Delay, s/veh	7.9					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	372	245	187	236	1
Future Vol, veh/h	1	372	245	187	236	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	404	266	203	257	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	469	0	-	0	774	368
Stage 1	-	-	-	-	368	-
Stage 2	-	-	-	-	406	-
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	1093	-	-	-	367	677
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1093	-	-	-	367	677
Mov Cap-2 Maneuver	-	-	-	-	367	-
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	673	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	34.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1093	-	-	-	368
HCM Lane V/C Ratio	0.001	-	-	-	0.7
HCM Control Delay (s)	8.3	0	-	-	34.7
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	5.1

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	389	164	1	270	128	1
Future Vol, veh/h	389	164	1	270	128	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	423	178	1	293	139	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	601	0	807	512
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	295	-
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	-	-	976	-	351	562
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	976	-	351	562
Mov Cap-2 Maneuver	-	-	-	-	351	-
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	754	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	351	562	-	-	976	-
HCM Lane V/C Ratio	0.396	0.002	-	-	0.001	-
HCM Control Delay (s)	21.8	11.4	-	-	8.7	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.8	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	674	6	73	454	39	6	304	104	48	294	46
Future Volume (veh/h)	35	674	6	73	454	39	6	304	104	48	294	46
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	38	733	7	79	493	42	7	330	113	52	320	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	53	701	7	82	671	57	6	290	99	46	282	44
Arrive On Green	0.03	0.38	0.38	0.05	0.40	0.40	0.22	0.22	0.22	0.20	0.20	0.20
Sat Flow, veh/h	1781	1850	18	1781	1700	145	28	1311	449	224	1380	216
Grp Volume(v), veh/h	38	0	740	79	0	535	450	0	0	422	0	0
Grp Sat Flow(s),veh/h/ln	1781	0	1867	1781	0	1844	1788	0	0	1820	0	0
Q Serve(g_s), s	2.5	0.0	45.5	5.3	0.0	29.7	26.5	0.0	0.0	24.5	0.0	0.0
Cycle Q Clear(g_c), s	2.5	0.0	45.5	5.3	0.0	29.7	26.5	0.0	0.0	24.5	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.08	0.02		0.25	0.12		0.12
Lane Grp Cap(c), veh/h	53	0	708	82	0	729	395	0	0	372	0	0
V/C Ratio(X)	0.71	0.00	1.05	0.97	0.00	0.73	1.14	0.00	0.00	1.14	0.00	0.00
Avail Cap(c_a), veh/h	76	0	708	82	0	729	395	0	0	372	0	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	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.7	0.0	37.3	57.2	0.0	30.9	46.8	0.0	0.0	47.8	0.0	0.0
Incr Delay (d2), s/veh	16.3	0.0	46.2	88.5	0.0	3.9	89.1	0.0	0.0	88.8	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	1.4	0.0	29.4	4.4	0.0	13.8	21.5	0.0	0.0	20.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.0	0.0	83.5	145.6	0.0	34.8	135.8	0.0	0.0	136.6	0.0	0.0
LnGrp LOS	E	A	F	F	A	C	F	A	A	F	A	A
Approach Vol, veh/h		778			614			450			422	
Approach Delay, s/veh		83.0			49.0			135.8			136.6	
Approach LOS		F			D			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	50.0		29.0	8.1	51.9		31.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	45.5		24.5	5.1	45.9		26.5				
Max Q Clear Time (g_c+I1), s	7.3	47.5		26.5	4.5	31.7		28.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	3.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			94.3									
HCM 6th LOS			F									

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	77	17	128	81	2
Future Vol, veh/h	12	77	17	128	81	2
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	84	18	139	88	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	264	89	90	0	-	0
Stage 1	89	-	-	-	-	-
Stage 2	175	-	-	-	-	-
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	725	969	1505	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	716	969	1505	-	-	-
Mov Cap-2 Maneuver	716	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	855	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1505	-	925	-	-
HCM Lane V/C Ratio	0.012	-	0.105	-	-
HCM Control Delay (s)	7.4	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Intersection Delay, s/veh	5.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	85	279	307	182
Demand Flow Rate, veh/h	87	284	313	185
Vehicles Circulating, veh/h	355	168	59	297
Vehicles Exiting, veh/h	127	204	383	155
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.7	5.4	4.9	5.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	87	284	313	185
Cap Entry Lane, veh/h	961	1163	1299	1019
Entry HV Adj Factor	0.982	0.981	0.980	0.984
Flow Entry, veh/h	85	279	307	182
Cap Entry, veh/h	943	1140	1273	1003
V/C Ratio	0.091	0.244	0.241	0.182
Control Delay, s/veh	4.7	5.4	4.9	5.3
LOS	A	A	A	A
95th %tile Queue, veh	0	1	1	1

Intersection						
Int Delay, s/veh	0.8					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	31	20	299	334	3
Future Vol, veh/h	2	31	20	299	334	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	34	22	325	363	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	734	365	366	0	-	0
Stage 1	365	-	-	-	-	-
Stage 2	369	-	-	-	-	-
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	387	680	1193	-	-	-
Stage 1	702	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	378	680	1193	-	-	-
Mov Cap-2 Maneuver	378	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	699	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1193	-	649	-	-
HCM Lane V/C Ratio	0.018	-	0.055	-	-
HCM Control Delay (s)	8.1	0	10.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	92	3	1	1	87	304	0	1	374	4
Future Vol, veh/h	3	0	92	3	1	1	87	304	0	1	374	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	100	3	1	1	95	330	0	1	407	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	932	931	409	981	933	330	411	0	0	330	0	0
Stage 1	411	411	-	520	520	-	-	-	-	-	-	-
Stage 2	521	520	-	461	413	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	247	267	642	229	266	712	1148	-	-	1229	-	-
Stage 1	618	595	-	539	532	-	-	-	-	-	-	-
Stage 2	539	532	-	581	594	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	226	240	642	178	239	712	1148	-	-	1229	-	-
Mov Cap-2 Maneuver	226	240	-	178	239	-	-	-	-	-	-	-
Stage 1	556	594	-	485	478	-	-	-	-	-	-	-
Stage 2	483	478	-	490	593	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	21.5	1.9	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1148	-	-	607	223	1229	-	-
HCM Lane V/C Ratio	0.082	-	-	0.17	0.024	0.001	-	-
HCM Control Delay (s)	8.4	0	-	12.1	21.5	7.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.6	0.1	0	-	-

Intersection												
Int Delay, s/veh	1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	0	29	1	0	4	26	373	0	1	457	11
Future Vol, veh/h	13	0	29	1	0	4	26	373	0	1	457	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	0	32	1	0	4	28	405	0	1	497	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	968	966	503	982	972	405	509	0	0	405	0	0
Stage 1	505	505	-	461	461	-	-	-	-	-	-	-
Stage 2	463	461	-	521	511	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	233	255	569	228	252	646	1056	-	-	1154	-	-
Stage 1	549	540	-	581	565	-	-	-	-	-	-	-
Stage 2	579	565	-	539	537	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	225	246	569	210	243	646	1056	-	-	1154	-	-
Mov Cap-2 Maneuver	225	246	-	210	243	-	-	-	-	-	-	-
Stage 1	530	539	-	561	546	-	-	-	-	-	-	-
Stage 2	556	546	-	509	536	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.6	13	0.6	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1056	-	-	386	456	1154	-	-
HCM Lane V/C Ratio	0.027	-	-	0.118	0.012	0.001	-	-
HCM Control Delay (s)	8.5	0	-	15.6	13	8.1	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	3	0	15	4	364	3	20	584	8
Future Vol, veh/h	1	1	1	3	0	15	4	364	3	20	584	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	1	3	0	16	4	396	3	22	635	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1093	1086	635	1088	1092	396	644	0	0	399	0	0
Stage 1	679	679	-	404	404	-	-	-	-	-	-	-
Stage 2	414	407	-	684	688	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	192	216	478	193	215	653	941	-	-	1160	-	-
Stage 1	441	451	-	623	599	-	-	-	-	-	-	-
Stage 2	616	597	-	439	447	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	184	211	478	188	210	653	941	-	-	1160	-	-
Mov Cap-2 Maneuver	184	211	-	188	210	-	-	-	-	-	-	-
Stage 1	439	442	-	621	597	-	-	-	-	-	-	-
Stage 2	598	595	-	429	439	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.8	13.1	0.1	0.3
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	941	-	-	184	295	462	1160	-	-
HCM Lane V/C Ratio	0.005	-	-	0.006	0.007	0.042	0.019	-	-
HCM Control Delay (s)	8.8	-	-	24.7	17.3	13.1	8.2	-	-
HCM Lane LOS	A	-	-	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.1	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	182	266	295	283	3	325	4	177	8	13	12
Future Volume (veh/h)	4	182	266	295	283	3	325	4	177	8	13	12
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	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	4	188	0	304	292	3	335	4	0	9	14	13
Peak Hour Factor	0.92	0.97	0.97	0.97	0.97	0.92	0.97	0.92	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	10	278		380	667	570	443	5		17	26	24
Arrive On Green	0.01	0.15	0.00	0.22	0.36	0.36	0.25	0.25	0.00	0.04	0.04	0.04
Sat Flow, veh/h	1781	1856	1572	1767	1856	1585	1761	21	1572	434	675	627
Grp Volume(v), veh/h	4	188	0	304	292	3	339	0	0	36	0	0
Grp Sat Flow(s),veh/h/ln	1781	1856	1572	1767	1856	1585	1782	0	1572	1736	0	0
Q Serve(g_s), s	0.1	5.0	0.0	8.5	6.3	0.1	9.2	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.1	5.0	0.0	8.5	6.3	0.1	9.2	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.99		1.00	0.25		0.36
Lane Grp Cap(c), veh/h	10	278		380	667	570	449	0		68	0	0
V/C Ratio(X)	0.42	0.68		0.80	0.44	0.01	0.76	0.00		0.53	0.00	0.00
Avail Cap(c_a), veh/h	170	781		998	1651	1410	1108	0		598	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.9	21.0	0.0	19.4	12.7	10.7	18.1	0.0	0.0	24.6	0.0	0.0
Incr Delay (d2), s/veh	26.2	2.9	0.0	3.9	0.5	0.0	2.6	0.0	0.0	6.4	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	0.1	2.2	0.0	3.5	2.3	0.0	3.7	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.1	23.9	0.0	23.4	13.2	10.7	20.7	0.0	0.0	31.0	0.0	0.0
LnGrp LOS	D	C		C	B	B	C	A		C	A	A
Approach Vol, veh/h		192			599			339			36	
Approach Delay, s/veh		24.5			18.3			20.7			31.0	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.7	12.3		6.5	4.8	23.3		17.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	29.5	22.0		18.0	5.0	46.5		32.5				
Max Q Clear Time (g_c+I1), s	10.5	7.0		3.1	2.1	8.3		11.2				
Green Ext Time (p_c), s	0.9	0.8		0.1	0.0	1.9		2.1				
Intersection Summary												
HCM 6th Ctrl Delay			20.4									
HCM 6th LOS			C									
Notes												

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	356	32	125	496	22	97
Future Vol, veh/h	356	32	125	496	22	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	387	35	136	539	24	105

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	387	0	1216	405
Stage 1	-	-	-	-	405	-
Stage 2	-	-	-	-	811	-
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	-	-	1171	-	200	646
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	437	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1171	-	177	646
Mov Cap-2 Maneuver	-	-	-	-	177	-
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	386	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	177	646	-	-	1171	-
HCM Lane V/C Ratio	0.135	0.163	-	-	0.116	-
HCM Control Delay (s)	28.5	11.7	-	-	8.5	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	0.6	-	-	0.4	-

Intersection						
Int Delay, s/veh	3.2					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	214	337	211	145	3
Future Vol, veh/h	0	214	337	211	145	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	233	366	229	158	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	595	0	-	0	714	481
Stage 1	-	-	-	-	481	-
Stage 2	-	-	-	-	233	-
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	981	-	-	-	398	585
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	806	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	981	-	-	-	398	585
Mov Cap-2 Maneuver	-	-	-	-	398	-
Stage 1	-	-	-	-	622	-
Stage 2	-	-	-	-	806	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	19.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	981	-	-	-	398	585
HCM Lane V/C Ratio	-	-	-	-	0.396	0.006
HCM Control Delay (s)	0	-	-	-	19.9	11.2
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	1.9	0

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	217	121	4	377	124	2
Future Vol, veh/h	217	121	4	377	124	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	236	132	4	410	135	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	368	0	720	302
Stage 1	-	-	-	-	302	-
Stage 2	-	-	-	-	418	-
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	-	-	1191	-	395	738
Stage 1	-	-	-	-	750	-
Stage 2	-	-	-	-	664	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1191	-	394	738
Mov Cap-2 Maneuver	-	-	-	-	394	-
Stage 1	-	-	-	-	750	-
Stage 2	-	-	-	-	662	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	18.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	394	738	-	-	1191	-
HCM Lane V/C Ratio	0.342	0.003	-	-	0.004	-
HCM Control Delay (s)	18.8	9.9	-	-	8	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	1.5	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	334	2	75	733	48	3	314	45	30	253	38
Future Volume (veh/h)	52	334	2	75	733	48	3	314	45	30	253	38
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	57	363	2	82	797	52	3	341	49	33	275	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	81	946	5	107	909	59	114	487	217	114	487	217
Arrive On Green	0.05	0.51	0.51	0.06	0.52	0.52	0.06	0.14	0.14	0.06	0.14	0.14
Sat Flow, veh/h	1781	1858	10	1781	1737	113	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	57	0	365	82	0	849	3	341	49	33	275	41
Grp Sat Flow(s),veh/h/ln	1781	0	1869	1781	0	1850	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.5	0.0	9.3	3.5	0.0	31.6	0.1	7.2	2.2	1.4	5.7	1.8
Cycle Q Clear(g_c), s	2.5	0.0	9.3	3.5	0.0	31.6	0.1	7.2	2.2	1.4	5.7	1.8
Prop In Lane	1.00		0.01	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	81	0	951	107	0	968	114	487	217	114	487	217
V/C Ratio(X)	0.70	0.00	0.38	0.77	0.00	0.88	0.03	0.70	0.23	0.29	0.56	0.19
Avail Cap(c_a), veh/h	125	0	1273	280	0	1422	410	832	371	412	836	373
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	0.0	11.7	36.2	0.0	16.4	34.3	32.2	30.0	34.9	31.6	29.9
Incr Delay (d2), s/veh	10.6	0.0	0.3	11.0	0.0	4.5	0.1	1.8	0.5	1.4	1.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	3.6	1.8	0.0	12.9	0.1	3.1	0.8	0.6	2.4	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	0.0	12.0	47.2	0.0	20.9	34.4	34.0	30.6	36.3	32.6	30.3
LnGrp LOS	D	A	B	D	A	C	C	C	C	D	C	C
Approach Vol, veh/h		422			931			393			349	
Approach Delay, s/veh		16.8			23.2			33.6			32.7	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	44.3	9.5	15.2	8.1	45.4	9.5	15.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.3	53.3	18.0	18.4	5.5	60.1	18.1	18.3
Max Q Clear Time (g_c+I1), s	5.5	11.3	2.1	7.7	4.5	33.6	3.4	9.2
Green Ext Time (p_c), s	0.1	2.5	0.0	1.3	0.0	7.3	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	25.5
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	26	66	127	162	8
Future Vol, veh/h	2	26	66	127	162	8
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	28	72	138	176	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	463	181	185	0	-	0
Stage 1	181	-	-	-	-	-
Stage 2	282	-	-	-	-	-
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	557	862	1390	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	528	862	1390	-	-	-
Mov Cap-2 Maneuver	528	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	766	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1390	-	825	-	-
HCM Lane V/C Ratio	0.052	-	0.037	-	-
HCM Control Delay (s)	7.7	-	9.5	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	123	284	457	202
Demand Flow Rate, veh/h	125	290	466	205
Vehicles Circulating, veh/h	390	233	91	306
Vehicles Exiting, veh/h	121	324	424	217
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.2	5.9	6.5	5.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	125	290	466	205
Cap Entry Lane, veh/h	927	1088	1258	1010
Entry HV Adj Factor	0.982	0.979	0.980	0.984
Flow Entry, veh/h	123	284	457	202
Cap Entry, veh/h	911	1065	1232	993
V/C Ratio	0.135	0.267	0.371	0.203
Control Delay, s/veh	5.2	5.9	6.5	5.6
LOS	A	A	A	A
95th %tile Queue, veh	0	1	2	1

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	40	37	414	390	1
Future Vol, veh/h	0	40	37	414	390	1
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	43	40	450	424	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	955	425	425	0	-	0
Stage 1	425	-	-	-	-	-
Stage 2	530	-	-	-	-	-
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	287	629	1134	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	274	629	1134	-	-	-
Mov Cap-2 Maneuver	274	-	-	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	590	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1134	-	629	-	-
HCM Lane V/C Ratio	0.035	-	0.069	-	-
HCM Control Delay (s)	8.3	0	11.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	42	3	0	2	38	449	3	0	427	1
Future Vol, veh/h	3	0	42	3	0	2	38	449	3	0	427	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	46	3	0	2	41	488	3	0	464	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1038	1038	465	1060	1037	490	465	0	0	491	0	0
Stage 1	465	465	-	572	572	-	-	-	-	-	-	-
Stage 2	573	573	-	488	465	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	209	231	597	202	231	578	1096	-	-	1072	-	-
Stage 1	578	563	-	505	504	-	-	-	-	-	-	-
Stage 2	505	504	-	561	563	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	200	219	597	179	219	578	1096	-	-	1072	-	-
Mov Cap-2 Maneuver	200	219	-	179	219	-	-	-	-	-	-	-
Stage 1	549	563	-	479	478	-	-	-	-	-	-	-
Stage 2	477	478	-	518	563	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.5	19.9	0.7	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1096	-	-	527	247	1072	-	-
HCM Lane V/C Ratio	0.038	-	-	0.093	0.022	-	-	-
HCM Control Delay (s)	8.4	0	-	12.5	19.9	0	-	-
HCM Lane LOS	A	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	0	47	0	1	6	53	463	0	0	450	22
Future Vol, veh/h	19	0	47	0	1	6	53	463	0	0	450	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	51	0	1	7	58	503	0	0	489	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1124	1120	501	1146	1132	503	513	0	0	503	0	0
Stage 1	501	501	-	619	619	-	-	-	-	-	-	-
Stage 2	623	619	-	527	513	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	183	206	570	176	203	569	1052	-	-	1061	-	-
Stage 1	552	543	-	476	480	-	-	-	-	-	-	-
Stage 2	474	480	-	535	536	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	169	190	570	151	187	569	1052	-	-	1061	-	-
Mov Cap-2 Maneuver	169	190	-	151	187	-	-	-	-	-	-	-
Stage 1	509	543	-	439	443	-	-	-	-	-	-	-
Stage 2	431	443	-	487	536	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.4	13.3	0.9	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1052	-	-	339	440	1061	-	-
HCM Lane V/C Ratio	0.055	-	-	0.212	0.017	-	-	-
HCM Control Delay (s)	8.6	0	-	18.4	13.3	0	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.8	0.1	0	-	-

Intersection												
Int Delay, s/veh	1.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	0	16	6	0	28	14	567	9	32	428	22
Future Vol, veh/h	25	0	16	6	0	28	14	567	9	32	428	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	17	6	0	29	15	597	9	34	451	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1165	1155	451	1158	1169	597	474	0	0	606	0	0
Stage 1	519	519	-	627	627	-	-	-	-	-	-	-
Stage 2	646	636	-	531	542	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	171	197	608	173	193	503	1088	-	-	972	-	-
Stage 1	540	533	-	471	476	-	-	-	-	-	-	-
Stage 2	460	472	-	532	520	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	155	187	608	162	184	503	1088	-	-	972	-	-
Mov Cap-2 Maneuver	155	187	-	162	184	-	-	-	-	-	-	-
Stage 1	532	514	-	464	469	-	-	-	-	-	-	-
Stage 2	427	465	-	499	502	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	27.9			15.9			0.2			0.6		
HCM LOS	D			C								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1088	-	-	155	254	367	972	-	-
HCM Lane V/C Ratio	0.014	-	-	0.17	0.066	0.098	0.035	-	-
HCM Control Delay (s)	8.4	-	-	32.9	20.2	15.9	8.8	-	-
HCM Lane LOS	A	-	-	D	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	0.3	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	314	402	232	225	8	287	13	262	6	9	8
Future Volume (veh/h)	16	314	402	232	225	8	287	13	262	6	9	8
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	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	17	324	0	239	232	9	296	14	0	7	10	9
Peak Hour Factor	0.92	0.97	0.97	0.97	0.97	0.92	0.97	0.92	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	37	435		305	716	611	390	18		14	20	18
Arrive On Green	0.02	0.23	0.00	0.17	0.39	0.39	0.23	0.23	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1781	1856	1572	1767	1856	1585	1705	81	1572	468	669	602
Grp Volume(v), veh/h	17	324	0	239	232	9	310	0	0	26	0	0
Grp Sat Flow(s),veh/h/ln	1781	1856	1572	1767	1856	1585	1785	0	1572	1739	0	0
Q Serve(g_s), s	0.5	8.7	0.0	7.0	4.7	0.2	8.7	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.5	8.7	0.0	7.0	4.7	0.2	8.7	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.95		1.00	0.27		0.35
Lane Grp Cap(c), veh/h	37	435		305	716	611	409	0		52	0	0
V/C Ratio(X)	0.46	0.75		0.78	0.32	0.01	0.76	0.00		0.50	0.00	0.00
Avail Cap(c_a), veh/h	179	1103		772	1727	1475	945	0		581	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.0	19.1	0.0	21.3	11.6	10.2	19.4	0.0	0.0	25.7	0.0	0.0
Incr Delay (d2), s/veh	8.5	2.6	0.0	4.4	0.3	0.0	2.9	0.0	0.0	7.2	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	0.3	3.7	0.0	3.0	1.7	0.1	3.6	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	21.7	0.0	25.8	11.9	10.2	22.3	0.0	0.0	32.9	0.0	0.0
LnGrp LOS	C	C		C	B	B	C	A		C	A	A
Approach Vol, veh/h		341			480			310			26	
Approach Delay, s/veh		22.3			18.8			22.3			32.9	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.8	17.1		6.1	5.6	25.3		16.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	23.5	32.0		18.0	5.4	50.1		28.5
Max Q Clear Time (g_c+I1), s	9.0	10.7		2.8	2.5	6.7		10.7
Green Ext Time (p_c), s	0.6	1.9		0.1	0.0	1.5		1.7

Intersection Summary	
HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	580	36	105	416	24	148
Future Vol, veh/h	580	36	105	416	24	148
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	630	39	114	452	26	161

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	630	0	1330	650
Stage 1	-	-	-	-	650	-
Stage 2	-	-	-	-	680	-
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	-	-	952	-	171	469
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	503	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	952	-	150	469
Mov Cap-2 Maneuver	-	-	-	-	150	-
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	443	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	19
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	150	469	-	-	952	-
HCM Lane V/C Ratio	0.174	0.343	-	-	0.12	-
HCM Control Delay (s)	34	16.6	-	-	9.3	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	1.5	-	-	0.4	-

Intersection						
Int Delay, s/veh	9					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	383	240	193	247	1
Future Vol, veh/h	1	383	240	193	247	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	416	261	210	268	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	471	0	-	0	784	366
Stage 1	-	-	-	-	366	-
Stage 2	-	-	-	-	418	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1091	-	-	-	362	679
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	664	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1091	-	-	-	362	679
Mov Cap-2 Maneuver	-	-	-	-	362	-
Stage 1	-	-	-	-	701	-
Stage 2	-	-	-	-	664	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	38.6
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1091	-	-	-	362	679
HCM Lane V/C Ratio	0.001	-	-	-	0.742	0.002
HCM Control Delay (s)	8.3	-	-	-	38.7	10.3
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0	-	-	-	5.8	0

Intersection						
Int Delay, s/veh	3.3					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	401	177	1	267	138	1
Future Vol, veh/h	401	177	1	267	138	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	436	192	1	290	150	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	628	0	824	532
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	292	-
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	-	-	954	-	343	547
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	758	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	954	-	343	547
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	757	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	23.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	343	547	-	-	954	-
HCM Lane V/C Ratio	0.437	0.002	-	-	0.001	-
HCM Control Delay (s)	23.4	11.6	-	-	8.8	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	2.1	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	711	6	75	471	40	6	328	110	51	317	50
Future Volume (veh/h)	38	711	6	75	471	40	6	328	110	51	317	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	41	773	7	82	512	43	7	357	120	55	345	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	895	8	106	859	72	120	523	233	120	523	233
Arrive On Green	0.04	0.48	0.48	0.06	0.50	0.50	0.07	0.15	0.15	0.07	0.15	0.15
Sat Flow, veh/h	1781	1851	17	1781	1702	143	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	41	0	780	82	0	555	7	357	120	55	345	54
Grp Sat Flow(s),veh/h/ln	1781	0	1867	1781	0	1845	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.7	0.0	27.5	3.4	0.0	15.8	0.3	7.1	5.2	2.2	6.8	2.2
Cycle Q Clear(g_c), s	1.7	0.0	27.5	3.4	0.0	15.8	0.3	7.1	5.2	2.2	6.8	2.2
Prop In Lane	1.00		0.01	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	0	903	106	0	931	120	523	233	120	523	233
V/C Ratio(X)	0.60	0.00	0.86	0.77	0.00	0.60	0.06	0.68	0.51	0.46	0.66	0.23
Avail Cap(c_a), veh/h	170	0	1421	218	0	1453	432	876	391	434	881	393
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	0.0	17.0	34.4	0.0	13.0	32.4	30.0	29.2	33.3	29.9	28.0
Incr Delay (d2), s/veh	8.1	0.0	3.5	11.3	0.0	0.6	0.2	1.6	1.8	2.7	1.4	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	0.9	0.0	11.3	1.8	0.0	6.0	0.1	3.0	2.0	1.0	2.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.2	0.0	20.5	45.7	0.0	13.6	32.6	31.6	31.0	36.0	31.3	28.5
LnGrp LOS	D	A	C	D	A	B	C	C	C	D	C	C
Approach Vol, veh/h		821			637			484			454	
Approach Delay, s/veh		21.6			17.8			31.5			31.6	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	40.4	9.5	15.4	7.4	42.0	9.5	15.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.1	56.5	18.0	18.4	7.1	58.5	18.1	18.3
Max Q Clear Time (g_c+I1), s	5.4	29.5	2.3	8.8	3.7	17.8	4.2	9.1
Green Ext Time (p_c), s	0.0	6.4	0.0	1.6	0.0	4.2	0.1	1.8

Intersection Summary	
HCM 6th Ctrl Delay	24.5
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	77	17	135	89	2
Future Vol, veh/h	12	77	17	135	89	2
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	84	18	147	97	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	281	98	99	0	-	0
Stage 1	98	-	-	-	-	-
Stage 2	183	-	-	-	-	-
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	709	958	1494	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	700	958	1494	-	-	-
Mov Cap-2 Maneuver	700	-	-	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	848	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1494	-	913	-	-
HCM Lane V/C Ratio	0.012	-	0.106	-	-
HCM Control Delay (s)	7.4	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Intersection Delay, s/veh	5.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	85	280	316	191
Demand Flow Rate, veh/h	87	285	323	194
Vehicles Circulating, veh/h	365	177	59	298
Vehicles Exiting, veh/h	127	205	393	164
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.7	5.5	5.0	5.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	87	285	323	194
Cap Entry Lane, veh/h	951	1152	1299	1018
Entry HV Adj Factor	0.982	0.981	0.980	0.984
Flow Entry, veh/h	85	280	316	191
Cap Entry, veh/h	933	1130	1273	1002
V/C Ratio	0.091	0.247	0.249	0.191
Control Delay, s/veh	4.7	5.5	5.0	5.4
LOS	A	A	A	A
95th %tile Queue, veh	0	1	1	1

Intersection						
Int Delay, s/veh	0.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	31	20	307	343	3
Future Vol, veh/h	2	31	20	307	343	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	34	22	334	373	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	753	375	376	0	-	0
Stage 1	375	-	-	-	-	-
Stage 2	378	-	-	-	-	-
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	377	671	1182	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	693	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	368	671	1182	-	-	-
Mov Cap-2 Maneuver	368	-	-	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	693	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1182	-	639	-	-
HCM Lane V/C Ratio	0.018	-	0.056	-	-
HCM Control Delay (s)	8.1	0	11	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	92	3	1	1	87	312	0	1	383	4
Future Vol, veh/h	3	0	92	3	1	1	87	312	0	1	383	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	100	3	1	1	95	339	0	1	416	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	950	949	418	999	951	339	420	0	0	339	0	0
Stage 1	420	420	-	529	529	-	-	-	-	-	-	-
Stage 2	530	529	-	470	422	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	240	260	635	222	260	703	1139	-	-	1220	-	-
Stage 1	611	589	-	533	527	-	-	-	-	-	-	-
Stage 2	533	527	-	574	588	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	220	233	635	172	233	703	1139	-	-	1220	-	-
Mov Cap-2 Maneuver	220	233	-	172	233	-	-	-	-	-	-	-
Stage 1	548	588	-	478	473	-	-	-	-	-	-	-
Stage 2	476	473	-	483	587	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	22.1	1.8	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1139	-	-	599	216	1220	-	-
HCM Lane V/C Ratio	0.083	-	-	0.172	0.025	0.001	-	-
HCM Control Delay (s)	8.4	0	-	12.3	22.1	8	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.6	0.1	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	0	29	1	0	4	26	381	0	1	466	11
Future Vol, veh/h	13	0	29	1	0	4	26	381	0	1	466	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	0	32	1	0	4	28	414	0	1	507	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	987	985	513	1001	991	414	519	0	0	414	0	0
Stage 1	515	515	-	470	470	-	-	-	-	-	-	-
Stage 2	472	470	-	531	521	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	226	248	561	222	246	638	1047	-	-	1145	-	-
Stage 1	543	535	-	574	560	-	-	-	-	-	-	-
Stage 2	573	560	-	532	532	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	218	239	561	204	237	638	1047	-	-	1145	-	-
Mov Cap-2 Maneuver	218	239	-	204	237	-	-	-	-	-	-	-
Stage 1	524	534	-	554	540	-	-	-	-	-	-	-
Stage 2	549	540	-	502	531	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.9	13.1	0.5	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1047	-	-	377	448	1145	-	-
HCM Lane V/C Ratio	0.027	-	-	0.121	0.012	0.001	-	-
HCM Control Delay (s)	8.5	0	-	15.9	13.1	8.1	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	27	0	23	4	364	27	29	584	8
Future Vol, veh/h	1	1	1	27	0	23	4	364	27	29	584	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1	1	29	0	25	4	396	29	32	635	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1130	1132	635	1108	1112	396	644	0	0	425	0	0
Stage 1	699	699	-	404	404	-	-	-	-	-	-	-
Stage 2	431	433	-	704	708	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	181	203	478	187	209	653	941	-	-	1134	-	-
Stage 1	430	442	-	623	599	-	-	-	-	-	-	-
Stage 2	603	582	-	428	438	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	170	197	478	181	202	653	941	-	-	1134	-	-
Mov Cap-2 Maneuver	170	197	-	181	202	-	-	-	-	-	-	-
Stage 1	428	430	-	621	597	-	-	-	-	-	-	-
Stage 2	577	580	-	414	426	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.9	21.6	0.1	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	941	-	-	170	274	271	1134	-	-
HCM Lane V/C Ratio	0.005	-	-	0.006	0.008	0.201	0.028	-	-
HCM Control Delay (s)	8.8	-	-	26.3	18.2	21.6	8.3	-	-
HCM Lane LOS	A	-	-	D	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.7	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	203	266	298	304	3	325	4	180	8	13	12
Future Volume (veh/h)	4	203	266	298	304	3	325	4	180	8	13	12
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	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	4	209	0	307	313	3	335	4	0	9	14	13
Peak Hour Factor	0.92	0.97	0.97	0.97	0.97	0.92	0.97	0.92	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	10	298		381	689	589	440	5		17	26	24
Arrive On Green	0.01	0.16	0.00	0.22	0.37	0.37	0.25	0.25	0.00	0.04	0.04	0.04
Sat Flow, veh/h	1781	1856	1572	1767	1856	1585	1761	21	1572	434	675	627
Grp Volume(v), veh/h	4	209	0	307	313	3	339	0	0	36	0	0
Grp Sat Flow(s),veh/h/ln	1781	1856	1572	1767	1856	1585	1782	0	1572	1736	0	0
Q Serve(g_s), s	0.1	5.7	0.0	8.9	6.9	0.1	9.5	0.0	0.0	1.1	0.0	0.0
Cycle Q Clear(g_c), s	0.1	5.7	0.0	8.9	6.9	0.1	9.5	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.99		1.00	0.25		0.36
Lane Grp Cap(c), veh/h	10	298		381	689	589	446	0		67	0	0
V/C Ratio(X)	0.42	0.70		0.80	0.45	0.01	0.76	0.00		0.54	0.00	0.00
Avail Cap(c_a), veh/h	166	759		969	1604	1370	1077	0		581	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.7	21.3	0.0	20.0	12.8	10.6	18.7	0.0	0.0	25.4	0.0	0.0
Incr Delay (d2), s/veh	26.3	3.0	0.0	4.0	0.5	0.0	2.7	0.0	0.0	6.5	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	0.1	2.5	0.0	3.7	2.5	0.0	3.8	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.9	24.3	0.0	24.0	13.3	10.7	21.4	0.0	0.0	31.9	0.0	0.0
LnGrp LOS	D	C		C	B	B	C	A		C	A	A
Approach Vol, veh/h		213			623			339			36	
Approach Delay, s/veh		24.9			18.6			21.4			31.9	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.1	13.2		6.6	4.8	24.5		17.9
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	29.5	22.0		18.0	5.0	46.5		32.5
Max Q Clear Time (g_c+I1), s	10.9	7.7		3.1	2.1	8.9		11.5
Green Ext Time (p_c), s	0.9	0.9		0.1	0.0	2.0		2.1

Intersection Summary	
HCM 6th Ctrl Delay	20.9
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	369	32	133	509	22	105
Future Vol, veh/h	369	32	133	509	22	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	401	35	145	553	24	114

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	401	0	1262	419
Stage 1	-	-	-	-	419	-
Stage 2	-	-	-	-	843	-
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	-	-	1158	-	188	634
Stage 1	-	-	-	-	664	-
Stage 2	-	-	-	-	422	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1158	-	165	634
Mov Cap-2 Maneuver	-	-	-	-	165	-
Stage 1	-	-	-	-	664	-
Stage 2	-	-	-	-	369	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	15.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	165	634	-	-	1158	-
HCM Lane V/C Ratio	0.145	0.18	-	-	0.125	-
HCM Control Delay (s)	30.5	11.9	-	-	8.6	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	0.7	-	-	0.4	-

Intersection						
Int Delay, s/veh	3.3					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	223	346	215	149	3
Future Vol, veh/h	0	223	346	215	149	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	242	376	234	162	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	610	0	-	0	735	493
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	242	-
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	969	-	-	-	387	576
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	798	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	969	-	-	-	387	576
Mov Cap-2 Maneuver	-	-	-	-	387	-
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	798	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	969	-	-	-	387	576
HCM Lane V/C Ratio	-	-	-	-	0.418	0.006
HCM Control Delay (s)	0	-	-	-	20.8	11.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	2	0

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	226	121	4	386	124	2
Future Vol, veh/h	226	121	4	386	124	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	246	132	4	420	135	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	378	0	740	312
Stage 1	-	-	-	-	312	-
Stage 2	-	-	-	-	428	-
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	-	-	1180	-	384	728
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1180	-	383	728
Mov Cap-2 Maneuver	-	-	-	-	383	-
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	655	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	383	728	-	-	1180	-
HCM Lane V/C Ratio	0.352	0.003	-	-	0.004	-
HCM Control Delay (s)	19.4	10	-	-	8.1	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.6	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	341	2	76	740	49	3	314	46	31	253	38
Future Volume (veh/h)	52	341	2	76	740	49	3	314	46	31	253	38
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	57	371	2	83	804	53	3	341	50	34	275	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	80	951	5	108	915	60	113	486	217	113	485	217
Arrive On Green	0.05	0.51	0.51	0.06	0.53	0.53	0.06	0.14	0.14	0.06	0.14	0.14
Sat Flow, veh/h	1781	1859	10	1781	1735	114	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	57	0	373	83	0	857	3	341	50	34	275	41
Grp Sat Flow(s),veh/h/ln	1781	0	1869	1781	0	1850	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.5	0.0	9.6	3.6	0.0	32.2	0.1	7.2	2.2	1.4	5.7	1.8
Cycle Q Clear(g_c), s	2.5	0.0	9.6	3.6	0.0	32.2	0.1	7.2	2.2	1.4	5.7	1.8
Prop In Lane	1.00		0.01	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	80	0	956	108	0	975	113	486	217	113	485	217
V/C Ratio(X)	0.71	0.00	0.39	0.77	0.00	0.88	0.03	0.70	0.23	0.30	0.57	0.19
Avail Cap(c_a), veh/h	124	0	1261	277	0	1408	406	823	367	408	828	369
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	0.0	11.8	36.6	0.0	16.5	34.7	32.6	30.4	35.3	31.9	30.2
Incr Delay (d2), s/veh	10.8	0.0	0.3	10.9	0.0	4.8	0.1	1.9	0.5	1.5	1.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	3.7	1.9	0.0	13.3	0.1	3.2	0.9	0.7	2.5	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.0	0.0	12.0	47.4	0.0	21.2	34.8	34.4	30.9	36.8	32.9	30.6
LnGrp LOS	D	A	B	D	A	C	C	C	C	D	C	C
Approach Vol, veh/h		430			940			394			350	
Approach Delay, s/veh		16.8			23.5			34.0			33.1	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	44.9	9.5	15.3	8.1	46.1	9.5	15.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.3	53.3	18.0	18.4	5.5	60.1	18.1	18.3
Max Q Clear Time (g_c+I1), s	5.6	11.6	2.1	7.7	4.5	34.2	3.4	9.2
Green Ext Time (p_c), s	0.1	2.5	0.0	1.3	0.0	7.4	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

Intersection						
Int Delay, s/veh	1.8					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	26	66	145	177	8
Future Vol, veh/h	2	26	66	145	177	8
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	28	72	158	192	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	499	197	201	0	-	0
Stage 1	197	-	-	-	-	-
Stage 2	302	-	-	-	-	-
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	531	844	1371	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	750	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	503	844	1371	-	-	-
Mov Cap-2 Maneuver	503	-	-	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	750	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	2.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1371	-	805	-	-
HCM Lane V/C Ratio	0.052	-	0.038	-	-
HCM Control Delay (s)	7.8	-	9.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	6.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	124	285	480	219
Demand Flow Rate, veh/h	126	291	490	223
Vehicles Circulating, veh/h	409	255	91	309
Vehicles Exiting, veh/h	123	326	444	237
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.4	6.1	6.7	5.8
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	126	291	490	223
Cap Entry Lane, veh/h	909	1064	1258	1007
Entry HV Adj Factor	0.983	0.979	0.980	0.983
Flow Entry, veh/h	124	285	480	219
Cap Entry, veh/h	893	1041	1232	990
V/C Ratio	0.139	0.274	0.390	0.221
Control Delay, s/veh	5.4	6.1	6.7	5.8
LOS	A	A	A	A
95th %tile Queue, veh	0	1	2	1

Intersection						
Int Delay, s/veh	0.9					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	40	37	435	407	1
Future Vol, veh/h	0	40	37	435	407	1
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	43	40	473	442	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	996	443	443	0	-	0
Stage 1	443	-	-	-	-	-
Stage 2	553	-	-	-	-	-
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	271	615	1117	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	576	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	258	615	1117	-	-	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	615	-	-	-	-	-
Stage 2	576	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1117	-	615	-	-
HCM Lane V/C Ratio	0.036	-	0.071	-	-
HCM Control Delay (s)	8.3	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	42	3	0	2	38	470	3	0	444	1
Future Vol, veh/h	3	0	42	3	0	2	38	470	3	0	444	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	46	3	0	2	41	511	3	0	483	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1080	1080	484	1102	1079	513	484	0	0	514	0	0
Stage 1	484	484	-	595	595	-	-	-	-	-	-	-
Stage 2	596	596	-	507	484	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	196	218	583	189	218	561	1079	-	-	1052	-	-
Stage 1	564	552	-	491	492	-	-	-	-	-	-	-
Stage 2	490	492	-	548	552	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	187	206	583	167	206	561	1079	-	-	1052	-	-
Mov Cap-2 Maneuver	187	206	-	167	206	-	-	-	-	-	-	-
Stage 1	534	552	-	465	466	-	-	-	-	-	-	-
Stage 2	462	466	-	505	552	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	20.9	0.6	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1079	-	-	511	232	1052	-	-
HCM Lane V/C Ratio	0.038	-	-	0.096	0.023	-	-	-
HCM Control Delay (s)	8.5	0	-	12.8	20.9	0	-	-
HCM Lane LOS	A	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	0	47	0	1	6	53	484	0	0	467	22
Future Vol, veh/h	19	0	47	0	1	6	53	484	0	0	467	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	51	0	1	7	58	526	0	0	508	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1166	1162	520	1188	1174	526	532	0	0	526	0	0
Stage 1	520	520	-	642	642	-	-	-	-	-	-	-
Stage 2	646	642	-	546	532	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	171	195	556	165	192	552	1036	-	-	1041	-	-
Stage 1	539	532	-	463	469	-	-	-	-	-	-	-
Stage 2	460	469	-	522	526	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	158	180	556	141	177	552	1036	-	-	1041	-	-
Mov Cap-2 Maneuver	158	180	-	141	177	-	-	-	-	-	-	-
Stage 1	496	532	-	426	432	-	-	-	-	-	-	-
Stage 2	418	432	-	474	526	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.4	13.6	0.9	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1036	-	-	322	424	1041	-	-
HCM Lane V/C Ratio	0.056	-	-	0.223	0.018	-	-	-
HCM Control Delay (s)	8.7	0	-	19.4	13.6	0	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.8	0.1	0	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	0	16	63	0	49	14	567	56	49	428	22
Future Vol, veh/h	25	0	16	63	0	49	14	567	56	49	428	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	17	66	0	52	15	597	59	52	451	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1238	1241	451	1194	1205	597	474	0	0	656	0	0
Stage 1	555	555	-	627	627	-	-	-	-	-	-	-
Stage 2	683	686	-	567	578	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	152	175	608	163	184	503	1088	-	-	931	-	-
Stage 1	516	513	-	471	476	-	-	-	-	-	-	-
Stage 2	439	448	-	508	501	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	129	163	608	150	171	503	1088	-	-	931	-	-
Mov Cap-2 Maneuver	129	163	-	150	171	-	-	-	-	-	-	-
Stage 1	509	484	-	464	469	-	-	-	-	-	-	-
Stage 2	389	442	-	466	473	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	33.5	40	0.2	0.9
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1088	-	-	129	212	216	931	-	-
HCM Lane V/C Ratio	0.014	-	-	0.204	0.079	0.546	0.055	-	-
HCM Control Delay (s)	8.4	-	-	39.9	23.4	40	9.1	-	-
HCM Lane LOS	A	-	-	E	C	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.3	2.9	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	355	402	239	275	8	287	13	268	6	9	8
Future Volume (veh/h)	16	355	402	239	275	8	287	13	268	6	9	8
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	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	17	366	0	246	284	9	296	14	0	7	10	9
Peak Hour Factor	0.92	0.97	0.97	0.97	0.97	0.92	0.97	0.92	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	37	473		309	760	649	385	18		14	20	18
Arrive On Green	0.02	0.26	0.00	0.18	0.41	0.41	0.23	0.23	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1781	1856	1572	1767	1856	1585	1705	81	1572	468	669	602
Grp Volume(v), veh/h	17	366	0	246	284	9	310	0	0	26	0	0
Grp Sat Flow(s),veh/h/ln	1781	1856	1572	1767	1856	1585	1785	0	1572	1739	0	0
Q Serve(g_s), s	0.5	10.5	0.0	7.6	6.1	0.2	9.3	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.5	10.5	0.0	7.6	6.1	0.2	9.3	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.95		1.00	0.27		0.35
Lane Grp Cap(c), veh/h	37	473		309	760	649	403	0		51	0	0
V/C Ratio(X)	0.46	0.77		0.80	0.37	0.01	0.77	0.00		0.51	0.00	0.00
Avail Cap(c_a), veh/h	168	1037		725	1624	1387	889	0		547	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.7	19.8	0.0	22.6	11.8	10.0	20.8	0.0	0.0	27.4	0.0	0.0
Incr Delay (d2), s/veh	8.7	2.7	0.0	4.6	0.3	0.0	3.1	0.0	0.0	7.5	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	0.3	4.4	0.0	3.3	2.2	0.1	3.9	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.4	22.5	0.0	27.3	12.1	10.0	23.9	0.0	0.0	34.8	0.0	0.0
LnGrp LOS	D	C		C	B	B	C	A		C	A	A
Approach Vol, veh/h		383			539			310			26	
Approach Delay, s/veh		23.1			19.0			23.9			34.8	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.5	19.1		6.2	5.7	27.9		17.4
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	23.5	32.0		18.0	5.4	50.1		28.5
Max Q Clear Time (g_c+I1), s	9.6	12.5		2.8	2.5	8.1		11.3
Green Ext Time (p_c), s	0.6	2.1		0.1	0.0	1.9		1.7

Intersection Summary	
HCM 6th Ctrl Delay	21.8
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	604	36	125	446	24	165
Future Vol, veh/h	604	36	125	446	24	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	657	39	136	485	26	179

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	657	0	1434	677
Stage 1	-	-	-	-	677	-
Stage 2	-	-	-	-	757	-
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	-	-	931	-	147	453
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	463	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	931	-	126	453
Mov Cap-2 Maneuver	-	-	-	-	126	-
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	395	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	21
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	126	453	-	-	931	-
HCM Lane V/C Ratio	0.207	0.396	-	-	0.146	-
HCM Control Delay (s)	40.9	18.1	-	-	9.5	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	0.7	1.9	-	-	0.5	-

Intersection	
Int Delay, s/veh	11

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	400	262	201	254	1
Future Vol, veh/h	1	400	262	201	254	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	435	285	218	276	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	503	0	-	0	831	394
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	437	-
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	1061	-	-	-	340	655
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	651	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1061	-	-	-	340	655
Mov Cap-2 Maneuver	-	-	-	-	340	-
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	651	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	48.4
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1061	-	-	-	340	655
HCM Lane V/C Ratio	0.001	-	-	-	0.812	0.002
HCM Control Delay (s)	8.4	-	-	-	48.5	10.5
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0	-	-	-	6.9	0

Intersection						
Int Delay, s/veh	3.4					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	418	177	1	289	138	1
Future Vol, veh/h	418	177	1	289	138	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	454	192	1	314	150	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	646	0	866	550
Stage 1	-	-	-	-	550	-
Stage 2	-	-	-	-	316	-
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	-	-	939	-	324	535
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	939	-	324	535
Mov Cap-2 Maneuver	-	-	-	-	324	-
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	738	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	25.2
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	324	535	-	-	939	-
HCM Lane V/C Ratio	0.463	0.002	-	-	0.001	-
HCM Control Delay (s)	25.3	11.7	-	-	8.8	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	2.3	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	725	6	78	488	42	6	328	112	52	317	50
Future Volume (veh/h)	38	725	6	78	488	42	6	328	112	52	317	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	41	788	7	85	530	46	7	357	122	57	345	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	907	8	110	872	76	117	518	231	117	518	231
Arrive On Green	0.04	0.49	0.49	0.06	0.51	0.51	0.07	0.15	0.15	0.07	0.15	0.15
Sat Flow, veh/h	1781	1851	16	1781	1697	147	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	41	0	795	85	0	576	7	357	122	57	345	54
Grp Sat Flow(s),veh/h/ln	1781	0	1867	1781	0	1844	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.7	0.0	28.7	3.6	0.0	16.8	0.3	7.3	5.4	2.3	7.0	2.3
Cycle Q Clear(g_c), s	1.7	0.0	28.7	3.6	0.0	16.8	0.3	7.3	5.4	2.3	7.0	2.3
Prop In Lane	1.00		0.01	1.00		0.08	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	0	916	110	0	947	117	518	231	117	518	231
V/C Ratio(X)	0.60	0.00	0.87	0.77	0.00	0.61	0.06	0.69	0.53	0.49	0.67	0.23
Avail Cap(c_a), veh/h	166	0	1402	199	0	1418	422	855	381	424	860	383
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	17.2	35.2	0.0	13.1	33.3	30.9	30.1	34.3	30.7	28.7
Incr Delay (d2), s/veh	8.4	0.0	3.9	11.0	0.0	0.6	0.2	1.6	1.9	3.1	1.5	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	0.9	0.0	11.9	1.8	0.0	6.3	0.1	3.1	2.1	1.1	3.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	0.0	21.1	46.2	0.0	13.7	33.5	32.5	31.9	37.4	32.2	29.2
LnGrp LOS	D	A	C	D	A	B	C	C	C	D	C	C
Approach Vol, veh/h		836			661			486			456	
Approach Delay, s/veh		22.3			17.9			32.4			32.5	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.2	41.8	9.5	15.6	7.4	43.6	9.5	15.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	57.1	18.0	18.4	7.1	58.5	18.1	18.3
Max Q Clear Time (g_c+I1), s	5.6	30.7	2.3	9.0	3.7	18.8	4.3	9.3
Green Ext Time (p_c), s	0.0	6.5	0.0	1.6	0.0	4.4	0.1	1.8

Intersection Summary	
HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	24	67	151	179	7
Future Vol, veh/h	3	24	67	151	179	7
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	26	73	164	195	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	509	199	203	0	-	0
Stage 1	199	-	-	-	-	-
Stage 2	310	-	-	-	-	-
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	524	842	1369	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	744	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	496	842	1369	-	-	-
Mov Cap-2 Maneuver	496	-	-	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	744	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	9.8		2.4		0	
HCM LOS	A					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1369	-	781	-	-
HCM Lane V/C Ratio	0.053	-	0.038	-	-
HCM Control Delay (s)	7.8	-	9.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection				
Intersection Delay, s/veh	6.7			
Intersection LOS	A			

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	148	327	493	221
Demand Flow Rate, veh/h	150	334	503	225
Vehicles Circulating, veh/h	444	283	110	378
Vehicles Exiting, veh/h	159	330	484	239
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.9	6.9	7.1	6.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	150	334	503	225
Cap Entry Lane, veh/h	877	1034	1233	938
Entry HV Adj Factor	0.984	0.980	0.980	0.983
Flow Entry, veh/h	148	327	493	221
Cap Entry, veh/h	863	1013	1209	923
V/C Ratio	0.171	0.323	0.408	0.240
Control Delay, s/veh	5.9	6.9	7.1	6.3
LOS	A	A	A	A
95th %tile Queue, veh	1	1	2	1

Intersection						
Int Delay, s/veh	0.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	29	32	457	447	2
Future Vol, veh/h	1	29	32	457	447	2
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	32	35	497	486	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1054	487	488	0	-	0
Stage 1	487	-	-	-	-	-
Stage 2	567	-	-	-	-	-
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	250	581	1075	-	-	-
Stage 1	618	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	239	581	1075	-	-	-
Mov Cap-2 Maneuver	239	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	568	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1075	-	555	-	-
HCM Lane V/C Ratio	0.032	-	0.059	-	-
HCM Control Delay (s)	8.5	0	11.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	2	34	0	0	1	46	486	4	0	474	0
Future Vol, veh/h	5	2	34	0	0	1	46	486	4	0	474	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	2	37	0	0	1	50	528	4	0	515	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1146	1147	515	1165	1145	530	515	0	0	532	0	0
Stage 1	515	515	-	630	630	-	-	-	-	-	-	-
Stage 2	631	632	-	535	515	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	176	199	560	171	200	549	1051	-	-	1036	-	-
Stage 1	543	535	-	470	475	-	-	-	-	-	-	-
Stage 2	469	474	-	529	535	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	166	185	560	150	186	549	1051	-	-	1036	-	-
Mov Cap-2 Maneuver	166	185	-	150	186	-	-	-	-	-	-	-
Stage 1	506	535	-	438	443	-	-	-	-	-	-	-
Stage 2	436	442	-	492	535	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	11.6	0.7	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1051	-	-	403	549	1036	-	-
HCM Lane V/C Ratio	0.048	-	-	0.111	0.002	-	-	-
HCM Control Delay (s)	8.6	0	-	15	11.6	0	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	0	42	0	0	2	63	517	1	3	481	23
Future Vol, veh/h	17	0	42	0	0	2	63	517	1	3	481	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	0	46	0	0	2	68	562	1	3	523	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1242	1241	536	1264	1253	563	548	0	0	563	0	0
Stage 1	542	542	-	699	699	-	-	-	-	-	-	-
Stage 2	700	699	-	565	554	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	152	175	545	146	172	526	1021	-	-	1008	-	-
Stage 1	525	520	-	430	442	-	-	-	-	-	-	-
Stage 2	430	442	-	510	514	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	140	157	545	124	155	526	1021	-	-	1008	-	-
Mov Cap-2 Maneuver	140	157	-	124	155	-	-	-	-	-	-	-
Stage 1	474	518	-	388	399	-	-	-	-	-	-	-
Stage 2	387	399	-	465	512	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.4	11.9	1	0.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1021	-	-	297	526	1008	-	-
HCM Lane V/C Ratio	0.067	-	-	0.216	0.004	0.003	-	-
HCM Control Delay (s)	8.8	0	-	20.4	11.9	8.6	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.8	0	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	2	14	6	3	23	15	606	5	18	480	18
Future Vol, veh/h	29	2	14	6	3	23	15	606	5	18	480	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	2	15	6	3	24	16	638	5	19	505	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1229	1218	505	1224	1232	638	524	0	0	643	0	0
Stage 1	543	543	-	670	670	-	-	-	-	-	-	-
Stage 2	686	675	-	554	562	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	155	181	567	156	177	477	1043	-	-	942	-	-
Stage 1	524	520	-	446	455	-	-	-	-	-	-	-
Stage 2	438	453	-	517	510	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	141	175	567	146	171	477	1043	-	-	942	-	-
Mov Cap-2 Maneuver	141	175	-	146	171	-	-	-	-	-	-	-
Stage 1	516	510	-	439	448	-	-	-	-	-	-	-
Stage 2	407	446	-	491	500	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.7	18.6	0.2	0.3
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1043	-	-	141	207	299	942	-	-
HCM Lane V/C Ratio	0.015	-	-	0.216	0.081	0.113	0.02	-	-
HCM Control Delay (s)	8.5	-	-	37.5	23.9	18.6	8.9	-	-
HCM Lane LOS	A	-	-	E	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.3	0.4	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	315	402	227	275	7	326	12	300	6	8	7
Future Volume (veh/h)	15	315	402	227	275	7	326	12	300	6	8	7
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	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	16	325	0	234	284	8	336	13	0	7	9	8
Peak Hour Factor	0.92	0.97	0.97	0.97	0.97	0.92	0.97	0.92	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	35	431		297	706	603	431	17		14	18	16
Arrive On Green	0.02	0.23	0.00	0.17	0.38	0.38	0.25	0.25	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1781	1856	1572	1767	1856	1585	1718	66	1572	508	653	580
Grp Volume(v), veh/h	16	325	0	234	284	8	349	0	0	24	0	0
Grp Sat Flow(s),veh/h/ln	1781	1856	1572	1767	1856	1585	1784	0	1572	1741	0	0
Q Serve(g_s), s	0.5	9.1	0.0	7.1	6.3	0.2	10.2	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.5	9.1	0.0	7.1	6.3	0.2	10.2	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.96		1.00	0.29		0.33
Lane Grp Cap(c), veh/h	35	431		297	706	603	448	0		48	0	0
V/C Ratio(X)	0.46	0.75		0.79	0.40	0.01	0.78	0.00		0.50	0.00	0.00
Avail Cap(c_a), veh/h	171	1058		740	1657	1415	906	0		558	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.2	20.1	0.0	22.4	12.7	10.8	19.6	0.0	0.0	26.9	0.0	0.0
Incr Delay (d2), s/veh	9.0	2.7	0.0	4.6	0.4	0.0	3.0	0.0	0.0	7.6	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	0.3	3.9	0.0	3.1	2.3	0.1	4.2	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	22.8	0.0	27.0	13.1	10.8	22.5	0.0	0.0	34.5	0.0	0.0
LnGrp LOS	D	C		C	B	B	C	A		C	A	A
Approach Vol, veh/h		341			526			349			24	
Approach Delay, s/veh		23.4			19.2			22.5			34.5	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	17.5		6.1	5.6	25.9		18.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5	32.0		18.0	5.4	50.1		28.5				
Max Q Clear Time (g_c+I1), s	9.1	11.1		2.8	2.5	8.3		12.2				
Green Ext Time (p_c), s	0.6	1.9		0.0	0.0	1.9		1.9				

Intersection Summary			
HCM 6th Ctrl Delay			21.6
HCM 6th LOS			C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	574	38	131	478	30	157
Future Vol, veh/h	574	38	131	478	30	157
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	624	41	142	520	33	171

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	624	0	1449	645
Stage 1	-	-	-	-	645	-
Stage 2	-	-	-	-	804	-
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	-	-	957	-	144	472
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	440	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	957	-	123	472
Mov Cap-2 Maneuver	-	-	-	-	123	-
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	375	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	21.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	123	472	-	-	957	-
HCM Lane V/C Ratio	0.265	0.362	-	-	0.149	-
HCM Control Delay (s)	44.5	16.9	-	-	9.4	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	1	1.6	-	-	0.5	-

Intersection	
Int Delay, s/veh	12.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	356	283	196	266	3
Future Vol, veh/h	5	356	283	196	266	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	387	308	213	289	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	521	0	-	0	812	415
Stage 1	-	-	-	-	415	-
Stage 2	-	-	-	-	397	-
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	1045	-	-	-	348	637
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	679	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1045	-	-	-	346	637
Mov Cap-2 Maneuver	-	-	-	-	346	-
Stage 1	-	-	-	-	663	-
Stage 2	-	-	-	-	679	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	50.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1045	-	-	-	346	637
HCM Lane V/C Ratio	0.005	-	-	-	0.836	0.005
HCM Control Delay (s)	8.5	-	-	-	51.1	10.7
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0	-	-	-	7.4	0

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	378	139	2	310	104	1
Future Vol, veh/h	378	139	2	310	104	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	411	151	2	337	113	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	562	0	828	487
Stage 1	-	-	-	-	487	-
Stage 2	-	-	-	-	341	-
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	-	-	1009	-	341	581
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	720	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1009	-	340	581
Mov Cap-2 Maneuver	-	-	-	-	340	-
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	20.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	340	581	-	-	1009	-
HCM Lane V/C Ratio	0.332	0.002	-	-	0.002	-
HCM Control Delay (s)	20.8	11.2	-	-	8.6	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.4	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	678	0	72	419	48	3	288	101	41	292	60
Future Volume (veh/h)	36	678	0	72	419	48	3	288	101	41	292	60
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	737	0	78	455	52	3	313	110	45	317	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	709	0	82	650	74	3	290	102	39	275	56
Arrive On Green	0.03	0.38	0.00	0.05	0.39	0.39	0.22	0.22	0.22	0.20	0.20	0.20
Sat Flow, veh/h	1781	1870	0	1781	1648	188	13	1313	461	191	1345	276
Grp Volume(v), veh/h	39	737	0	78	0	507	426	0	0	427	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1781	0	1836	1787	0	0	1811	0	0
Q Serve(g_s), s	2.6	45.5	0.0	5.2	0.0	27.7	26.5	0.0	0.0	24.5	0.0	0.0
Cycle Q Clear(g_c), s	2.6	45.5	0.0	5.2	0.0	27.7	26.5	0.0	0.0	24.5	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.10	0.01		0.26	0.11		0.15
Lane Grp Cap(c), veh/h	54	709	0	82	0	725	395	0	0	370	0	0
V/C Ratio(X)	0.72	1.04	0.00	0.96	0.00	0.70	1.08	0.00	0.00	1.15	0.00	0.00
Avail Cap(c_a), veh/h	76	709	0	82	0	725	395	0	0	370	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.7	37.3	0.0	57.1	0.0	30.4	46.8	0.0	0.0	47.8	0.0	0.0
Incr Delay (d2), s/veh	18.2	44.4	0.0	84.4	0.0	3.0	68.3	0.0	0.0	96.0	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	1.4	29.1	0.0	4.3	0.0	12.7	19.2	0.0	0.0	20.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.8	81.6	0.0	141.5	0.0	33.4	115.1	0.0	0.0	143.7	0.0	0.0
LnGrp LOS	E	F	A	F	A	C	F	A	A	F	A	A
Approach Vol, veh/h		776			585			426			427	
Approach Delay, s/veh		81.4			47.8			115.1			143.7	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	50.0		29.0	8.1	51.9		31.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	45.5		24.5	5.1	45.9		26.5
Max Q Clear Time (g_c+I1), s	7.2	47.5		26.5	4.6	29.7		28.5
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	3.0		0.0

Intersection Summary			
HCM 6th Ctrl Delay			91.0
HCM 6th LOS			F

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	24	67	170	195	7
Future Vol, veh/h	3	24	67	170	195	7
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	26	73	185	212	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	547	216	220	0	-	0
Stage 1	216	-	-	-	-	-
Stage 2	331	-	-	-	-	-
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	498	824	1349	-	-	-
Stage 1	820	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	471	824	1349	-	-	-
Mov Cap-2 Maneuver	471	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	728	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1349	-	761	-	-
HCM Lane V/C Ratio	0.054	-	0.039	-	-
HCM Control Delay (s)	7.8	-	9.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	7.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	149	329	517	238
Demand Flow Rate, veh/h	151	336	527	242
Vehicles Circulating, veh/h	463	305	110	381
Vehicles Exiting, veh/h	160	332	504	260
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.0	7.1	7.3	6.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	151	336	527	242
Cap Entry Lane, veh/h	861	1011	1233	936
Entry HV Adj Factor	0.984	0.980	0.980	0.983
Flow Entry, veh/h	149	329	517	238
Cap Entry, veh/h	847	991	1209	920
V/C Ratio	0.175	0.332	0.427	0.259
Control Delay, s/veh	6.0	7.1	7.3	6.6
LOS	A	A	A	A
95th %tile Queue, veh	1	1	2	1

Intersection						
Int Delay, s/veh	0.6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	29	32	479	465	2
Future Vol, veh/h	1	29	32	479	465	2
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	32	35	521	505	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1097	506	507	0	-	0
Stage 1	506	-	-	-	-	-
Stage 2	591	-	-	-	-	-
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	236	566	1058	-	-	-
Stage 1	606	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	225	566	1058	-	-	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	578	-	-	-	-	-
Stage 2	553	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1058	-	539	-	-
HCM Lane V/C Ratio	0.033	-	0.06	-	-
HCM Control Delay (s)	8.5	0	12.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	2	34	0	0	1	46	508	4	0	492	0
Future Vol, veh/h	5	2	34	0	0	1	46	508	4	0	492	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	2	37	0	0	1	50	552	4	0	535	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1190	1191	535	1209	1189	554	535	0	0	556	0	0
Stage 1	535	535	-	654	654	-	-	-	-	-	-	-
Stage 2	655	656	-	555	535	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	165	187	545	160	188	532	1033	-	-	1015	-	-
Stage 1	529	524	-	456	463	-	-	-	-	-	-	-
Stage 2	455	462	-	516	524	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	156	174	545	140	175	532	1033	-	-	1015	-	-
Mov Cap-2 Maneuver	156	174	-	140	175	-	-	-	-	-	-	-
Stage 1	492	524	-	424	431	-	-	-	-	-	-	-
Stage 2	422	430	-	479	524	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	11.8	0.7	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1033	-	-	387	532	1015	-	-
HCM Lane V/C Ratio	0.048	-	-	0.115	0.002	-	-	-
HCM Control Delay (s)	8.7	0	-	15.5	11.8	0	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	0	42	0	0	2	63	539	1	3	499	23
Future Vol, veh/h	17	0	42	0	0	2	63	539	1	3	499	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	0	46	0	0	2	68	586	1	3	542	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1285	1284	555	1307	1296	587	567	0	0	587	0	0
Stage 1	561	561	-	723	723	-	-	-	-	-	-	-
Stage 2	724	723	-	584	573	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	142	165	531	137	162	510	1005	-	-	988	-	-
Stage 1	512	510	-	417	431	-	-	-	-	-	-	-
Stage 2	417	431	-	498	504	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	130	148	531	115	145	510	1005	-	-	988	-	-
Mov Cap-2 Maneuver	130	148	-	115	145	-	-	-	-	-	-	-
Stage 1	461	508	-	375	388	-	-	-	-	-	-	-
Stage 2	374	388	-	453	502	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.6	12.1	0.9	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1005	-	-	281	510	988	-	-
HCM Lane V/C Ratio	0.068	-	-	0.228	0.004	0.003	-	-
HCM Control Delay (s)	8.8	0	-	21.6	12.1	8.7	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.9	0	0	-	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	2	14	68	3	45	15	606	56	36	480	18
Future Vol, veh/h	29	2	14	68	3	45	15	606	56	36	480	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	2	15	72	3	47	16	638	59	38	505	19

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1306	1310	505	1262	1270	638	524	0	0	697	0	0
Stage 1	581	581	-	670	670	-	-	-	-	-	-	-
Stage 2	725	729	-	592	600	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	137	159	567	147	168	477	1043	-	-	899	-	-
Stage 1	499	500	-	446	455	-	-	-	-	-	-	-
Stage 2	416	428	-	493	490	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	116	150	567	136	159	477	1043	-	-	899	-	-
Mov Cap-2 Maneuver	116	150	-	136	159	-	-	-	-	-	-	-
Stage 1	492	479	-	439	448	-	-	-	-	-	-	-
Stage 2	366	422	-	458	469	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.2	53.4	0.2	0.6
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1043	-	-	116	171	189	899	-	-
HCM Lane V/C Ratio	0.015	-	-	0.263	0.098	0.646	0.042	-	-
HCM Control Delay (s)	8.5	-	-	46.8	28.3	53.4	9.2	-	-
HCM Lane LOS	A	-	-	E	D	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1	0.3	3.8	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	360	402	235	329	7	326	12	306	6	8	7
Future Volume (veh/h)	15	360	402	235	329	7	326	12	306	6	8	7
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	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	16	371	0	242	339	8	336	13	0	7	9	8
Peak Hour Factor	0.92	0.97	0.97	0.97	0.97	0.92	0.97	0.92	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	35	473		303	755	645	424	16		14	18	16
Arrive On Green	0.02	0.25	0.00	0.17	0.41	0.41	0.25	0.25	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1781	1856	1572	1767	1856	1585	1718	66	1572	508	653	580
Grp Volume(v), veh/h	16	371	0	242	339	8	349	0	0	24	0	0
Grp Sat Flow(s),veh/h/ln	1781	1856	1572	1767	1856	1585	1784	0	1572	1741	0	0
Q Serve(g_s), s	0.5	11.2	0.0	7.9	8.0	0.2	11.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.5	11.2	0.0	7.9	8.0	0.2	11.0	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.96		1.00	0.29		0.33
Lane Grp Cap(c), veh/h	35	473		303	755	645	441	0		48	0	0
V/C Ratio(X)	0.46	0.78		0.80	0.45	0.01	0.79	0.00		0.50	0.00	0.00
Avail Cap(c_a), veh/h	160	987		691	1546	1321	846	0		521	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.2	20.9	0.0	23.9	13.0	10.6	21.2	0.0	0.0	28.8	0.0	0.0
Incr Delay (d2), s/veh	9.2	2.9	0.0	4.9	0.4	0.0	3.2	0.0	0.0	7.9	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	0.3	4.8	0.0	3.5	3.0	0.1	4.6	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.4	23.8	0.0	28.8	13.4	10.6	24.4	0.0	0.0	36.8	0.0	0.0
LnGrp LOS	D	C		C	B	B	C	A		D	A	A
Approach Vol, veh/h		387			589			349			24	
Approach Delay, s/veh		24.4			19.7			24.4			36.8	
Approach LOS		C			B			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.8	19.8		6.2	5.7	29.0		19.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5	32.0		18.0	5.4	50.1		28.5				
Max Q Clear Time (g_c+I1), s	9.9	13.2		2.8	2.5	10.0		13.0				
Green Ext Time (p_c), s	0.6	2.1		0.0	0.0	2.3		1.9				
Intersection Summary												
HCM 6th Ctrl Delay			22.6									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	4.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	601	38	153	510	30	175
Future Vol, veh/h	601	38	153	510	30	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	653	41	166	554	33	190

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	653	0	1560	674
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	886	-
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	-	-	934	-	123	455
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	403	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	934	-	101	455
Mov Cap-2 Maneuver	-	-	-	-	101	-
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	331	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	24.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	101	455	-	-	934	-
HCM Lane V/C Ratio	0.323	0.418	-	-	0.178	-
HCM Control Delay (s)	56.8	18.5	-	-	9.7	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	1.2	2	-	-	0.6	-

Intersection	
Int Delay, s/veh	16.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	375	306	205	274	3
Future Vol, veh/h	5	375	306	205	274	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	408	333	223	298	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	556	0	-	0	863	445
Stage 1	-	-	-	-	445	-
Stage 2	-	-	-	-	418	-
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	1015	-	-	-	325	613
Stage 1	-	-	-	-	646	-
Stage 2	-	-	-	-	664	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1015	-	-	-	323	613
Mov Cap-2 Maneuver	-	-	-	-	323	-
Stage 1	-	-	-	-	643	-
Stage 2	-	-	-	-	664	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	68.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1015	-	-	-	323	613
HCM Lane V/C Ratio	0.005	-	-	-	0.922	0.005
HCM Control Delay (s)	8.6	-	-	-	68.8	10.9
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0	-	-	-	9.1	0

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	397	139	2	333	104	1
Future Vol, veh/h	397	139	2	333	104	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	432	151	2	362	113	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	583	0	874	508
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	366	-
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	-	-	991	-	320	565
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	991	-	319	565
Mov Cap-2 Maneuver	-	-	-	-	319	-
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	701	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	22.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	319	565	-	-	991	-
HCM Lane V/C Ratio	0.354	0.002	-	-	0.002	-
HCM Control Delay (s)	22.4	11.4	-	-	8.6	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.6	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	693	0	75	437	50	3	288	104	42	292	60
Future Volume (veh/h)	36	693	0	75	437	50	3	288	104	42	292	60
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	753	0	82	475	54	3	313	113	46	317	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	709	0	82	651	74	3	288	104	40	274	56
Arrive On Green	0.03	0.38	0.00	0.05	0.39	0.39	0.22	0.22	0.22	0.20	0.20	0.20
Sat Flow, veh/h	1781	1870	0	1781	1649	187	12	1302	470	195	1341	275
Grp Volume(v), veh/h	39	753	0	82	0	529	429	0	0	428	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1781	0	1837	1785	0	0	1811	0	0
Q Serve(g_s), s	2.6	45.5	0.0	5.5	0.0	29.4	26.5	0.0	0.0	24.5	0.0	0.0
Cycle Q Clear(g_c), s	2.6	45.5	0.0	5.5	0.0	29.4	26.5	0.0	0.0	24.5	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.10	0.01		0.26	0.11		0.15
Lane Grp Cap(c), veh/h	54	709	0	82	0	725	394	0	0	370	0	0
V/C Ratio(X)	0.72	1.06	0.00	1.00	0.00	0.73	1.09	0.00	0.00	1.16	0.00	0.00
Avail Cap(c_a), veh/h	76	709	0	82	0	725	394	0	0	370	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	57.7	37.3	0.0	57.2	0.0	30.9	46.8	0.0	0.0	47.8	0.0	0.0
Incr Delay (d2), s/veh	18.2	51.4	0.0	100.8	0.0	3.7	71.1	0.0	0.0	97.0	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	1.4	30.5	0.0	4.8	0.0	13.6	19.5	0.0	0.0	20.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.8	88.7	0.0	158.1	0.0	34.6	117.9	0.0	0.0	144.8	0.0	0.0
LnGrp LOS	E	F	A	F	A	C	F	A	A	F	A	A
Approach Vol, veh/h		792			611			429			428	
Approach Delay, s/veh		88.0			51.2			117.9			144.8	
Approach LOS		F			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	50.0		29.0	8.1	51.9		31.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.5	45.5		24.5	5.1	45.9		26.5
Max Q Clear Time (g_c+I1), s	7.5	47.5		26.5	4.6	31.4		28.5
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	3.0		0.0

Intersection Summary			
HCM 6th Ctrl Delay			94.5
HCM 6th LOS			F

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	26	72	163	193	8
Future Vol, veh/h	3	26	72	163	193	8
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	28	78	177	210	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	548	215	219	0	-	0
Stage 1	215	-	-	-	-	-
Stage 2	333	-	-	-	-	-
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	497	825	1350	-	-	-
Stage 1	821	-	-	-	-	-
Stage 2	726	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	468	825	1350	-	-	-
Mov Cap-2 Maneuver	468	-	-	-	-	-
Stage 1	773	-	-	-	-	-
Stage 2	726	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	2.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1350	-	765	-	-
HCM Lane V/C Ratio	0.058	-	0.041	-	-
HCM Control Delay (s)	7.8	-	9.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	159	352	532	238
Demand Flow Rate, veh/h	162	359	542	242
Vehicles Circulating, veh/h	478	306	120	406
Vehicles Exiting, veh/h	170	356	520	259
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.3	7.4	7.6	6.8
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	162	359	542	242
Cap Entry Lane, veh/h	847	1010	1221	912
Entry HV Adj Factor	0.984	0.981	0.981	0.983
Flow Entry, veh/h	159	352	532	238
Cap Entry, veh/h	834	991	1197	897
V/C Ratio	0.191	0.355	0.444	0.265
Control Delay, s/veh	6.3	7.4	7.6	6.8
LOS	A	A	A	A
95th %tile Queue, veh	1	2	2	1

Intersection						
Int Delay, s/veh	0.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	31	34	493	482	2
Future Vol, veh/h	1	31	34	493	482	2
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	34	37	536	524	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1135	525	526	0	-	0
Stage 1	525	-	-	-	-	-
Stage 2	610	-	-	-	-	-
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	224	552	1041	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	213	552	1041	-	-	-
Mov Cap-2 Maneuver	213	-	-	-	-	-
Stage 1	563	-	-	-	-	-
Stage 2	542	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1041	-	526	-	-
HCM Lane V/C Ratio	0.036	-	0.066	-	-
HCM Control Delay (s)	8.6	0	12.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	2	37	0	0	1	50	524	4	0	511	0
Future Vol, veh/h	5	2	37	0	0	1	50	524	4	0	511	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	2	40	0	0	1	54	570	4	0	555	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1236	1237	555	1256	1235	572	555	0	0	574	0	0
Stage 1	555	555	-	680	680	-	-	-	-	-	-	-
Stage 2	681	682	-	576	555	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	153	176	531	148	176	520	1015	-	-	999	-	-
Stage 1	516	513	-	441	451	-	-	-	-	-	-	-
Stage 2	440	450	-	503	513	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	144	162	531	127	162	520	1015	-	-	999	-	-
Mov Cap-2 Maneuver	144	162	-	127	162	-	-	-	-	-	-	-
Stage 1	476	513	-	407	416	-	-	-	-	-	-	-
Stage 2	405	415	-	463	513	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.9	11.9	0.8	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1015	-	-	377	520	999	-	-
HCM Lane V/C Ratio	0.054	-	-	0.127	0.002	-	-	-
HCM Control Delay (s)	8.7	0	-	15.9	11.9	0	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	0	45	0	0	2	68	557	1	3	518	25
Future Vol, veh/h	18	0	45	0	0	2	68	557	1	3	518	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	0	49	0	0	2	74	605	1	3	563	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1338	1337	577	1361	1350	606	590	0	0	606	0	0
Stage 1	583	583	-	754	754	-	-	-	-	-	-	-
Stage 2	755	754	-	607	596	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	130	153	516	125	150	497	985	-	-	972	-	-
Stage 1	498	499	-	401	417	-	-	-	-	-	-	-
Stage 2	401	417	-	483	492	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	118	135	516	103	132	497	985	-	-	972	-	-
Mov Cap-2 Maneuver	118	135	-	103	132	-	-	-	-	-	-	-
Stage 1	442	497	-	356	370	-	-	-	-	-	-	-
Stage 2	354	370	-	435	490	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.4	12.3	1	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	985	-	-	263	497	972	-	-
HCM Lane V/C Ratio	0.075	-	-	0.26	0.004	0.003	-	-
HCM Control Delay (s)	9	0	-	23.4	12.3	8.7	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1	0	0	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	2	15	6	3	25	16	653	5	19	517	19
Future Vol, veh/h	31	2	15	6	3	25	16	653	5	19	517	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	2	16	6	3	26	17	687	5	20	544	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1322	1310	544	1316	1325	687	564	0	0	692	0	0
Stage 1	584	584	-	721	721	-	-	-	-	-	-	-
Stage 2	738	726	-	595	604	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	133	159	539	135	156	447	1008	-	-	903	-	-
Stage 1	498	498	-	419	432	-	-	-	-	-	-	-
Stage 2	410	430	-	491	488	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	120	153	539	126	150	447	1008	-	-	903	-	-
Mov Cap-2 Maneuver	120	153	-	126	150	-	-	-	-	-	-	-
Stage 1	490	487	-	412	425	-	-	-	-	-	-	-
Stage 2	377	423	-	464	477	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39.4	20	0.2	0.3
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1008	-	-	120	177	275	903	-	-
HCM Lane V/C Ratio	0.017	-	-	0.272	0.101	0.13	0.022	-	-
HCM Control Delay (s)	8.6	-	-	45.8	27.6	20	9.1	-	-
HCM Lane LOS	A	-	-	E	D	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1	0.3	0.4	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	339	433	245	296	8	351	13	323	6	9	8
Future Volume (veh/h)	16	339	433	245	296	8	351	13	323	6	9	8
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	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	17	349	0	253	305	9	362	14	0	7	10	9
Peak Hour Factor	0.92	0.97	0.97	0.97	0.97	0.92	0.97	0.92	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	36	446		313	737	630	449	17		14	19	18
Arrive On Green	0.02	0.24	0.00	0.18	0.40	0.40	0.26	0.26	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1781	1856	1572	1767	1856	1585	1718	66	1572	468	669	602
Grp Volume(v), veh/h	17	349	0	253	305	9	376	0	0	26	0	0
Grp Sat Flow(s),veh/h/ln	1781	1856	1572	1767	1856	1585	1784	0	1572	1739	0	0
Q Serve(g_s), s	0.6	10.9	0.0	8.5	7.3	0.2	12.2	0.0	0.0	0.9	0.0	0.0
Cycle Q Clear(g_c), s	0.6	10.9	0.0	8.5	7.3	0.2	12.2	0.0	0.0	0.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.96		1.00	0.27		0.35
Lane Grp Cap(c), veh/h	36	446		313	737	630	467	0		51	0	0
V/C Ratio(X)	0.47	0.78		0.81	0.41	0.01	0.81	0.00		0.51	0.00	0.00
Avail Cap(c_a), veh/h	156	962		673	1506	1286	824	0		507	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.9	21.9	0.0	24.4	13.4	11.3	21.3	0.0	0.0	29.5	0.0	0.0
Incr Delay (d2), s/veh	9.0	3.0	0.0	4.9	0.4	0.0	3.3	0.0	0.0	7.8	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	0.3	4.7	0.0	3.7	2.8	0.1	5.1	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	25.0	0.0	29.3	13.8	11.3	24.7	0.0	0.0	37.4	0.0	0.0
LnGrp LOS	D	C		C	B	B	C	A		D	A	A
Approach Vol, veh/h		366			567			376			26	
Approach Delay, s/veh		25.6			20.7			24.7			37.4	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.4	19.4		6.3	5.8	29.0		20.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5	32.0		18.0	5.4	50.1		28.5				
Max Q Clear Time (g_c+I1), s	10.5	12.9		2.9	2.6	9.3		14.2				
Green Ext Time (p_c), s	0.6	2.0		0.1	0.0	2.0		2.0				
Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	619	41	141	515	32	169
Future Vol, veh/h	619	41	141	515	32	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	673	45	153	560	35	184

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	673	0	1562	696
Stage 1	-	-	-	-	696	-
Stage 2	-	-	-	-	866	-
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	-	-	918	-	123	442
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	412	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	918	-	102	442
Mov Cap-2 Maneuver	-	-	-	-	229	-
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	343	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	19.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	229	442	-	-	918	-
HCM Lane V/C Ratio	0.152	0.416	-	-	0.167	-
HCM Control Delay (s)	23.5	18.8	-	-	9.7	-
HCM Lane LOS	C	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	2	-	-	0.6	-

Intersection						
Int Delay, s/veh	20					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	384	305	211	287	3
Future Vol, veh/h	5	384	305	211	287	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	417	332	229	312	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	561	0	-	0	874	447
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	427	-
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	1010	-	-	-	320	612
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	658	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1010	-	-	-	318	612
Mov Cap-2 Maneuver	-	-	-	-	318	-
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	658	-

Approach	EB		WB		SB	
HCM Control Delay, s	0.1		0		82.2	
HCM LOS					F	

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1010	-	-	-	318	612
HCM Lane V/C Ratio	0.005	-	-	-	0.981	0.005
HCM Control Delay (s)	8.6	-	-	-	82.9	10.9
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0	-	-	-	10.4	0

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	407	150	2	334	112	1
Future Vol, veh/h	407	150	2	334	112	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	442	163	2	363	122	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	605	0	891	524
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	367	-
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	-	-	973	-	313	553
Stage 1	-	-	-	-	594	-
Stage 2	-	-	-	-	701	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	973	-	312	553
Mov Cap-2 Maneuver	-	-	-	-	312	-
Stage 1	-	-	-	-	594	-
Stage 2	-	-	-	-	700	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	23.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	312	553	-	-	973	-
HCM Lane V/C Ratio	0.39	0.002	-	-	0.002	-
HCM Control Delay (s)	23.7	11.5	-	-	8.7	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.8	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	731	0	78	452	52	3	310	109	44	315	65
Future Volume (veh/h)	39	731	0	78	452	52	3	310	109	44	315	65
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	42	795	0	85	491	57	3	337	118	48	342	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	918	0	110	845	98	119	499	223	119	499	223
Arrive On Green	0.04	0.49	0.00	0.06	0.51	0.51	0.07	0.14	0.14	0.07	0.14	0.14
Sat Flow, veh/h	1781	1870	0	1781	1645	191	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	42	795	0	85	0	548	3	337	118	48	342	71
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1781	0	1836	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.7	28.2	0.0	3.5	0.0	15.5	0.1	6.7	5.2	1.9	6.9	3.0
Cycle Q Clear(g_c), s	1.7	28.2	0.0	3.5	0.0	15.5	0.1	6.7	5.2	1.9	6.9	3.0
Prop In Lane	1.00		0.00	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	918	0	110	0	943	119	499	223	119	499	223
V/C Ratio(X)	0.61	0.87	0.00	0.77	0.00	0.58	0.03	0.67	0.53	0.40	0.68	0.32
Avail Cap(c_a), veh/h	169	1411	0	216	0	1434	428	869	387	431	873	390
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.4	16.9	0.0	34.6	0.0	12.6	32.7	30.6	29.9	33.5	30.6	29.0
Incr Delay (d2), s/veh	8.3	3.8	0.0	10.9	0.0	0.6	0.1	1.6	1.9	2.2	1.7	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	11.6	0.0	1.8	0.0	5.8	0.1	2.9	2.0	0.9	3.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.7	20.7	0.0	45.5	0.0	13.2	32.7	32.1	31.8	35.7	32.3	29.8
LnGrp LOS	D	C	A	D	A	B	C	C	C	D	C	C
Approach Vol, veh/h		837			633			458			461	
Approach Delay, s/veh		21.8			17.5			32.1			32.2	
Approach LOS		C			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.1	41.2	9.5	15.0	7.4	42.9	9.5	15.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	9.1	56.5	18.0	18.4	7.1	58.5	18.1	18.3				
Max Q Clear Time (g_c+I1), s	5.5	30.2	2.1	8.9	3.7	17.5	3.9	8.7				
Green Ext Time (p_c), s	0.0	6.5	0.0	1.7	0.0	4.2	0.1	1.8				
Intersection Summary												
HCM 6th Ctrl Delay			24.7									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	26	72	182	209	8
Future Vol, veh/h	3	26	72	182	209	8
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	-	85	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	28	78	198	227	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	586	232	236	0	-	0
Stage 1	232	-	-	-	-	-
Stage 2	354	-	-	-	-	-
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	473	807	1331	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	710	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	445	807	1331	-	-	-
Mov Cap-2 Maneuver	445	-	-	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	710	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	2.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1331	-	744	-	-
HCM Lane V/C Ratio	0.059	-	0.042	-	-
HCM Control Delay (s)	7.9	-	10.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	160	353	555	255
Demand Flow Rate, veh/h	163	360	566	259
Vehicles Circulating, veh/h	496	328	120	408
Vehicles Exiting, veh/h	171	358	539	280
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.4	7.7	7.9	7.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	163	360	566	259
Cap Entry Lane, veh/h	832	988	1221	910
Entry HV Adj Factor	0.984	0.981	0.981	0.983
Flow Entry, veh/h	160	353	555	255
Cap Entry, veh/h	819	969	1198	895
V/C Ratio	0.196	0.365	0.464	0.285
Control Delay, s/veh	6.4	7.7	7.9	7.0
LOS	A	A	A	A
95th %tile Queue, veh	1	2	3	1

Intersection						
Int Delay, s/veh	0.6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	31	34	515	500	2
Future Vol, veh/h	1	31	34	515	500	2
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	34	37	560	543	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1178	544	545	0	-	0
Stage 1	544	-	-	-	-	-
Stage 2	634	-	-	-	-	-
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	211	539	1024	-	-	-
Stage 1	582	-	-	-	-	-
Stage 2	529	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	200	539	1024	-	-	-
Mov Cap-2 Maneuver	200	-	-	-	-	-
Stage 1	552	-	-	-	-	-
Stage 2	529	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.5	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1024	-	512	-	-
HCM Lane V/C Ratio	0.036	-	0.068	-	-
HCM Control Delay (s)	8.6	0	12.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	2	37	0	0	1	50	546	4	0	529	0
Future Vol, veh/h	5	2	37	0	0	1	50	546	4	0	529	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	2	40	0	0	1	54	593	4	0	575	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1279	1280	575	1299	1278	595	575	0	0	597	0	0
Stage 1	575	575	-	703	703	-	-	-	-	-	-	-
Stage 2	704	705	-	596	575	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	143	166	518	138	166	504	998	-	-	980	-	-
Stage 1	503	503	-	428	440	-	-	-	-	-	-	-
Stage 2	428	439	-	490	503	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	134	153	518	118	153	504	998	-	-	980	-	-
Mov Cap-2 Maneuver	134	153	-	118	153	-	-	-	-	-	-	-
Stage 1	462	503	-	393	404	-	-	-	-	-	-	-
Stage 2	392	403	-	450	503	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.5	12.2	0.7	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	998	-	-	361	504	980	-	-
HCM Lane V/C Ratio	0.054	-	-	0.132	0.002	-	-	-
HCM Control Delay (s)	8.8	0	-	16.5	12.2	0	-	-
HCM Lane LOS	A	A	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	0	45	0	0	2	68	579	1	3	536	25
Future Vol, veh/h	18	0	45	0	0	2	68	579	1	3	536	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	0	49	0	0	2	74	629	1	3	583	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1382	1381	597	1405	1394	630	610	0	0	630	0	0
Stage 1	603	603	-	778	778	-	-	-	-	-	-	-
Stage 2	779	778	-	627	616	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	121	144	503	117	141	482	969	-	-	952	-	-
Stage 1	486	488	-	389	407	-	-	-	-	-	-	-
Stage 2	389	407	-	471	482	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	109	126	503	96	124	482	969	-	-	952	-	-
Mov Cap-2 Maneuver	109	126	-	96	124	-	-	-	-	-	-	-
Stage 1	429	486	-	343	359	-	-	-	-	-	-	-
Stage 2	342	359	-	423	480	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.1	12.5	0.9	0
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	969	-	-	247	482	952	-	-
HCM Lane V/C Ratio	0.076	-	-	0.277	0.005	0.003	-	-
HCM Control Delay (s)	9	0	-	25.1	12.5	8.8	0	-
HCM Lane LOS	A	A	-	D	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.1	0	0	-	-

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	2	15	68	3	47	16	653	56	37	517	19
Future Vol, veh/h	31	2	15	68	3	47	16	653	56	37	517	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	0	-	40	-	-	-	100	-	200	100	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	2	16	72	3	49	17	687	59	39	544	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1399	1402	544	1354	1363	687	564	0	0	746	0	0
Stage 1	622	622	-	721	721	-	-	-	-	-	-	-
Stage 2	777	780	-	633	642	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	118	140	539	127	148	447	1008	-	-	862	-	-
Stage 1	474	479	-	419	432	-	-	-	-	-	-	-
Stage 2	390	406	-	468	469	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	98	131	539	116	139	447	1008	-	-	862	-	-
Mov Cap-2 Maneuver	98	131	-	116	139	-	-	-	-	-	-	-
Stage 1	466	457	-	412	425	-	-	-	-	-	-	-
Stage 2	338	399	-	432	448	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	45	72.6	0.2	0.6
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1008	-	-	98	270	166	862	-	-
HCM Lane V/C Ratio	0.017	-	-	0.333	0.066	0.748	0.045	-	-
HCM Control Delay (s)	8.6	-	-	59.1	19.3	72.6	9.4	-	-
HCM Lane LOS	A	-	-	F	C	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.3	0.2	4.7	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	384	433	253	350	8	351	13	329	6	9	8
Future Volume (veh/h)	16	384	433	253	350	8	351	13	329	6	9	8
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	1856	1856	1856	1856	1870	1856	1870	1856	1870	1870	1870
Adj Flow Rate, veh/h	17	396	0	261	361	9	362	14	0	7	10	9
Peak Hour Factor	0.92	0.97	0.97	0.97	0.97	0.92	0.97	0.92	0.97	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	3	3	3	2	3	2	3	2	2	2
Cap, veh/h	36	489		318	785	670	442	17		13	19	17
Arrive On Green	0.02	0.26	0.00	0.18	0.42	0.42	0.26	0.26	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1781	1856	1572	1767	1856	1585	1718	66	1572	468	669	602
Grp Volume(v), veh/h	17	396	0	261	361	9	376	0	0	26	0	0
Grp Sat Flow(s),veh/h/ln	1781	1856	1572	1767	1856	1585	1784	0	1572	1739	0	0
Q Serve(g_s), s	0.6	13.3	0.0	9.4	9.3	0.2	13.2	0.0	0.0	1.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	13.3	0.0	9.4	9.3	0.2	13.2	0.0	0.0	1.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.96		1.00	0.27		0.35
Lane Grp Cap(c), veh/h	36	489		318	785	670	459	0		50	0	0
V/C Ratio(X)	0.47	0.81		0.82	0.46	0.01	0.82	0.00		0.52	0.00	0.00
Avail Cap(c_a), veh/h	145	894		625	1400	1196	766	0		471	0	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	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	32.2	22.9	0.0	26.2	13.7	11.1	23.2	0.0	0.0	31.8	0.0	0.0
Incr Delay (d2), s/veh	9.2	3.3	0.0	5.3	0.4	0.0	3.7	0.0	0.0	8.2	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	0.4	5.8	0.0	4.2	3.6	0.1	5.6	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	26.2	0.0	31.5	14.2	11.1	26.9	0.0	0.0	40.0	0.0	0.0
LnGrp LOS	D	C		C	B	B	C	A		D	A	A
Approach Vol, veh/h		413			631			376			26	
Approach Delay, s/veh		26.8			21.3			26.9			40.0	
Approach LOS		C			C			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.4	22.0		6.4	5.8	32.6		21.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	23.5	32.0		18.0	5.4	50.1		28.5				
Max Q Clear Time (g_c+I1), s	11.4	15.3		3.0	2.6	11.3		15.2				
Green Ext Time (p_c), s	0.6	2.2		0.1	0.0	2.4		1.9				

Intersection Summary		
HCM 6th Ctrl Delay		24.7
HCM 6th LOS		C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	646	41	163	547	32	187
Future Vol, veh/h	646	41	163	547	32	187
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	275	-	0	250
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	702	45	177	595	35	203

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	702	0	1674	725
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	949	-
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	-	-	895	-	105	425
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	376	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	895	-	84	425
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	302	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	21.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	205	425	-	-	895	-
HCM Lane V/C Ratio	0.17	0.478	-	-	0.198	-
HCM Control Delay (s)	26.1	21	-	-	10	-
HCM Lane LOS	D	C	-	-	B	-
HCM 95th %tile Q(veh)	0.6	2.5	-	-	0.7	-

Intersection	
Int Delay, s/veh	26.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	403	328	220	295	3
Future Vol, veh/h	5	403	328	220	295	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	100	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	438	357	239	321	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	596	0	-	0	925	477
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	448	-
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	980	-	-	-	~ 299	588
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	980	-	-	-	~ 298	588
Mov Cap-2 Maneuver	-	-	-	-	~ 298	-
Stage 1	-	-	-	-	621	-
Stage 2	-	-	-	-	644	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	111.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	980	-	-	-	298	588
HCM Lane V/C Ratio	0.006	-	-	-	1.076	0.006
HCM Control Delay (s)	8.7	-	-	-	112.6	11.2
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0	-	-	-	12.5	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	426	150	2	357	112	1
Future Vol, veh/h	426	150	2	357	112	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	500	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	463	163	2	388	122	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	626	0	937	545
Stage 1	-	-	-	-	545	-
Stage 2	-	-	-	-	392	-
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	-	-	956	-	294	538
Stage 1	-	-	-	-	581	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	956	-	293	538
Mov Cap-2 Maneuver	-	-	-	-	293	-
Stage 1	-	-	-	-	581	-
Stage 2	-	-	-	-	682	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	25.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	293	538	-	-	956	-
HCM Lane V/C Ratio	0.415	0.002	-	-	0.002	-
HCM Control Delay (s)	25.7	11.7	-	-	8.8	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	2	0	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	746	0	81	470	54	3	310	112	45	315	65
Future Volume (veh/h)	39	746	0	81	470	54	3	310	112	45	315	65
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	42	811	0	88	511	59	3	337	122	49	342	71
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	931	0	114	861	99	116	495	221	116	495	221
Arrive On Green	0.04	0.50	0.00	0.06	0.52	0.52	0.07	0.14	0.14	0.07	0.14	0.14
Sat Flow, veh/h	1781	1870	0	1781	1646	190	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	42	811	0	88	0	570	3	337	122	49	342	71
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1781	0	1836	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.8	29.5	0.0	3.7	0.0	16.5	0.1	6.9	5.5	2.0	7.0	3.1
Cycle Q Clear(g_c), s	1.8	29.5	0.0	3.7	0.0	16.5	0.1	6.9	5.5	2.0	7.0	3.1
Prop In Lane	1.00		0.00	1.00		0.10	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	931	0	114	0	960	116	495	221	116	495	221
V/C Ratio(X)	0.61	0.87	0.00	0.78	0.00	0.59	0.03	0.68	0.55	0.42	0.69	0.32
Avail Cap(c_a), veh/h	165	1390	0	197	0	1398	417	847	378	420	851	380
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	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.4	17.1	0.0	35.4	0.0	12.7	33.6	31.4	30.8	34.5	31.5	29.8
Incr Delay (d2), s/veh	8.5	4.2	0.0	10.7	0.0	0.6	0.1	1.7	2.2	2.4	1.7	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	12.3	0.0	1.9	0.0	6.2	0.1	3.0	2.2	0.9	3.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.9	21.4	0.0	46.1	0.0	13.3	33.7	33.1	33.0	37.0	33.2	30.6
LnGrp LOS	D	C	A	D	A	B	C	C	C	D	C	C
Approach Vol, veh/h		853			658			462			462	
Approach Delay, s/veh		22.5			17.7			33.1			33.2	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	42.7	9.5	15.2	7.5	44.7	9.5	15.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	8.5	57.1	18.0	18.4	7.1	58.5	18.1	18.3
Max Q Clear Time (g_c+I1), s	5.7	31.5	2.1	9.0	3.8	18.5	4.0	8.9
Green Ext Time (p_c), s	0.0	6.7	0.0	1.6	0.0	4.4	0.1	1.8

Intersection Summary		
HCM 6th Ctrl Delay		25.2
HCM 6th LOS		C