

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
<input type="checkbox"/> H. Industrial processes.	<input type="checkbox"/> Show process area.	<input type="checkbox"/> If industrial processes are to be located on site, state: “All process activities to be performed indoors. No processes to drain to exterior or to storm drain system.”	<input type="checkbox"/> See Fact Sheet SC-10, “Non-Stormwater Discharges” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com See the brochure “Industrial & Commercial Facilities Best Management Practices for: Industrial, Commercial Facilities” at http://rcflood.org/stormwater/

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<input type="checkbox"/> I. Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)	<input type="checkbox"/> Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area. <input type="checkbox"/> Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults. <input type="checkbox"/> Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.	<p>Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains.</p> <p>Where appropriate, reference documentation of compliance with the requirements of Hazardous Materials Programs for:</p> <ul style="list-style-type: none"> ▪ Hazardous Waste Generation ▪ Hazardous Materials Release Response and Inventory ▪ California Accidental Release (CalARP) ▪ Aboveground Storage Tank ▪ Uniform Fire Code Article 80 Section 103(b) & (c) 1991 ▪ Underground Storage Tank <p>www.cchealth.org/groups/hazmat/</p>	<input type="checkbox"/> See the Fact Sheets SC-31, “Outdoor Liquid Container Storage” and SC-33, “Outdoor Storage of Raw Materials ” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

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<input type="checkbox"/> J. Vehicle and Equipment Cleaning	<input type="checkbox"/> Show on drawings as appropriate: (1) Commercial/industrial facilities having vehicle/equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses. (2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use). (3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer. (4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.	<input type="checkbox"/> If a car wash area is not provided, describe any measures taken to discourage on-site car washing and explain how these will be enforced.	Describe operational measures to implement the following (if applicable): <input type="checkbox"/> Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system. Refer to “Outdoor Cleaning Activities and Professional Mobile Service Providers” for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/ <input type="checkbox"/> Car dealerships and similar may rinse cars with water only.

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<input type="checkbox"/> K. Vehicle/Equipment Repair and Maintenance	<input type="checkbox"/> Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater. <input type="checkbox"/> Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas. <input type="checkbox"/> Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.	<input type="checkbox"/> State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area. <input type="checkbox"/> State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements. <input type="checkbox"/> State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.	<p>In the Stormwater Control Plan, note that all of the following restrictions apply to use the site:</p> <input type="checkbox"/> No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains. <input type="checkbox"/> No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately. <input type="checkbox"/> No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment. Refer to "Automotive Maintenance & Car Care Best Management Practices for Auto Body Shops, Auto Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations". Brochure can be found at http://rcflood.org/stormwater/ Refer to Outdoor Cleaning Activities and Professional Mobile Service Providers for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/

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<input type="checkbox"/> L. Fuel Dispensing Areas	<input type="checkbox"/> Fueling areas ⁶ shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable. <input type="checkbox"/> Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area ¹ .] The canopy [or cover] shall not drain onto the fueling area.		<input type="checkbox"/> The property owner shall dry sweep the fueling area routinely. <input type="checkbox"/> See the Fact Sheet SD-30 , “Fueling Areas” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

⁶ The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.

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<input type="checkbox"/> M. Loading Docks	<input type="checkbox"/> Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer. <input type="checkbox"/> Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation. <input type="checkbox"/> Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.		<input type="checkbox"/> Move loaded and unloaded items indoors as soon as possible. <input type="checkbox"/> See Fact Sheet SC-30, “Outdoor Loading and Unloading,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

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<input type="checkbox"/> N. Fire Sprinkler Test Water		<input type="checkbox"/> Provide a means to drain fire sprinkler test water to the sanitary sewer.	<input type="checkbox"/> See the note in Fact Sheet SC-41, “Building and Grounds Maintenance,” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
<p>O. Miscellaneous Drain or Wash Water or Other Sources</p> <input type="checkbox"/> Boiler drain lines <input type="checkbox"/> Condensate drain lines <input type="checkbox"/> Rooftop equipment <input type="checkbox"/> Drainage sumps <input type="checkbox"/> Roofing, gutters, and trim. <input type="checkbox"/> Other sources		<input type="checkbox"/> Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system. <input type="checkbox"/> Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system. Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment. <input type="checkbox"/> Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water. <input type="checkbox"/> Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff. Include controls for other sources as specified by local reviewer.	

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<input checked="" type="checkbox"/> P. Plazas, sidewalks, and parking lots.			<input checked="" type="checkbox"/> Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

Will provide in Final WQMP

Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

3.5 Bioretention Facility

Type of BMP	LID – Bioretention
Treatment Mechanisms	Infiltration, Evapotranspiration, Evaporation, Biofiltration
Maximum Drainage Area	This BMP is intended to be integrated into a project's landscaped area in a distributed manner. Typically, contributing drainage areas to Bioretention Facilities range from less than 1 acre to a maximum of around 10 acres.
Other Names	Rain Garden, Bioretention Cell, Bioretention Basin, Biofiltration Basin, Landscaped Filter Basin, Porous Landscape Detention

Description

Bioretention Facilities are shallow, vegetated basins underlain by an engineered soil media. Healthy plant and biological activity in the root zone maintain and renew the macro-pore space in the soil and maximize plant uptake of pollutants and runoff. This keeps the Best Management Practice (BMP) from becoming clogged and allows more of the soil column to function as both a sponge (retaining water) and a highly effective and self-maintaining biofilter. In most cases, the bottom of a Bioretention Facility is unlined, which also provides an opportunity for infiltration to the extent the underlying onsite soil can accommodate. When the infiltration rate of the underlying soil is exceeded, fully biotreated flows are discharged via underdrains. Bioretention Facilities therefore will inherently achieve the maximum feasible level of infiltration and evapotranspiration and achieve the minimum feasible (but highly biotreated) discharge to the storm drain system.

Siting Considerations

These facilities work best when they are designed in a relatively level area. Unlike other BMPs, Bioretention Facilities can be used in smaller landscaped spaces on the site, such as:

- ✓ Parking islands
- ✓ Medians
- ✓ Site entrances

Landscaped areas on the site (such as may otherwise be required through minimum landscaping ordinances), can often be designed as Bioretention Facilities. This can be accomplished by:

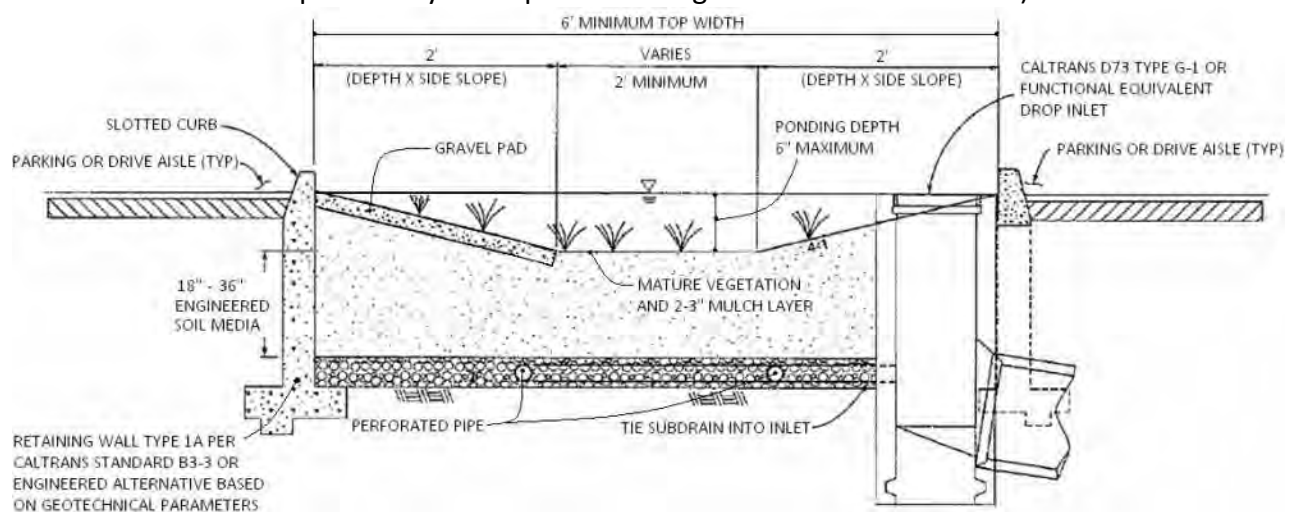
- *Depressing* landscaped areas below adjacent impervious surfaces, rather than elevating those areas
- Grading the site to direct runoff from those impervious surfaces *into* the Bioretention Facility, rather than away from the landscaping
- Sizing and designing the depressed landscaped area as a Bioretention Facility as described in this Fact Sheet

Bioretention Facilities should however not be used downstream of areas where large amounts of sediment can clog the system. Placing a Bioretention Facility at the toe of a steep slope should also be avoided due to the potential for clogging the engineered soil media with erosion from the slope, as well as the potential for damaging the vegetation.

Design and Sizing Criteria

The recommended cross section necessary for a Bioretention Facility includes:

- Vegetated area
- 18' minimum depth of engineered soil media
- 12' minimum gravel layer depth with 6' perforated pipes (added flow control features such as orifice plates may be required to mitigate for HCOG conditions)



While the 18-inch minimum engineered soil media depth can be used in some cases, it is recommended to use 24 inches or a preferred 36 inches to provide an adequate root zone for the chosen plant palate. Such a design also provides for improved removal effectiveness for nutrients. The recommended ponding depth inside of a Bioretention Facility is 6 inches; measured from the flat bottom surface to the top of the water surface as shown in Figure 1.

Because this BMP is filled with an engineered soil media, pore space in the soil and gravel layer is assumed to provide storage volume. However, several considerations must be noted:

- Surcharge storage above the soil surface (6 inches) is important to assure that design flows do not bypass the BMP when runoff exceeds the soil's absorption rate.
- In cases where the Bioretention Facility contains engineered soil media deeper than 36 inches, the pore space within the engineered soil media can only be counted to the 36-inch depth.
- A maximum of 30 percent pore space can be used for the soil media whereas a maximum of 40 percent pore space can be used for the gravel layer.

BIORETENTION FACILITY BMP FACT SHEET

Engineered Soil Media Requirements

The engineered soil media shall be comprised of 85 percent mineral component and 15 percent organic component, by volume, drum mixed prior to placement. The mineral component shall be a Class A sandy loam topsoil that meets the range specified in Table 1 below. The organic component shall be nitrogen stabilized compost¹, such that nitrogen does not leach from the media.

Table 1: Mineral Component Range Requirements

Percent Range	Component
70-80	Sand
15-20	Silt
5-10	Clay

The trip ticket, or certificate of compliance, shall be made available to the inspector to prove the engineered mix meets this specification.

Vegetation Requirements

Vegetative cover is important to minimize erosion and ensure that treatment occurs in the Bioretention Facility. The area should be designed for at least 70 percent mature coverage throughout the Bioretention Facility. To prevent the BMP from being used as walkways, Bioretention Facilities shall be planted with a combination of small trees, densely planted shrubs, and natural grasses. Grasses shall be native or ornamental; preferably ones that do not need to be mowed. The application of fertilizers and pesticides should be minimal. To maintain oxygen levels for the vegetation and promote biodegradation, it is important that vegetation not be completely submerged for any extended period of time. Therefore, a maximum of 6 inches of ponded water shall be used in the design to ensure that plants within the Bioretention Facility remain healthy.

A 2 to 3-inch layer of standard shredded aged hardwood mulch shall be placed as the top layer inside the Bioretention Facility. The 6-inch ponding depth shown in Figure 1 above shall be measured from the top surface of the 2 to 3-inch mulch layer.

Curb Cuts

To allow water to flow into the Bioretention Facility, 1-foot-wide (minimum) curb cuts should be placed approximately every 10 feet around the perimeter of the Bioretention Facility. Figure 2 shows a curb cut in a Bioretention Facility. Curb cut flow lines must be at or above the V_{BMP} water surface level.

¹ For more information on compost, visit the US Composting Council website at: <http://compostingcouncil.org/>

BIORETENTION FACILITY BMP FACT SHEET



Figure 2: Curb Cut located in a Bioretention Facility

To reduce erosion, a gravel pad shall be placed at each inlet point to the Bioretention Facility. The gravel should be 1- to 1.5-inch diameter in size. The gravel should overlap the curb cut opening a minimum of 6 inches. The gravel pad inside the Bioretention Facility should be flush with the finished surface at the curb cut and extend to the bottom of the slope.

In addition, place an apron of stone or concrete, a foot square or larger, inside each inlet to prevent vegetation from growing up and blocking the inlet. See Figure 3.

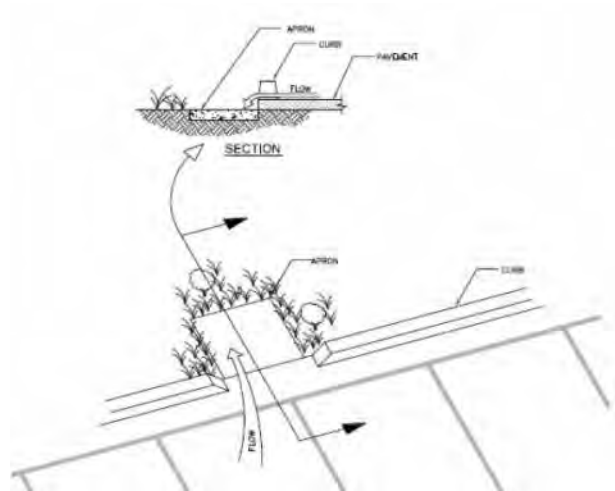


Figure 3: Apron located in a Bioretention Facility

Terracing the Landscaped Filter Basin

It is recommended that Bioretention Facilities be level. In the event the facility site slopes and lacks proper design, water would fill the lowest point of the BMP and then discharge from the basin without being treated. To ensure that the water will be held within the Bioretention Facility on sloped sites, the BMP must be terraced with nonporous check dams to provide the required storage and treatment capacity.

The terraced version of this BMP shall be used on non-flat sites with no more than a 3 percent slope. The surcharge depth cannot exceed 0.5 feet, and side slopes shall not exceed 4:1. Table 2 below shows the spacing of the check dams, and slopes shall be rounded up (i.e., 2.5 percent slope shall use 10' spacing for check dams).

Table 2: Check Dam Spacing

6" Check Dam Spacing	
Slope	Spacing
1%	25'
2%	15'
3%	10'

BIORETENTION FACILITY BMP FACT SHEET

Planter Boxes

Bioretention Facilities can also be placed above ground as planter boxes. Planter boxes must have a minimum width of 2 feet, a maximum surcharge depth of 6 inches, and no side slopes are necessary. Planter boxes must be constructed so as to ensure that the top surface of the engineered soil media will remain level. This option may be constructed of concrete, brick, stone or other stable materials that will not warp or bend. Chemically treated wood or galvanized steel, which has the ability to contaminate stormwater, should not be used. Planter boxes must be lined with an impermeable liner on all sides, including the bottom. Due to the impermeable liner, the inside bottom of the planter box shall be designed and constructed with a cross fall, directing treated flows within the subdrain layer toward the point where subdrain exits the planter box, and subdrains shall be oriented with drain holes oriented down. These provisions will help avoid excessive stagnant water within the gravel underdrain layer. Similar to the in-ground Bioretention Facility versions, this BMP benefits from healthy plants and biological activity in the root zone. Planter boxes should be planted with appropriately selected vegetation.



Figure 5: Planter Box

Source: LA Team Effort

Overflow

An overflow route is needed in the Bioretention Facility design to bypass stored runoff from storm events larger than V_{BMP} or in the event of facility or subdrain clogging. Overflow systems must connect to an acceptable discharge point, such as a downstream conveyance system as shown in Figure 1 and Figure 4. The inlet to the overflow structure shall be elevated inside the Bioretention Facility to be flush with the ponding surface for the design capture volume (V_{BMP}) as shown in Figure 4. This will allow the design capture volume to be fully treated by the Bioretention Facility, and for larger events to safely be conveyed to downstream systems. The overflow inlet shall **not** be located in the entrance of a Bioretention Facility, as shown in Figure 6.

BIORETENTION FACILITY BMP FACT SHEET

Underdrain Gravel and Pipes

An underdrain gravel layer and pipes shall be provided in accordance with Appendix B – Underdrains.



Figure 6: Incorrect Placement of an Overflow Inlet.

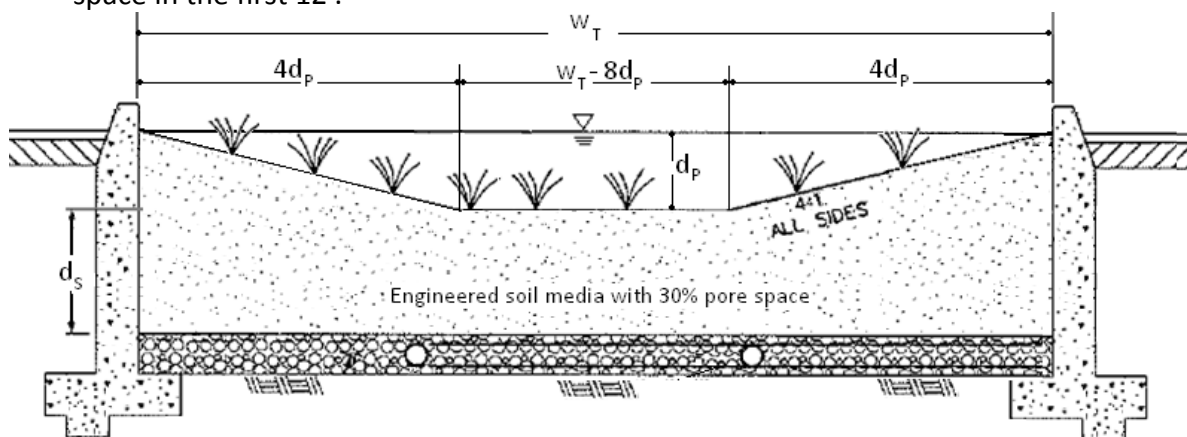
Inspection and Maintenance Schedule

The Bioretention Facility area shall be inspected for erosion, dead vegetation, soggy soils, or standing water. The use of fertilizers and pesticides on the plants inside the Bioretention Facility should be minimized.

Schedule	Activity
Ongoing	<ul style="list-style-type: none">• Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance activities.• Remove trash and debris• Replace damaged grass and/or plants• Replace surface mulch layer as needed to maintain a 2-3 inch soil cover.
After storm events	<ul style="list-style-type: none">• Inspect areas for ponding
Annually	<ul style="list-style-type: none">• Inspect/clean inlets and outlets

Bioretention Facility Design Procedure

- 1) Enter the area tributary, A_T , to the Bioretention Facility.
- 2) Enter the Design Volume, V_{BMP} , determined from Section 2.1 of this Handbook.
- 3) Select the type of design used. There are two types of Bioretention Facility designs: the standard design used for most project sites that include side slopes, and the modified design used when the BMP is located perpendicular to the parking spaces or with planter boxes that do not use side slopes.
- 4) Enter the depth of the engineered soil media, d_s . The minimum depth for the engineered soil media can be 18' in limited cases, but it is recommended to use 24' or a preferred 36' to provide an adequate root zone for the chosen plant palette. Engineered soil media deeper than 36' will only get credit for the pore space in the first 36'.
- 5) Enter the top width of the Bioretention Facility.
- 6) Calculate the total effective depth, d_E , within the Bioretention Facility. The maximum allowable pore space of the soil media is 30% while the maximum allowable pore space for the gravel layer is 40%. Gravel layer deeper than 12' will only get credit for the pore space in the first 12'.



- a. For the design with side slopes the following equation shall be used to determine the total effective depth. Where, d_p is the depth of ponding within the basin.

$$d_E(\text{ft}) = \frac{0.3 \times \left[(w_T(\text{ft}) \times d_s(\text{ft})) + 4(d_p(\text{ft}))^2 \right] + 0.4 \times 1(\text{ft}) + d_p(\text{ft})[4d_p(\text{ft}) + (w_T(\text{ft}) - 8d_p(\text{ft}))]}{w_T(\text{ft})}$$

This above equation can be simplified if the maximum ponding depth of 0.5' is used. The equation below is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = (0.3 \times d_s(\text{ft}) + 0.4 \times 1(\text{ft})) - \left(\frac{0.7(\text{ft}^2)}{w_T(\text{ft})} \right) + 0.5(\text{ft})$$

BIORETENTION FACILITY BMP FACT SHEET

Roof Runoff

Roof downspouts may be directed towards Bioretention Facilities. However, the downspouts must discharge onto a concrete splash block to protect the Bioretention Facility from erosion.

Retaining Walls

It is recommended that Retaining Wall Type 1A, per Caltrans Standard B3-3 or equivalent, be constructed around the entire perimeter of the Bioretention Facility. This practice will protect the sides of the Bioretention Facility from collapsing during construction and maintenance or from high service loads adjacent to the BMP. Where such service loads would not exist adjacent to the BMP, an engineered alternative may be used if signed by a licensed civil engineer.

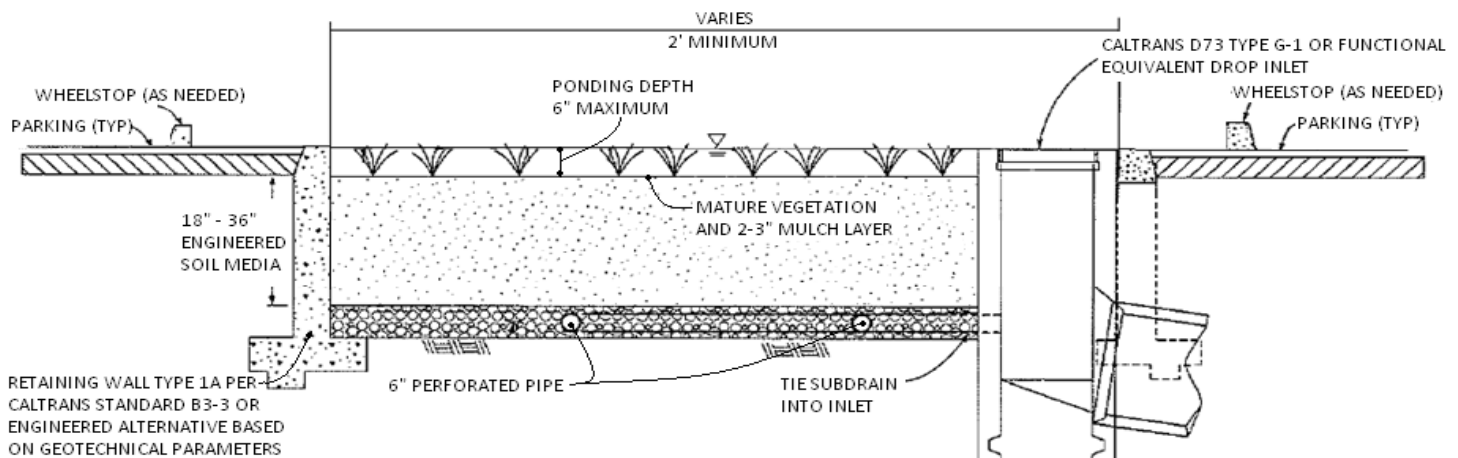
Side Slope Requirements

Bioretention Facilities Requiring Side Slopes

The design should assure that the Bioretention Facility does not present a tripping hazard. Bioretention Facilities proposed near pedestrian areas, such as areas parallel to parking spaces or along a walkway, must have a gentle slope to the bottom of the facility. Side slopes inside of a Bioretention Facility shall be 4:1. A typical cross section for the Bioretention Facility is shown in Figure 1.

Bioretention Facilities Not Requiring Side Slopes

Where cars park perpendicular to the Bioretention Facility, side slopes are not required. A 6-inch maximum drop may be used, and the Bioretention Facility must be planted with trees and shrubs to prevent pedestrian access. In this case, a curb is not placed around the Bioretention Facility, but wheel stops shall be used to prevent vehicles from entering the Bioretention Facility, as shown in Figure 4.



- b. For the design without side slopes the following equation shall be used to determine the total effective depth:

$$d_E(\text{ft}) = d_P(\text{ft}) + [(0.3) \times d_S(\text{ft}) + (0.4) \times 1(\text{ft})]$$

The equation below, using the maximum ponding depth of 0.5', is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = 0.5 (\text{ft}) + [(0.3) \times d_S(\text{ft}) + (0.4) \times 1(\text{ft})]$$

- 7) Calculate the minimum surface area, A_M , required for the Bioretention Facility. This does not include the curb surrounding the Bioretention Facility or side slopes.

$$A_M(\text{ft}^2) = \frac{V_{\text{BMP}}(\text{ft}^3)}{d_E (\text{ft})}$$

- 8) Enter the proposed surface area. This area shall not be less than the minimum required surface area.
- 9) Verify that side slopes are no steeper than 4:1 in the standard design, and are not required in the modified design.
- 10) Provide the diameter, minimum 6 inches, of the perforated underdrain used in the Bioretention Facility. See Appendix B for specific information regarding perforated pipes.
- 11) Provide the slope of the site around the Bioretention Facility, if used. The maximum slope is 3 percent for a standard design.
- 12) Provide the check dam spacing, if the site around the Bioretention Facility is sloped.
- 13) Describe the vegetation used within the Bioretention Facility.

References Used to Develop this Fact Sheet

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APPENDIX E

BMP POLLUTANT REMOVAL EFFECTIVENESS

BMP Pollutant Removal Effectiveness ⁽¹⁾

Pollutant of Concern	Harvest and Use ⁽⁸⁾	Infiltration on BMPs ⁽³⁾	Bioretention	Extended Detention Basins ⁽²⁾	Sand Filter Basin ⁽⁷⁾
Sediment	H	H	H	M	H
Nutrient	H	H	⁽⁵⁾	M ⁽⁴⁾	L ⁽⁶⁾
Trash	H	H	H	H	H
Metal	H	H	H	M	M
Bacteria	H	H	H	M	M
Oil & Grease	H	H	H	M	H
Organic Compounds	H	H	H	M	H
Pesticides	H	H	H	U	U

Abbreviations:

L: Low removal efficiency M: Medium removal efficiency H: High removal efficiency U: Unknown

Notes:

- (1) Periodic performance assessment and updating of this table may be performed based on updated information from studies from the District, CASQA, Caltrans or others. These effectiveness ratings are based on the specific BMP designs incorporated into this manual.
- (2) Effectiveness based upon total 72-hour drawdown time.
- (3) Includes infiltration basins, infiltration trenches, and permeable pavements.
- (4) Medium for soil types A & B only. Low for soil types C & D.
- (5) Removal rating is dependent on the soil media depth. L=Min. 18" deep, M= Min. 24" deep, H=Max. 30"-36" deep.
- (6) Medium where sand filter layer is increased to 36".
- (7) Considered to be a Treatment Control BMP. See the WQMP to determine if this BMP can be used.
- (8) Cisterns, when associated with an adequate and reliable (year-round) demand for non-potable use of captured storm water (see the applicable WQMP for any specific requirements), have a High effectiveness at removing all pollutants from stormwater runoff. If there is inadequate demand to reliably drain the cistern through a non-potable use throughout the year, pollutant removal effectiveness will be Low.

Helpful telephone numbers and links:

Riverside County Stormwater Protection Partners

Flood Control District	(951) 955-1200
County of Riverside	(951) 955-1000
City of Banning	(951) 922-3105
City of Beaumont	(951) 769-8520
City of Calimesa	(909) 795-9801
City of Canyon Lake	(951) 244-2955
Cathedral City	(760) 770-0327
City of Coachella	(760) 398-4978
City of Corona	(951) 736-2447
City of Desert Hot Springs	(760) 329-6411
City of Eastvale	(951) 361-0900
City of Hemet	(951) 765-2300
City of Indian Wells	(760) 346-2489
City of Indio	(760) 391-4000
City of Lake Elsinore	(951) 674-3124
City of La Quinta	(760) 777-7000
City of Menifee	(951) 672-6777
City of Moreno Valley	(951) 413-3000
City of Murrieta	(951) 304-2489
City of Norco	(951) 270-5607
City of Palm Desert	(760) 346-0611
City of Palm Springs	(760) 323-8299
City of Perris	(951) 943-6100
City of Rancho Mirage	(760) 324-4511
City of Riverside	(951) 361-0900
City of San Jacinto	(951) 654-7337
City of Temecula	(951) 694-6444
City of Wildomar	(951) 677-7751

REPORT ILLEGAL STORM DRAIN DISPOSAL

1-800-506-2555 or e-mail us at fcnpdes@rcflood.org

- Riverside County Flood Control and Water Conservation District www.rcflood.org

Online resources include:

- California Storm Water Quality Association www.casqa.org
- State Water Resources Control Board www.waterboards.ca.gov
- Power Washers of North America www.thepwna.org

Stormwater Pollution

What you should know for...

Outdoor Cleaning Activities and Professional Mobile Service Providers



Storm drain pollution prevention information for:

- Car Washing / Mobile Detailers
- Window and Carpet Cleaners
- Power Washers
- Waterproofers / Street Sweepers
- Equipment cleaners or degreasers and all mobile service providers

Do you know where street flows actually go?

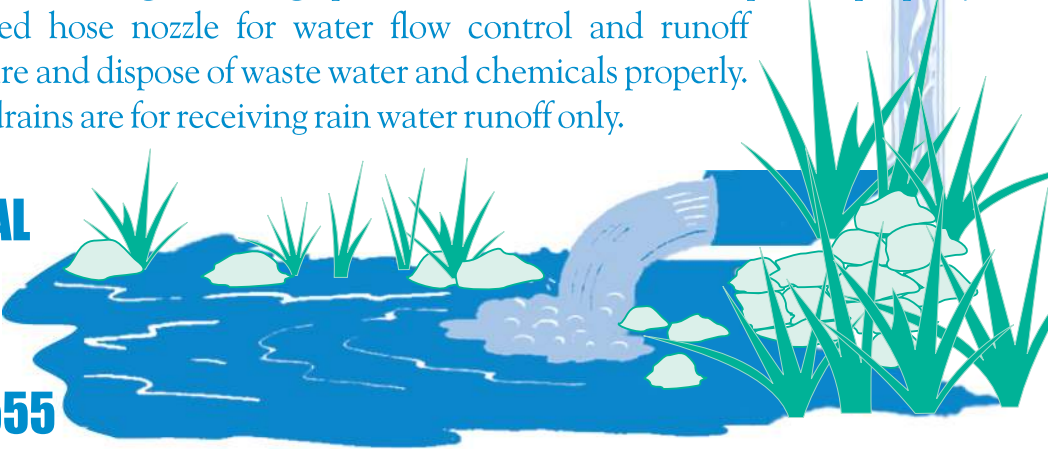
Storm drains are NOT connected to sanitary sewer systems and treatment plants!



The primary purpose of storm drains is to carry rain water away from developed areas to prevent flooding. Pollutants discharged to storm drains are transported directly into rivers, lakes and streams. Soaps, degreasers, automotive fluids, litter and a host of materials are washed off buildings, sidewalks, plazas and parking areas. Vehicles and equipment must be properly managed to prevent the pollution of local waterways.

Unintentional spills by mobile service operators can flow into storm drains and pollute our waterways. **Avoid mishaps.** Always have a **Spill Response Kit** on hand to clean up unintentional spills. Only emergency Mechanical repairs should be done in City streets, using drip pans for spills. Plumbing should be done on private property. Always store chemicals in a leak-proof container and keep covered when not in use. Window/Power Washing waste water shouldn't be released into the streets, but should be disposed of in a sanitary sewer, landscaped area or in the soil. Soiled Carpet Cleaning wash water should be filtered before being discharged into the sanitary sewer. Dispose of all filter debris properly. Car Washing/Detailing operators should wash cars on private property and use a regulated hose nozzle for water flow control and runoff prevention. Capture and dispose of waste water and chemicals properly. Remember, storm drains are for receiving rain water runoff only.

REPORT ILLEGAL STORM DRAIN DISPOSAL 1-800-506-2555



Help Protect Our Waterways!

Use these guidelines for Outdoor Cleaning Activities and Wash Water Disposal

Did you know that disposing of pollutants into the street, gutter, storm drain or body of water is **PROHIBITED** by law and can result in stiff penalties?

Best Management Practices

Waste wash water from Mechanics, Plumbers, Window/Power Washers, Carpet Cleaners, Car Washing and Mobile Detailing activities may contain significant quantities of motor oil, grease, chemicals, dirt, detergents, brake pad dust, litter and other materials.

Best Management Practices, or BMPs as they are known, are guides to prevent pollutants from entering the storm drains. *Each of us* can do our part to keep stormwater clean by using the suggested BMPs below:

Simple solutions for both light and heavy duty jobs:

Do...consider dry cleaning methods first such as a mop, broom, rag or wire brush. Always keep a spill response kit on site.

Do...prepare the work area before power cleaning by using sand bags, rubber mats, vacuum booms, containment pads or temporary berms to keep wash water away from the gutters and storm drains.

Do...use vacuums or other machines to remove and collect loose debris or litter before applying water.

Do...obtain the property owner's permission to dispose of *small amounts* of power washing waste water on to landscaped, gravel or unpaved surfaces.

Do...check your local sanitary sewer agency's policies on wash water disposal regulations before disposing of wash water into the sewer. (See list on reverse side)

Do...be aware that if discharging to landscape areas, soapy wash water may damage landscaping. Residual wash water may remain on paved surfaces to evaporate. Sweep up solid residuals and dispose of properly. Vacuum booms are another option for capturing and collecting wash water.

Do...check to see if local ordinances prevent certain activities.

Do not let...wash or waste water from sidewalk, plaza or building cleaning go into a street or storm drain.



Report illegal storm drain disposal
Call Toll Free
1-800-506-2555

Using Cleaning Agents

Try using biodegradable/phosphate-free products. They are easier on the environment, but don't confuse them with being toxic free. Soapy water entering the storm drain system can impact the delicate aquatic environment.



When cleaning surfaces with a *high-pressure washer* or *steam cleaner*, additional precautions should be taken to prevent the discharge of pollutants into the storm drain system. These two methods of surface cleaning can loosen additional material that can contaminate local waterways.

Think Water Conservation

Minimize water use by using high pressure, low volume nozzles. Be sure to check all hoses for leaks. Water is a precious resource, don't let it flow freely and be sure to shut it off in between uses.

Screening Wash Water

Conduct thorough dry cleanup before washing exterior surfaces, such as buildings and decks *with loose paint*, sidewalks or plaza areas. Keep debris from entering the storm drain after cleaning by first passing the wash water through a "20 mesh" or finer screen to catch the solid materials, then dispose of the mesh in a refuse container. Do not let the remaining wash water enter a street, gutter or storm drain.

Drain Inlet Protection & Collection of Wash Water

- Prior to any washing, block all storm drains with an impervious barrier such as sandbags or berms, or seal the storm drain with plugs or other appropriate materials.
- Create a containment area with berms and traps or take advantage of a low spot to keep wash water contained.
- Wash vehicles and equipment on grassy or gravel areas so that the wash water can seep into the ground.
- Pump or vacuum up all wash water in the contained area.

Concrete/Coring/Saw Cutting and Drilling Projects

Protect any down-gradient inlets by using dry activity techniques whenever possible. If water is used, minimize the amount of water used during the coring/drilling or saw cutting process. Place a barrier of sandbags and/or absorbent berms to protect the storm drain inlet or watercourse. Use a shovel or wet vacuum to remove the residue from the pavement. Do not wash residue or particulate matter into a storm drain inlet or watercourse.

For Information:

For information on “closed-loop” suppliers and recycling/disposal vendors, contact:
County of Riverside
Health Services Agency
Department of Environmental Health
at (909) 358-5055.

SPILL RESPONSE AGENCY:
HAZ-MAT: (909) 358-5055
AFTER 5:00 P.M.: (909) 358-5245 OR 911
HAZARDOUS WASTE DISPOSAL: (909) 358-5055
RECYCLING INFORMATION: 1-800-366-SAVE
TO REPORT ILLEGAL DUMPING OR A CLOGGED STORM DRAIN: 1-800-506-2555

To order additional brochures or to obtain information on other pollution prevention activities, call: (909) 955-1111.

The Cities and County of Riverside
StormWater/CleanWater Protection Program
1-800-506-2555



Riverside County gratefully acknowledges the Santa Clara Valley Nonpoint Source Pollution Control Program, Alameda Countywide Clean Water Program and the San Bernardino County Stormwater Program for their contribution to this Draft Initial Study and Mitigated Negative Declaration brochure.

StormWater Pollution

What you should know for...



Best Management Practices (BMPS) for:

- Restaurants
- Grocery Stores
- Delicatessens
- Bakeries

StormWater Pollution . . . What You Should Know

Riverside County has two drainage systems - sanitary sewers and storm drains. The storm drain system is designed to help prevent flooding by carrying excess rainwater away from streets. Since the storm drain system does not provide for water treatment, it also serves the *unintended* function of transporting pollutants directly to our waterways.

Unlike sanitary sewers, storm drains are not connected to a treatment plant - they flow directly to our local streams, rivers and lakes.

Waste or washwater generated by the food service industry often contains materials such as food wastes, oil, grease, detergents, and degreasers. These materials can degrade local waters when allowed to flow into a storm drain system.

Stormwater pollution causes as much as 60% of our water pollution problem. It jeopardizes the quality of our waterways and poses a threat to groundwater resources if pollutants percolate through soil.



The Cities and County of Riverside
StormWater/CleanWater Protection Program

Since preventing pollution is much easier, and less costly, than cleaning up “after the fact,” the Cities and County of Riverside StormWater/CleanWater Protection Program informs residents and businesses on pollution prevention activities such as the Best Management Practices (BMPs) described in this pamphlet.

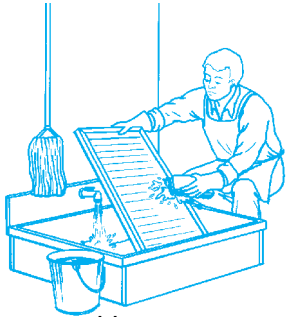
The Cities and County of Riverside have adopted ordinances for stormwater management and discharge control. In accordance with state and federal law, these local stormwater ordinances **prohibit** the discharge of wastes into the storm drain system or local surface waters. This includes discharges from the food service industry containing food wastes, oil, grease, detergents, and degreasers.

PLEASE NOTE: A common stormwater pollution problem associated with the food service industry is the discharge of washwater into alleys and gutters, and the hosing down of outdoor areas. Often, these activities flush pollutants into the storm drain system. The discharges of pollutants is **strictly prohibited** by local ordinances and state and federal regulations.

A Menu of Activities . . . to Keep Our Water Clean

Cleanin' It Right . . .

Pour mop and wash water into the mop sink or down floor drains . . . not into gutters, alleys, parking lots or a storm drain. Wash greasy equipment only in designated wash areas which are properly connected to the sewer system with an appropriate oil/water separator. Also, avoid washing kitchen mats, garbage containers, and other items in areas where wastewater is likely to flow into a storm drain.



Watch Out For Spills . . .

Use dry methods for spill cleanup. Don't hose down outside spills. Use rags or absorbents such as cat litter and then dispose of in the garbage, or handle as hazardous waste as appropriate. If necessary, mop the area with a minimum amount of water.



Proper Storage and Disposal . . .

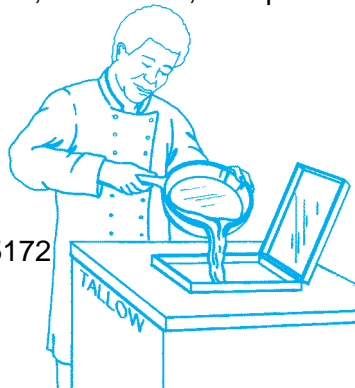
General cleaners, floor cleaners, solvents, and detergents often contain toxic substances. Read labels carefully and store and dispose of these products properly.

REMEMBER: Don't throw toxic waste into the trash or into a storm drain. To report toxic spill call 911. For information on hazardous waste pick-up call (909) 358-5055.



Grease and Oil . . .

Handle and dispose of grease properly. Save used cooking grease and oil for recycling in tallow bins or sealed containers. Never pour grease into a sink, floor drain, dumpster or storm drain. Watch out for, and report to management, overflowing grease interceptors. Call (909) 358-5172 for disposal information.



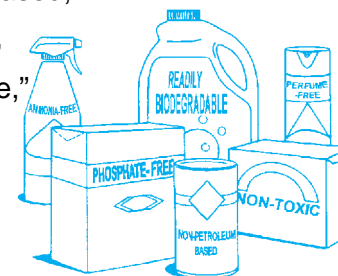
How 'Bout That Dumpster . . .

Keep dumpster and loading dock areas clean. Control litter by sweeping - don't hose down the area. Replace leaky dumpsters and keep lids closed to keep out rainwater.



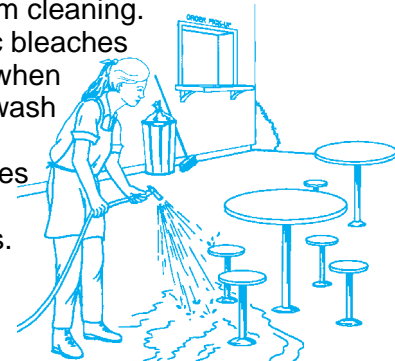
Use Water-Friendly Products . . .

Whenever possible, purchase water-based cleaning products. Look for products labeled "non-toxic," "non-petroleum based," "ammonia-free," "phosphate-free," and "perfume-free," or "readily biodegradable."



Outdoor/Sidewalk Areas . . .

Sweep up food particles, cigarette butts, and trash from outdoor dining areas before rinsing or steam cleaning. Don't use toxic bleaches or detergents when you pressure wash outdoor dining areas, entrances or surrounding sidewalk areas.



***You may be** already implementing many of the BMPs prescribed in this brochure. However, if you discover any potential problem areas, please consider using one or more of the recommended BMPs.*

***Also,** please note that the Riverside County Environmental Health Department will monitor potential sources of stormwater pollution activities during regularly scheduled inspections of food service facilities. If Health Department staff observe activities which may be contributing to stormwater pollution, suggestions will be provided and/or use of prescribed BMPs listed in this brochure will be offered.*

Please remember:



Saltwater Pools

- Salt water pools, although different from regular pools, are in fact, sanitized using chlorine. A salt-chlorine generator separates the chlorine and sodium molecules in salt and reintroduces them into the pool water. The same harmful effects of chlorine still apply.
- A salt water pool is still maintained with chemicals such as Muriatic acid, soda ash and sodium carbonate to help keep a proper pH, total Alkalinity, Calcium Hardness and Stabilizer levels.



- It may be illegal to discharge salt water to land. The salt may kill plants and the build-up of salt in soil puts animals, plants, and groundwater at risk. Consult your city representatives to determine local requirements regarding salt water drainage.

NEVER put unused chemicals into the trash, onto the ground or down a storm drain.

IMPORTANT: The discharge of pollutants into the street, gutter, storm drain system or waterways - without a permit or waiver - is strictly prohibited by local ordinances, state and federal law. Violations may result in monetary fines and enforcement actions.

Helpful telephone numbers and links

RIVERSIDE COUNTY WATER AGENCIES:

City of Banning.....	(951) 922-3130
City of Beaumont/Cherry Valley.....	(951) 845-9581
City of Blythe.....	(760) 922-6161
City of Coachella.....	(760) 398-3502
City of Corona.....	(951) 736-2263
City of Hemet.....	(951) 765-3710
City of Norco.....	(951) 270 5607
City of Riverside Public Works.....	(951) 351-6140
City of San Jacinto.....	(951) 654-4041
Coachella Valley Water District.....	(760) 398-2651
Desert Water Agency (Palm Springs).....	(760) 323-4971
Eastern Municipal Water District.....	(951) 928-3777
Elsinore Valley Municipal Water District.....	(951) 674 3146
Elsinore Water District.....	(951) 674-2168
Farm Mutual Water Company.....	(951) 244-4198
Idyllwild Water District.....	(951) 659-2143
Indio Water Authority.....	(760) 391-4129
Jurupa Community Services District.....	(951) 685-7434
Lee Lake Water.....	(951) 658-3241
Mission Springs Water.....	(760) 329-6448
Rancho California Water District.....	(951) 296-6900
Ripley, CSA #62.....	(760) 922-4951
Riverside Co. Service Area #51.....	(760) 227-3203
Rubidoux Community Services District.....	(951) 684-7580
Valley Sanitary District.....	(760) 347-2356
Western Municipal Water District.....	(951) 789-5000
Yucaipa Valley Water District.....	(909) 797-5117

CALL 1-800-506-2555 to:

- Report clogged storm drains or illegal storm drain disposal from residential, industrial, construction and commercial sites into public streets, storm drains and/or water bodies.
- Find out about our various storm drain pollution prevention materials.
- Locate the dates and times of Household Hazardous Waste (HHW) Collection Events.
- Request adult, neighborhood, or classroom presentations.
- Locate other County environmental services.
- Receive greascycling information and composting workshop information.

Or visit our

Riverside County Flood Control and Water Conservation District
website at: www.rcflood.org

Other links to additional storm drain pollution information:

- County of Riverside Environmental Health: www.rivcoeh.org
- State Water Resources Control Board: www.waterboards.ca.gov
- California Stormwater Quality Association: www.casqa.org
- United States Environmental Protection Agency (EPA):
www.epa.gov/compliance/assistance (compliance assistance information)

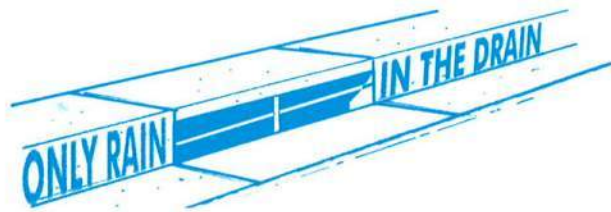


Guidelines for Maintaining your...



Swimming Pool, Jacuzzi and Garden Fountain

Where does the water go?



Pool, Jacuzzi and Fountain wastewater and rain water runoff (also called stormwater) that reach streets can enter the storm drain and be conveyed directly into local streams, rivers and lakes.



A storm drain's purpose is to prevent flooding by carrying rain water away from developed areas. Storm drains are not connected to sanitary sewers systems and treatment plants!

Wastewater, from residential swimming pools, Jacuzzis, fishponds and fountains, often contains chemicals used for sanitizing or cleansing purposes. Toxic chemicals (such as chlorine or copper-based algaecides) may pollute the environment when discharged into a storm drain system.

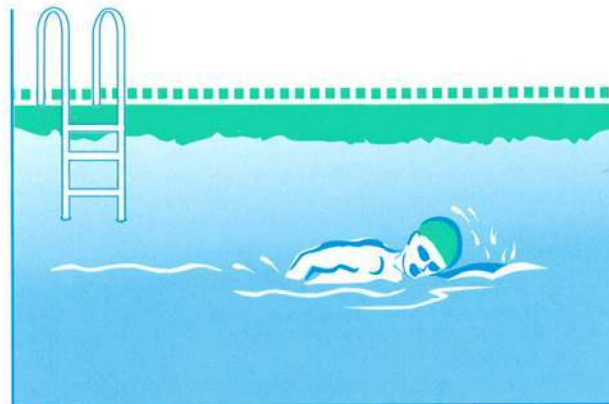
The Cities and County of Riverside have adopted ordinances that prohibit the discharge of wastewater to the street and storm drain system.



Discharge Regulations

Regulatory requirements for discharging wastewater from your pool may differ from city to city. Chlorinated water should not be discharged into the street, storm drain or surface waters. Check with your water agency to see if disposal to the sanitary sewer line is allowed for pool discharges (see reverse for Riverside County sewer agencies).

If allowed, a hose can be run from the pool Jacuzzi, or fountain to the private sewer cleanout, washing machine drain or a sink or bathtub.



If you cannot discharge to the sewer, you may drain your fountain, pool, or jacuzzi to your landscaping by following these guidelines:

First, reduce or eliminate solids (e.g. debris, leaves or dirt) in the pool water and allow the chemicals in the pool water to dissipate before draining the pool (this could take up to 7 days, verify using a home pool test kit).

Second, slowly drain to a landscaped area away from buildings or structures. Control the flow to prevent soil erosion; it may take more than one day to empty. Do not allow sediment to enter the street, gutter or storm drain.

Maintenance & Chemicals

Cleaning Filters

Filter rinse water and backwash must be discharged to the sanitary sewer, on-site septic tank and drain field system (if properly designed and adequately sized), or a seepage pit. Alternatively, rinse water or backwash may be diverted to landscaped or dirt areas. Filter media and other non-hazardous solids should be picked up and disposed of in the trash.



Algaecides

Avoid using copper-based algaecides unless absolutely necessary. Control algae with chlorine, organic polymers or other alternatives to copper-based pool chemicals. Copper is a heavy metal that can be toxic to aquatic life when you drain your pool.

Chemical Storage and Handling

- Use only the amount indicated on product labels
- Store chlorine and other chemicals in a covered area to prevent runoff. Keep out of reach of children and pets.
- Chlorine kits, available at retail swimming pool equipment and supply stores, should be used to monitor the chlorine and pH levels before draining your pool.
- Chlorine and other pool chemicals should never be allowed to flow into the gutter or storm drain system.

Take unwanted chemicals to a Household Hazardous Waste (HHW) Collection Event. There's no cost for taking HHW items to collection events – it's FREE! Call 1-800-506-2555 for a schedule of HHW events in your community.





Landscaping and garden maintenance activities can be major contributors to water pollution. Soils, yard wastes, over-watering and garden chemicals become part of the urban runoff mix that winds its way through streets, gutters and storm drains before entering lakes, rivers, streams, etc. Urban runoff pollution contaminates water and harms aquatic life!

In Riverside County, report illegal discharges into the storm drain, call
1-800-506-2555
"Only Rain Down the Storm Drain"

Important Links:

Riverside County Household Hazardous Waste Collection Information
1-800-304-2226 or www.rivcowm.org

Riverside County Backyard Composting Program
1-800-366-SAVE

Integrated Pest Management (IPM) Solutions
www.ipm.ucdavis.edu

California Master Gardener Programs
www.mastergardeners.org
www.camastergardeners.ucdavis.edu

California Native Plant Society
www.cnps.org

The Riverside County "Only Rain Down the Storm Drain" Pollution Prevention Program gratefully acknowledges Orange County's Storm Water Program for their contribution to this brochure.

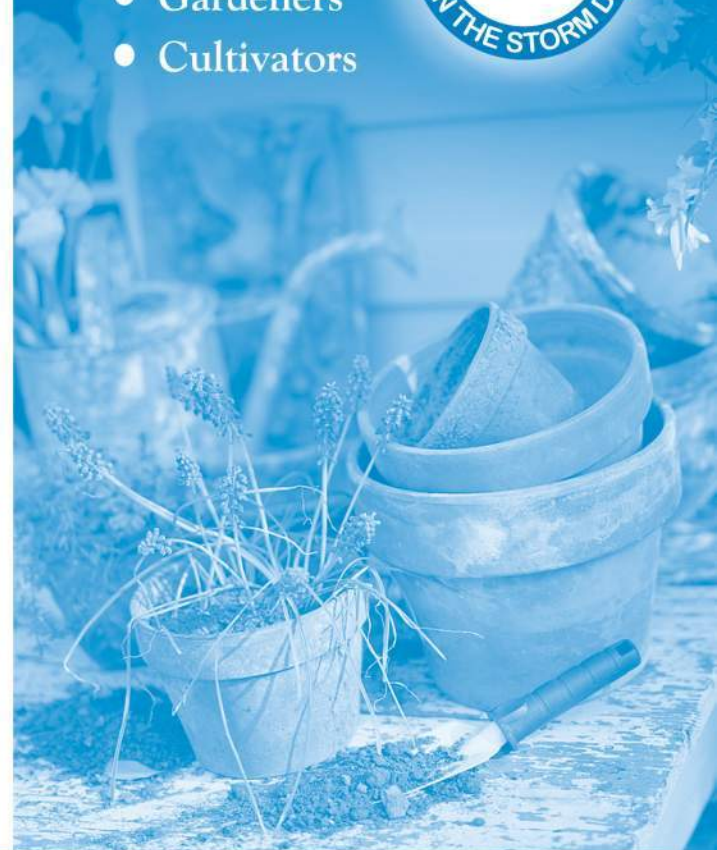


...Only Rain Down ...the Storm Drain

*What you should know for...
Landscape and Gardening*

Best Management tips for:

- Professionals
- Novices
- Landscapers
- Gardeners
- Cultivators



Tips for Landscape & Gardening

This brochure will help you to get the most of your lawn and gardening efforts and keep our waterways clean. Clean waterways provide recreation, establish thriving fish habitats, secure safe sanctuaries for wildlife, and add beauty to our communities. NEVER allow gardening products or waste water to enter the street, gutter or storm drain.

General Landscaping Tips

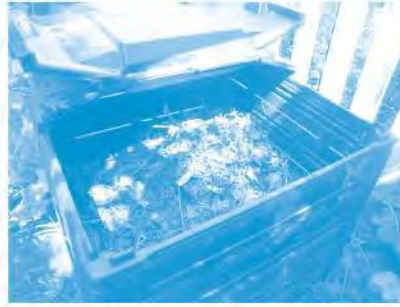
- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.
- Plant native vegetation to reduce the amount of water, fertilizers and pesticides applied to the landscape.
- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.



Garden & Lawn Maintenance

- Do not overwater. Use irrigation practices such as drip irrigation, soaker hoses or micro-spray systems. Periodically inspect and fix leaks and misdirected sprinklers.

- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drain. Instead, dispose of green waste by composting, hauling it to a permitted landfill, or recycling it through your city's program.



- Consider recycling your green waste and adding "nature's own fertilizer" to your lawn or garden.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.
- Rinse empty pesticide containers and re-use rinse water as you would use the product. Do not dump rinse water down storm drains or sewers. Dispose of empty containers in the trash.
- When available, use non-toxic alternatives to traditional pesticides, and use pesticides specifically designed to control the pest you are targeting.

- Try natural long-term common sense solutions first. Integrated Pest Management (IPM) can provide landscaping guidance and solutions, such as:

- ◆ **Physical Controls** - Try hand picking, barriers, traps or caulking holes to control weeds and pests.
- ◆ **Biological Controls** - Use predatory insects to control harmful pests.
- ◆ **Chemical Controls** - Check out www.ipm.ucdavis.edu before using chemicals. Remember, all chemicals should be used cautiously and in moderation.


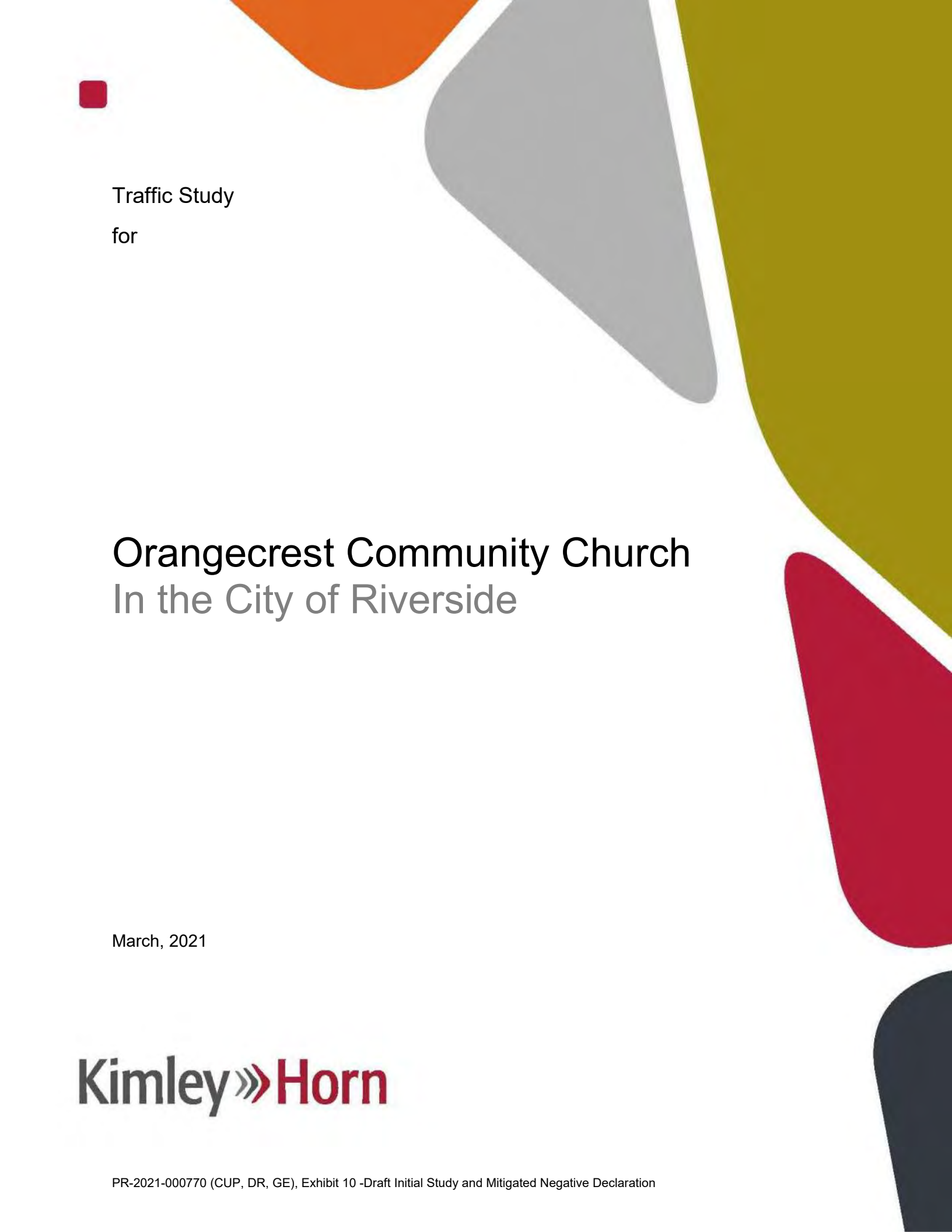
- If fertilizer is spilled, sweep up the spill before irrigating. If the spill is liquid, apply an absorbent material such as cat litter, and then sweep it up and dispose of it in the trash.
- Take unwanted pesticides to a Household Waste Collection Center to be recycled.
- *Dumping toxics into the street, gutter or storm drain is illegal!*

www.bewaterwise.com Great water conservation tips and drought tolerant garden designs.

www.ourwaterourworld.com Learn how to safely manage home and garden pests.

Additional information can also be found on the back of this brochure.

Appendix H
Focused TIA



Traffic Study
for

Orangecrest Community Church In the City of Riverside

March, 2021



TRAFFIC STUDY
FOR THE PROPOSED
ORANGECREST CHURCH
IN THE CITY OF RIVERSIDE

Prepared by:

Kimley-Horn and Associates, Inc.
765 The City Drive, Suite 200
Orange, California 92868



March, 2021

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TRAFFIC STUDY
FOR THE PROPOSED
ORANGECREST COMMUNITY CHURCH
IN THE CITY OF RIVERSIDE

INTRODUCTION

Purpose and Study Objectives

This traffic study has been prepared to address the traffic-related effects of the proposed Orangecrest Church project in the City of Riverside. This traffic study has been conducted in accordance with the traffic study requirements of the City of Riverside Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (July 2020).

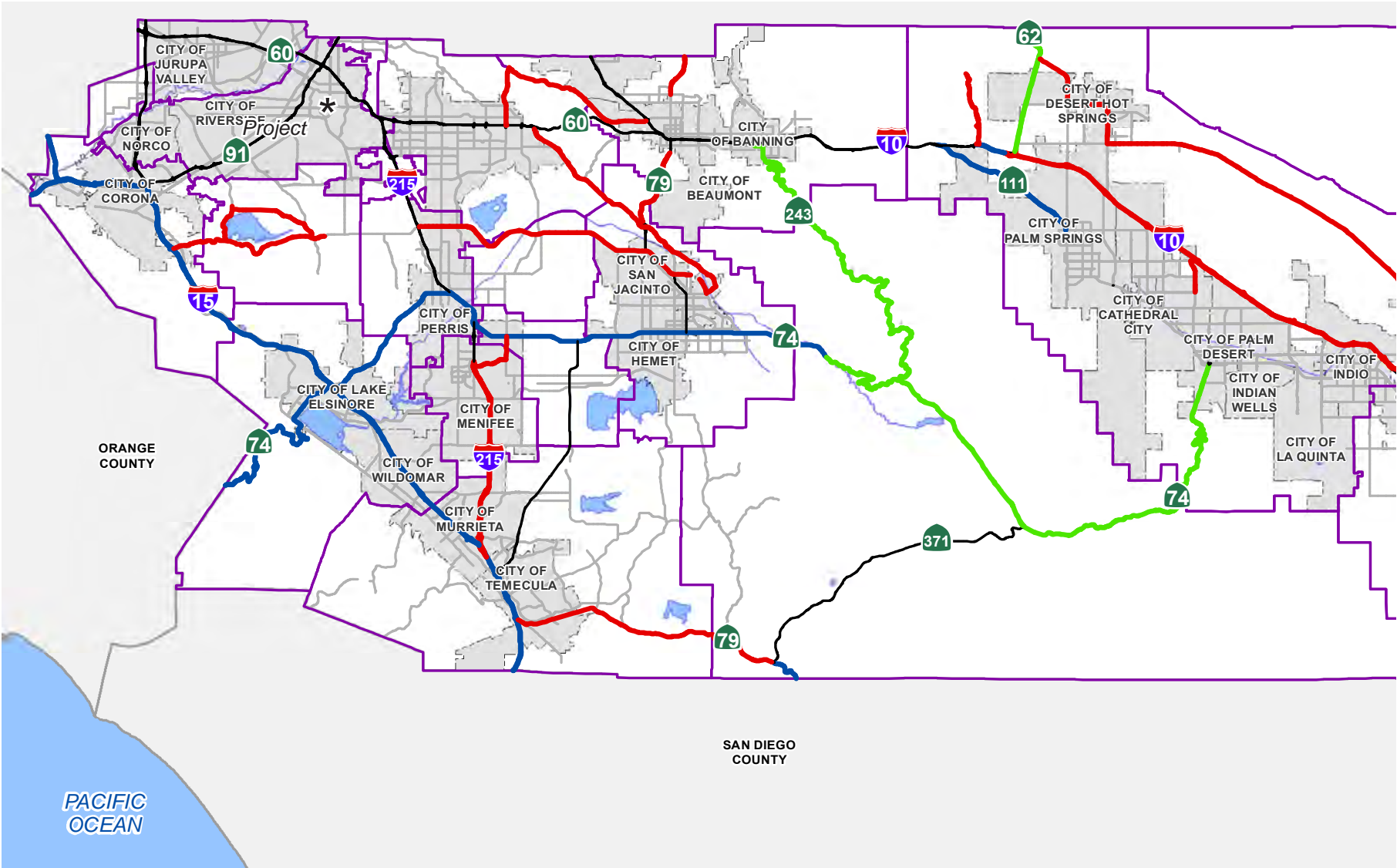
This report includes a description of existing traffic conditions in the surrounding area, estimated project trip generation and distribution, future traffic growth, and an assessment of project-related effects on the transportation system. Where necessary, circulation system improvements have been identified to address project-related deficiencies at the study locations.

Project Overview

The Project address is 5659 Glenhaven Avenue, Riverside, 92506. The Assessor's Parcel Number (APN) is: 222-250-006. The Project site is at the northwest corner of Glenhaven Avenue and Alessandro Boulevard and is located west of State Route 91 (SR-91) and generally along the western portion of the City. The project site is shown in its regional setting on Figure 1. The Project site is surrounded by single-family residential units to the north, south, east, and west.

The project proposes to construct a Community Church and classrooms at the 5.27-acre site which consists of four (4) buildings. The project site's former use was a swim and tennis club. The two existing buildings will be renovated and expanded in place and used as Building A (2,448.889 square feet (SF)) and Building B (1,583.09 SF). The Project proposes to construct three new structures. The construction of the three new buildings plus the expansion of the two existing buildings would total approximately 19,905 SF. The project includes 266 surface parking spaces which will be provided for visitors along the northern, southern, and western portions of the site. Vehicular access for the project site would be via two unsignalized full-access driveways on Glenhaven Avenue. A copy of the project's site plan is provided on Figure 2.

FIGURE 1 - Vicinity Map



Source: County of Riverside Circulation Element

FIGURE 2 - Site Plan



ANALYSIS SCENARIOS AND METHODOLOGY

Analysis Scenarios

Due to project size, the City of Riverside recommends a site access analysis and a queueing assessment for the project driveways to be evaluated in the morning and evening peak hours for the following conditions:

- Existing Conditions
- Opening Year 2021 Plus Cumulative Projects Plus Project

If analysis shows that improvement are required based on deficiency criteria, then Opening Year 2021 Cumulative Plus Project Plus Improvements scenarios will be analyzed.

Intersection Analysis – HCM Methodology

Peak hour intersection operations at the signalized existing intersection and proposed unsignalized driveways were evaluated using the methods prescribed in the Highway Capacity Manual 6th Edition (HCM), consistent with the Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (July 2020).

For signalized intersections, the HCM methodology estimates the average delay (in average seconds per vehicle) for each of the movements through the intersection, considering a number of factors, including the number of lanes, volume of traffic, and the signal timing phasing.

For unsignalized intersections, the HCM methodology analysis determines the average total delay for each vehicle making any movement from the stop-controlled minor street, as well as left turns from the major street. Delay values are calculated based on the relationship between traffic on the major street and the availability of acceptable gaps in the traffic stream through which conflicting traffic movements can be made.

The HCM delay forecast translates to a Level of Service designation, ranging from LOS A to LOS F. a summary of each Level of Service and the corresponding delay is provided in the following chart.

LEVEL OF SERVICE DEFINITIONS	
Level of Service	Description
A	No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turns are made easily and nearly all drivers find freedom of operation.
B	This service level represents stable operation, where an occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel restricted within platoons of vehicles.
C	This level still represents stable operating conditions. Occasionally drivers may have to wait through more than one red signal indication, and backups may develop behind turning vehicles. Most drivers feel somewhat restricted but not objectionably so.
D	This level encompasses a zone of increasing restriction, approaching instability at the intersection. Delays to approaching vehicles may be substantial during short peaks within the peak period; however, enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive backups.
E	Capacity occurs at the upper end of this service level. It represents the most vehicles that any particular intersection approach can accommodate. Full utilization of every signal cycle is seldom attained no matter how great the demand.
F	This level describes forced flow operations at low speeds, where volumes exceed capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. Speeds are reduced substantially, and stoppages may occur for short or long periods of time due to the congestion. In the extreme case, both speed and volume can drop to zero.

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED AND UNSIGNALIZED INTERSECTIONS		
Level of Service	Signalized Intersection (Average delay per vehicle, in seconds) ¹	Unsignalized Intersections (Average delay per vehicle, in seconds) ²
A	≤ 10	0 – 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

¹ Source: Highway Capacity Manual (HCM 2010), Exhibit 18-4.

² Source: Highway Capacity Manual (HCM 2010), Exhibits 19-1 and 20-2.

Level of Service Standards

The City of Riverside General Plan includes the following policies regarding minimum acceptable level of service (LOS):

- a) LOS **C** is to be maintained at all street intersections
- b) LOS **D** is to be maintained at intersections of Collector or higher Classification. See *General Plan Policy CCM – 2.3*

For projects that propose intensities above that contained in the General Plan:

Operational improvements are required when the addition of project related trips causes either peak hour LOS to degrade the acceptable (A through D) to unacceptable levels (E or F) or the peak hour delay to increase as follows:

- LOS A/B – By 10 seconds
- LOS C – By 8 seconds
- LOS D – By 5 seconds
- LOS E – By 2 seconds
- LOS F – By 1 seconds

AREA CONDITIONS

Study Area

This traffic study includes documentation of existing conditions, future conditions, and identification of project-related deficiencies at the following study intersections:

1. Alessandro Boulevard at Glenhaven Avenue
2. Glenhaven Avenue/ Benedict Avenue at Driveway 1
3. Glenhaven Avenue at Driveway 2

The study locations were established in consultation with City of Riverside staff through the Scoping Letter Agreement process. A copy of the approved Scoping Letter Agreement is provided in *Appendix A*.

Existing Street System

Regional access to the site is provided primarily by State Route 91 (SR-91) and Interstate 215 (I-215), which can both be accessed via Alessandro Boulevard.

Existing lane configurations and intersection controls at the study intersections are shown on Figure 3. A copy of the City of Riverside Circulation Plan is provided on Figure 4. The following provides a description of the roadways surrounding the project site.

Alessandro Boulevard – The segment of Alessandro Boulevard adjacent to the project site is a four-lane roadway with a raised center median. On-street parking is not allowed along both sides of the roadway and the posted speed limit is 40 miles per hour (mph). Class II Bike lanes are provided on both sides of the roadway. Alessandro Boulevard forms the western boundary of the project site and would provide vehicle access to Glenhaven Avenue where two project driveways are located. Alessandro Boulevard is designated as an Urban Arterial on the County of Riverside Circulation Element.

Existing Traffic Volumes

Starting March of 2020, the COVID-19 Pandemic has altered trip patterns and traffic levels as a result of the California Governor's Stay at Home Order and school closures. The City of Riverside recommends that any studies conducted during this initial or any subsequent stay at home order may qualify for special accommodations regarding data collection. Historical counts within the project study area were not available and therefore historical morning and evening peak hour turning movement volumes for the intersection of Overlook Parkway/ Canyon Crest Drive and Alessandro Boulevard were obtained from the Meridian South Campus Traffic Impact Analysis collected in August 2019. Peak hour counts for the intersection of Overlook Parkway/ Canyon Crest Drive and Alessandro Boulevard and Alessandro Boulevard and Glenhaven Avenue were conducted on October 20, 2020. A COVID-19 factor was applied to the intersection of Alessandro Boulevard and Glenhaven Avenue to properly represent pre-COVID-19 conditions.

Adjusted Existing morning and evening peak hour volumes are presented on Figure 5. Traffic volumes and COVID-19 factor calculations are provided in Appendix B.

Existing Intersection and Roadway Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours using the analysis procedures and assumptions described previously in this report. The results of the intersection analysis for Existing Conditions are shown on Table 1. Copies of Existing Conditions intersection analysis worksheets are provided in *Appendix C*.

Review of this table indicates that all study intersections currently operating at an acceptable Level of Service under Existing Conditions.

FIGURE 3 - Existing Lane Configuration and Traffic Control

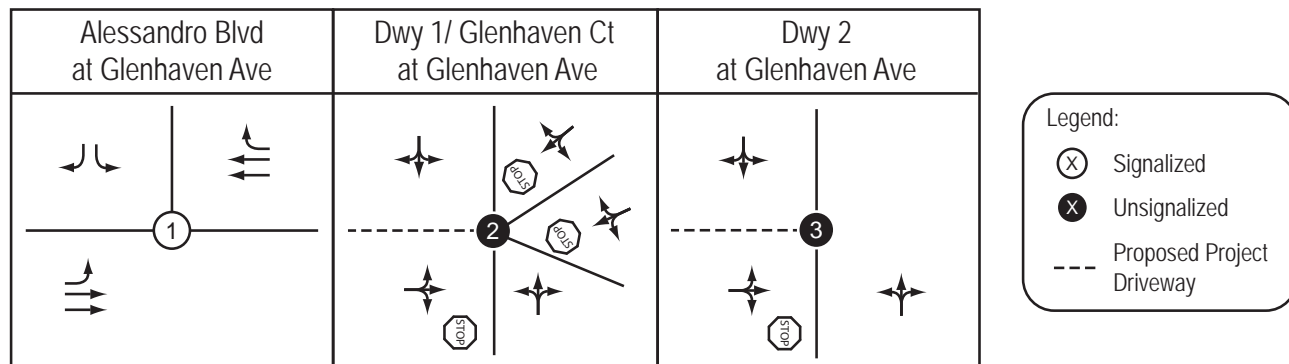
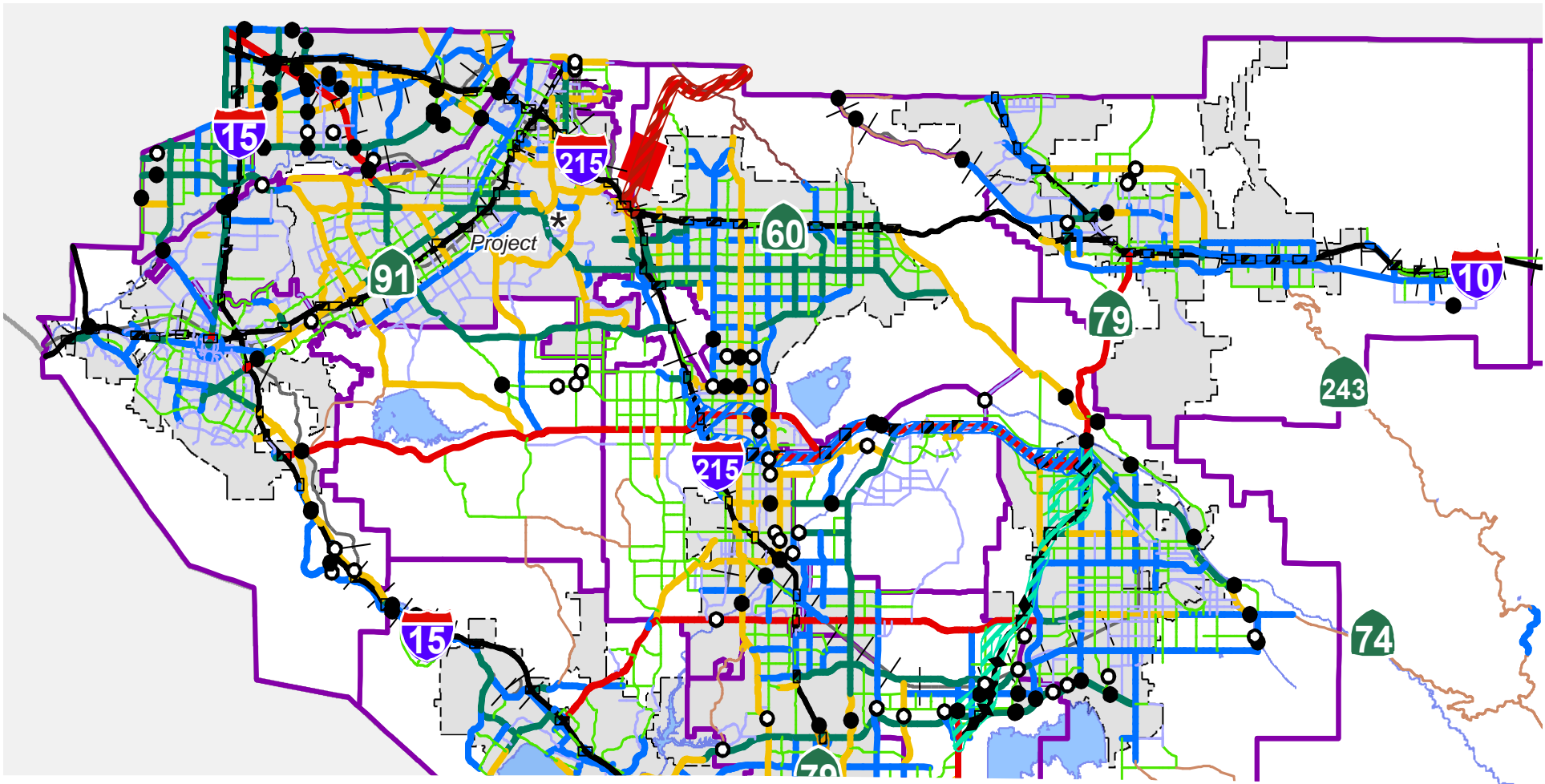


FIGURE 4 - City of Riverside Circulation Plan



Source: County of Riverside Circulation Element

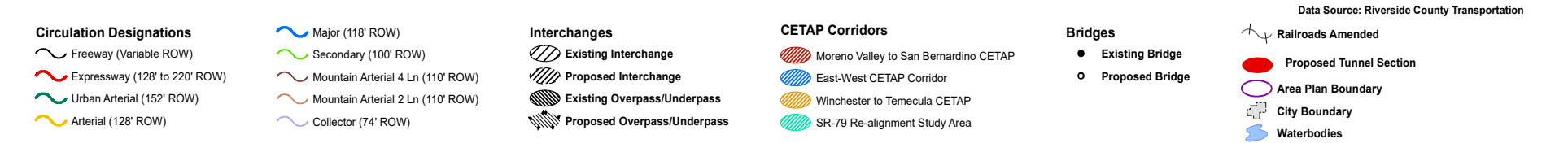


FIGURE 5 - Existing Traffic Volumes

<div>1</div> <div> <div>59 / 30</div> <div>68 / 83</div> <div>Glenhaven Ave</div> <div> <div>↔ 59 / 117</div> <div>↕ 1771 / 1129</div> </div> <div>Alessandro Blvd</div> </div> <div> <div>23 / 33</div> <div>672 / 2488</div> <div>↔</div> <div>↕</div> </div>	<div>2</div> <div> <div>126 / 113</div> <div>Glenhaven Ave</div> <div> <div>↔ 1 / 0</div> <div>↕ 77 / 142</div> <div>5 / 8</div> </div> <div>Dwy 1</div> </div>	<div>3</div> <div> <div>126 / 113</div> <div>Glenhaven Ave</div> <div> <div>↔ 77 / 142</div> </div> <div>Dwy 2</div> </div>
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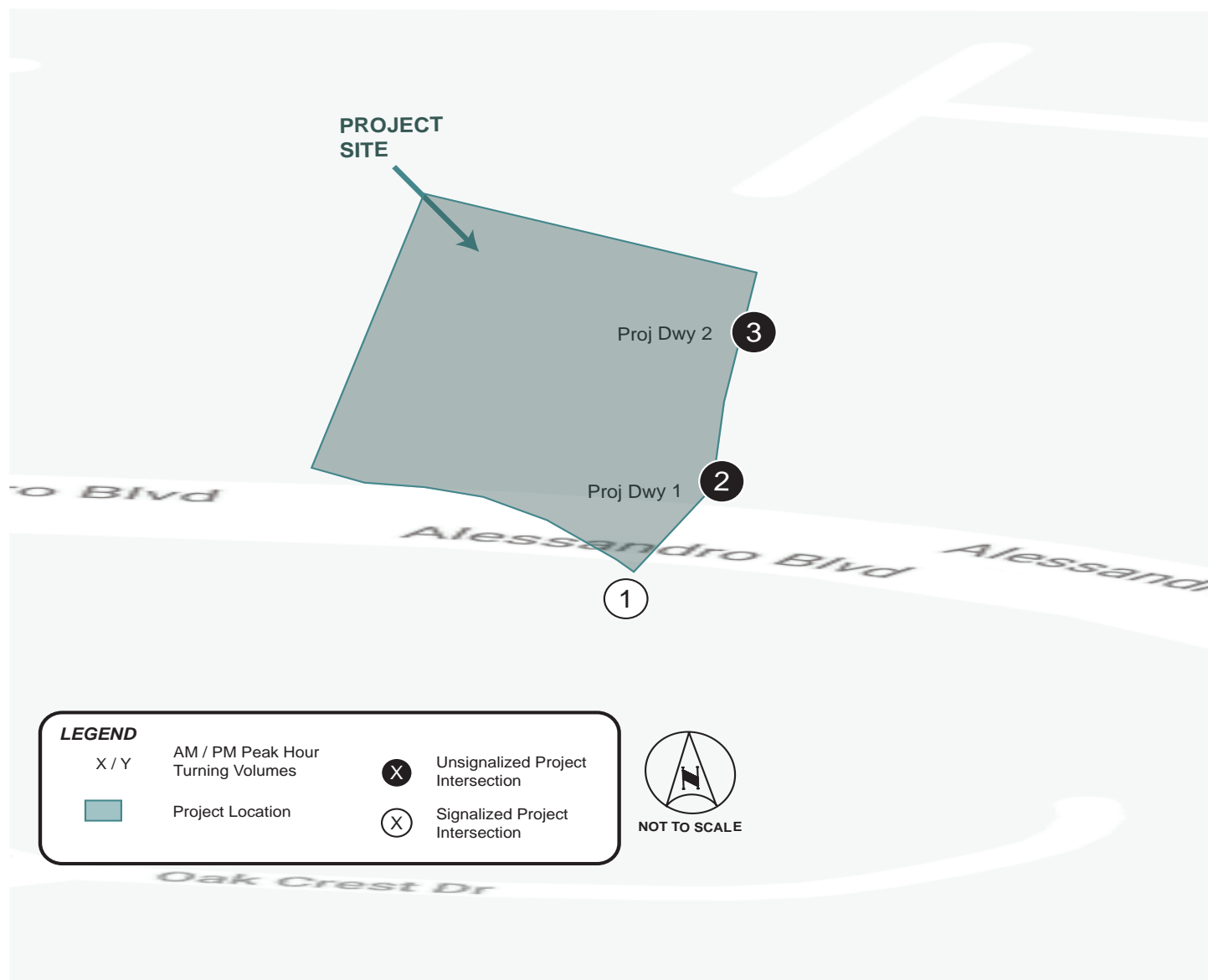


TABLE 1
SUMMARY OF INTERSECTION OPERATION
EXISTING CONDITIONS

Int. #	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	Alessandro Blvd & Glenhaven Ave	S	8.4	A	9.6	A
2	Glenhaven Ave & Dwy 1/ Glenhaven Ct	U	FUTURE INTERSECTION			
3	Glenhaven Ave & Dwy 2	U	FUTURE INTERSECTION			

Notes:

- **Bold** values indicate intersections operating at an unacceptable Level of Service
- Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach.

PROJECT TRAFFIC

Project Trip Generation

Trip generation estimates for the Orangecrest Church project are based on daily and peak hour trip generation rates obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition) and additional sources:

- ITE Land Use 560: Church

Daily, AM peak hour, and PM peak hour trips were estimated for a proposed 19,905 Church. Trip rates and the estimated project trip generation are shown on Table 3. The project is expected to generate 138 daily trips, 7 trips during the AM peak (4 inbound and 3 outbound) and 9 trips during the PM peak (4 inbound and 5 outbound)

Trip Distribution and Assignment

Project trip distribution assumptions for the project site were developed taking into account the proposed site use, and routes to and from the freeway system. Trip distribution and assignment for project trips are shown on Figure 6. Figure 7 shows the total project trip assignment.

**TABLE 2
SUMMARY OF PROJECT TRIP GENERATION
ORANGECREST CHURCH**

Land Use	ITE Code	Unit	Trip Generation Rates ¹						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Church	560	KSF	6.950	0.198	0.132	0.33	0.221	0.270	0.49
Land Use	Quantity	Unit	Trip Generation Estimates						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Church	19.905	KSF	138	4	3	7	4	5	9
Total Project Trips			138	4	3	7	4	5	9
¹ Source: Institute of Transportation Engineers (ITE) <u>Trip Generation Manual</u> , 10th Edition									

FIGURE 6 - Project Distribution

<div>1</div> <div> <div> <div>(50%) ↗</div> <div>(50%) ↘</div> </div> <div>Glenhaven Ave</div> </div> <div> <div>↖ 50%</div> <div>Alessandro Blvd</div> </div>	<div>2</div> <div> <div> <div>(50%) ↕</div> <div>Glenhaven Ave</div> </div> <div>Dwy 1</div> </div> <div> <div>Glenhaven Ct</div> <div> <div>↖ ↗</div> <div>50% 50%</div> </div> </div>	<div>3</div> <div> <div>Glenhaven Ave</div> <div>Dwy 2</div> </div> <div> <div>↖</div> <div>50%</div> </div>
<div>50% ↗</div>	<div>(50%) ↘</div>	<div>(50%) ↘</div>

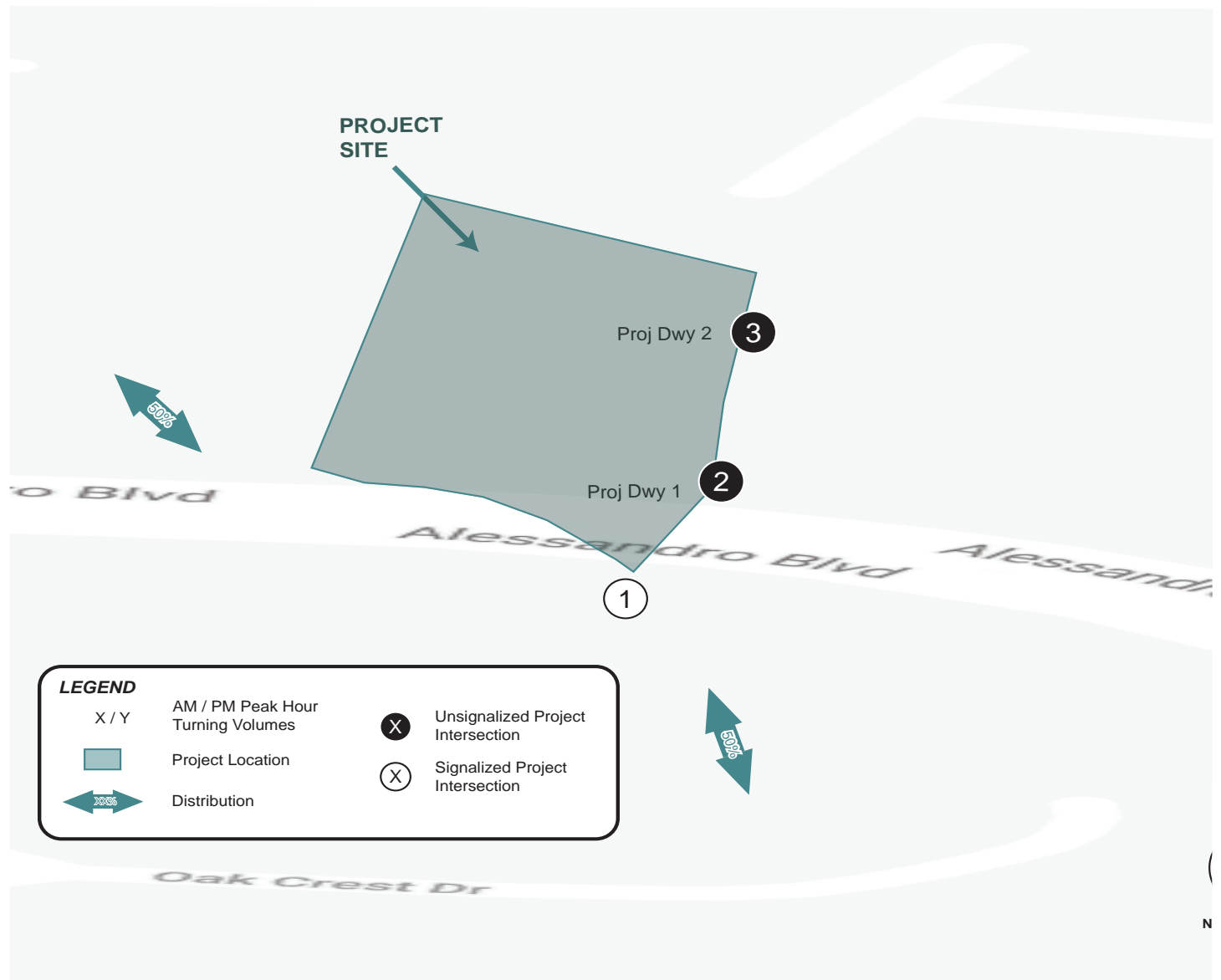
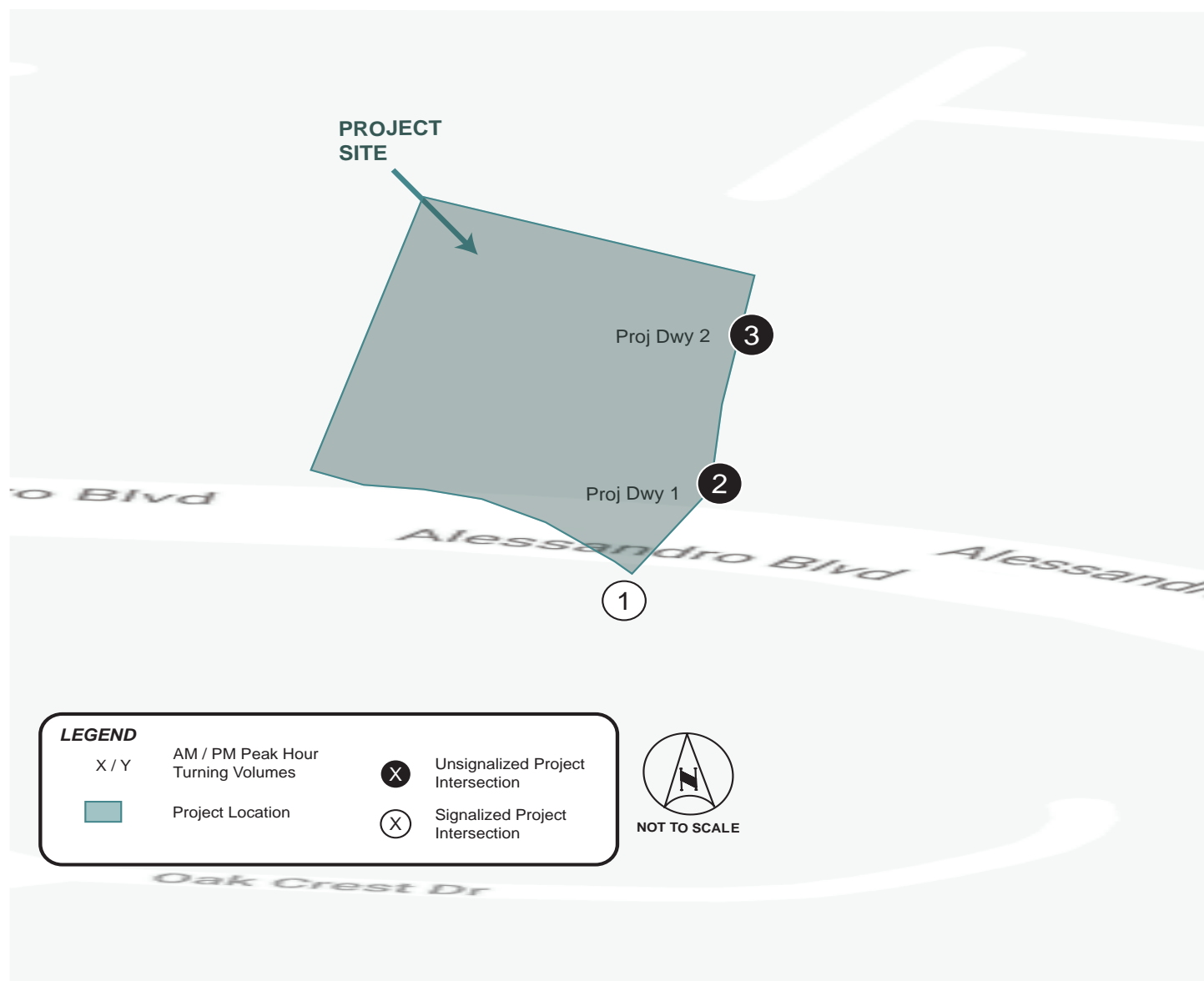


FIGURE 7 - Project-Related Traffic Volumes

<div>1</div> <div> <div>2 / 3</div> <div>2 / 3</div> <div>Glenhaven Ave</div> <div>2 / 2</div> <div>Alessandro Blvd</div> <div>2 / 2</div> </div>	<div>2</div> <div> <div>2 / 3</div> <div>Glenhaven Ave</div> <div>Dwy 1</div> <div>Glenhaven Ct</div> <div>2 / 3</div> <div>2 / 2</div> <div>2 / 2</div> </div>	<div>3</div> <div> <div>Glenhaven Ave</div> <div>Dwy 2</div> <div>2 / 3</div> <div>2 / 2</div> </div>
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FUTURE CONDITIONS WITH PROJECT

Opening Year 2021 Plus Cumulative Projects Plus Project Traffic Conditions

Project-related traffic was added to the Project Opening Year 2021 Plus Cumulative Projects Traffic volumes. Cumulative project information can be found in *Appendix D*. Opening Year 2021 Plus Cumulative Projects Plus Project traffic at study intersections are shown on Figure 8.

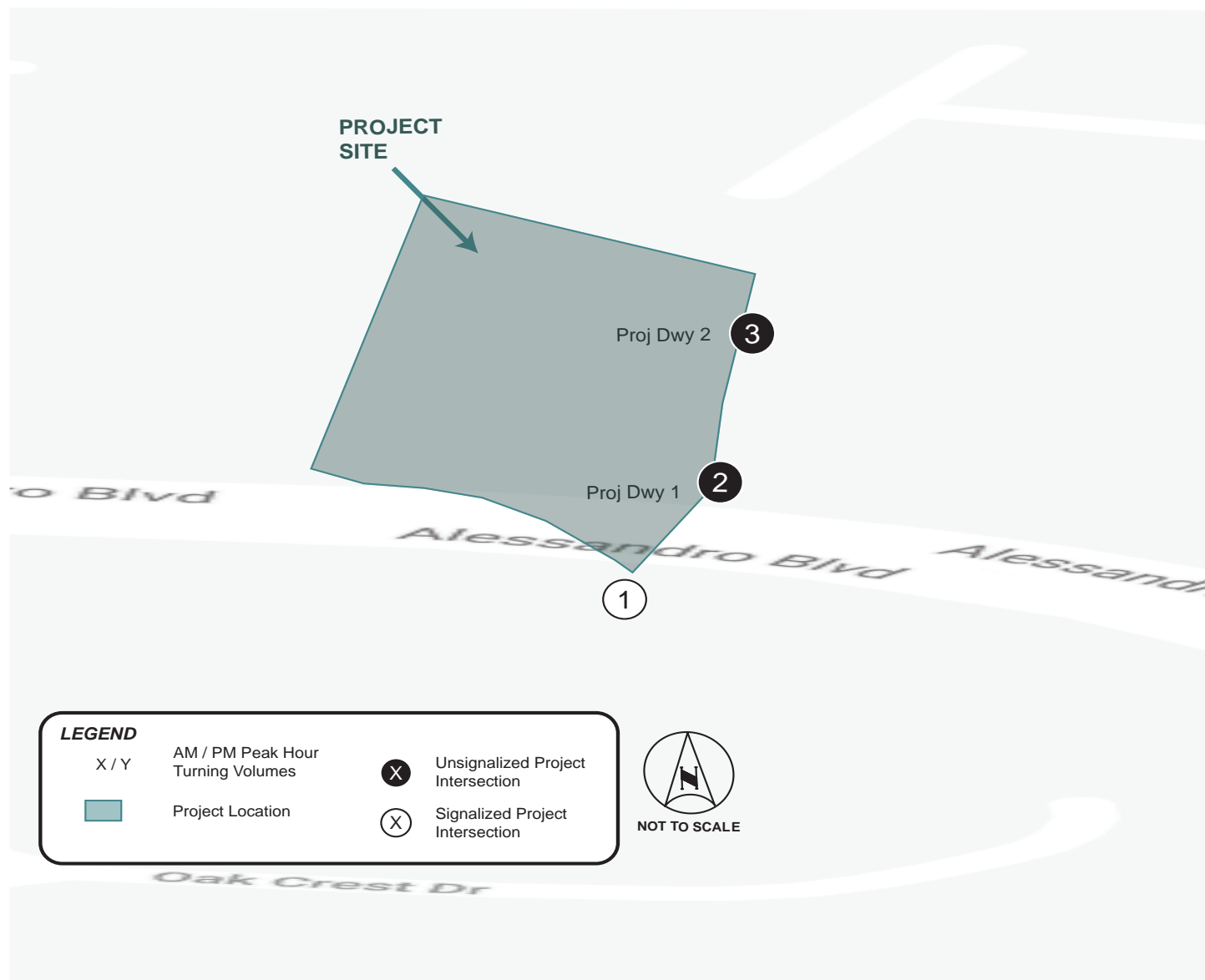
Intersection and Roadway Operating Conditions

Intersection Level of Service analysis was conducted for the morning and evening peak hours for the Opening Year 2021 Plus Cumulative Projects Plus Project Traffic condition. The results are shown on Table 3. Intersection analysis worksheets for this scenario are provided in *Appendix C*.

Review of this table indicates that all study intersections currently operating at an acceptable Level of Service under Opening Year 2021 Plus Cumulative Projects Plus Project Traffic Conditions.

FIGURE 8 - Opening Year 2021 Plus Cumulative Projects Plus Project Traffic Volumes

<div>1</div> <div> <div>71 / 33</div> <div>80 / 86</div> <div>Glenhaven Ave</div> <div> <div>↖ 61 / 129</div> <div>↗ 1774 / 1135</div> </div> <div>Alessandro Blvd</div> </div> <div> <div>25 / 45</div> <div>677 / 2492</div> </div>	<div>2</div> <div> <div>128 / 116</div> <div>Glenhaven Ave</div> <div> <div>↖ 21 / 0</div> <div>↗</div> </div> <div>Glenhaven Ct</div> </div> <div> <div>Dwy 1</div> <div>2 / 3</div> </div> <div> <div>2 / 2</div> <div>79 / 144</div> <div>5 / 28</div> </div>	<div>3</div> <div> <div>126 / 113</div> <div>Glenhaven Ave</div> <div> <div>↖</div> <div>↗</div> </div> <div>Dwy 2</div> </div> <div> <div>2 / 3</div> <div>2 / 2</div> <div>77 / 142</div> </div>
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<p style="text-align: center;">TABLE 3 SUMMARY OF INTERSECTION OPERATION OPENING YEAR 2021 WITH CUMULATIVE PROJECTS WITH PROJECT CONDITIONS</p>					
Int. #	Intersection	AM Peak Hour		PM Peak Hour	
		With Project		With Project	
		Delay	LOS	Delay	LOS
1	Alessandro Blvd & Glenhaven Ave	9.2	A	10.1	B
2	Glenhaven Ave & Dwy 1/ Glenhaven Ct	10.2	B	8.9	A
3	Glenhaven Ave & Dwy 2	9.0	A	8.9	A
<p>Notes:</p> <ul style="list-style-type: none"> - Bold values indicate intersections operating at an unacceptable Level of Service - Delay values for unsignalized intersections represent the average vehicle delay on the worst (highest delay) intersection approach. 					

CHURCH CLASSROOM OPERATIONS

The Project anticipates retaining 6 full-time employees and 7 part-time employees. The facility would operate with hours typical of places of worship, with the primary activity occurring each Sunday for worship services. Occasional midweek gatherings and events would occur, including occasional evening events for the congregation and guests. Church classrooms are to be used when church is in service ("youth and children's ministries) and for occasional use throughout the week for church-related functions and ministries.

All activities would comply with the City's municipal code including limitations on noise, lighting and parking. The Project and associated activities are those associated with a place of worship and does not include "school classrooms" or similar weekday daily school uses that would generate weekday traffic.

SITE ACCESS ANALYSIS

Vehicular access for the project site would be via two full-access driveways on Glenhaven Avenue. A queuing analysis was conducted at the proposed project driveways and the study intersection of Alessandro Boulevard and Glenhaven Avenue to evaluate the adequacy of the storage capacities. A summary of the storage capacities and the 95th percentile queue lengths during the morning and evening peak hours under Opening Year 2021 Plus Cumulative Projects Plus Project conditions are shown on Table 4. As shown on the table, there would be adequate storage capacity to accommodate the 95th percentile queue at the study intersections. There are no sight distance issues as there are no steep grades or obstructive landscaping along the southbound side of Glenhaven Avenue.

**TABLE 4 – OPENING YEAR 2021 PLUS CUMULATIVE PROJECTS PLUS
PROJECT CONDITIONS
SUMMARY OF QUEUING STORAGE CAPACITY**

INTERSECTION	MOVEMENT	PEAK HOUR	STORAGE CAPACITY (ft)	95 TH PERCENTILE QUEUE (ft)	EXCEEDS AVAILABLE STORAGE?
Alessandro Boulevard & Glenhaven Avenue	Southbound (left)	AM	150	119	NO
		PM	150	122	NO
	Eastbound (left)	AM	100	52	NO
		PM	100	79	NO
Glenhaven Avenue & Driveway 1	Northbound (left/thru/right)	AM	150	<25	NO
		PM	150	<25	NO
	Eastbound (left/thru/right)	AM	100	<25	NO
		PM	100	<25	NO
Glenhaven Avenue & Driveway 2	Northbound (left/thru)	AM	150	<25	NO
		PM	150	<25	NO
	Eastbound (left/thru/right)	AM	25	<25	NO
		PM	25	<25	NO

Notes:

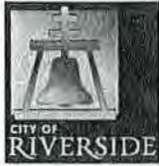
- 95th Percentile Queues are based on Synchro HCM 6th Edition reports (version 10.0).

SUMMARY OF FINDINGS AND CONCLUSIONS

- The Project address is 5659 Glenhaven Avenue, Riverside, 92506. The Assessor's Parcel Number (APN) is: 222-250-006.
- The Project site is at the northwest corner of Glenhaven Avenue and Alessandro Boulevard and is located west of State Route 91 (SR-91)
- The project consists of the construction of a 19,901 SF Church replacing the vacated swim and tennis club
- The project is estimated to generate 138 trips on a daily basis, with 7 trips in the morning peak hour, and 9 trips in the evening peak hour.
- Vehicular access for the project site would be via two full-access driveways on Glenhaven Avenue.
- Based on the City of Riverside's Level of Service standards, no project-related deficiencies would occur under Existing and Project Opening Year 2021 plus Cumulative Projects Plus Project conditions.
- Based on a queuing analysis at the study intersections, there would be adequate storage capacity to accommodate the 95th percentile queue at the study intersections during the morning and evening peak hours.
- There are no sight distance issues as there are no steep grades or obstructive landscaping along the southbound side of Glenhaven Avenue.
- As shown in the Scoping Agreement on Appendix A, the project is screened from VMT assessment as it is a local serving church.

APPENDIX A

SCOPING AGREEMENT



City of Arts & Innovation

Public Works Department

Accepted With
☐ NO EXCEPTIONS
☐ EXCEPTIONS

By: Vital

Traffic Analysis Scoping Form

This scoping form shall be submitted to the City of Riverside Traffic Engineering Division

Project Identification:

Case Number:	P20-0320 Design Review and CUP P20-0319
Related Cases:	
SP No.	
EIR No.	
GPA No.	
CZ No.	
Project Name:	Orangecrest Church
Project Address:	5695 Glenhaven Avenue, Riverside, CA 92506
Project Opening Year:	2021
Project Description:	19,905 sf single-tenant, multi-phase worship building, children's ministry building, youth ministry building, administrative building, and nursery building, and associated 49,214 sf landscaping with 266 parking spaces.

	Consultant:	Developer:
Name:	Kimley-Horn and Associates, Inc.	Orangecrest Community Church
Address:	3880 Lemon Street, Suite 420	PO Box 2799
	Riverside, CA 92501	Riverside, CA 92516
Telephone:	951-543-9869	951-215-0563
Fax/Email:		

Scoping & Study Fees:

Fees to be made payable to "City of Riverside" and delivered to Land Development, City Hall 3rd Floor, 3900 Main Street, Riverside, CA 92522

✓ Scoping Agreement Fee (For all projects not screened from analysis): **\$271.00**

2) TIA Review (For projects with both LOS & VMT analysis of any scale, or standalone LOS analyses with over 100 vehicle trips per hour): **\$2671.02**

✓ 3) TIA Review (For standalone VMT analysis, or standalone LOS analyses with under 100 vehicle trips per hour): **\$1288.20**



Public Works Department

City of Arts & Innovation

Trip Generation Information:

Trip Generation Data Source: ITE Trip Generation Manual, most recent edition (See Attachment A)

Current General Plan Land Use:

Proposed General Plan Land Use:

Swim & Tennis Club (unoccupied)

Current Zoning:

Proposed Zoning:

R-1-13000 Low Density Residential

Assembly - Worship Facility

	Existing Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips				4	3	7
PM Trips				4	5	9

Trip Internalization: ☐ Yes ☒ No (N/A % Trip Discount)

Pass-By Allowance: ☐ Yes ☒ No (N/A % Trip Discount)

Potential Screening Checks

Is your project screened from specific analyses in accordance with City Guidelines?

Is the project screened from LOS assessment? ☒ Yes ☐ No



Public Works Department

City of Arts & Innovation

LOS screening justification (see Page 6 of the guidelines): Less than
100 peak hour trips

Is the project screened from VMT assessment?

☒ Yes

☐ No

VMT screening justification (see Pages 23-25 of the guidelines):
Local serving church and school

Level of Service Scoping

- Proposed Trip Distribution (Attach Graphic for Detailed Distribution):

North	South	East	West
%	%	50 %	50 %

- Attach list of Approved and Pending Projects that need to be considered (provided by the lead agency and adjacent agencies)
- Attach list of study intersections/roadway segments
- Attach legible site plan
- Note other specific items to be addressed:
 - Site access
 - On-site circulation
 - Parking
 - Consistency with Plans supporting Bikes/Peds/Transit
 - Other _____
- Date of Traffic Counts New counts with factor applied for Covid
- Attach proposed analysis scenarios (years plus proposed forecasting approach) (Attachment B)
- Attach proposed phasing approach (if the project is phased)



Public Works Department

City of Arts & Innovation

VMT Scoping

For projects that are not screened, identify the following:

- Travel Demand Forecasting Model _____
- Attach WRCOG Screening VMT Assessment output or describe why it is not appropriate for use
- Attach proposed Model Land Use Inputs and Assumed Conversion Factors (attach)

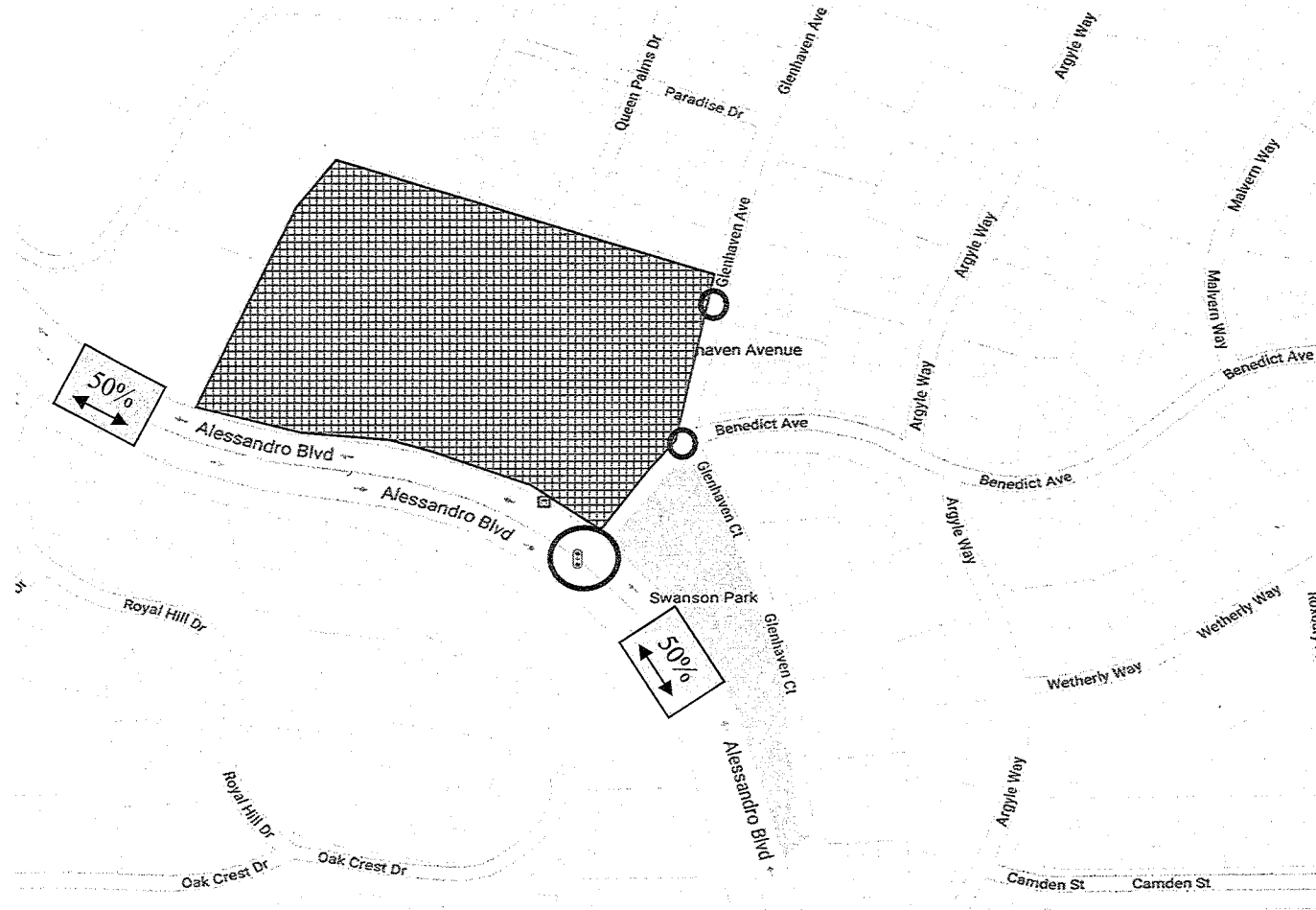
Specific Issues to be addressed in the Study (In addition to the standard analysis described in the Guidelines) (To be filled out by the Public Works Traffic Engineering Division)

- A queuing assessment for the project driveways and the adjacent intersection of Alessandro Blvd and Glenhaven Ave.
- A section that explains "School Operations".

**ATTACHMENT A
SUMMARY OF PROJECT TRIP GENERATION
ORANGECREST CHURCH**

Land Use	ITE Code	Unit	Trip Generation Rates ¹						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Church	560	KSF	6.950	0.198	0.132	0.33	0.221	0.270	0.49
Land Use	Quantity	Unit	Trip Generation Estimates						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Church	19.905	KSF	138	4	3	7	4	5	9
Total Project Trips			138	4	3	7	4	5	9
¹ Source: Institute of Transportation Engineers (ITE) <u>Trip Generation Manual</u> , 10th Edition									

ATTACHMENT B **PROJECT STUDY AREA AND ANALYSIS SCENARIOS**



PROJECT SITE



STUDY INTERSECTION



PROJECT DRIVEWAY INTERSECTION



TRIP DISTRIBUTION

ATTACHMENT B
PROJECT STUDY AREA AND ANALYSIS SCENARIOS

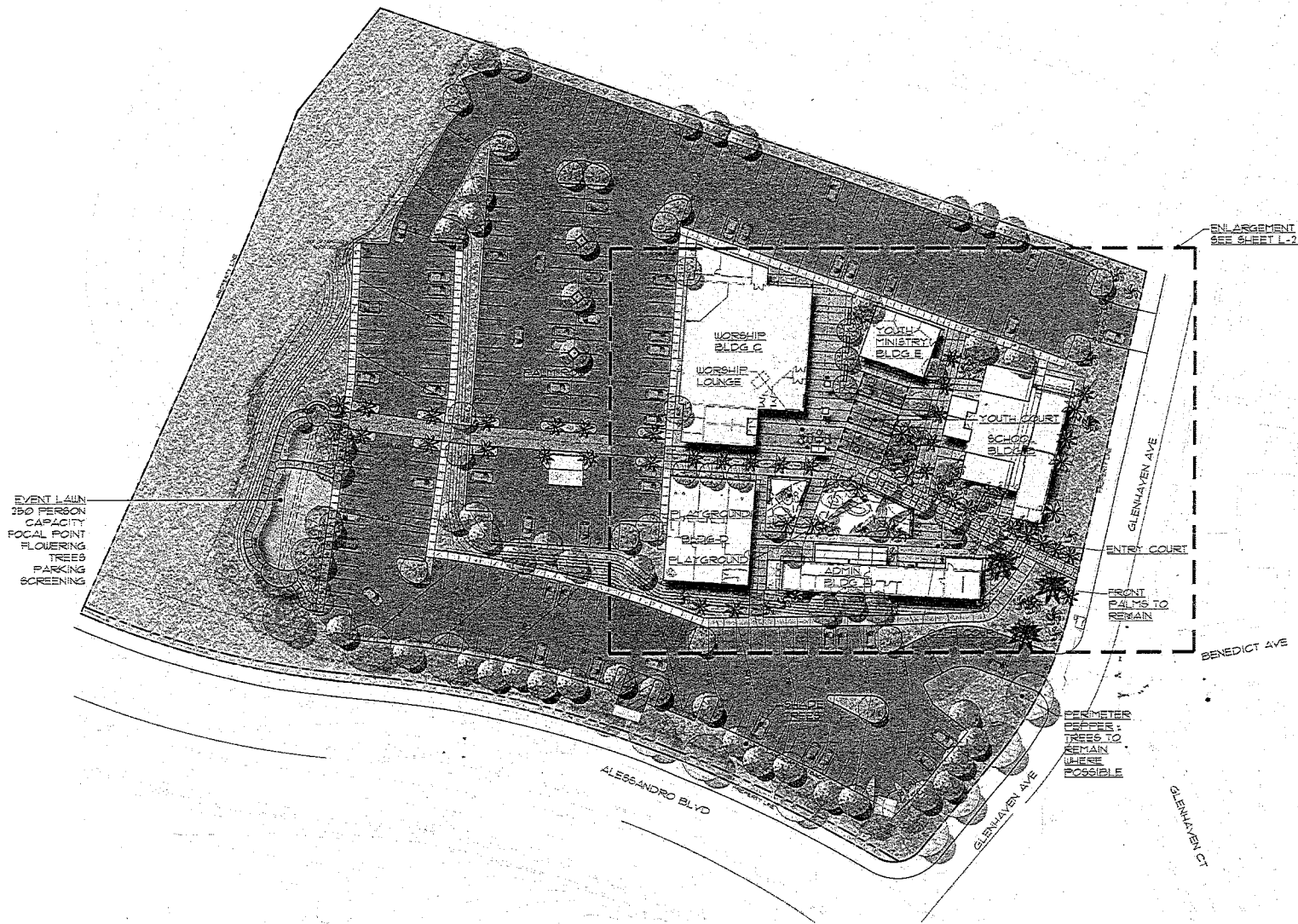
Study Intersections:

- 1. Alessandro Boulevard at Glenhaven Avenue
- D1. Glenhaven Avenue/Benedict Avenue at Driveway 1
- D2. Glenhaven Avenue at Driveway 2

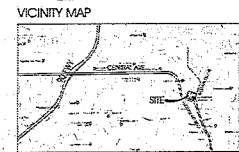
Analysis Scenarios:

- 1. Existing (2020)
- 2. Opening Year (2021) With Project

Attachment C



LANDSCAPE	
LOT SIZE:	229,718 S.F. (5.27 ACRES)
TOTAL LANDSCAPE AREA:	87,370 S.F. (38%)
PARKING LOT LANDSCAPE AREA:	26,162 S.F. (11%)
LANDSCAPE SEBACK AREA:	24,021 S.F.
ADDITIONAL LANDSCAPE AREA:	37,187 S.F.
PARKING LOT TREES:	
71 NEW TREES PROVIDED	
68 TREES REQUIRED	
1 TREE REQUIRED FOR 4 STALLS	
ADDITIONAL TREES ON SITE:	
12 TREES	
22 PALMS	
EXISTING PALMS AND TREES TO REMAIN AT ENTRIES AND STREET PERIMETER WHERE POSSIBLE	



CONCEPTUAL LANDSCAPE SITE PLAN
ORANGE CREST COMMUNITY CHURCH
5695 GLENHAVEN AVENUE RIVERSIDE, CA 92506



ORANGE CREST
COMMUNITY CHURCH

SCALE: 1"=30'
DATE: JUNE 5, 2020
PROJECT NO: 220146



conceptual design & planning company
2115 S. JENSEN BLVD. SUITE 100
RIVERSIDE, CA 92506
TEL: 951.505.1000
WWW.CDP-CA.COM



L-1

ATTACHMENT D CITY OF RIVERSIDE CUMULATIVE PROJECTS LIST									
Map ID #	Case Number	Location	Project Description	City	State	Acres	Buildings Total Square Feet	Dwelling Units	Approval Date
	P20-0293 P20-0294	2201 Fairview Avenue	Tentative Tract Map and CUP for 44 for-sale senior condos.	Riverside	CA	2.21		44	

APPENDIX B

EXISTING VOLUMES

National Data & Surveying Services

Intersection Turning Movement Count

Location: Glenhaven Ave & Alessandro Blvd
City: Riverside
Control: Signalized

Project ID: 20-030152-002
Date: 10/20/2020

Total

NS/EW Streets:	Glenhaven Ave				Glenhaven Ave				Alessandro Blvd				Alessandro Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	1	0	1	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	0	0	0	6	0	7	0	5	88	0	0	0	309	7	0	422
7:15 AM	0	0	0	0	15	0	8	0	0	99	0	0	0	307	6	0	435
7:30 AM	0	0	0	0	15	0	15	0	3	108	0	0	0	382	11	0	534
7:45 AM	0	0	0	0	14	0	7	0	3	113	0	0	0	364	10	0	511
8:00 AM	0	0	0	0	12	0	13	0	5	116	0	0	0	257	12	0	415
8:15 AM	0	0	0	0	11	0	10	0	5	127	0	0	0	285	10	0	448
8:30 AM	0	0	0	0	10	0	2	0	3	126	0	0	0	239	8	0	388
8:45 AM	0	0	0	0	11	0	8	0	4	97	0	0	0	237	14	0	371
TOTAL VOLUMES:	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s:	0	0	0	0	94	0	70	0	28	874	0	0	0	2380	78	0	3524
					57.32%	0.00%	42.68%	0.00%	3.10%	96.90%	0.00%	0.00%	0.00%	96.83%	3.17%	0.00%	
PEAK HR:	07:30 AM - 08:30 AM				52	0	45	0	16	464	0	0	0	1288	43	0	TOTAL
PEAK HR VOL:	0	0	0	0	0.867	0.000	0.750	0.000	0.800	0.913	0.000	0.000	0.000	0.843	0.896	0.000	1908
PEAK HR FACTOR:	0.000	0.000	0.000	0.000			0.808				0.909			0.847			0.893

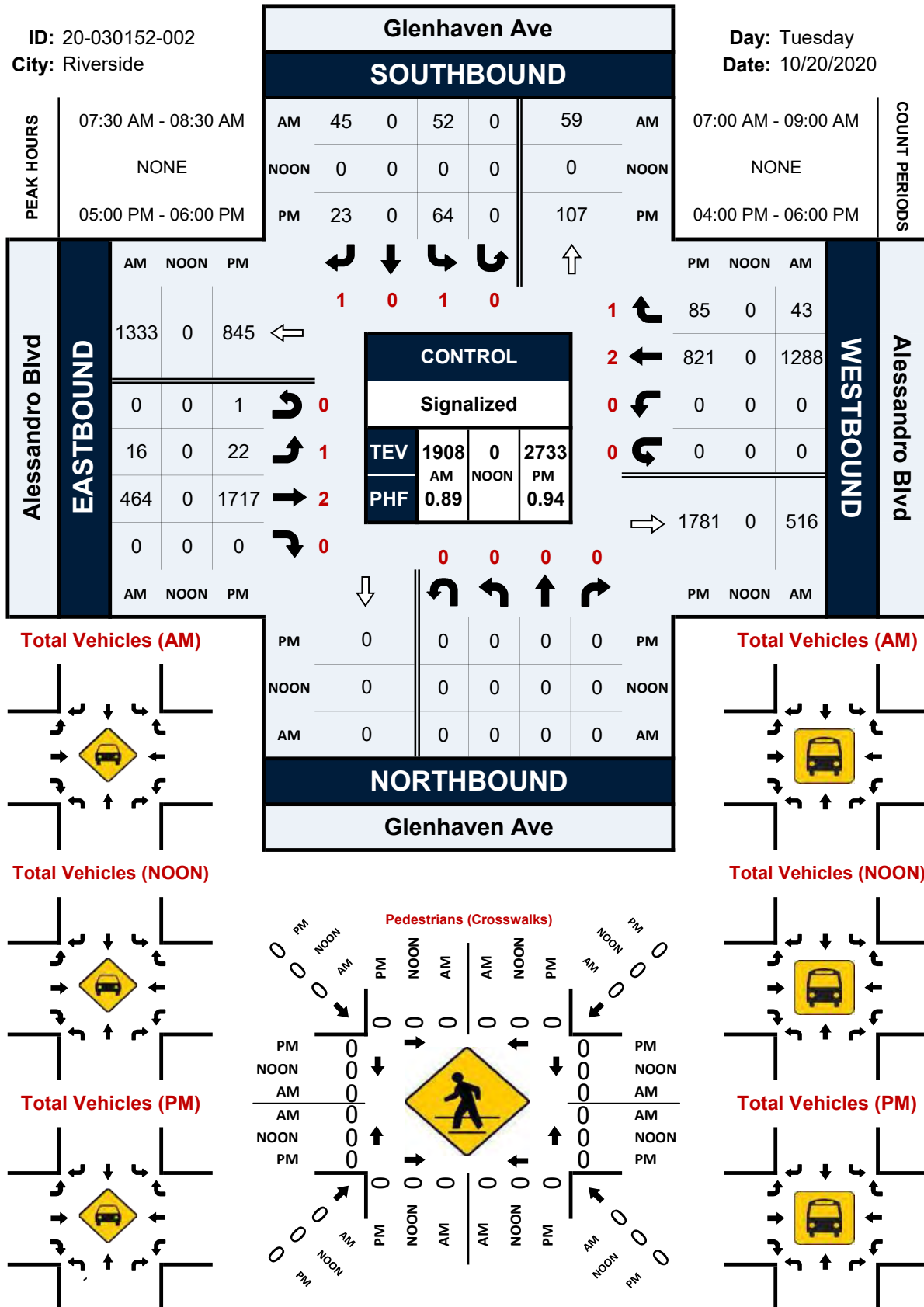
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	1	0	1	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	0	0	0	14	0	8	0	9	337	0	0	0	224	8	0	600
4:15 PM	0	0	0	0	14	0	3	0	4	376	0	0	0	283	15	0	695
4:30 PM	0	0	0	0	13	0	6	0	9	427	0	0	0	242	17	0	714
4:45 PM	0	0	0	0	10	0	3	0	5	362	0	0	0	176	16	0	572
5:00 PM	0	0	0	0	9	0	6	0	2	433	0	0	0	208	20	0	678
5:15 PM	0	0	0	0	21	0	5	0	6	477	0	1	0	195	23	0	728
5:30 PM	0	0	0	0	18	0	7	0	9	415	0	0	0	208	14	0	671
5:45 PM	0	0	0	0	16	0	5	0	5	392	0	0	0	210	28	0	656
TOTAL VOLUMES:	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s:	0	0	0	0	115	0	43	0	49	3219	0	1	0	1746	141	0	5314
					72.78%	0.00%	27.22%	0.00%	1.50%	98.47%	0.00%	0.03%	0.00%	92.53%	7.47%	0.00%	
PEAK HR:	05:00 PM - 06:00 PM				64	0	23	0	22	1717	0	1	0	821	85	0	TOTAL
PEAK HR VOL:	0	0	0	0	0.762	0.000	0.821	0.000	0.611	0.900	0.000	0.250	0.000	0.977	0.759	0.000	2733
PEAK HR FACTOR:	0.000	0.000	0.000	0.000			0.837				0.899			0.952			0.939

Glenhaven Ave & Alessandro Blvd

Peak Hour Turning Movement Count

ID: 20-030152-002
City: Riverside

Day: Tuesday
Date: 10/20/2020



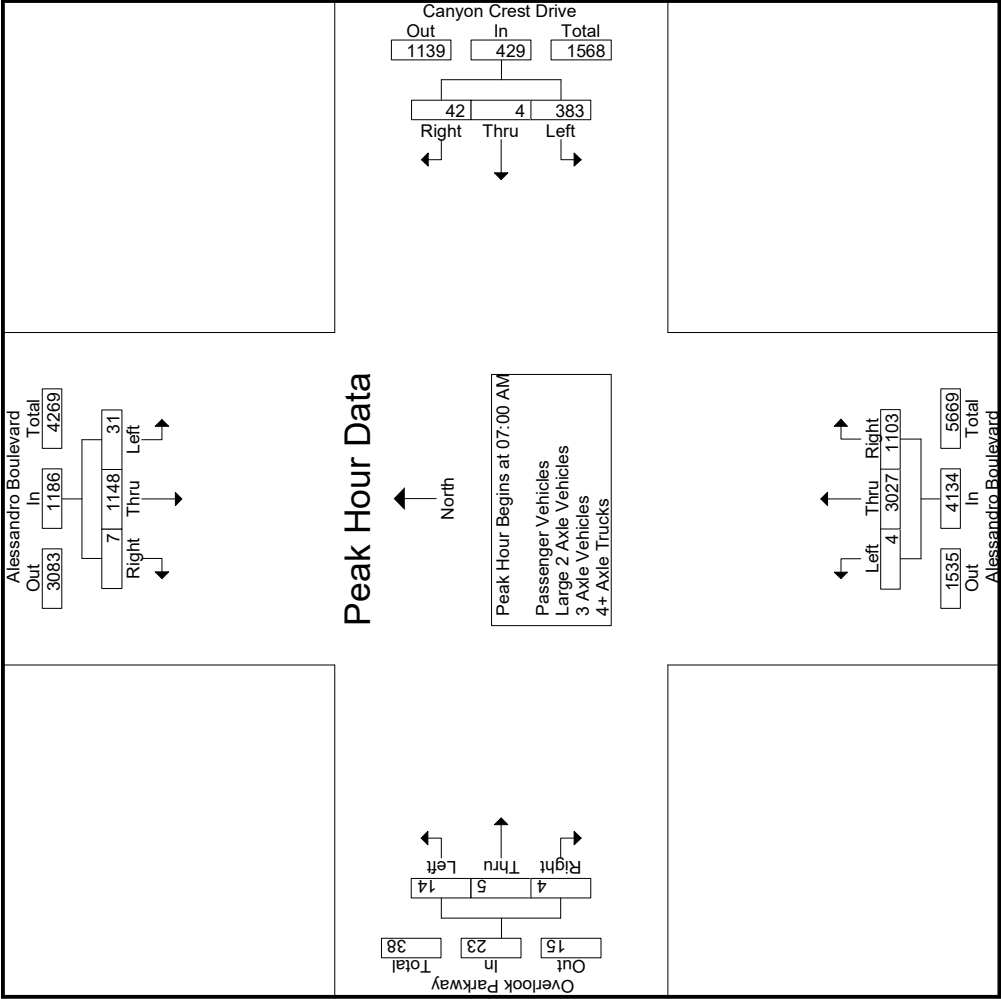
City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

File Name : 01_RIV_Alessandro_Overlook AM
Site Code : 05119542
Start Date : 8/20/2019
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Alessandro Boulevard Southbound					Canyon Crest Drive Westbound					Alessandro Boulevard Northbound					Overlook Parkway Eastbound					Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
07:00 AM	4	272	0	0	276	111	2	13	2	126	0	774	272	74	1046	4	3	2	2	9	78	1457	1535
07:15 AM	6	314	0	0	320	117	2	10	6	129	1	725	301	67	1027	5	0	1	1	6	74	1482	1556
07:30 AM	10	254	3	0	267	80	0	13	2	93	3	811	260	60	1074	3	0	0	0	3	62	1437	1499
07:45 AM	11	308	4	0	323	75	0	6	3	81	0	717	270	49	987	2	2	1	1	5	53	1396	1449
Total	31	1148	7	0	1186	383	4	42	13	429	4	3027	1103	250	4134	14	5	4	4	23	267	5772	6039
08:00 AM	12	224	0	0	236	62	0	22	10	84	0	603	220	28	823	4	5	2	2	11	40	1154	1194
08:15 AM	8	210	0	0	218	67	0	18	2	85	2	627	221	14	850	2	4	1	1	7	17	1160	1177
08:30 AM	8	234	3	1	245	58	0	22	11	80	2	551	154	19	707	1	2	0	0	3	31	1035	1066
08:45 AM	5	242	1	0	248	66	3	9	6	78	3	502	158	47	663	4	2	3	2	9	55	998	1053
Total	33	910	4	1	947	253	3	71	29	327	7	2283	753	108	3043	11	13	6	5	30	143	4347	4490
Grand Total	64	2058	11	1	2133	636	7	113	42	756	11	5310	1856	358	7177	25	18	10	9	53	410	10119	10529
Apprch %	3	96.5	0.5			84.1	0.9	14.9			0.2	74	25.9			47.2	34	18.9					
Total %	0.6	20.3	0.1		21.1	6.3	0.1	1.1		7.5	0.1	52.5	18.3		70.9	0.2	0.2	0.1		0.5	3.9	96.1	
Passenger Vehicles	53	2017	10		2081	620	7	106		774	9	5220	1840		7422	25	17	10		61	0	0	10338
% Passenger Vehicles	82.8	98	90.9	100	97.5	97.5	100	93.8	97.6	97	81.8	98.3	99.1	98.6	98.5	100	94.4	100	100	98.4	0	0	98.2
Large 2 Axle Vehicles	11	36	1		48	15	0	7		23	1	85	14		104	0	1	0		1	0	0	176
% Large 2 Axle Vehicles	17.2	1.7	9.1	0	2.2	2.4	0	6.2	2.4	2.9	9.1	1.6	0.8	1.1	1.4	0	5.6	0	0	1.6	0	0	1.7
3 Axle Vehicles	0	3	0		3	0	0	0		0	0	2	1		3	0	0	0		0	0	0	6
% 3 Axle Vehicles	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0.1
4+ Axle Trucks	0	2	0		2	1	0	0		1	1	3	1		6	0	0	0		0	0	0	9
% 4+ Axle Trucks	0	0.1	0	0	0.1	0.2	0	0	0	0.1	9.1	0.1	0.1	0.3	0.1	0	0	0	0	0	0	0	0.1

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	4	272	0	276	111	2	13	126	0	774	272	1046	4	3	2	9	1457
07:15 AM	6	314	0	320	117	2	10	129	1	725	301	1027	5	0	1	6	1482
07:30 AM	10	254	3	267	80	0	13	93	3	811	260	1074	3	0	0	3	1437
07:45 AM	11	308	4	323	75	0	6	81	0	717	270	987	2	2	1	5	1396
Total Volume	31	1148	7	1186	383	4	42	429	4	3027	1103	4134	14	5	4	23	5772
% App. Total	2.6	96.8	0.6		89.3	0.9	9.8		0.1	73.2	26.7		60.9	21.7	17.4		
PHF	.705	.914	.438	.918	.818	.500	.808	.831	.333	.933	.916	.962	.700	.417	.500	.639	.974



City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

File Name : 01_RIV_Alessandro_Overlook AM
Site Code : 05119542
Start Date : 8/20/2019
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	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				08:00 AM				
+0 mins.	4	272	0	276	111	2	13	126	0	774	272	1046	4	5	2	11	
+15 mins.	6	314	0	320	117	2	10	129	1	725	301	1027	2	4	1	7	
+30 mins.	10	254	3	267	80	0	13	93	3	811	260	1074	1	2	0	3	
+45 mins.	11	308	4	323	75	0	6	81	0	717	270	987	4	2	3	9	
Total Volume	31	1148	7	1186	383	4	42	429	4	3027	1103	4134	11	13	6	30	
% App. Total	2.6	96.8	0.6		89.3	0.9	9.8		0.1	73.2	26.7		36.7	43.3	20		
PHF	.705	.914	.438	.918	.818	.500	.808	.831	.333	.933	.916	.962	.688	.650	.500	.682	

City of Riverside
N/S: Alessandro Boulevard
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Weather: Clear

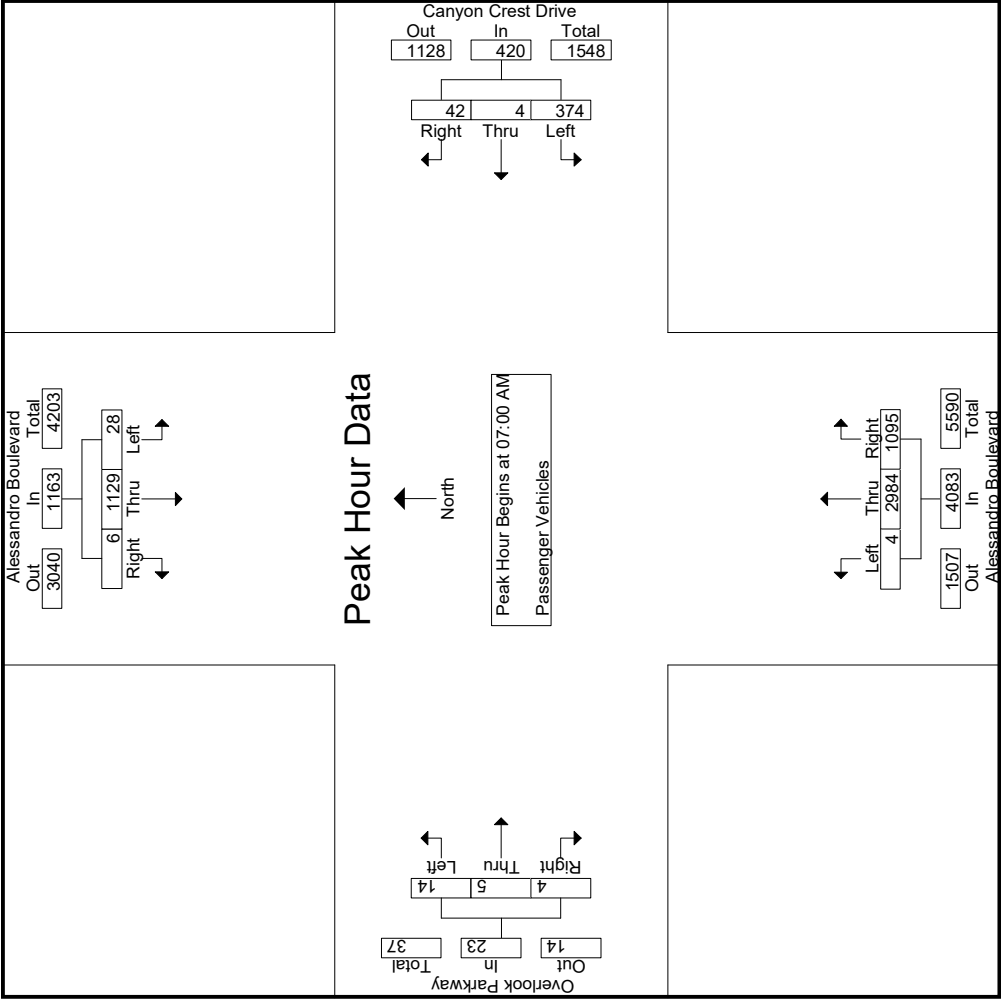
File Name : 01_RIV_Alessandro_Overlook AM
Site Code : 05119542
Start Date : 8/20/2019
Page No : 1

Groups Printed- Passenger Vehicles

	Alessandro Boulevard Southbound					Canyon Crest Drive Westbound					Alessandro Boulevard Northbound					Overlook Parkway Eastbound					Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	3	263	0	0	266	109	2	13	2	124	0	763	267	73	1030	4	3	2	2	9	77	1429	1506
07:15 AM	6	311	0	0	317	113	2	10	6	125	1	711	299	67	1011	5	0	1	1	6	74	1459	1533
07:30 AM	10	253	3	0	266	77	0	13	2	90	3	803	260	60	1066	3	0	0	0	3	62	1425	1487
07:45 AM	9	302	3	0	314	75	0	6	3	81	0	707	269	48	976	2	2	1	1	5	52	1376	1428
Total	28	1129	6	0	1163	374	4	42	13	420	4	2984	1095	248	4083	14	5	4	4	23	265	5689	5954
08:00 AM	5	215	0	0	220	62	0	19	9	81	0	595	220	28	815	4	4	2	2	10	39	1126	1165
08:15 AM	7	208	0	0	215	67	0	16	2	83	2	610	218	14	830	2	4	1	1	7	17	1135	1152
08:30 AM	8	228	3	1	239	56	0	20	11	76	2	538	152	18	692	1	2	0	0	3	30	1010	1040
08:45 AM	5	237	1	0	243	61	3	9	6	73	1	493	155	45	649	4	2	3	2	9	53	974	1027
Total	25	888	4	1	917	246	3	64	28	313	5	2236	745	105	2986	11	12	6	5	29	139	4245	4384
Grand Total	53	2017	10	1	2080	620	7	106	41	733	9	5220	1840	353	7069	25	17	10	9	52	404	9934	10338
Apprch %	2.5	97	0.5			84.6	1	14.5			0.1	73.8	26			48.1	32.7	19.2					
Total %	0.5	20.3	0.1		20.9	6.2	0.1	1.1		7.4	0.1	52.5	18.5		71.2	0.3	0.2	0.1		0.5	3.9	96.1	

3.1-4

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	3	263	0	266	109	2	13	124	0	763	267	1030	4	3	2	9	1429
07:15 AM	6	311	0	317	113	2	10	125	1	711	299	1011	5	0	1	6	1459
07:30 AM	10	253	3	266	77	0	13	90	3	803	260	1066	3	0	0	3	1425
07:45 AM	9	302	3	314	75	0	6	81	0	707	269	976	2	2	1	5	1376
Total Volume	28	1129	6	1163	374	4	42	420	4	2984	1095	4083	14	5	4	23	5689
% App. Total	2.4	97.1	0.5		89	1	10		0.1	73.1	26.8		60.9	21.7	17.4		
PHF	.700	.908	.500	.917	.827	.500	.808	.840	.333	.929	.916	.958	.700	.417	.500	.639	.975



City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

File Name : 01_RIV_Alessandro_Overlook AM
Site Code : 05119542
Start Date : 8/20/2019
Page No : 3

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	3	263	0	266	109	2	13	124	0	763	267	1030	4	3	2	9	
+15 mins.	6	311	0	317	113	2	10	125	1	711	299	1011	5	0	1	6	
+30 mins.	10	253	3	266	77	0	13	90	3	803	260	1066	3	0	0	3	
+45 mins.	9	302	3	314	75	0	6	81	0	707	269	976	2	2	1	5	
Total Volume	28	1129	6	1163	374	4	42	420	4	2984	1095	4083	14	5	4	23	
% App. Total	2.4	97.1	0.5		89	1	10		0.1	73.1	26.8		60.9	21.7	17.4		
PHF	.700	.908	.500	.917	.827	.500	.808	.840	.333	.929	.916	.958	.700	.417	.500	.639	

City of Riverside
N/S: Alessandro Boulevard
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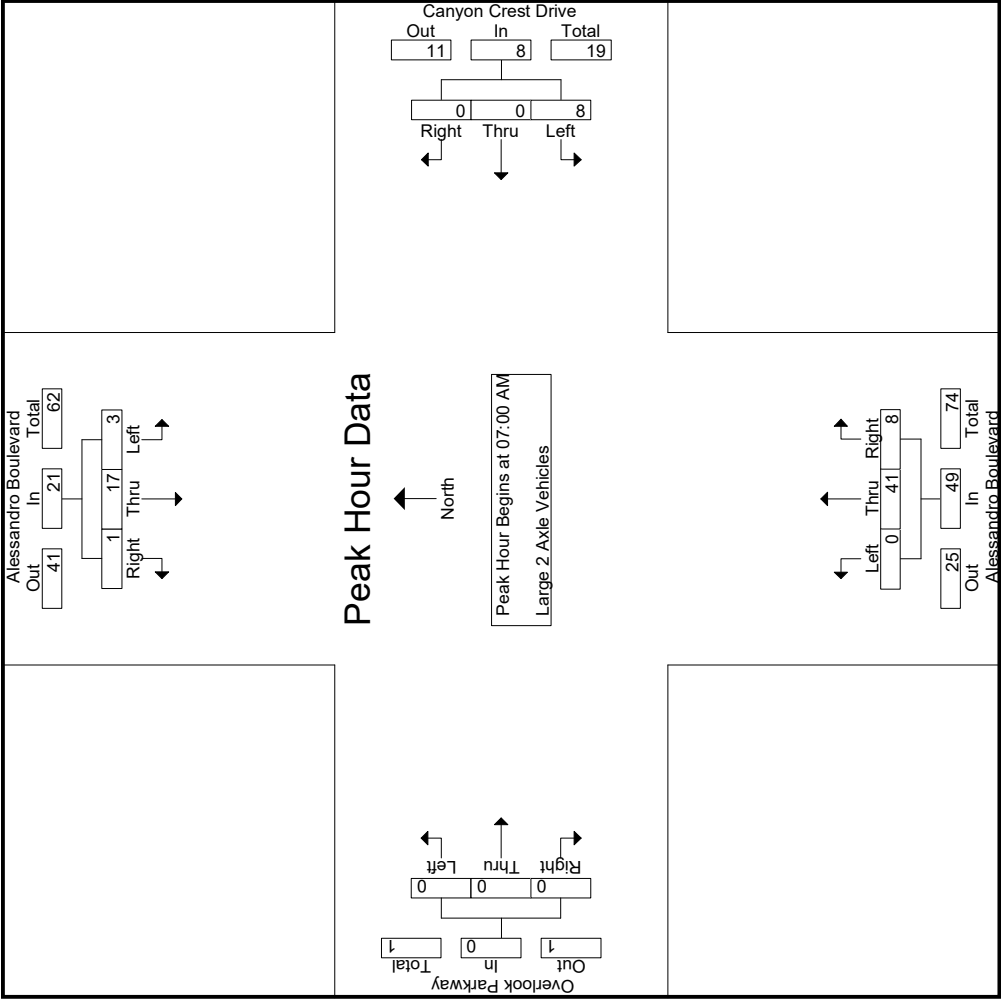
File Name : 01_RIV_Alessandro_Overlook AM
Site Code : 05119542
Start Date : 8/20/2019
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	Alessandro Boulevard Southbound					Canyon Crest Drive Westbound					Alessandro Boulevard Northbound					Overlook Parkway Eastbound					Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
07:00 AM	1	8	0	0	9	2	0	0	0	2	0	11	5	1	16	0	0	0	0	0	1	27	28
07:15 AM	0	2	0	0	2	3	0	0	0	3	0	13	2	0	15	0	0	0	0	0	0	20	20
07:30 AM	0	1	0	0	1	3	0	0	0	3	0	7	0	0	7	0	0	0	0	0	0	11	11
07:45 AM	2	6	1	0	9	0	0	0	0	0	0	10	1	1	11	0	0	0	0	0	1	20	21
Total	3	17	1	0	21	8	0	0	0	8	0	41	8	2	49	0	0	0	0	0	2	78	80
08:00 AM	7	7	0	0	14	0	0	3	1	3	0	7	0	0	7	0	1	0	0	1	1	25	26
08:15 AM	1	2	0	0	3	0	0	2	0	2	0	17	2	0	19	0	0	0	0	0	0	24	24
08:30 AM	0	5	0	0	5	2	0	2	0	4	0	12	2	1	14	0	0	0	0	0	1	23	24
08:45 AM	0	5	0	0	5	5	0	0	0	5	1	8	2	1	11	0	0	0	0	0	1	21	22
Total	8	19	0	0	27	7	0	7	1	14	1	44	6	2	51	0	1	0	0	1	3	93	96
Grand Total	11	36	1	0	48	15	0	7	1	22	1	85	14	4	100	0	1	0	0	1	5	171	176
Apprch %	22.9	75	2.1			68.2	0	31.8			1	85	14			0	100	0					
Total %	6.4	21.1	0.6		28.1	8.8	0	4.1		12.9	0.6	49.7	8.2		58.5	0	0.6	0		0.6	2.8	97.2	

3.1-7

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	8	0	9	2	0	0	2	0	11	5	16	0	0	0	0	27
07:15 AM	0	2	0	2	3	0	0	3	0	13	2	15	0	0	0	0	20
07:30 AM	0	1	0	1	3	0	0	3	0	7	0	7	0	0	0	0	11
07:45 AM	2	6	1	9	0	0	0	0	0	10	1	11	0	0	0	0	20
Total Volume	3	17	1	21	8	0	0	8	0	41	8	49	0	0	0	0	78
% App. Total	14.3	81	4.8		100	0	0		0	83.7	16.3		0	0	0		
PHF	.375	.531	.250	.583	.667	.000	.000	.667	.000	.788	.400	.766	.000	.000	.000	.000	.722



City of Riverside
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	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	1	8	0	9	2	0	0	2	0	11	5	16	0	0	0	0	
+15 mins.	0	2	0	2	3	0	0	3	0	13	2	15	0	0	0	0	
+30 mins.	0	1	0	1	3	0	0	3	0	7	0	7	0	0	0	0	
+45 mins.	2	6	1	9	0	0	0	0	0	10	1	11	0	0	0	0	
Total Volume	3	17	1	21	8	0	0	8	0	41	8	49	0	0	0	0	
% App. Total	14.3	81	4.8		100	0	0		0	83.7	16.3		0	0	0		
PHF	.375	.531	.250	.583	.667	.000	.000	.667	.000	.788	.400	.766	.000	.000	.000	.000	

City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

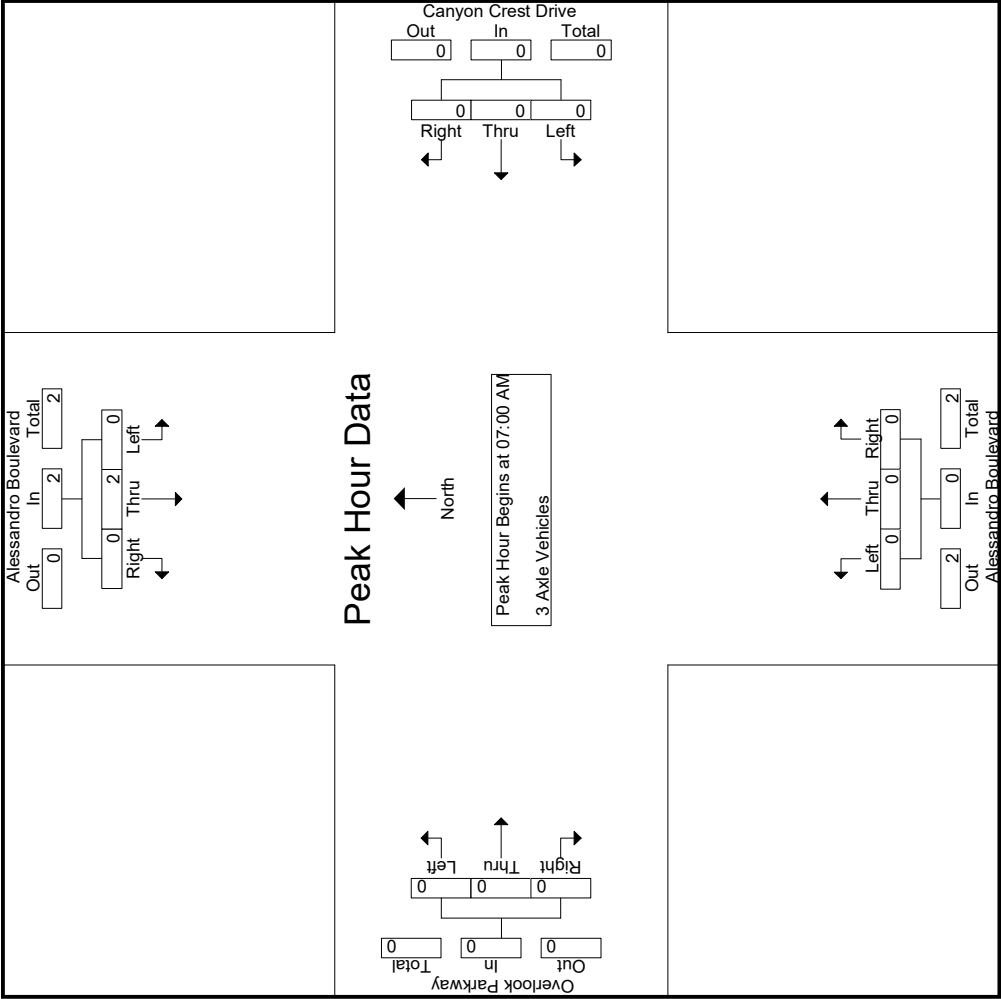
File Name : 01_RIV_Alessandro_Overlook AM
Site Code : 05119542
Start Date : 8/20/2019
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Groups Printed- 3 Axle Vehicles

	Alessandro Boulevard Southbound					Canyon Crest Drive Westbound					Alessandro Boulevard Northbound					Overlook Parkway Eastbound					Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
07:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
07:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
08:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1
Total	0	1	0	0	1	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	4	4
Grand Total	0	3	0	0	3	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	6	6
Apprch %	0	100	0			0	0	0			0	66.7	33.3			0	0	0			0		
Total %	0	50	0		50	0	0	0		0	0	33.3	16.7		50	0	0	0		0	0	100	

3-1-10

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500



City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

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	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

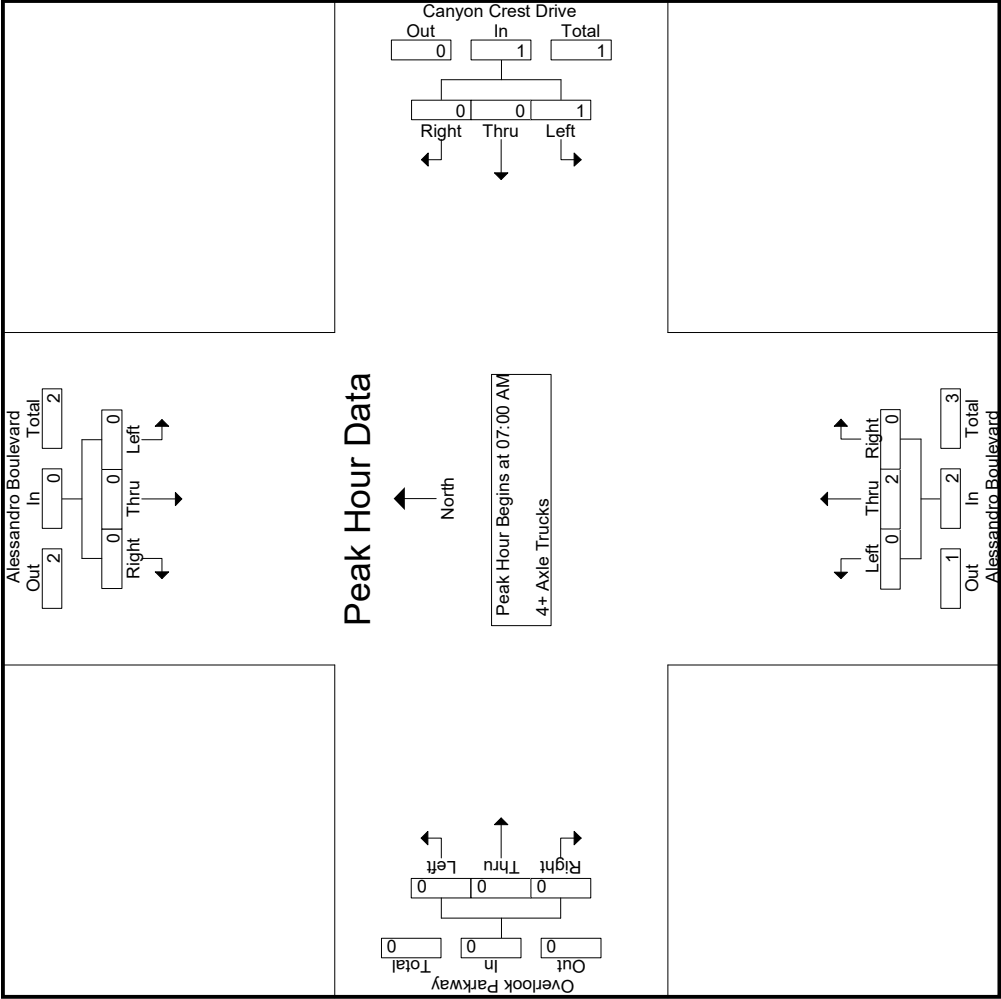
File Name : 01_RIV_Alessandro_Overlook AM
Site Code : 05119542
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Groups Printed- 4+ Axle Trucks

	Alessandro Boulevard Southbound					Canyon Crest Drive Westbound					Alessandro Boulevard Northbound					Overlook Parkway Eastbound					Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	2	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	3	3
08:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	1	2	0	0	0	0	0	1	2	3
Total	0	2	0	0	2	0	0	0	0	0	1	1	1	1	3	0	0	0	0	0	1	5	6
Grand Total	0	2	0	0	2	1	0	0	0	1	1	3	1	1	5	0	0	0	0	0	1	8	9
Apprch %	0	100	0			100	0	0			20	60	20			0	0	0					
Total %	0	25	0		25	12.5	0	0		12.5	12.5	37.5	12.5		62.5	0	0	0		0	11.1	88.9	

3.1-13

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	2	0	2	0	0	0	0	3
% App. Total	0	0	0		100	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.500	.000	.500	.000	.000	.000	.000	.375



City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

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	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	07:00 AM				07:00 AM				07:00 AM				07:00 AM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	2	0	2	0	0	0	0	0
% App. Total	0	0	0		100	0	0		0	100	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.500	.000	.500	.000	.000	.000	.000	.000

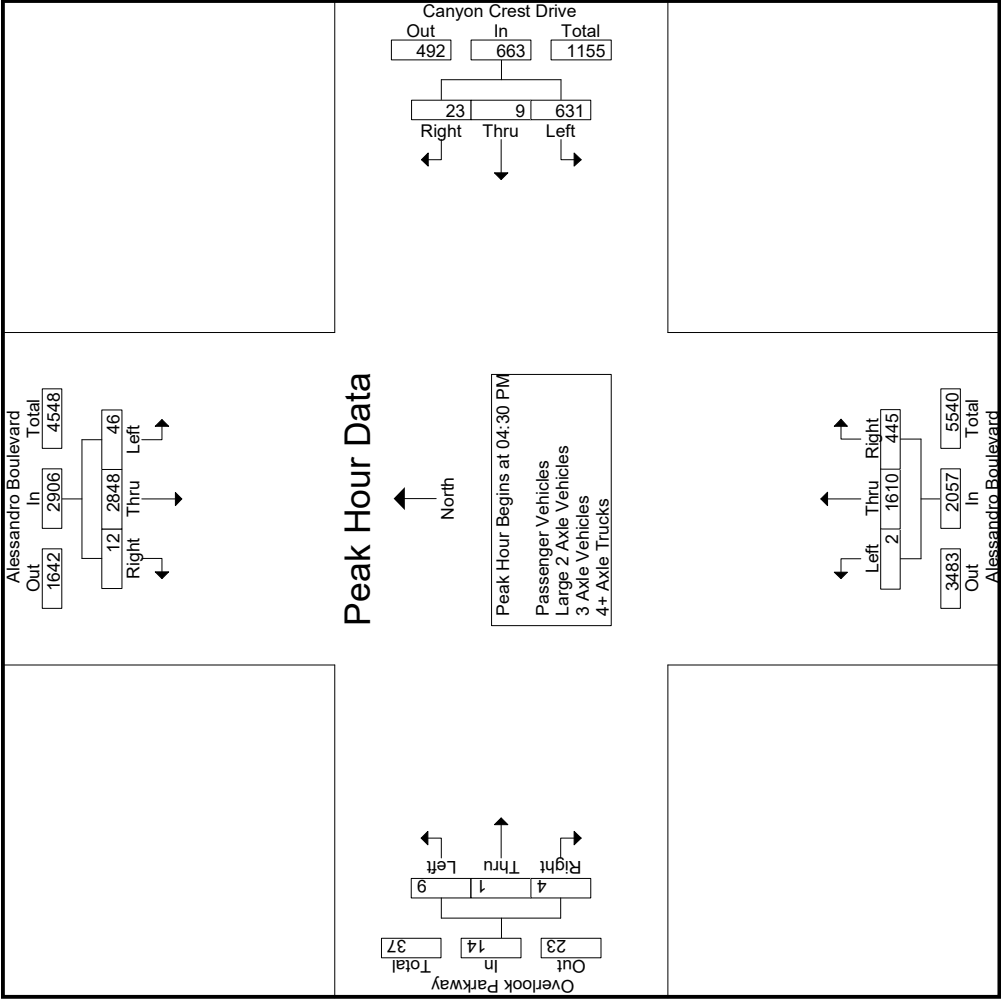
City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

File Name : 01_RIV_Alessandro_Overlook PM
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Groups Printed- Passenger Vehicles - Large 2 Axle Vehicles - 3 Axle Vehicles - 4+ Axle Trucks

	Alessandro Boulevard Southbound					Canyon Crest Drive Westbound					Alessandro Boulevard Northbound					Overlook Parkway Eastbound					Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	14	544	1	0	559	146	2	10	6	158	2	417	118	45	537	1	1	0	0	2	51	1256	1307
04:15 PM	10	774	2	1	786	151	0	8	7	159	0	429	112	36	541	3	1	1	1	5	45	1491	1536
04:30 PM	12	704	5	0	721	140	0	7	4	147	0	418	97	20	515	2	0	0	0	2	24	1385	1409
04:45 PM	11	658	3	0	672	165	1	6	4	172	1	381	114	48	496	2	0	0	0	2	52	1342	1394
Total	47	2680	11	1	2738	602	3	31	21	636	3	1645	441	149	2089	8	2	1	1	11	172	5474	5646
05:00 PM	7	725	1	0	733	167	3	8	7	178	1	367	116	24	484	3	1	1	1	5	32	1400	1432
05:15 PM	16	761	3	0	780	159	5	2	0	166	0	444	118	53	562	2	0	3	3	5	56	1513	1569
05:30 PM	12	643	2	0	657	186	2	16	11	204	0	396	100	48	496	1	0	1	1	2	60	1359	1419
05:45 PM	22	733	1	0	756	128	0	15	11	143	1	338	84	34	423	1	1	1	0	3	45	1325	1370
Total	57	2862	7	0	2926	640	10	41	29	691	2	1545	418	159	1965	7	2	6	5	15	193	5597	5790
Grand Total	104	5542	18	1	5664	1242	13	72	50	1327	5	3190	859	308	4054	15	4	7	6	26	365	11071	11436
Apprch %	1.8	97.8	0.3			93.6	1	5.4			0.1	78.7	21.2			57.7	15.4	26.9					
Total %	0.9	50.1	0.2		51.2	11.2	0.1	0.7		12	0	28.8	7.8		36.6	0.1	0	0.1		0.2	3.2	96.8	
Passenger Vehicles	104	5492	18		5615	1239	13	72		1374	5	3161	852		4323	15	4	7		32	0	0	11344
% Passenger Vehicles	100	99.1	100	100	99.1	99.8	100	100	100	99.8	100	99.1	99.2	99	99.1	100	100	100	100	100	0	0	99.2
Large 2 Axle Vehicles	0	45	0		45	3	0	0		3	0	29	7		39	0	0	0		0	0	0	87
% Large 2 Axle Vehicles	0	0.8	0	0	0.8	0.2	0	0	0	0.2	0	0.9	0.8	1	0.9	0	0	0	0	0	0	0	0.8
3 Axle Vehicles	0	3	0		3	0	0	0		0	0	0	0		0	0	0	0		0	0	0	3
% 3 Axle Vehicles	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4+ Axle Trucks	0	2	0		2	0	0	0		0	0	0	0		0	0	0	0		0	0	0	2
% 4+ Axle Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	12	704	5	721	140	0	7	147	0	418	97	515	2	0	0	2	1385
04:45 PM	11	658	3	672	165	1	6	172	1	381	114	496	2	0	0	2	1342
05:00 PM	7	725	1	733	167	3	8	178	1	367	116	484	3	1	1	5	1400
05:15 PM	16	761	3	780	159	5	2	166	0	444	118	562	2	0	3	5	1513
Total Volume	46	2848	12	2906	631	9	23	663	2	1610	445	2057	9	1	4	14	5640
% App. Total	1.6	98	0.4		95.2	1.4	3.5		0.1	78.3	21.6		64.3	7.1	28.6		
PHF	.719	.936	.600	.931	.945	.450	.719	.931	.500	.907	.943	.915	.750	.250	.333	.700	.932



Counts Unlimited
PO Box 1178
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(951) 268-6268

City of Riverside
N/S: Alessandro Boulevard
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Weather: Clear

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	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	05:00 PM				04:45 PM				04:00 PM				05:00 PM				
+0 mins.	7	725	1	733	165	1	6	172	2	417	118	537	3	1	1	5	
+15 mins.	16	761	3	780	167	3	8	178	0	429	112	541	2	0	3	5	
+30 mins.	12	643	2	657	159	5	2	166	0	418	97	515	1	0	1	2	
+45 mins.	22	733	1	756	186	2	16	204	1	381	114	496	1	1	1	3	
Total Volume	57	2862	7	2926	677	11	32	720	3	1645	441	2089	7	2	6	15	
% App. Total	1.9	97.8	0.2		94	1.5	4.4		0.1	78.7	21.1		46.7	13.3	40		
PHF	.648	.940	.583	.938	.910	.550	.500	.882	.375	.959	.934	.965	.583	.500	.500	.750	

City of Riverside
N/S: Alessandro Boulevard
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Weather: Clear

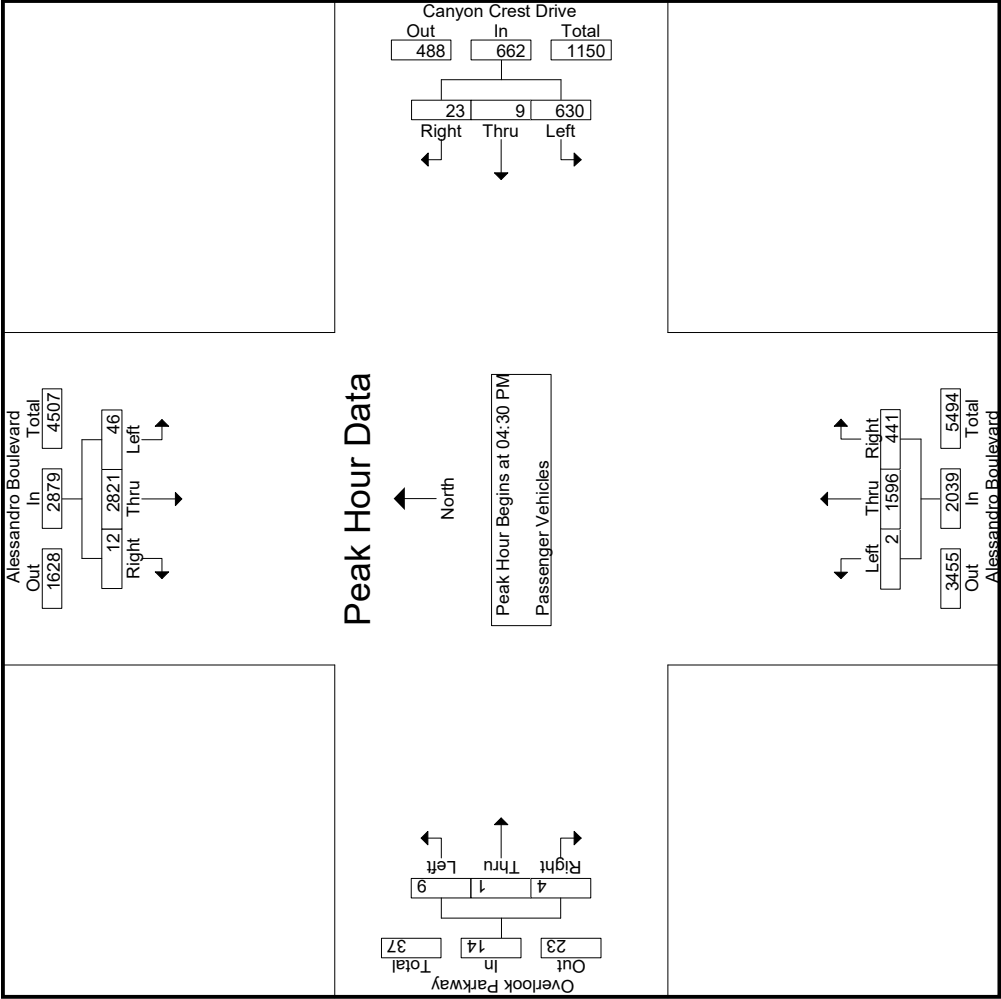
File Name : 01_RIV_Alessandro_Overlook PM
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Groups Printed- Passenger Vehicles

	Alessandro Boulevard Southbound					Canyon Crest Drive Westbound					Alessandro Boulevard Northbound					Overlook Parkway Eastbound					Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	14	541	1	0	556	146	2	10	6	158	2	411	116	43	529	1	1	0	0	2	49	1245	1294
04:15 PM	10	763	2	1	775	149	0	8	7	157	0	425	111	36	536	3	1	1	1	5	45	1473	1518
04:30 PM	12	695	5	0	712	139	0	7	4	146	0	412	95	19	507	2	0	0	0	2	23	1367	1390
04:45 PM	11	652	3	0	666	165	1	6	4	172	1	377	113	48	491	2	0	0	0	2	52	1331	1383
Total	47	2651	11	1	2709	599	3	31	21	633	3	1625	435	146	2063	8	2	1	1	11	169	5416	5585
05:00 PM	7	718	1	0	726	167	3	8	7	178	1	365	115	24	481	3	1	1	1	5	32	1390	1422
05:15 PM	16	756	3	0	775	159	5	2	0	166	0	442	118	53	560	2	0	3	3	5	56	1506	1562
05:30 PM	12	638	2	0	652	186	2	16	11	204	0	393	100	48	493	1	0	1	1	2	60	1351	1411
05:45 PM	22	729	1	0	752	128	0	15	11	143	1	336	84	34	421	1	1	1	0	3	45	1319	1364
Total	57	2841	7	0	2905	640	10	41	29	691	2	1536	417	159	1955	7	2	6	5	15	193	5566	5759
Grand Total	104	5492	18	1	5614	1239	13	72	50	1324	5	3161	852	305	4018	15	4	7	6	26	362	10982	11344
Apprch %	1.9	97.8	0.3			93.6	1	5.4			0.1	78.7	21.2			57.7	15.4	26.9					
Total %	0.9	50	0.2		51.1	11.3	0.1	0.7		12.1	0	28.8	7.8		36.6	0.1	0	0.1		0.2	3.2	96.8	

3.1-19

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	12	695	5	712	139	0	7	146	0	412	95	507	2	0	0	2	1367
04:45 PM	11	652	3	666	165	1	6	172	1	377	113	491	2	0	0	2	1331
05:00 PM	7	718	1	726	167	3	8	178	1	365	115	481	3	1	1	5	1390
05:15 PM	16	756	3	775	159	5	2	166	0	442	118	560	2	0	3	5	1506
Total Volume	46	2821	12	2879	630	9	23	662	2	1596	441	2039	9	1	4	14	5594
% App. Total	1.6	98	0.4		95.2	1.4	3.5		0.1	78.3	21.6		64.3	7.1	28.6		
PHF	.719	.933	.600	.929	.943	.450	.719	.930	.500	.903	.934	.910	.750	.250	.333	.700	.929



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	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	12	695	5	712	139	0	7	146	0	412	95	507	2	0	0	2	
+15 mins.	11	652	3	666	165	1	6	172	1	377	113	491	2	0	0	2	
+30 mins.	7	718	1	726	167	3	8	178	1	365	115	481	3	1	1	5	
+45 mins.	16	756	3	775	159	5	2	166	0	442	118	560	2	0	3	5	
Total Volume	46	2821	12	2879	630	9	23	662	2	1596	441	2039	9	1	4	14	
% App. Total	1.6	98	0.4		95.2	1.4	3.5		0.1	78.3	21.6		64.3	7.1	28.6		
PHF	.719	.933	.600	.929	.943	.450	.719	.930	.500	.903	.934	.910	.750	.250	.333	.700	

3-1-21

City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

File Name : 01_RIV_Alessandro_Overlook PM
Site Code : 05119542
Start Date : 8/20/2019
Page No : 1

Groups Printed- Large 2 Axle Vehicles

	Alessandro Boulevard Southbound					Canyon Crest Drive Westbound					Alessandro Boulevard Northbound					Overlook Parkway Eastbound					Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	0	2	0	0	2	0	0	0	0	0	0	6	2	2	8	0	0	0	0	0	2	10	12
04:15 PM	0	11	0	0	11	2	0	0	0	2	0	4	1	0	5	0	0	0	0	0	0	18	18
04:30 PM	0	8	0	0	8	1	0	0	0	1	0	6	2	1	8	0	0	0	0	0	1	17	18
04:45 PM	0	5	0	0	5	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	10	10
Total	0	26	0	0	26	3	0	0	0	3	0	20	6	3	26	0	0	0	0	0	3	55	58
05:00 PM	0	6	0	0	6	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	9	9
05:15 PM	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	7	7
05:30 PM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	8	8
05:45 PM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	5	5
Total	0	19	0	0	19	0	0	0	0	0	0	9	1	0	10	0	0	0	0	0	0	29	29
Grand Total	0	45	0	0	45	3	0	0	0	3	0	29	7	3	36	0	0	0	0	0	3	84	87
Apprch %	0	100	0			100	0	0			0	80.6	19.4			0	0	0					
Total %	0	53.6	0		53.6	3.6	0	0		3.6	0	34.5	8.3		42.9	0	0	0		0	3.4	96.6	

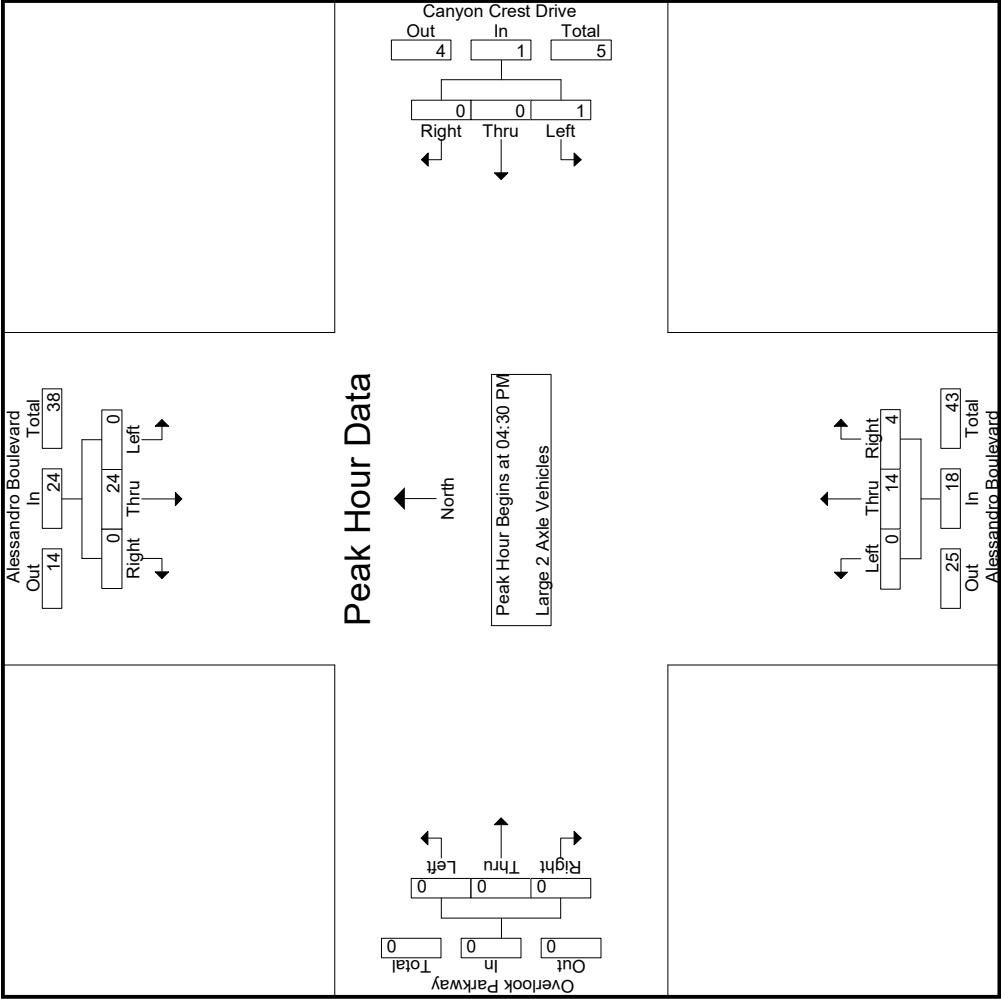
3.1-22

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	8	0	8	1	0	0	1	0	6	2	8	0	0	0	0	17
04:45 PM	0	5	0	5	0	0	0	0	0	4	1	5	0	0	0	0	10
05:00 PM	0	6	0	6	0	0	0	0	0	2	1	3	0	0	0	0	9
05:15 PM	0	5	0	5	0	0	0	0	0	2	0	2	0	0	0	0	7
Total Volume	0	24	0	24	1	0	0	1	0	14	4	18	0	0	0	0	43
% App. Total	0	100	0		100	0	0		0	77.8	22.2		0	0	0		
PHF	.000	.750	.000	.750	.250	.000	.000	.250	.000	.583	.500	.563	.000	.000	.000	.000	.632

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

File Name : 01_RIV_Alessandro_Overlook PM
Site Code : 05119542
Start Date : 8/20/2019
Page No : 2

City of Riverside
N/S Alessandro Boulevard
E/W Overlook Pkwy/Canyon Crest Drive
Weather: Clear



City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

File Name : 01_RIV_Alessandro_Overlook PM
Site Code : 05119542
Start Date : 8/20/2019
Page No : 3

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	8	0	8	1	0	0	1	0	6	2	8	0	0	0	0	
+15 mins.	0	5	0	5	0	0	0	0	0	4	1	5	0	0	0	0	
+30 mins.	0	6	0	6	0	0	0	0	0	2	1	3	0	0	0	0	
+45 mins.	0	5	0	5	0	0	0	0	0	2	0	2	0	0	0	0	
Total Volume	0	24	0	24	1	0	0	1	0	14	4	18	0	0	0	0	
% App. Total	0	100	0		100	0	0		0	77.8	22.2		0	0	0		
PHF	.000	.750	.000	.750	.250	.000	.000	.250	.000	.583	.500	.563	.000	.000	.000	.000	

City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

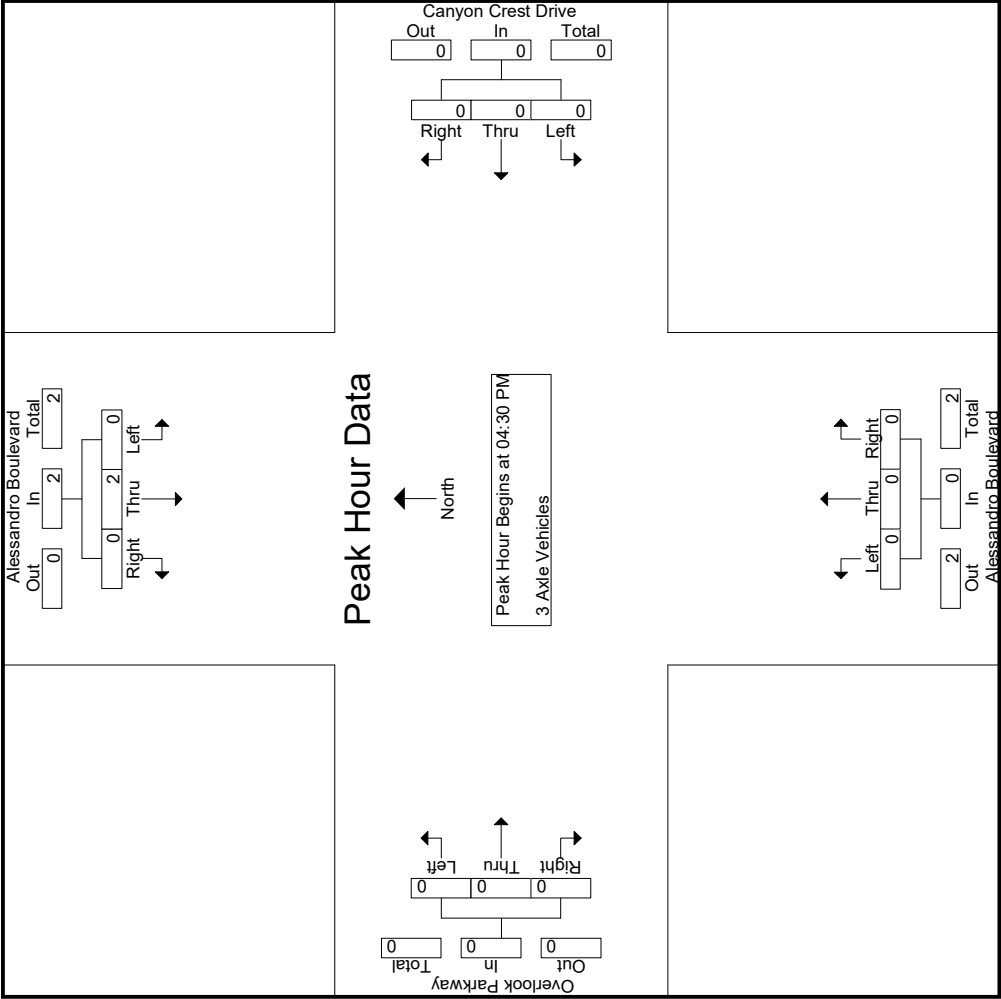
File Name : 01_RIV_Alessandro_Overlook PM
Site Code : 05119542
Start Date : 8/20/2019
Page No : 1

Groups Printed- 3 Axle Vehicles

	Alessandro Boulevard Southbound					Canyon Crest Drive Westbound					Alessandro Boulevard Northbound					Overlook Parkway Eastbound					Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Grand Total	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Apprch %	0	100	0			0	0	0			0	0	0			0	0	0			0		
Total %	0	100	0		100	0	0	0		0	0	0	0		0	0	0	0		0	0	100	

3-1-25

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500



City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

File Name : 01_RIV_Alessandro_Overlook PM
Site Code : 05119542
Start Date : 8/20/2019
Page No : 3

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

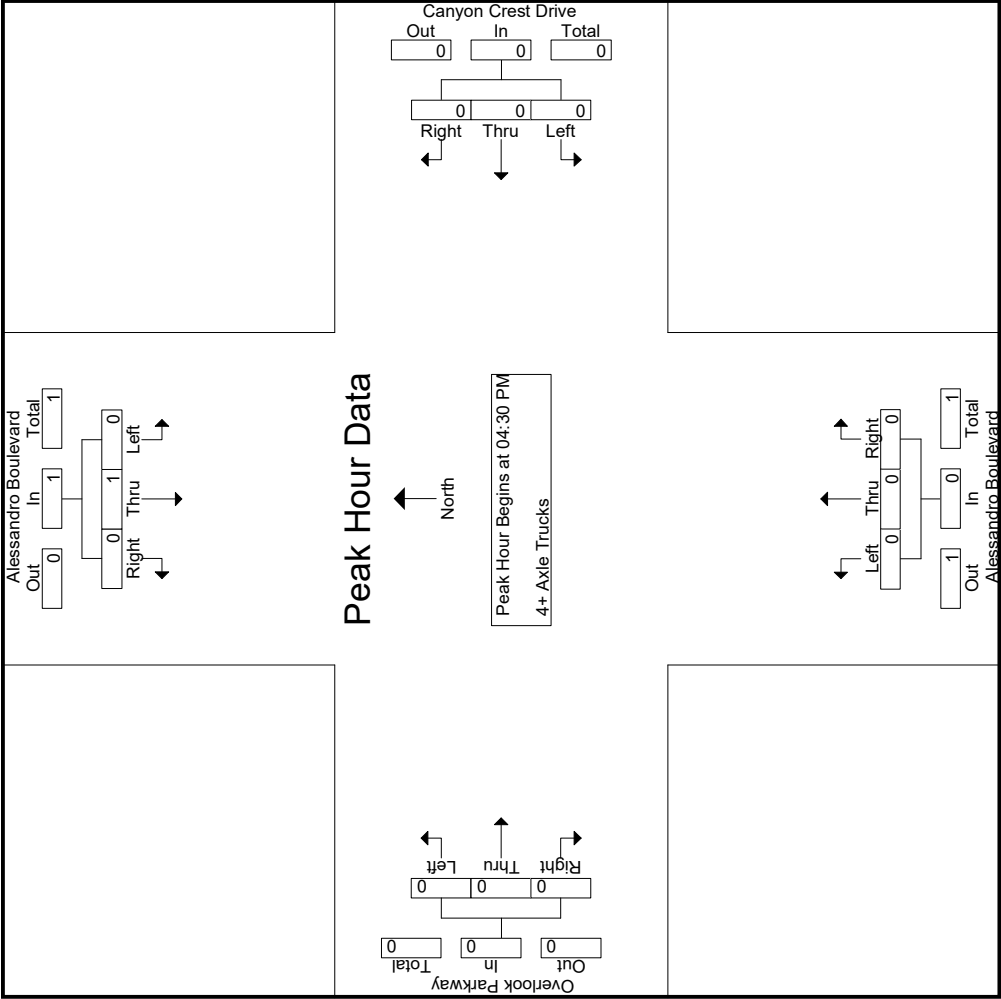
File Name : 01_RIV_Alessandro_Overlook PM
Site Code : 05119542
Start Date : 8/20/2019
Page No : 1

Groups Printed- 4+ Axle Trucks

	Alessandro Boulevard Southbound					Canyon Crest Drive Westbound					Alessandro Boulevard Northbound					Overlook Parkway Eastbound					Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Grand Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Apprch %	0	100	0			0	0	0			0	0	0			0	0	0			0		
Total %	0	100	0		100	0	0	0		0	0	0	0		0	0	0	0		0	0	100	

3.1-28

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250



City of Riverside
N/S: Alessandro Boulevard
E/W: Overlook Pkwy/Canyon Crest Drive
Weather: Clear

File Name : 01_RIV_Alessandro_Overlook PM
Site Code : 05119542
Start Date : 8/20/2019
Page No : 3

	Alessandro Boulevard Southbound				Canyon Crest Drive Westbound				Alessandro Boulevard Northbound				Overlook Parkway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Peak Hour for Each Approach Begins at:																	
	04:30 PM				04:30 PM				04:30 PM				04:30 PM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

3-1-30

Location: Riverside
 N/S: Alessandro Boulevard
 E/W: Canyon Crest Dr/Overlook Pkwy



Date: 8/20/2019
 Day: Tuesday

PEDESTRIANS

	North Leg Alessandro Boulevard	East Leg Canyon Crest Drive	South Leg Alessandro Boulevard	West Leg Overlook Parkway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	1	0	0	0	1
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL VOLUMES:	1	0	0	0	1

	North Leg Alessandro Boulevard	East Leg Canyon Crest Drive	South Leg Alessandro Boulevard	West Leg Overlook Parkway	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	1	0	0	0	1
TOTAL VOLUMES:	1	0	0	0	1

Location: Riverside
 N/S: Alessandro Boulevard
 E/W: Canyon Crest Dr/Overlook Pkwy



Date: 8/20/2019
 Day: Tuesday

BICYCLES

	Southbound Alessandro Boulevard			Westbound Canyon Crest Drive			Northbound Alessandro Boulevard			Eastbound Overlook Parkway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
TOTAL VOLUMES:	0	2	0	0	0	1	0	0	0	0	0	0	3

	Southbound Alessandro Boulevard			Westbound Canyon Crest Drive			Northbound Alessandro Boulevard			Eastbound Overlook Parkway			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
TOTAL VOLUMES:	0	0	0	0	0	0	0	2	1	0	0	0	3

National Data & Surveying Services

Intersection Turning Movement Count

Location: Glenhaven Ave & Alessandro Blvd
City: Riverside
Control: Signalized

Project ID: 20-030152-002
Date: 10/20/2020

Total

NS/EW Streets:	Glenhaven Ave				Glenhaven Ave				Alessandro Blvd				Alessandro Blvd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	1	0	1	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	0	0	0	6	0	7	0	5	88	0	0	0	309	7	0	422
7:15 AM	0	0	0	0	15	0	8	0	0	99	0	0	0	307	6	0	435
7:30 AM	0	0	0	0	15	0	15	0	3	108	0	0	0	382	11	0	534
7:45 AM	0	0	0	0	14	0	7	0	3	113	0	0	0	364	10	0	511
8:00 AM	0	0	0	0	12	0	13	0	5	116	0	0	0	257	12	0	415
8:15 AM	0	0	0	0	11	0	10	0	5	127	0	0	0	285	10	0	448
8:30 AM	0	0	0	0	10	0	2	0	3	126	0	0	0	239	8	0	388
8:45 AM	0	0	0	0	11	0	8	0	4	97	0	0	0	237	14	0	371
TOTAL VOLUMES:	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s:	0	0	0	0	94	0	70	0	28	874	0	0	0	2380	78	0	3524
PEAK HR:	07:30 AM - 08:30 AM				57.32%	0.00%	42.68%	0.00%	3.10%	96.90%	0.00%	0.00%	0.00%	96.83%	3.17%	0.00%	
PEAK HR VOL:	0	0	0	0	52	0	45	0	16	464	0	0	0	1288	43	0	TOTAL
PEAK HR FACTOR:	0.000	0.000	0.000	0.000	0.867	0.000	0.750	0.000	0.800	0.913	0.000	0.000	0.000	0.843	0.896	0.000	1908
							0.808				0.909				0.847		0.893

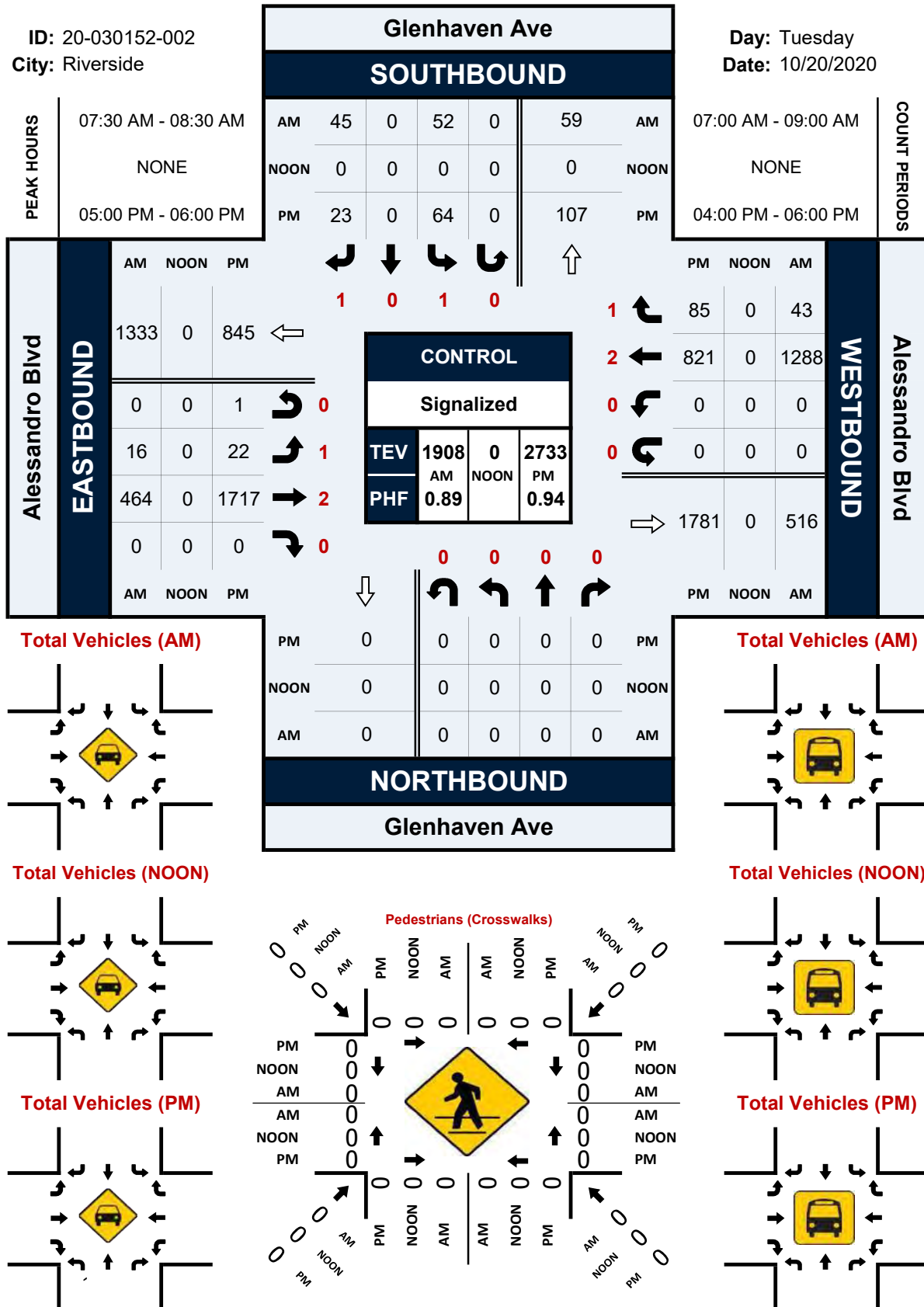
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	1	0	1	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	0	0	0	14	0	8	0	9	337	0	0	0	224	8	0	600
4:15 PM	0	0	0	0	14	0	3	0	4	376	0	0	0	283	15	0	695
4:30 PM	0	0	0	0	13	0	6	0	9	427	0	0	0	242	17	0	714
4:45 PM	0	0	0	0	10	0	3	0	5	362	0	0	0	176	16	0	572
5:00 PM	0	0	0	0	9	0	6	0	2	433	0	0	0	208	20	0	678
5:15 PM	0	0	0	0	21	0	5	0	6	477	0	1	0	195	23	0	728
5:30 PM	0	0	0	0	18	0	7	0	9	415	0	0	0	208	14	0	671
5:45 PM	0	0	0	0	16	0	5	0	5	392	0	0	0	210	28	0	656
TOTAL VOLUMES:	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s:	0	0	0	0	115	0	43	0	49	3219	0	1	0	1746	141	0	5314
PEAK HR:	05:00 PM - 06:00 PM				72.78%	0.00%	27.22%	0.00%	1.50%	98.47%	0.00%	0.03%	0.00%	92.53%	7.47%	0.00%	
PEAK HR VOL:	0	0	0	0	64	0	23	0	22	1717	0	1	0	821	85	0	TOTAL
PEAK HR FACTOR:	0.000	0.000	0.000	0.000	0.762	0.000	0.821	0.000	0.611	0.900	0.000	0.250	0.000	0.977	0.759	0.000	2733
							0.837				0.899				0.952		0.939

Glenhaven Ave & Alessandro Blvd

Peak Hour Turning Movement Count

ID: 20-030152-002
City: Riverside

Day: Tuesday
Date: 10/20/2020



Historical Counts					Year 2019							
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<u>01. Canyon Crest/Overlook Pkwy & Alessandro Blvd</u>												
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	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM	14	5	4	383	4	42	31	1148	7	4	3027	1103
PM	9	1	4	631	9	23	46	2848	12	2	1610	445

2020 Counts					Year 2020							
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<u>01. Canyon Crest/Overlook Pkwy & Alessandro Blvd</u>												
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	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM	13	4	5	240	2	42	31	810	2	2	2173	525
PM	4	2	2	414	9	33	48	2668	16	6	1348	362

Covid Growth Factor												
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<u>01. Canyon Crest/Overlook Pkwy & Alessandro Blvd</u>												
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	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AM	1.077	1.250	0.800	1.596	2.000	1.000	1.000	1.417	3.500	2.000	1.393	2.101
PM	2.250	0.500	2.000	1.524	1.000	0.697	0.958	1.067	0.750	0.333	1.194	1.229

North Leg
1.313

South Leg
1.303

East Leg
1.449

West Leg
1.375

APPENDIX C

LEVEL OF SERVICE WORKSHEETS

Orangecrest Church
1: Alessandro Blvd & Glenhaven Ave

Existing Conditions
Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	23	672	1771	59	68	59
Future Volume (veh/h)	23	672	1771	59	68	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	755	1990	66	76	66
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	48	2853	2562	1249	120	107
Arrive On Green	0.03	0.80	0.72	0.72	0.07	0.07
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	26	755	1990	66	76	66
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	1.2	4.4	29.3	0.8	3.4	3.3
Cycle Q Clear(g_c), s	1.2	4.4	29.3	0.8	3.4	3.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	48	2853	2562	1249	120	107
V/C Ratio(X)	0.54	0.26	0.78	0.05	0.63	0.62
Avail Cap(c_a), veh/h	162	4132	3614	1719	508	452
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	2.0	7.3	1.9	37.4	37.4
Incr Delay (d2), s/veh	8.9	0.0	0.7	0.0	5.4	5.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	7.1	0.2	1.7	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.5	2.1	8.0	1.9	42.8	43.1
LnGrp LOS	D	A	A	A	D	D
Approach Vol, veh/h		781	2056		142	
Approach Delay, s/veh		3.6	7.8		43.0	
Approach LOS		A	A		D	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.7	65.6			72.3	10.1
Change Period (Y+Rc), s	4.5	6.2			6.2	4.5
Max Green Setting (Gmax), s	7.5	83.8			95.8	23.5
Max Q Clear Time (g_c+I1), s	3.2	31.3			6.4	5.4
Green Ext Time (p_c), s	0.0	28.1			5.8	0.4
Intersection Summary						
HCM 6th Ctrl Delay			8.4			
HCM 6th LOS			A			

Orangecrest Church
1: Alessandro Blvd & Glenhaven Ave

Existing Conditions
Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	2488	1129	117	83	30
Future Volume (veh/h)	33	2488	1129	117	83	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	2647	1201	124	88	30
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	54	2960	2704	1313	120	107
Arrive On Green	0.03	0.83	0.76	0.76	0.07	0.07
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	35	2647	1201	124	88	30
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	2.1	52.4	13.1	1.6	5.2	1.9
Cycle Q Clear(g_c), s	2.1	52.4	13.1	1.6	5.2	1.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	54	2960	2704	1313	120	107
V/C Ratio(X)	0.65	0.89	0.44	0.09	0.73	0.28
Avail Cap(c_a), veh/h	146	3185	2745	1331	381	339
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	5.9	4.6	1.7	49.2	47.6
Incr Delay (d2), s/veh	12.5	3.5	0.1	0.0	8.3	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	10.0	3.5	0.5	2.6	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	64.1	9.4	4.8	1.7	57.5	49.0
LnGrp LOS	E	A	A	A	E	D
Approach Vol, veh/h		2682	1325		118	
Approach Delay, s/veh		10.1	4.5		55.3	
Approach LOS		B	A		E	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	7.7	88.0			95.7	11.7
Change Period (Y+Rc), s	4.5	6.2			6.2	4.5
Max Green Setting (Gmax), s	8.8	83.0			96.3	23.0
Max Q Clear Time (g_c+I1), s	4.1	15.1			54.4	7.2
Green Ext Time (p_c), s	0.0	12.3			35.1	0.3
Intersection Summary						
HCM 6th Ctrl Delay			9.6			
HCM 6th LOS			A			

Orangecrest Church
1: Alessandro Blvd & Glenhaven Ave





Opening Year with Project
Timing Plan: AM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	677	1774	61	80	71
Future Volume (veh/h)	25	677	1774	61	80	71
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	761	1993	69	90	80
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	51	2831	2540	1254	136	121
Arrive On Green	0.03	0.80	0.71	0.71	0.08	0.08
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	28	761	1993	69	90	80
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	1.3	4.7	30.7	0.8	4.1	4.1
Cycle Q Clear(g_c), s	1.3	4.7	30.7	0.8	4.1	4.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	51	2831	2540	1254	136	121
V/C Ratio(X)	0.55	0.27	0.78	0.06	0.66	0.66
Avail Cap(c_a), veh/h	186	4055	3495	1680	485	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	2.2	7.8	1.9	37.9	37.9
Incr Delay (d2), s/veh	9.0	0.1	0.8	0.0	5.4	6.0
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	0.7	7.9	0.2	2.0	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.5	2.3	8.6	1.9	43.3	43.9
LnGrp LOS	D	A	A	A	D	D
Approach Vol, veh/h		789	2062		170	
Approach Delay, s/veh		3.9	8.4		43.6	
Approach LOS		A	A		D	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.9	66.5			73.4	11.0
Change Period (Y+Rc), s	4.5	6.2			6.2	4.5
Max Green Setting (Gmax), s	8.8	83.0			96.3	23.0
Max Q Clear Time (g_c+I1), s	3.3	32.7			6.7	6.1
Green Ext Time (p_c), s	0.0	27.6			5.9	0.4
Intersection Summary						
HCM 6th Ctrl Delay			9.2			
HCM 6th LOS			A			

Intersection




Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	2	21	0	0	2	79	5	0	128	0
Future Vol, veh/h	0	0	2	21	0	0	2	79	5	0	128	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	100	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	2	23	0	0	2	86	5	0	139	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	232	234	139	233	232	89	139	0	0	91	0	0
Stage 1	139	139	-	93	93	-	-	-	-	-	-	-
Stage 2	93	95	-	140	139	-	-	-	-	-	-	-
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	723	666	909	722	668	969	1445	-	-	1504	-	-
Stage 1	864	782	-	914	818	-	-	-	-	-	-	-
Stage 2	914	816	-	863	782	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	722	665	909	720	667	969	1445	-	-	1504	-	-
Mov Cap-2 Maneuver	722	665	-	720	667	-	-	-	-	-	-	-
Stage 1	863	782	-	913	817	-	-	-	-	-	-	-
Stage 2	913	815	-	861	782	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	10.2	0.2	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1445	-	-	909	720	1504	-
HCM Lane V/C Ratio	0.002	-	-	0.002	0.032	-	-
HCM Control Delay (s)	7.5	0	-	9	10.2	0	-
HCM Lane LOS	A	A	-	A	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-





Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	2	77	126	0
Future Vol, veh/h	0	2	2	77	126	0
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	2	2	84	137	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	225	137	137	0	-	0
Stage 1	137	-	-	-	-	-
Stage 2	88	-	-	-	-	-
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	763	911	1447	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	762	911	1447	-	-	-
Mov Cap-2 Maneuver	762	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	0.2		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1447	-	911	-	-	
HCM Lane V/C Ratio	0.002	-	0.002	-	-	
HCM Control Delay (s)	7.5	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	




Orangecrest Church
1: Alessandro Blvd & Glenhaven Ave

Opening Year with Project
Timing Plan: PM Peak



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	2492	1135	129	86	33
Future Volume (veh/h)	45	2492	1135	129	86	33
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	2651	1207	137	91	33
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	1.00
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	63	2955	2682	1306	124	110
Arrive On Green	0.04	0.83	0.75	0.75	0.07	0.07
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	48	2651	1207	137	91	33
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	2.9	53.4	13.6	1.8	5.4	2.1
Cycle Q Clear(g_c), s	2.9	53.4	13.6	1.8	5.4	2.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	63	2955	2682	1306	124	110
V/C Ratio(X)	0.76	0.90	0.45	0.10	0.74	0.30
Avail Cap(c_a), veh/h	145	3167	2730	1327	379	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	6.0	4.9	1.8	49.3	47.8
Incr Delay (d2), s/veh	17.1	3.7	0.1	0.0	8.2	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	10.5	3.7	0.6	2.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	68.8	9.7	5.0	1.9	57.5	49.3
LnGrp LOS	E	A	A	A	E	D
Approach Vol, veh/h		2699	1344		124	
Approach Delay, s/veh		10.7	4.7		55.3	
Approach LOS		B	A		E	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.3	87.7			96.1	12.0
Change Period (Y+Rc), s	4.5	6.2			6.2	4.5
Max Green Setting (Gmax), s	8.8	83.0			96.3	23.0
Max Q Clear Time (g_c+l1), s	4.9	15.6			55.4	7.4
Green Ext Time (p_c), s	0.0	12.5			34.4	0.3
Intersection Summary						
HCM 6th Ctrl Delay			10.1			
HCM 6th LOS			B			

Intersection												
Int Delay, s/veh		0.2										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	3	0	0	0	2	144	28	0	116	0
Future Vol, veh/h	0	0	3	0	0	0	2	144	28	0	116	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	0	0	3	0	0	0	2	157	30	0	126	0
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	302	317	126	304	302	172	126	0	0	187	0	0
Stage 1	126	126	-	176	176	-	-	-	-	-	-	-
Stage 2	176	191	-	128	126	-	-	-	-	-	-	-
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	650	599	924	648	611	872	1460	-	-	1387	-	-
Stage 1	878	792	-	826	753	-	-	-	-	-	-	-
Stage 2	826	742	-	876	792	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	649	598	924	645	610	872	1460	-	-	1387	-	-
Mov Cap-2 Maneuver	649	598	-	645	610	-	-	-	-	-	-	-
Stage 1	876	792	-	824	751	-	-	-	-	-	-	-
Stage 2	824	741	-	873	792	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	8.9		0			0.1			0			
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1460	-	-	924	-	1387	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.004	-	-	-	-				
HCM Control Delay (s)	7.5	0	-	8.9	0	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-				

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	2	142	113	0
Future Vol, veh/h	0	3	2	142	113	0
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	3	2	154	123	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	281	123	123	0	-	0
Stage 1	123	-	-	-	-	-
Stage 2	158	-	-	-	-	-
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	928	1464	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	708	928	1464	-	-	-
Mov Cap-2 Maneuver	708	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.9	0.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1464	-	928	-	-	
HCM Lane V/C Ratio	0.001	-	0.004	-	-	
HCM Control Delay (s)	7.5	0	8.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	28	761	1993	69	90	80
v/c Ratio	0.20	0.29	0.82	0.05	0.42	0.31
Control Delay	54.2	3.6	15.1	0.4	52.3	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	3.6	15.1	0.4	52.3	14.5
Queue Length 50th (ft)	18	56	462	0	58	0
Queue Length 95th (ft)	52	90	662	5	119	45
Internal Link Dist (ft)		1357	756		155	
Turn Bay Length (ft)	100			100		
Base Capacity (vph)	185	3190	2945	1538	485	492
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.24	0.68	0.04	0.19	0.16
Intersection Summary						



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	48	2651	1207	137	91	33
v/c Ratio	0.41	0.92	0.47	0.10	0.54	0.18
Control Delay	64.8	15.9	8.3	0.4	62.6	18.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.8	15.9	8.3	0.4	62.6	18.1
Queue Length 50th (ft)	36	623	195	0	67	0
Queue Length 95th (ft)	79	#1064	275	7	122	31
Internal Link Dist (ft)		1357	756		155	
Turn Bay Length (ft)	100			100		
Base Capacity (vph)	131	2878	2573	1516	343	334
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.92	0.47	0.09	0.27	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

APPENDIX D

CUMULATIVE PROJECTS

Orangecrest Church

1	Glenhaven Ave	3 / 6 ↕ Alessandro Blvd	2	Glenhaven Ave	Dwy 1	Glenhaven Ct	3	Glenhaven Ave	Dwy 2	
5 / 4 ↕										

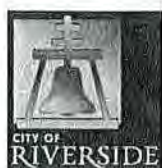
Legend

X / Y = AM / PM PEAK HOUR
TURNING VOLUMES



NOT TO SCALE

ATTACHMENT D CITY OF RIVERSIDE CUMULATIVE PROJECTS LIST									
Map ID #	Case Number	Location	Project Description	City	State	Acres	Buildings Total Square Feet	Dwelling Units	Approval Date
	P20-0293 P20-0294	2201 Fairview Avenue	Tentative Tract Map and CUP for 44 for-sale senior condos.	Riverside	CA	2.21		44	



City of Arts & Innovation

Public Works Department

Accepted With
☐ NO EXCEPTIONS
☐ EXCEPTIONS

By: Vita

Traffic Analysis Scoping Form

This scoping form shall be submitted to the City of Riverside Traffic Engineering Division

Project Identification:

Case Number:	P20-0320 Design Review and CUP P20-0319
Related Cases:	
SP No.	
EIR No.	
GPA No.	
CZ No.	
Project Name:	Orangecrest Church
Project Address:	5695 Glenhaven Avenue, Riverside, CA 92506
Project Opening Year:	2021
Project Description:	19,905 sf single-tenant, multi-phase worship building, children's ministry building, youth ministry building, administrative building, and nursery building, and associated 49,214 sf landscaping with 266 parking spaces.

	Consultant:	Developer:
Name:	Kimley-Horn and Associates, Inc.	Orangecrest Community Church
Address:	3880 Lemon Street, Suite 420 Riverside, CA 92501	PO Box 2799 Riverside, CA 92516
Telephone:	951-543-9869	951-215-0563
Fax/Email:		

Scoping & Study Fees:

Fees to be made payable to "City of Riverside" and delivered to Land Development, City Hall 3rd Floor, 3900 Main Street, Riverside, CA 92522

✓ Scoping Agreement Fee (For all projects not screened from analysis): **\$271.00**

2) TIA Review (For projects with both LOS & VMT analysis of any scale, or standalone LOS analyses with over 100 vehicle trips per hour): **\$2671.02**

✓ 3) TIA Review (For standalone VMT analysis, or standalone LOS analyses with under 100 vehicle trips per hour): **\$1288.20**



Public Works Department

City of Arts & Innovation

Trip Generation Information:

Trip Generation Data Source: ITE Trip Generation Manual, most recent edition (See Attachment A)

Current General Plan Land Use:

Proposed General Plan Land Use:

Swim & Tennis Club (unoccupied)

Current Zoning:

Proposed Zoning:

R-1-13000 Low Density Residential

Assembly - Worship Facility

	Existing Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips				4	3	7
PM Trips				4	5	9

Trip Internalization: ☐ Yes ☒ No (N/A % Trip Discount)

Pass-By Allowance: ☐ Yes ☒ No (N/A % Trip Discount)

Potential Screening Checks

Is your project screened from specific analyses in accordance with City Guidelines?

Is the project screened from LOS assessment? ☒ Yes ☐ No



Public Works Department

City of Arts & Innovation

LOS screening justification (see Page 6 of the guidelines): Less than
100 peak hour trips

Is the project screened from VMT assessment?

☒ Yes

☐ No

VMT screening justification (see Pages 23-25 of the guidelines):
Local serving church and school

Level of Service Scoping

- Proposed Trip Distribution (Attach Graphic for Detailed Distribution):

North	South	East	West
%	%	50 %	50 %

- Attach list of Approved and Pending Projects that need to be considered (provided by the lead agency and adjacent agencies)
- Attach list of study intersections/roadway segments
- Attach legible site plan
- Note other specific items to be addressed:
 - Site access
 - On-site circulation
 - Parking
 - Consistency with Plans supporting Bikes/Peds/Transit
 - Other _____
- Date of Traffic Counts New counts with factor applied for Covid
- Attach proposed analysis scenarios (years plus proposed forecasting approach) (Attachment B)
- Attach proposed phasing approach (if the project is phased)



Public Works Department

City of Arts & Innovation

VMT Scoping

For projects that are not screened, identify the following:

- Travel Demand Forecasting Model _____
- Attach WRCOG Screening VMT Assessment output or describe why It is not appropriate for use
- Attach proposed Model Land Use Inputs and Assumed Conversion Factors (attach)

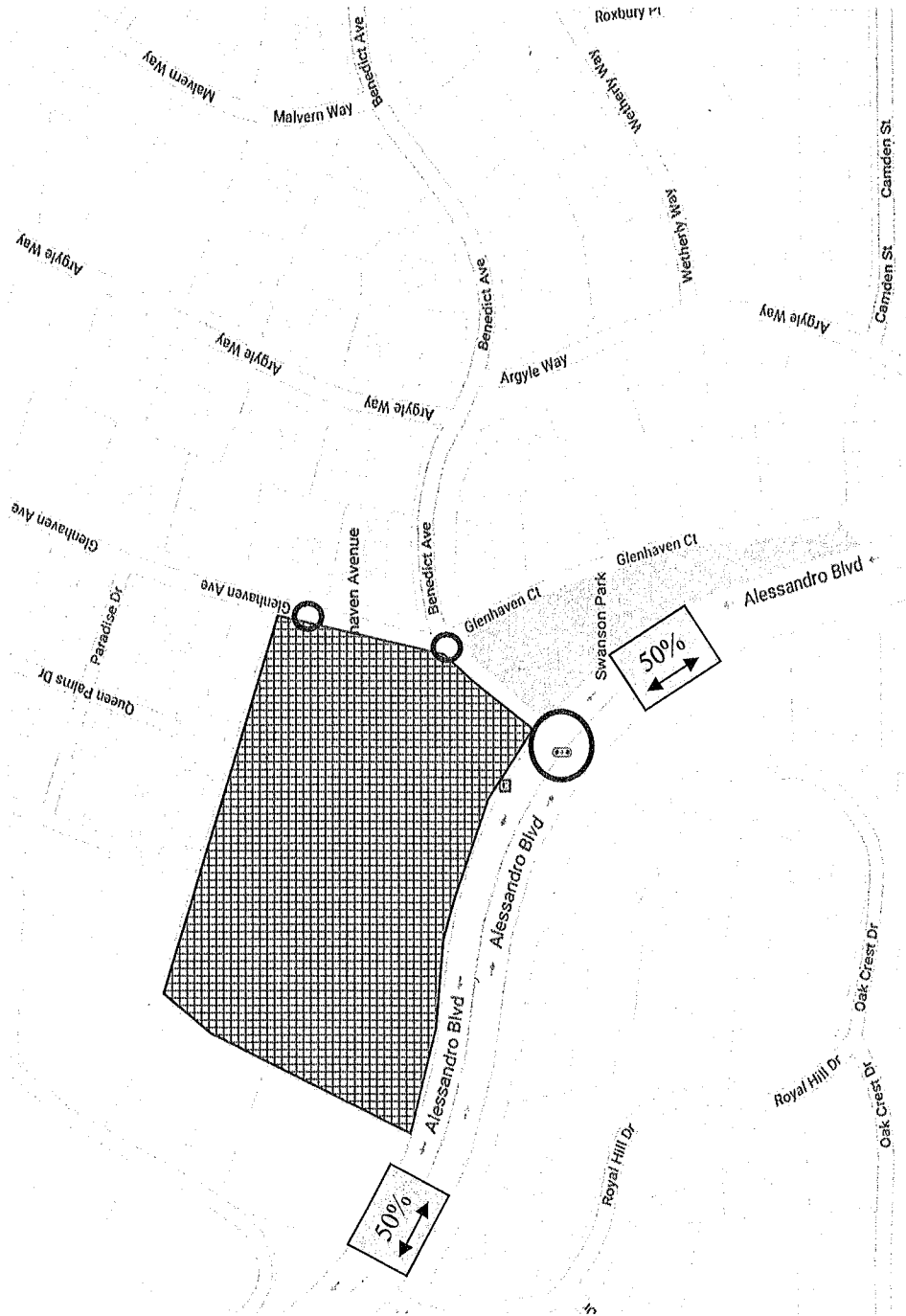
Specific Issues to be addressed in the Study (In addition to the standard analysis described in the Guidelines) (To be filled out by the Public Works Traffic Engineering Division)

- A queuing assesment for the project driveways and the adjacent intersection of Alessandro Blvd and Glenhaven Ave.
- A section that explains "School Operations".

**ATTACHMENT A
SUMMARY OF PROJECT TRIP GENERATION
ORANGECREST CHURCH**

Land Use	ITE Code	Unit	Trip Generation Rates ¹						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Church	560	KSF	6.950	0.198	0.132	0.33	0.221	0.270	0.49
Land Use	Quantity	Unit	Trip Generation Estimates						
			Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Church	19.905	KSF	138	4	3	7	4	5	9
Total Project Trips			138	4	3	7	4	5	9
¹ Source: Institute of Transportation Engineers (ITE) <u>Trip Generation Manual</u> , 10th Edition									

ATTACHMENT B PROJECT STUDY AREA AND ANALYSIS SCENARIOS



ATTACHMENT B
PROJECT STUDY AREA AND ANALYSIS SCENARIOS

Study Intersections:

1. Alessandro Boulevard at Glenhaven Avenue
- D1. Glenhaven Avenue/Benedict Avenue at Driveway 1
- D2. Glenhaven Avenue at Driveway 2

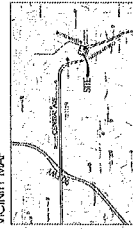
Analysis Scenarios:

1. Existing (2020)
2. Opening Year (2021) With Project

Architectural site plan of a church complex. The plan shows a large parking lot on the left, a central building complex, and a landscaped area on the right. The buildings are labeled: "WORSHIP BUILDING", "WORSHIP LOUNGE", "YOUTH MINISTRY BLDG", "YOUTH GROUP BLDG", "PLAYGROUND", "ADMIN BLDG", and "ENTRANCE". The parking lot is labeled "EVENT LAUN" and "350 PERSON CAPACITY". The landscaped area is labeled "TREES TO REMAIN", "FLOWERING TREES", "SCREENING", and "TREES TO BE PLANTED". The plan also shows "ALESSANDRO BLVD" and "GLENHAVEN CT". A note at the bottom right says "ENLARGEMENT SEE SHEET L-2".

LANDSCAPE
LOT 325: 229' 718 S.F. (5.27 ACRES)
TOTAL LANDSCAPE AREA: 87,370 S.F. (88%)
PAVING LOT LANDSCAPE AREA: 26,162 S.F. (11%)
LANDSCAPE SEPARATION: 10' (MIN.)
ADDITIONAL LANDSCAPE AREA: 57,137 S.F.
PAVING LOT TREES:
71 NEW TREES PROVIDED
68 TREES REQUIRED
1 TREE REQUIRED PER 4 STALLS
ADDITIONAL TREES ON SITE:
12 TREES
12 STALLS
EASTING PAVES AND TREES TO
REMAIN AT ENDS AND STREET
FRONTAGE WHERE POSSIBLE

VICINITY MAP



1

conceptual design & planning company
 Graduate Office
 2775 S. Airport Blvd., 4th Fl.
 Austin, TX 78741
 E: 512.391.2419
 WWW: CDPAC.COM

COSTA REA • AUSCADEIRO • SAN JOSE



50' 00' 10' 30'

SCALE 1"=30'

CONC. PROJECT NO. 500.44

JUNE 5, 2020

ORANGECREST
COMMUNITY CHURCH

CONCEPTUAL LANDSCAPE SITE PLAN
ORANGE CREST COMMUNITY CHURCH
5695 GLENHAVEN AVENUE RIVERSIDE, CA 92506



ATTACHMENT D CITY OF RIVERSIDE CUMULATIVE PROJECTS LIST									
Map ID #	Case Number	Location	Project Description	City	State	Acres	Buildings Total Square Feet	Dwelling Units	Approval Date
	P20-0293 P20-0294	2201 Fairview Avenue	Tentative Tract Map and CUP for 44 for-sale senior condos.	Riverside	CA	2.21		44	