

## 4.8 Transportation

### 4.8.1 Methodology

This section describes the existing conditions of the Arroyo Seco Canyon Project (ASCP) Areas 2 and 3 (Project/proposed Project) site and vicinity, identifies associated regulatory requirements, evaluates potential environmental impacts, and identifies mitigation measures related to implementation of the proposed Project. The analysis of Project impacts related to transportation is based on a review of existing resources and applicable laws, regulations, and guidelines.

Comments received in response to the Notice of Preparation (NOP) for this Draft EIR included a comment from the California Department of Transportation (Caltrans) regarding their request to provide additional transportation impact analysis such as queuing analysis (to identify potential for traffic conflicts) at ramp locations where the Project-related construction activities would occur in combination with the ongoing sediment removal activities associated with the Devil's Gate Reservoir Project. A queuing analysis for the proposed Project's peak construction traffic along with construction traffic from other cumulative projects in the area, primarily Devil's Gate Reservoir Project was conducted. The queuing analysis is summarized in the Cumulative Impacts section and the traffic data and analysis worksheet are provided as follows:

#### **Appendix H** Transportation Technical Data and Analysis Worksheets, Dudek May 2020

Comments received in response to the Notice of Preparation (NOP) are summarized in Table 1, Notice of Preparation and Scoping Comment Letters Summary, included in Section 1, Introduction of this Draft EIR. A copy of the NOP and Initial Study is included in Appendix A-1, the Appendices to the Initial Study are included in Appendix A-2, and the comment letters received in response to the NOP are included in Appendix A-3 of this Draft EIR.

### 4.8.2 Existing Conditions

#### **Regional Access**

##### ***Interstate-210 or Foothill Freeway***

Interstate (I) 210 provides regional access to the proposed Project site. The Foothill Freeway starts at the Interstate (I) -5 in the northern portion of the San Fernando Valley and generally runs in a southeasterly and easterly direction near the southern base of the San Gabriel and San Bernardino Mountains to the I-10 in Redlands. The I-210 has eight travel lanes as it passes along the southern edge of Devil's Gate Dam and provides access to the Project site via its interchange with Arroyo Boulevard/Windsor Avenue. Per Caltrans estimates, the 2018 traffic volumes on the I-210 between the Berkshire Place and Arroyo Boulevard/Windsor Avenue exits during the AM peak hour included 13,300 vehicles, with a peak month volume of 128,000 vehicles per day and an annual average daily traffic volume of 125,000 vehicles per day.

##### ***Interstate (I)-605***

I-605 provides regional access to the landfill site for the proposed Project. The freeway runs generally in a north-south direction and extends from I-210 in the north to I-405 to the south. It provides eight travel lanes, with four lanes in each direction and provides access to the landfill site via its interchange with Rivergrade

Road/Los Angeles Street. Per Caltrans estimates, the 2018 traffic volumes on the I-605 near Lower Azusa Road/Los Angeles Street exits during the AM peak hour included 13,800 vehicles, with a peak month volume of 194,000 vehicles per day and an annual average daily traffic volume of 190,000 vehicles per day.

### **Local Access**

#### ***Los Angeles Street***

Los Angeles Street provides local access to the landfill site (Vulcan Materials Company, Durbin Inert Debris Engineered Fill Site). Los Angeles Street is a four-lane roadway with a two-way-left-turn lane. The roadway generally is built with sidewalks on either side. The posted speed limit on Los Angeles Street is 45 miles per hour. The access to the landfill site is located on Los Angeles Street via an approximately 140 foot right turn lane, approximately 850 feet east of the I-605/Los Angeles Street northbound off ramp.

#### ***Windsor Avenue***

Windsor Avenue provides local access to Arroyo Seco Canyon and the proposed Project site from the I-210 on- and off-ramps. Windsor Avenue is generally a north-south roadway between I-210 northbound ramps and its intersection with Ventura Street and Explorer Road. Windsor Avenue is functionally classified as Connector-Neighborhood in the City of Pasadena's Street Plan (City of Pasadena 2015a) and serves as a Collector street that is generally a two-lane roadway with intermittent two-way-left turn lane along this stretch that terminates at the Ventura Street/Explorer Road intersection. The average daily traffic (ADT) volumes on North Windsor Avenue near the Project site just south of Ventura Street was approximately 8,409 vehicles in the year 2017 on a weekday (County of Los Angeles 2020).

#### ***Oak Grove Drive***

Oak Grove Drive is a four-lane road from west of Windsor Avenue to just north of the I-210 and passing along Devil's Gate Dam and the southwest edge of the reservoir, to Foothill Boulevard before turning north toward the JPL campus. Oak Grove Drive is functionally classified as Connector-City in the City of Pasadena's Street Plan (City of Pasadena 2015a).

#### ***Explorer Road***

Explorer Road is two-lane roadway that leads to the JPL entrance from the Windsor Avenue/Ventura Street intersection and turns west across the Arroyo Seco (onto the JPL Bridge) and southwesterly onto the JPL campus. Explorer Road would provide access to construction activities in the Area 3.

#### ***North Arroyo Boulevard (Gabrielino Trail/Access Road)***

North Arroyo Boulevard is a paved road that runs on top of the slope east of the former JPL Parking Lot and goes into the Arroyo Seco Canyon, crossing the Arroyo Seco at several locations as it heads into the Angeles National Forest (ANF). This trail is used by hikers, bicyclists, and equestrians going into Arroyo Seco Canyon; it is also used by City, County, and U. S. Forest Service (USFS) inspection and maintenance vehicles. This trail would be used for construction activities in the northernmost portion of Area 3 near the JPL Bridge and also Area 2.

Some of the existing vehicle trips on Windsor Avenue and Explorer Road in Area 3 are associated with recreational users of the Gabrielino Trail/Access Road, although most use is attributed to NASA JPL employees that formerly utilized the JPL East Parking Lot. After NASA's completion of a new parking structure on the JPL campus in 2016, they vacated the former parking lot (which was previously leased by the City to JPL), and removed the paving for the specific purpose of accommodating PWP's planned expansion of the spreading basins. The former JPL Parking Lot is currently unpaved, with the exception of the temporary alignment of Explorer Road. In addition, there are paved and unpaved access roads that are also used by recreational visitors and maintenance workers to access the spreading basins, reservoir, and dam.

### **Transit Services**

The Los Angeles County Metropolitan Transportation Authority (Metro) provides regional bus and passenger train services in the County. Metro Bus routes 177 and 268 run along Oak Grove Avenue and into the JPL campus, south and west of Area 3. The Glendale Beeline Route 3 also runs from Downtown Glendale to JPL (Metro 2010). The Pasadena Transit provides local bus services within the City. Route 52 goes into the JPL campus four times daily on weekdays from Glenarm Street and Raymond Avenue intersection and terminates at Art Center N. Campus (City of Pasadena 2020).

### 4.8.3 Relevant Plans, Policies, and Ordinances

#### **Federal**

There is no applicable federal policy or program related to transportation for the proposed Project.

#### **State/Regional**

##### ***Senate Bill (SB) 743***

A change to transportation analysis in CEQA environmental review occurred when Governor Jerry Brown signed Senate Bill (SB) 743 on September 27, 2013 into a law that required an update in the metric of transportation impact from Level of Service (LOS) and automobile delay to one that promotes the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses for transit priority areas. On November 3, 2014, the City of Pasadena City Council adopted a resolution to replace the City's transportation performance measures with five new Transportation Performance Measures and new thresholds of significance to determine transportation and traffic impacts under CEQA. The new performance measures and CEQA thresholds are consistent with the City's adopted General Plan and Senate Bill (SB) 743 and include VMT per capita, vehicle trips (VT) per capita, proximity and quality of bicycle network, proximity and quality of transit network, and pedestrian accessibility. The new measures support the City's vision of creating a community where people can circulate without cars, which relies upon an integrated multimodal transportation system that provides choices and accessibility for everyone in the City.

The City established the Transportation Impact Analysis Current Practice and Guidelines (City of Pasadena 2015b) to implement the Transportation Performance Measures and for use in CEQA analysis. These guidelines identify separate approaches for three categories of projects—exempt projects, Category 1: Below Communitywide Significance and Category 2: Communitywide Significance. Per the Transportation Impact

Analysis Current Practice and Guidelines, Table 1: Thresholds for Determining Transportation Review of Projects, any non-residential project which is expected to generate fewer than 300 daily trips is considered exempt, is not expected to generate any impacts, and does not require a full traffic analysis. Also, the City does not require analysis of construction traffic. Therefore, no Project level analysis of CEQA impacts is required. However, an assessment of construction trip generation was conducted for Area 2 and Area 3, and consideration was given to construction traffic associated with the other cumulative projects including County’s Devil’s Gate Reservoir Project that would be occurring at the same time under cumulative conditions.

## Local

### *General Plan Mobility Element, 2015*

Pasadena’s General Plan Mobility Element guides the continuing development of the transportation system to support planned growth. The Mobility Element sets forth goals and policies to improve overall transportation in Pasadena. The Mobility Element’s objective is to promote a livable community where people can circulate without cars and non-auto travel modes are emphasized in order to recognize their role in improving the City’s environment and quality of life. Consequently, performance measures related to the per capita length and number of trips associated with changes in land use have been adopted for evaluating the transportation system in lieu of levels of service measures. As discussed above, these new performance measures and CEQA thresholds are consistent with the City’s adopted General Plan.

### *Supplements and Modifications to the Greenbook*

The City’s Department of Public Works (Department) has the responsibility for and control over the construction, modification, and maintenance of facilities within the public rights of way of the City of Pasadena. The Department established guidelines, monitors, inspects, and finally approves or rejects all such construction, including operations, materials, methods, and finished facilities. The Department adopted the Standard Specifications for Public Works Construction<sup>1</sup> (known as the Greenbook), which was supplemented and modified to meet the needs of the City. It is the responsibility of all contractors to comply with the requirements of the City’s Greenbook Supplements and Modifications during construction activities.

## 4.8.4 Thresholds of Significance

The significance criteria used to evaluate the Project impacts related to transportation are based on Appendix H of the CEQA Guidelines. According to Appendix H of the CEQA Guidelines, a significant impact related to transportation would occur if the project would:

- a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
- b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

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<sup>1</sup> The Standards Specifications for Public Works Construction was written and promulgated by the Joint Cooperative Committee of the Southern California Chapter American Public Works Association and Southern California Districts Associated General Contractors of California.

- c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- d) Result in inadequate emergency access.

Through the analysis in the Initial Study (see Appendix A), it was determined that the proposed Project would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b); substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or, result in inadequate emergency access (i.e., Thresholds b, c, and d). Accordingly, these issues are not further analyzed in the EIR. Based on the remaining thresholds, a significant impact related to transportation would occur if the project would:

- a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

## 4.8.5 Environmental Impacts Analysis

### **Threshold 4.8a. Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?**

The proposed Project would require construction activities that would involve the transport of workers to and from the Project site, as well as construction equipment and construction vehicles. The primary vehicular activity would occur during construction activities in Area 3, which would require the export of soils to create the redesigned spreading basins. Construction trucks hauling soils and debris generated by construction activities are anticipated to drive to and from Vulcan Materials Company landfill located at 13000 East Los Angeles Street in the City of Irwindale, which is approximately 18 miles from the Project site.

Haul trucks and equipment deliveries are expected to come to the Project site from I-210 at the Windsor Avenue westbound off-ramp and head north on Windsor Avenue to the intersection with Ventura Street. At this intersection is a fork in the road, one leading to Explorer Road into Area 3 and the other leading to the gated North Arroyo Boulevard, which passes adjacent to residential properties and the Behner WTP. North of the JPL Bridge, North Arroyo Boulevard (the Gabrielino Trail/Access Road) would be used for construction vehicles and equipment transport to and from Area 2. Explorer Road and potentially North Arroyo Boulevard would be used to access Area 3.

For the disposal of excavated soils, it is expected that haul trucks from the Project site would head eastbound on I-210 via eastbound ramps at Windsor Avenue; exit at the I-605 southbound off ramp at Lower Azusa Road/Los Angeles Street; head east towards the Vulcan Materials Company landfill. Trucks would come back from the landfill entering the northbound on-ramp on the I-605 at Los Angeles Street and head north; trucks would then go west on I-210 to Windsor Avenue to Explorer Road and then to the Project site.

Construction of the proposed Project would result in a temporary increase in local traffic on Windsor Avenue, I-210 freeway and other streets as a result of construction-related workforce traffic, material deliveries, and construction activities. The primary off-site impacts from the movement of construction trucks would include short-term and intermittent effects on traffic operations because of slower movements and larger turning radii of delivery and haul trucks compared to passenger vehicles. Occasional partial closures for the Gabrielino

Trail/Access Road would be required for construction truck and equipment access. However, Windsor Avenue would be open to traffic at all times during the construction period.

The Institute of Transportation Engineers' (ITE) Trip Generation Manual does not contain trip rates for construction-related activities associated with the proposed Project. Trip generation for construction projects is based on average or peak number of workers and trucks that would be required for the proposed construction activities. Construction traffic includes the number of workers and the amount of delivery (vendor) and haul truck traffic that would be generated to and from the site daily and during the AM and PM peak hours.

## Area 2: Short-Term Construction Impacts

As discussed in Section 3.1 of this Draft EIR, construction activities in the Area 2 Diversion and Intake Replacement would include the demolition and removal of the existing weir and intake structure after the removal of sediment and debris that has accumulated behind the existing weir. The construction of Area 2 would last approximately 3 months from August 2021 through October 2021.

Per construction phasing and schedule for Area 2, approximately 7 workers, 1 delivery (vendor) truck, and 7 haul trucks would be required per day on average for construction-related activities during the 3-month period. However, during peak construction phase (i.e. during overlap of demolition and dewatering) which would last approximately 5 days, approximately 12 workers, 2 delivery (vendor) trucks, and 43 haul trucks would be required per day for construction-related activities. The construction activities would occur between 7:00 AM and 4:00 PM over the weekdays, Monday through Friday. All workers and trucks were assumed to make two daily trips (one inbound and one outbound) to the Project site. Although workers may not travel during the AM or the PM peak periods, to be conservative all workers were assumed to arrive during the AM peak hour and leave the site during the PM peak hour. Passenger Car Equivalency (PCE) factors were used to account for the Project's truck traffic and provide a more realistic measurement in terms of the impact of Project-related truck traffic. All truck trips were converted to PCE trips using a factor of 2.0 or 3.0. All truck trips were averaged over an 8-hour workday to estimate peak hour trips with 50% inbound and 50% outbound travel.

Construction trip generation estimates for Area 2 are shown in Table 4.8-1 below.

**Table 4.8-1. Area 2 - Construction Trip Generation**

Vehicle Type	Daily Quantity	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<b><i>Average (All Construction Phases)</i></b>								
Workers <sup>1</sup>	7	14	7	0	7	0	7	7
Vendor Trucks <sup>2</sup>	1	2	1	0	1	0	1	1
Haul Trucks <sup>3</sup>	7	14	1	1	2	1	1	2
<b>Total Trips</b>		<b>30</b>	<b>9</b>	<b>1</b>	<b>10</b>	<b>1</b>	<b>9</b>	<b>10</b>
<b><i>Average (All Construction Phases with PCE)</i></b>								
Workers (1 PCE)	7	14	7	0	7	0	7	7
Vendor Trucks (2 PCE)	1	4	2	0	2	0	2	2

Table 4.8-1. Area 2 - Construction Trip Generation

Vehicle Type	Daily Quantity	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Haul Trucks (3 PCE)	7	42	3	3	6	3	3	6
<b>Total Trips (with PCE)</b>		<b>60</b>	<b>12</b>	<b>3</b>	<b>15</b>	<b>3</b>	<b>12</b>	<b>15</b>
<b><i>Peak (Demolition and Dewatering)</i></b>								
Workers <sup>1</sup>	12	24	12	0	12	0	12	12
Vendor Trucks <sup>2</sup>	2	4	1	0	1	0	1	1
Haul Trucks <sup>3</sup>	43	86	5	6	11	6	5	11
<b>Total Trips</b>		<b>114</b>	<b>18</b>	<b>6</b>	<b>24</b>	<b>6</b>	<b>18</b>	<b>24</b>
<b><i>Peak (Demolition and Dewatering with PCE)</i></b>								
Workers (1 PCE)	12	24	12	0	12	0	12	12
Vendor Trucks (2 PCE)	2	8	2	0	2	0	2	2
Haul Trucks (3 PCE)	43	257	15	18	33	18	15	33
<b>Total Trips (with PCE)</b>		<b>289</b>	<b>29</b>	<b>18</b>	<b>47</b>	<b>18</b>	<b>29</b>	<b>47</b>

**Notes:** PCE – Passenger Car Equivalent

- Workers as assumed to utilize passenger cars and no carpooling is assumed. All of the workers were conservatively assumed to arrive and depart during the AM and PM peak hour.
- A nominal number of vendor trucks are required for the Project, therefore one vendor truck was assumed to arrive and depart during the AM and PM peak hour, respectively.
- Haul truck trips are distributed evenly over the duration of construction phase to estimate daily haul truck trips and across the 8-hour work shift to estimate AM and PM peak hour trips.

As shown in Table 4.8-1, on average, the Project would generate 30 daily trips, 10 trips during the AM peak hour (9 inbound and 1 outbound), and 10 trips during the PM peak hour (1 inbound and 9 outbound). During the peak construction phase, for a short period of time, the Project would generate 114 daily trips, 24 trips during the AM peak hour (18 inbound and 6 outbound), and 24 trips during the PM peak hour (6 inbound and 18 outbound).

With the application of PCE factors to truck trips, on average the Project would generate 60 total PCE daily trips, and 15 PCE trips during the AM peak hour (12 inbound and 3 outbound) and 15 PCE trips during the PM peak hour (3 inbound and 12 outbound). With the application of PCE factors to truck trips, during the peak, for a short period, the Project would generate 289 total PCE daily trips, and 47 PCE trips during the AM peak hour (29 inbound and 18 outbound) and 47 PCE trips during the PM peak hour (18 inbound and 29 outbound).

As shown in Table 4.8-1, the proposed Project would generate less than 500 ADT, and hence would not require a traffic impact analysis per County of Los Angeles Department of Public Works (LACDPW) Transportation Impact Analysis Report Guidelines (County of Los Angeles 2013). Similarly, the City of Pasadena does not require analysis of construction traffic and considers any non-residential project which is expected to generate fewer than 300 ADT exempt from conducting a transportation impact analysis. Therefore, no significant impacts to the roadway facilities due to short-term construction of Area 2 would occur.

### Area 3: Short-Term Construction Impacts

Improvements in Area 3 include the reconfiguration and expansion of the spreading basins. The construction of Area 3 would last approximately 9 months from March 2022 through November 2022.

Per construction phasing and schedule for Area 3, approximately 6 workers, 1 delivery (vendor) truck, and 42 haul trucks would be required per day on an average for construction-related activities during the 9-month period. However, during the peak construction phase (i.e. during demolition), which would last approximately 10 days, approximately 5 workers, 1 delivery (vendor) trucks, and 237 haul trucks would be required per day for construction-related activities. The construction activities would occur between 7:00 AM and 4:00 PM over the weekdays, Monday through Friday. All workers and trucks were assumed to make two daily trips (one inbound and one outbound) to the Project site. Although workers may not travel during the AM or the PM peak periods, to be conservative all workers were assumed to arrive during the AM peak hour and leave the site during the PM peak hour. PCE factors were used to account for the Project's truck traffic and provide a more realistic measurement in terms of the impact of Project-related truck traffic. All truck trips were converted to PCE trips using a factor of 2.0 or 3.0. All truck trips were averaged over the 8-hour workday to estimate peak hour trips with 50% inbound and 50% outbound.

Construction trip generation estimates for Area 3 are shown in Table 4.8-2 below.

**Table 4.8-2. Area 3 - Construction Trip Generation**

Vehicle Type	Daily Quantity	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<b>Average (All Construction Phases)</b>								
Workers <sup>1</sup>	6 workers	12	6	0	6	0	6	6
Vendor Trucks <sup>2</sup>	1 trucks	1	1	0	1	0	1	1
Haul Trucks <sup>3</sup>	42 trucks	84	5	6	11	6	5	11
<b>Total Trips</b>		<b>97</b>	<b>12</b>	<b>6</b>	<b>18</b>	<b>6</b>	<b>12</b>	<b>18</b>
<b>Average (All Construction Phases with PCE)</b>								
Workers (1 PCE)	6 workers	12	6	0	6	0	6	6
Vendor Trucks (2 PCE)	1 trucks	3	2	0	2	0	2	2
Haul Trucks (3 PCE)	42 trucks	252	15	18	33	18	15	33
<b>Total Trips with PCE</b>		<b>266</b>	<b>23</b>	<b>18</b>	<b>41</b>	<b>18</b>	<b>23</b>	<b>41</b>
<b>Peak (Demolition)</b>								
Workers <sup>1</sup>	5 workers	10	5	0	5	0	5	5
Vendor Trucks <sup>2</sup>	1 trucks	2	1	0	1	0	1	1
Haul Trucks <sup>3</sup>	237 trucks	474	30	30	60	30	30	60
<b>Total Trips</b>		<b>486</b>	<b>36</b>	<b>30</b>	<b>66</b>	<b>30</b>	<b>36</b>	<b>66</b>

Table 4.8-2. Area 3 - Construction Trip Generation

Vehicle Type	Daily Quantity	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
<b>Peak (Demolition with PCE)</b>								
Workers (1 PCE)	5 workers	10	5	0	5	0	5	5
Vendor Trucks (2 PCE)	1 truck	4	2	0	2	0	2	2
Haul Trucks (3 PCE)	237 trucks	1,422	90	90	180	90	90	180
<b>Total Trips with PCE</b>		<b>1,436</b>	<b>97</b>	<b>90</b>	<b>187</b>	<b>90</b>	<b>97</b>	<b>187</b>

**Notes:**

- Workers as assumed to utilize passenger cars and no carpooling is assumed. All of the workers were conservatively assumed to arrive and depart during the AM and PM peak hour.
- A nominal number of vendor trucks are required for the Project, therefore one vendor truck was assumed to arrive and depart during the AM and PM peak hour, respectively.
- Haul truck trips are distributed evenly over the duration of construction phase to estimate daily haul truck trips and across the 8-hour work shift to estimate AM and PM peak hour trips.

As shown in Table 4.8-2, on an average, the Project would generate 97 daily trips, 18 trips during the AM peak hour (12 inbound and 6 outbound), and 18 trips during the PM peak hour (6 inbound and 12 outbound). During the peak construction phase, for a short period of time, the Project would generate 486 daily trips, 66 trips during the AM peak hour (36 inbound and 30 outbound), and 66 trips during the PM peak hour (30 inbound and 36 outbound).

With the application of PCE factors to truck trips, on average the Project would generate 266 total PCE daily trips, and 41 PCE trips during the AM peak hour (23 inbound and 18 outbound) and 41 PCE trips during the PM peak hour (18 inbound and 23 outbound). With the application of PCE factors to truck trips, during the peak, for a short period, the Project would generate 1,436 total PCE daily trips, and 187 PCE trips during the AM peak hour (97 inbound and 90 outbound) and 187 PCE trips during the PM peak hour (90 inbound and 97 outbound).

As shown in Table 4.8-2, under average conditions the proposed Project would generate less than 500 ADT, and hence would not require a traffic impact analysis per County of LACDPW Transportation Impact Analysis Report Guidelines (County of Los Angeles 2013). Similarly, the City of Pasadena does not require analysis of construction traffic and considers any non-residential project which is expected to generate fewer than 300 daily trips exempt from conducting a transportation impact analysis. The peak phase of Area 3 constructions would cause an increase in the average daily traffic greater than 500 ADT. Although this threshold is applicable to long-term operational activities and not applicable to construction traffic, it is possible that roadway facilities could be impacted during these approximately 10 days during construction in Area 3.

Additionally, the 2015 IS/MND included mitigation measures that have been incorporated into the Mitigation Monitoring and Reporting Program (MMRP) for the previously approved ASCP, as discussed in detail in Section 2.2, Project Background and in Table 2-1 in Section 2, Environmental Setting of this Draft EIR. MM-TRA-1 would reduce construction trips that could potentially increase congestion on freeways and arterial roadways during the peak hour; therefore, MM-TRA-1 (modified from the MMRP), would be implemented. During construction activities, the Contractor shall schedule the arrival and departure of the construction equipment

and trucks outside the AM peak hours of 7:30 AM to 8:30 AM and the PM peak hours of 4:30 PM to 5:30 PM. In addition, trucks transporting sediment and debris from the site shall travel to and from the site outside the AM and PM peak hours. MM-TRA-1 as modified is still appropriate for inclusion in the proposed Project and would reduce traffic congestion associated with the 500 ADT during the peak phase of construction in Area 3.

### ***Long-Term Operational Impacts***

No new employees are required for the long-term operation of the proposed Area 2 and Area 3. Future schedules of operation and maintenance activities would not substantively differ from the current maintenance routine and procedures required for the sedimentation basin. An estimated 100 truckloads or 200 truck trips of trucks carrying soil from the existing and proposed spreading basins would have to be disposed of off-site approximately every 5 years (approximately 20 trucks per year), which is reflective of current maintenance activities. As such no long-term operational impacts related to transportation are anticipated with the proposed Project.

### ***Impacts to Transit, Bicycles and Pedestrian Facilities***

There would be no impact on the use of transit since the proposed Project is not directly served by a public transportation system and would not likely encourage bicycle use or walking to the site by construction workers.

During construction of Area 2, however, there would be periods where sections of the trail would need to be partially or fully closed, mainly during excavations, construction of the new intake, trenching for the new intake service structure, and hauling in materials/equipment. The portion of Gabrielino Trail/Access Road along the construction zone may also need to be reduced in width for the duration of the construction period during work hours to allow for parked construction vehicles (e.g., pickup trucks).

Access to Area 2 (and the USFS Ranger Station in the ANF) would be made available during construction activities, but short-term partial closures may occur. Additionally, bicyclists, hikers, and users of the Gabrielino Trail/Access Road would be prohibited from using portions of the trail, as further described in Section 4.7, Recreation of this Draft EIR. Temporary closure of the Gabrielino Trail/Access Road and any other public roads (e.g. Explorer Road) that may be impacted during short-term construction activities would be executed in a manner that ensured compliance with applicable plans and policies addressing the circulation system, including roadway, bicycle, and pedestrian facilities.

The City will follow the Supplements and Modifications to the Greenbook regarding notifications to residents and businesses affected by the temporary closures of the Gabrielino Trail/Access Road (City of Pasadena 2006). Applicable mandatory measures from the Supplements and Modifications to the Greenbook that would be applied to construction of the proposed Project are generally summarized below to include, but not be limited to:

#### **P-7-10.2 Storage of Equipment and Materials in Public Streets**

Requires that construction materials shall not be stored in streets, roads or highways overnight, and all materials or equipment not installed or used in construction shall be stored elsewhere, unless approved by the City Engineer.

**P-7-10.3 Street Closure, Detours, Barricades**

All streets without specific traffic requirements may be closed to through traffic from 7:00 AM to 5:00 PM if approved in writing by the Engineer. The contractor shall obtain the approval of the Engineer before any partial or total closure of any street. During a street closure, the following requirements shall apply:

- A. Where long sections are encountered on a particular street, only that portion which can be repaved in one day shall be closed to through traffic unless otherwise directed by the City Engineer.
- B. Both local and emergency access must be maintained at all times.
- C. Street closure signing shall be provided and maintained on the closed street and at all intersecting streets within the closure limits. "ROAD CLOSED AHEAD" signs shall also be provided and maintained on each of the first intersecting streets on each end of the closed street. This signing shall conform to the requirements of these Specifications, the "WATCH" handbook, and the City Engineer. These signs shall be placed at locations approved by the City Engineer, for optimum visibility to traffic and in a non-hazardous location to pedestrians.

**P-7-10.1.2 Notifications to Residents/Businesses**

A project general information letter and sufficient copies thereof will be prepared by City staff for Contractor distribution to all residents, business establishments, and institutions fronting on or directly affected by the project. Distribution shall be accomplished in a manner acceptable to the Engineer and shall be completed at least 48 hours prior to the beginning of construction operations in the immediate vicinity. In addition to the above, the Contractor shall be fully responsible for such other notifications as may be required related to necessary closures of streets, alleys, driveways, etc., or to unavoidable access or parking restrictions. Such "additional notifications" shall be given in writing to all affected parties and premises at least five (5) working days prior to such closure or restriction. These notifications shall apply where the closures and access or parking restrictions required in the performance of any work under this contract preclude any resident, tenant, or property owner from utilizing the premises or conducting business thereon in a reasonable and customary manner.

**P-7-10.1.3 Notification of Utilities**

In order for the utilities to have continuous access to their facilities, the Contractor shall be required to notify the Underground Service Alert-South (U.S.A.) no less than two working days in advance of the construction work.

As such, implementation of the proposed Project would require notification of utility agencies with facilities in the area; the USFS Ranger Station; Pasadena Fire and Police Departments; and other emergency service providers. Although not required by the Greenbook, it is anticipated that the Gabrielino Trail/Access Road would be made passable at the end of each workday.

The 2015 IS/MND included mitigation measures that have been incorporated into the MMRP for the previously approved ASCP, as discussed in detail in Section 2.2, Project Background and in Table 2-1 in Section 2, Environmental Setting of this Draft EIR. MM-TRA-2 (modified from the MMRP) requires use of flagpersons and/or other safety procedures to be used as necessary to ensure the safety of recreational users along the Gabrielino Trail/Access Road during construction activities that could involve partial road closures.

## 4.8.6 Cumulative Impacts

As discussed, no long-term impacts to traffic would be generated by the proposed Project; therefore, there would be no long-term operational cumulative impacts.

Based on review of cumulative projects in the area, during construction of the proposed Project Areas 2 and 3, sediment removal activities at the Devil's Gate Reservoir and construction of the Explorer Groundwater Well would most likely be ongoing. Other cumulative projects in the area are either not likely to overlap with the construction of the proposed Project or no environmental documentation is available at this time.

To address the Caltrans comment letter dated December 6, 2019 regarding queuing at Caltrans ramp intersections, a queuing analysis at selected nearby ramp intersections was conducted to determine if the construction-related traffic of the proposed Project and its overlap with other cumulative projects (primarily, the Devil's Gate Reservoir Project) would significantly impact those Caltrans facilities under cumulative conditions. The I-210 ramps at Windsor Avenue and the segment of Windsor Avenue to Oak Grove Drive would be used by construction equipment and trucks for the Devil's Gate Reservoir sediment removal and the proposed Project throughout the work day and therefore, cumulative traffic impacts from the Project could potentially occur at those locations.

Based on the proposed haul route of the Project (from Project site to landfill site) and its overlap with haul routes of other cumulative projects in the area, the following intersections were selected for evaluation:

<b>Intersection #1</b>	I-210 westbound ramp/Windsor Avenue
<b>Intersection #2</b>	I-210 eastbound ramp/Arroyo Boulevard
<b>Intersection #3</b>	I-605 southbound ramp- Rivergrade Road/Lower Azusa Road
<b>Intersection #4</b>	I-605 northbound ramp- Rivergrade Road/Los Angeles Street

Figure 4.8-1, Proposed Haul Route and Study Intersections, illustrates the locations of the study area intersections and proposed haul route near the Project site and the Vulcan Materials Company landfill.

Due to the ongoing shelter in place orders from the COVID-19 situation, collection of new traffic counts was not recommended since it would not be representative of the typical traffic conditions in the area. Therefore, in consultation with Caltrans<sup>2</sup>, the existing traffic counts for the above mentioned intersections for year 2019 were estimated using historic count data and applying appropriate traffic growth factors. Appendix H includes historic traffic counts (year 2014) for the above mentioned intersections and a compilation of ramp volumes from Caltrans Performance Measurement System (PeMS) data source (version 9.0.0) and the annual daily and peak hour traffic volumes published by Caltrans Division of Traffic Operations (Caltrans 2020). As shown In Table 1, in Appendix H to this Draft EIR, the peak hour ramp volumes from PeMS were available for a limited period and locations and further showed inconsistent variation during the AM and PM peak hours including

<sup>2</sup> Correspondence with Caltrans District 7, Emily Gibson and other Traffic Operations staff, via e-mail correspondence in March, 2020.

negative growth for certain ramps in the period between the years 2012 to 2019. The data from Division of Traffic Operations showed an increase in daily and peak hour ramp volumes during similar period, however the increase was in the range of 3%-13% per year. Therefore, due to these significant data inconsistencies, it was determined that the historical Caltrans data was not an appropriate method to obtain traffic growth factors for the study area intersections.

Instead, traffic growth factors in the “General Traffic Volume Growth Factors” for the respective Regional Statistical Area (RSA) #25 - Pasadena for intersections 1 and 2 and #26 - West Covina for intersections 3 and 4 in the Exhibit D-1 of the Los Angeles County Congestion Management Program (CMP) (Metro 2010) were used. The growth factors for the RSAs in the CMP were reviewed and found to be a better approximation of traffic growth compared to the Caltrans data. Since both the RSAs #25 (Pasadena) and #26 (West Covina), are adjacent to each other, the higher traffic growth factor of the two was applied to all the intersections to provide a conservative estimate. Therefore, a growth rate of 0.82% per year from year 2014-2019 and 0.40% per year from year 2019-2022 was utilized to estimate Existing Year 2019 and Cumulative Year 2022 baseline traffic volumes, respectively (see Appendix H). The AM and PM peak hour traffic volumes estimated using these growth rates was utilized for the queuing analysis of the intersections under Existing Year 2019 and Cumulative Year 2022 conditions. The queuing analysis was conducted using the Synchro 10/SimTraffic (version 10) software.

Table 4.8-3 provides a summary of the queuing analysis for the study area ramp intersections under Existing Year 2019 and Cumulative Year 2022 conditions, a future baseline condition without Project traffic or Devil’s Gate Reservoir’s construction traffic. As shown in the table, the following intersections have vehicle queues that exceed available storage lengths i.e. the length (in feet) available for vehicles to stack in a turn lane at an intersection. Note that off-ramp queues are evaluated by comparing these to 85% of the lane’s storage capacity, per Caltrans District 7 requirements:

- **Intersection #1, I-210 westbound ramps/Windsor Avenue:** Vehicle queues on the single northbound left turn lane on Windsor Avenue would exceed its storage length of 110 feet in the PM peak hour of the Cumulative condition. There would be no queueing impacts to the off-ramp because AM and PM peak hour queues would meet Caltrans requirements.
- **Intersection #2, I-210 eastbound ramps/Arroyo Boulevard:** Vehicle queues on the dual southbound left turn lanes on Arroyo Boulevard would exceed their storage lengths. The combined storage length is 380 feet (two 190-foot lanes). The AM and PM peak hour queues in the Existing and Cumulative conditions exceed the dual left turn storage capacity. There would be no queueing impacts to the off-ramp because AM and PM peak hour queues would meet Caltrans requirements.
- **Intersection #3, I-605 southbound ramps – Rivergrade Road/Lower Azusa Road:** Vehicle queues on the single westbound left turn lane on Lower Azusa Road would exceed its storage length of 230 feet. The AM peak hour queues in the Existing and Cumulative conditions currently, and would, exceed the left turn storage capacity. There would be no queueing impacts to the off-ramp because AM and PM peak hour queues would meet Caltrans requirements.

Table 4.8-3. Queuing Analysis Summary for Existing Year 2019 and Cumulative Year 2022 Conditions

No.	Intersection	Movement	Storage Length (feet)	Off-Ramp Storage Length at 85% Capacity <sup>4</sup>	Existing Year 2019				Cumulative Year 2022			
					AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
					95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?
1	<b><i>I-210 westbound ramps/Windsor Avenue</i></b>											
	I-210 westbound off-ramp	WBLTR <sup>3</sup>	1150	978	299	No	225	No	313	No	217	No
		WBR	560	476	267		172		286		171	
	Arroyo Boulevard	NBL	110	–	63	No	104	No	53	No	<b>112</b>	<b>Yes</b>
Windsor Avenue	SBTR <sup>4</sup>	450	–	356	No	285	No	363	No	288	No	
2	<b><i>I-210 eastbound ramps/Arroyo Boulevard</i></b>											
	I-210 eastbound off-ramp	EBL <sup>3</sup>	1330 <sup>3</sup>	1131	246	No	277	No	267	No	268	No
		EBLR	550	468	298		318		312		319	
	Arroyo Boulevard	SBL	190	–	182	<b>Yes</b>	<b>192</b>	<b>Yes</b>	188	<b>Yes</b>	<b>197</b>	<b>Yes</b>
		SBLT	190	–	<b>226</b>		<b>221</b>		<b>218</b>		<b>228</b>	
NBTR		120	–	39	No	38	No	34	No	42	No	
3	<b><i>I-605 southbound ramps-Rivergrade Road/Lower Azusa Road</i></b>											
	I-605 southbound off ramp	SBLT <sup>3</sup>	1350	1148	223	No	449	No	234	No	422	No
		SBTR	680	578	246		406		266		371	
		SBR	195	166	220		279		226		261	
	Lower Azusa Road	EBT/R <sup>4</sup>	1770	–	181	No	215	No	205	No	217	No
WBL		230	–	<b>264</b>	<b>Yes</b>	175	No	<b>267</b>	<b>Yes</b>	175	No	

Table 4.8-3. Queuing Analysis Summary for Existing Year 2019 and Cumulative Year 2022 Conditions

No.	Intersection	Movement	Storage Length (feet)	Off-Ramp Storage Length at 85% Capacity <sup>4</sup>	Existing Year 2019				Cumulative Year 2022				
					AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
					95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	
4	<b><i>I-605 northbound ramps-Rivergrade Road/Los Angeles Street</i></b>												
	I-605 northbound off ramp	NBLT <sup>3</sup>	1380	1173	667	No	946	No	608	No	896	No	
		NBTR	910	774	594		921		550		890		
	Los Angeles Street	EBL	250	–	134	No	163	No	167	No	171	No	
WBTR <sup>4</sup>		1740	–	132		22		150		– <sup>5</sup>			

Source: Appendix H

WBLTR – Westbound left-through-right; WBR – Westbound right; NBL – Northbound left; SBTR – Southbound through-right; EBL- Eastbound right; EBLR- Eastbound left-right; SBL-Southbound left; SBLT = Southbound left-through; NBTR- Northbound through-right; SBTR- Southbound through-right; SBR-southbound right; EBTR- Eastbound through right; WBL – Westbound left; NBLT – Northbound left-through; EBL – Eastbound left; WBTR- Westbound through-right.

**Notes:**

- <sup>1</sup> Per Caltrans District 7, queuing impacts at freeway off-ramps are based on the queues that exceed 85% of the off-ramp's storage capacity.
- <sup>2</sup> Based on 95th percentile (design) queue length (in feet) in SimTraffic 10.
- <sup>3</sup> Approximate length of storage lane measured from intersection (stop bar) to freeway mainline (at gore point).
- <sup>4</sup> Storage length based on lane distance from intersection to adjacent, upstream intersection.
- <sup>5</sup> Queue not reported in SimTraffic, therefore queue is assumed to be zero feet.

 Movement is utilized by Project traffic as part of the proposed haul route

### ***Cumulative Projects Trip Generation***

Dudek reviewed the Traffic Impact Study for the Devil's Gate Reservoir Sediment Removal and Management Project prepared by Hall & Foreman, Inc. dated October 18, 2013 and updated information regarding the project activities available on the County's website<sup>3</sup>. Based on the review of Devil's Gate project's hauling schedule, it is anticipated that approximately 95 trucks would be used to make a maximum of 425 daily trips over the period of April 2020 to November 2022. The Devil's Gate project would have varying haul routes and timing and would also utilize I-210 westbound ramps/Windsor Avenue and I-210 eastbound ramps/Arroyo Boulevard intersections from approximately 7:00 AM to 3:30 PM with some peak hour restrictions. However, to present a worst-case scenario under cumulative conditions, Devil's Gate truck traffic (approximately 50 inbound truck trips and 50 outbound truck trips) was added to the proposed Project's peak hour construction truck traffic (approximately 30 inbound truck trips and 30 outbound truck trips) when analyzing the potential queues at the I-210 ramps at Windsor Avenue and Arroyo Boulevard. The truck trips were converted to passenger car equivalent trips by utilizing a factor of 3 PCE. Therefore, Devil's Gate Project was estimated to generate 150 inbound PCE trips and 150 outbound trips during both AM and PM peak hours.

Since specific trip generation for other cumulative projects such as Explorer Groundwater Well was not available, to account for traffic from those projects and any background growth in the study area, a growth factor was applied to the estimated Existing Year 2019 peak hour traffic volumes for a period of 3 years to estimate Cumulative Year 2022 peak hour traffic volumes.

### ***Assumptions for Queuing Analysis***

In order to account for the maximum truck traffic that would occur with the overlap of construction activities of the proposed Project and cumulative projects (primarily Devil's Gate Project) the following assumptions were used in the analysis:

1. The peak Project traffic would be generated from improvements in Area 3 which would last approximately 9 months from March 2022 through November 2022. The peak phase of construction of Area 3 would be during demolition activities which would occur for approximately 10 days. As mentioned above this phase would generate 90 inbound PCE trips and 90 outbound trips during both the AM and PM peak hours. The worker trips are nominal and could potentially use other routes in the study area. Therefore, only PCE trips representing truck trips were assigned to the appropriate movements at the ramp intersections for the haul route from the Project site to the landfill. It is assumed that the truck trips would be distributed evenly over the 8-hour period.
2. The Traffic Impact Analysis (TIA) for the Devil's Gate project analyzed multiple haul routes (approximately 26 routes) from the reservoir to eight different landfill sites spread across the County. Devil's Gate truck traffic could utilize ramps located along Berkshire Place or Windsor Avenue to access I-210. However, it is not possible to determine accurately which route and what percentage of the trucks removing sediment from Devil's Gate Reservoir would overlap with Area 3 peak construction

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<sup>3</sup> Devil's Gate Reservoir Sediment Removal and Management Project website: <https://pw.lacounty.gov/swe/devilsgate/docs/DevilsGateReservoirRestorationProjectPresentation-January2020.pdf>

phase. Therefore, two most conservative scenarios of overlap between the truck traffic from the proposed Project and Devil's Gate project were considered for the queuing analysis:

- a. **Scenario 1** – All haul trucks (150 inbound PCE trips and 150 PCE outbound trips) from Devil's Gate Project would be traveling west along I-210 via Windsor Avenue ramps.
  - b. **Scenario 2** – All haul trucks (150 inbound PCE trips and 150 PCE outbound trips) from Devil's Gate Project would be traveling east along I-210 via Arroyo Boulevard ramps.
3. The ramps at I-210 and Windsor Avenue and Arroyo Boulevard (Intersections 1 and 2) were analyzed with peak truck traffic from proposed Project from Area 3 and Devil's Gate project for the two scenarios explained above. However, the ramps at I-605 and Lower Azusa Road- Los Angeles Street (Intersections 3 and 4) near the landfill site were analyzed only with peak Project traffic from Area 3, since that specific Vulcan Material landfill site would not be utilized by the Devil's Gate project.

### ***Summary of Queuing Analysis for Cumulative Conditions***

Table 4.8-4 provides a summary of queuing analysis for the intersections under Cumulative Year 2022 conditions with Area 3 Project traffic and cumulative traffic including Devil's Gate project traffic for under Scenario 1 and Scenario 2 conditions. As shown in the table, the following intersections would have vehicle queues that exceed available storage lengths:

- **Intersection #1, I-210 westbound ramps/Windsor Avenue:** Vehicle queues on the single northbound left turn lane on Windsor Avenue are forecast to exceed its storage length of 110 feet in the PM peak hour of both Cumulative Scenarios 1 and 2. However, the proposed Project would not contribute traffic to this northbound left movement. Also, it should be noted that the off-ramp's AM and PM peak hour queues would continue to be within 85% of the off-ramp's storage capacity (per Caltrans District 7 requirements) under both Cumulative Scenarios 1 and 2.
- **Intersection #2, I-210 eastbound ramps/Arroyo Boulevard:** Vehicle queues on the dual southbound left turn lanes on Arroyo Boulevard would continue to exceed their storage lengths in both peak hours of both Cumulative Scenarios 1 and 2. The combined storage length is 380 feet (two 190-foot lanes). The AM and PM peak hour queues in both Cumulative Scenarios 1 and 2 are forecast to continue to exceed the dual left turn storage capacity. The proposed Project would contribute traffic to this southbound left turn movement and therefore would have a cumulative impact to this intersection. Also, it should be noted that the off-ramp's AM and PM peak hour queues would continue to be within 85% of the off-ramp's storage capacity (per Caltrans District 7 requirements) under both Cumulative Scenarios 1 and 2.
- **Intersection #3, I-605 southbound ramps – Rivergrade Road/Lower Azusa Road:** Vehicle queues on the single westbound left turn lane on Lower Azusa Road would continue to exceed its storage length of 230 feet in the AM peak hour under both Cumulative Scenario 1 and 2 conditions. However, the proposed Project would not contribute traffic to this westbound left movement. Also, it should be noted that the off-ramp's AM and PM peak hour queues would continue to be within 85% of the off-ramp's storage capacity (per Caltrans District 7 requirements) under both Cumulative Scenarios 1 and 2.

Table 4.8-4. Queuing Analysis Summary for Cumulative Year 2022 with Project Conditions

No.	Intersection	Movement	Storage Length (feet)	Off-Ramp Storage Length at 85% Capacity <sup>1</sup>	Cumulative (w Devil's Gate Scenario 1) plus Project (Area 3 Peak Traffic)				Cumulative (w Devil's Gate Scenario 2) plus Project (Area 3 Peak Traffic)			
					AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
					95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?
1	<b><i>I-210 westbound ramps/Windsor Avenue</i></b>											
	I-210 westbound off-ramp	WBLTR <sup>3</sup>	1150	978	343	No	268	No	373	No	310	No
		WBR	560	476	304		236		328		278	
	Arroyo Boulevard	NBL	110	--	65	No*	<b>135</b>	<b>Yes*</b>	63	No*	<b>133</b>	<b>Yes*</b>
Windsor Avenue	SBTR <sup>4</sup>	450	--	320	No	363	No	359	No	318	No	
2	<b><i>I-210 eastbound ramps/Arroyo Boulevard</i></b>											
	I-210 eastbound off-ramp	EBL <sup>3</sup>	1330	1131	307	No*	326	No*	249	No*	269	No
		EBLR	550	468	360		382		295		325	
	Arroyo Boulevard	SBL	190	--	<b>220</b>	Yes	<b>239</b>	Yes	<b>256</b>	Yes	<b>247</b>	Yes
		SBLT	190	--	<b>247</b>		<b>271</b>		<b>294</b>		<b>287</b>	
NBTR		120	--	40	No*	35	No*	39	No*	32	No*	
3	<b><i>I-605 southbound ramps-Rivergrade Road/Lower Azusa Road</i></b>											
	I-605 southbound off-ramp	SBLT <sup>3</sup>	1350	1148	343	No	451	No	234	No	411	No
		SBTR	680	578	313		465		268		375	
		SBR	195	166	255		264		230		272	
	Lower Azusa Road	EBT/R <sup>4</sup>	1770	--	206	No*	214	No*	217	No*	216	No*
WBL		230	--	<b>257</b>	<b>Yes*</b>	181	No*	<b>259</b>	<b>Yes*</b>	183	No*	

Table 4.8-4. Queuing Analysis Summary for Cumulative Year 2022 with Project Conditions

No.	Intersection	Movement	Storage Length (feet)	Off-Ramp Storage Length at 85% Capacity <sup>1</sup>	Cumulative (w Devil's Gate Scenario 1) plus Project (Area 3 Peak Traffic)				Cumulative (w Devil's Gate Scenario 2) plus Project (Area 3 Peak Traffic)				
					AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		
					95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	95th Percentile Queue <sup>2</sup>	Exceeds Storage Length?	
4	<b><i>I-605 northbound ramps-Rivergrade Road/Los Angeles Street</i></b>												
	I-605 northbound off ramp	NBLT <sup>3</sup>	1380	1173	811	No*	926	No *	829	No*	920	No*	
		NBTR	910	774	774		915		782		917		
	Los Angeles Street	EBL	250	--	223	No*	157	No*	214	No*	167	No*	
WBTR <sup>4</sup>		1740	--	198	No	21	No	170	No	20	No		

Source: Appendix H

WBLTR – Westbound left-through-right; WBR – Westbound right; NBL – Northbound left; SBTR – Southbound through-right; EBL- Eastbound right; EBLR- Eastbound left-right; SBL- Southbound left; SBLT = Southbound left-through; NBTR- Northbound through-right; SBTR- Southbound through-right; SBR-southbound right; EBTR- Eastbound through right; WBL – Westbound left; NBLT – Northbound left-through; EBL – Eastbound left; WBTR- Westbound through-right.

**Notes:**

- 1 Per Caltrans District 7, queuing impacts at freeway off-ramps are based on the queues that exceed 85% of the off-ramp's storage capacity.
- 2 Based on 95th percentile (design) queue length (in feet) in SimTraffic 10.
- 3 Approximate length of storage lane measured from intersection (stop bar) to freeway mainline (at gore point).
- 4 Storage length based on lane distance from intersection to adjacent, upstream intersection.
- \* The Project would not add traffic to the movement.

Movement is utilized by Project traffic as part of the proposed haul route

### ***Conclusion of Queuing Analysis for Cumulative Conditions***

Based on the queuing analysis of cumulative conditions provided above, the proposed Project would have a potentially significant queuing impact at the I-210 eastbound ramps/Arroyo Boulevard intersection. Therefore, the project would contribute to a cumulatively significant impact to the Caltrans ramp intersection during short-term construction of Area 3. Therefore MM-CUML-1 is proposed, which requires that the City shall coordinate with the contractor for Devil's Gate Reservoir to avoid potential queuing impacts at the I-210 eastbound ramps/Arroyo Boulevard intersection during peak phase of Area 3 construction under cumulative conditions.

## **4.8.7 Mitigation Measures**

- MM TRA-1** During the peak phase of construction activities (i.e. during the demolition phase requiring haul truck trips) in Area 3, all Construction Contractors shall schedule the arrival and departure of the sediment export haul trucks to be outside the AM peak hours of 7:30 AM to 8:30 AM and the PM peak hours of 4:30 PM to 5:30 PM.
- MM TRA-2** During construction activities in Areas 2 and 3, use of the North Arroyo Boulevard or Gabrielino Trail/Access Road by hikers, bicyclists and equestrians shall be limited or prohibited when temporary partial or full closures of the Gabrielino Trail/ Access Road, Explorer Road, hiking trails or maintenance roads is necessary. In addition to the requirements for notification set forth in the City's Supplements and Modifications to the Greenbook, flagpersons and/or other safety procedures shall be used as necessary to ensure the safety of recreational users.
- MM TRA-3** Prior to the start of construction, the City and/or their Construction Contractor shall provide written notice to the USFS and residences at the Ranger Station of the anticipated construction schedule, stating that access may be temporarily obstructed on an intermittent basis and providing a schedule of anticipated closures. In order to ensure that emergency vehicles would not be obstructed at any time, any temporary obstructions to the Gabrielino Trail/Access Road that could hinder emergency vehicular access shall be mobile and able to be removed from the roadway immediately upon notice from emergency responders.
- MM CUML-1** The City and/or their Construction Contractor shall coordinate with the Los Angeles County Department of Public Works and/or their contractor for the sediment removal activities at Devil's Gate Reservoir regarding the schedule of trucks to and from landfills that would require the use of Interstate 210 eastbound ramps/Arroyo Boulevard intersection. If it is determined that activities would overlap and Project traffic and cumulative traffic including the Devil's Gate project traffic would have vehicle queues at Caltrans facilities that exceed available storage lengths, then the City and/or their contractor shall implement construction vehicle/hauling restrictions that disallow the proposed Project's truck traffic during the AM and PM peak hours of 7:30 AM to 8:30 AM and 4:30 PM to 5:30 PM.

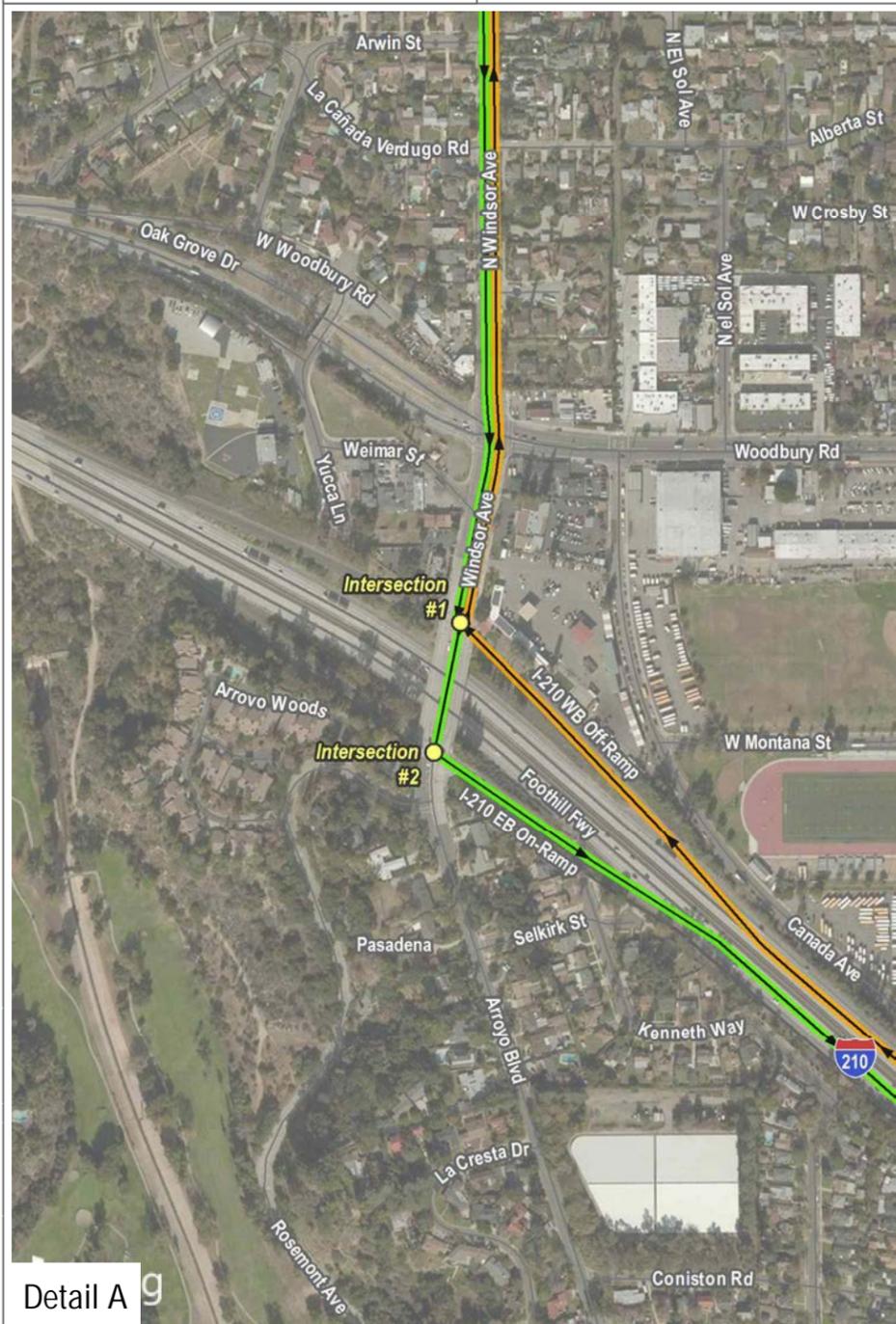
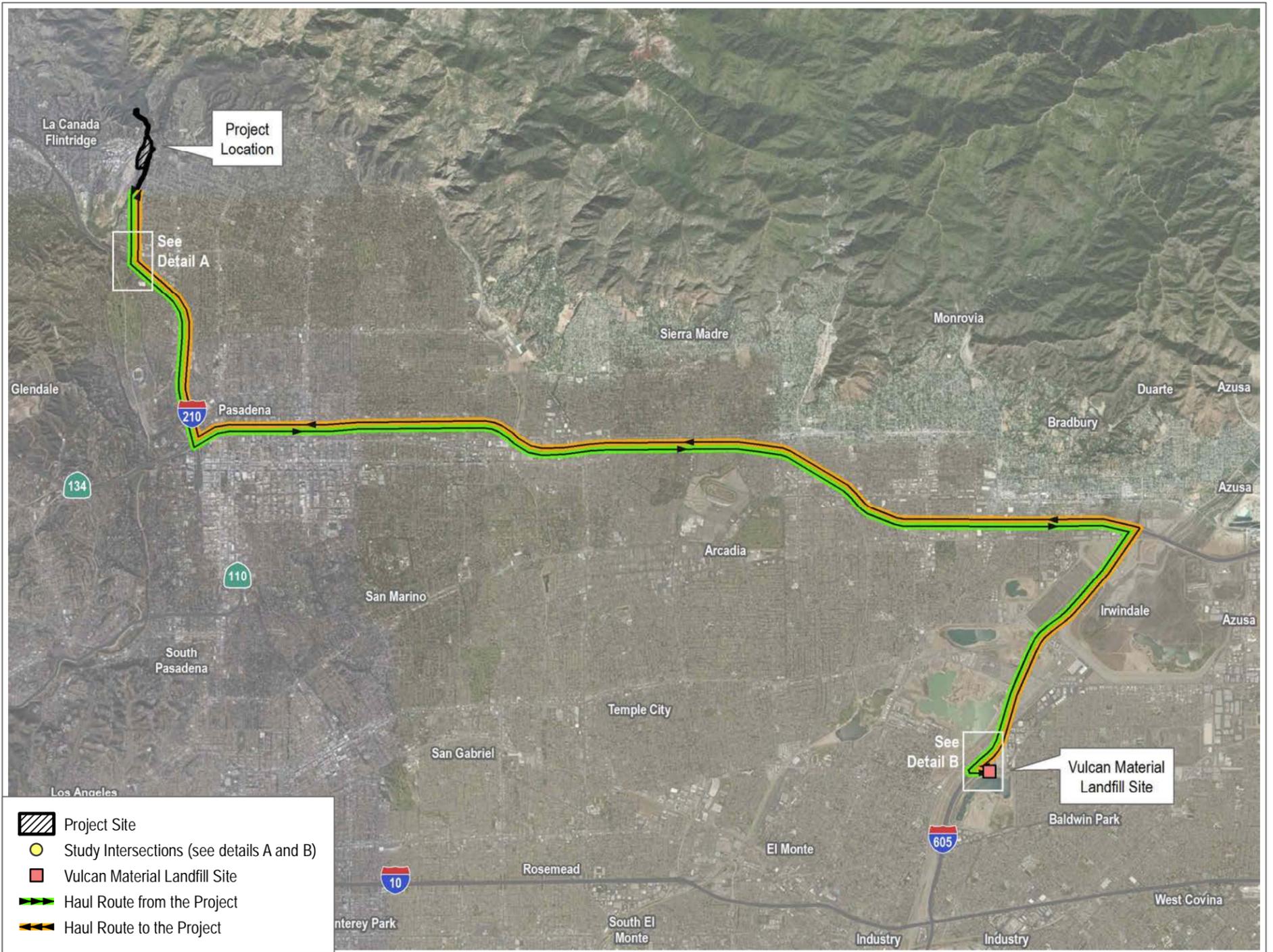
## 4.8.8 Level of Significance After Mitigation

With implementation of MM-TRA-1, MM-TRA-2, MM-TRA-3, and MM-CUML-1, short-term construction traffic impacts would be reduced to levels less than significant. There would be no impacts and no mitigation required for long-term operational transportation.

## 4.8.9 References

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SOURCE: Bing 2019, Open Street Map 2019



FIGURE 4.8-1  
Proposed Haul Route and Study Intersections  
Arroyo Seco Canyon Project Areas 2 and 3

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