

## 4.7 Transportation/Circulation

The TIS for the Proposed Project prepared by Darnell and Associates, Inc. (2017) is contained in Appendix I of this Draft EIR. As discussed in Section 3.7, recent legislation (SB 743) will redefine the analysis of traffic impacts; however, this requirement does not become effective until July 1, 2020 and for the purpose of this EIR, the identified significance thresholds are based on criteria provided in the County Guidelines for Determining Significance and Report Format and Content Requirements for Transportation and Traffic (County Guidelines for Transportation and Traffic), approved August 24, 2011. A VMT Analysis and supporting market analysis have been prepared for the Proposed Project for informational purposes only and can be found in their entirety in Appendix P.

The methodology used to estimate potential impacts, as well as the criteria for significance, results, and conclusions of the TIS regarding potential project traffic circulation impacts, as well as recommended mitigation measures, are summarized here. The following traffic scenarios were analyzed in the TIS:

- *Existing (Year 2017) Conditions* refers to that condition which currently exists on the ground, including existing traffic counts and existing lane configurations at intersections and on roadway segments. The extension of SR 905 to Enrico Fermi Drive was completed and opened to traffic in February 2017. To account for the extension of SR 905 to Enrico Fermi Drive the study area was revised to reflect the SR 905 extension, and new traffic counts were collected in April 2017.
- *Opening Year 2019 Conditions with Proposed Project (Maximum Production)* refers to the Opening Year 2019 condition plus the traffic generated by the combination of Phases 1 and 2 of the Proposed Project based on the maximum production scenario.
- *Year 2050 Conditions* refers to the conditions and traffic volumes that would exist under 2050 conditions per the EOMSP. All roadway segments were assumed to be built out to their classifications as identified in the *East Otay Mesa Business Park Specific Plan*, as Amended by SPA 14-002 approved by the County Board of Supervisors on April 22, 2015. The traffic forecast for 2050 conditions was based on the February 20, 2014 Traffic Forecasts prepared by SANDAG for the General Plan Update. This scenario assumes that the Project site is developed with 62 acres of mixed industrial use and 254 acres of rural residential use.<sup>1</sup>
- *Year 2050 with Proposed SPA* refers to those conditions which include the 2050 roadway classifications; however, the 2050 traffic volume were adjusted to include the Project's proposed SPA to increase the mixed industrial land use within the Project site by a net of 43 acres and decrease the rural residential land use within the project site by a net of 254 acres. This results in the Project site having a net of 105 acres of mixed industrial use and approximately 211 acres of conservation/limited use<sup>1</sup>.

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<sup>1</sup> Note that an additional 94 acres within the Project site is located outside the EOMSP. This area is in unincorporated County land and is proposed as Conservation/Limited Use within the OHCA.

The first scenario (Existing Conditions) was summarized in Subchapter 3.7, *Transportation/Circulation*, of this EIR. The remaining scenarios are summarized in this subchapter.

The trip generation potential for a project is estimated based on the proposed land use characteristics. In the San Diego area, there are three sources that provide standard trip generation rates for various land use types: (1) The City of San Diego's *Trip Generation Manual*, (2) SANDAG's (*Not So*) *Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, and (3) *The Institute of Transportation Engineers (ITE) Trip Generation Manual, 8<sup>th</sup> Edition*. These sources were the basis for estimating project trip generation under all alternatives; however, since none of these sources include trip generation rates for a facility such as the Proposed Project, trip generation for those alternatives involving construction aggregate production facilities was estimated based on the anticipated operating characteristics of the Project (i.e., number of employees, volume of material produced, etc.).

#### **4.7.1 Thresholds of Significance**

The roadway segments and intersections in the vicinity of the Proposed Project are located in the jurisdiction of both the County and City, and in some cases are under the combined jurisdiction of the County, City and/or Caltrans. The criteria for determining project significance depend on the location of the roadway segment or intersection and the corresponding jurisdiction(s). The County's and City's significance of impact criteria, as well as those of Caltrans, are discussed below.

##### **4.7.1.1 County of San Diego**

The following guidelines are based on County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Transportation and Traffic, dated August 24, 2011. For Regionally Significant Arterials (RSAs), the County uses the guidelines established by the San Diego Traffic Engineers' Council (SANTEC) and the ITE.

##### Roadway Segments

1. Traffic volumes increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or LOS traffic impact on a road segment if:
  - a. The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Circulation Element Road or State Highway currently operating at LOS E or F as identified for road segments in the County Threshold Table below;
  - b. The additional or redistributed ADT generated by the proposed project will cause a Circulation Element Road or State Highway to operate at LOS E or LOS F as a result of the proposed project as identified for road segments in the County Threshold Table below; or
  - c. The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity.

COUNTY TRAFFIC THRESHOLDS						
Allowable Increases on Congested Roads and Intersections						
LOS	Intersections		Road Segments			
	Signalized	Unsignalized	2-Lane Road <sup>1</sup> with intersection spacing less than one mile	2-Lane Road <sup>1</sup>	4-Lane Road	6-Lane Road
LOS E	Delay of 2 seconds or less	20 or less peak hour trips on a critical movement	Delay of 2 or less seconds at adjacent signalized intersection	200 <sup>2</sup> ADT	400 ADT	600 ADT
LOS F	Either a delay of 1 second, or 5 or less peak hour trips on a critical movement	5 or less peak hour trips on a critical movement	Delay of 1 second or less, or 5 peak hour trips or less on a critical movement	100 <sup>3</sup> ADT	200 ADT	300 ADT
Allowable Change due to Project Impact on County Circulation Element Roads, Signalized Intersections, and Ramps						
LOS with Project	Freeways		Roadway Segments <sup>4</sup>		Intersections <sup>5</sup>	Ramps with > 15 min. delay
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
E and F	0.01	1	0.02	1	2	2

Notes:

- A critical movement is an intersection movement (right turn, left turn, through-movement) that experiences excessive queues, which typically operate at LOS F. Also, if a project adds significant volume to a minor roadway approach, a gap study should be provided that details the headways between vehicles on the major roadway.
  - By adding Proposed Project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes additional trips must mitigate a share of the cumulative impacts.
  - The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.
  - For determining significance at signalized intersection with LOS F conditions, the analysis must evaluate both the delay and the number of trips on a critical movement, exceedance of either criteria result in a significant impact.
- <sup>1</sup> Impacts related to operational features on two-lane highway may be evaluated on a case-by-case basis, based upon traffic flow patterns, geometrics, available sight distance, accident histories, and other factors.
- <sup>2</sup> For 2-lane roads with intersection spacing over one mile, the LOS criteria for LOS E is 16,200 ADT or more, and the threshold for impact significance is an increase of 325 ADT or more.
- <sup>3</sup> For 2-lane roads with intersection spacing over one mile, the LOS criteria for LOS F is 22,900 ADT or more, and the threshold for impact significance is an increase of 225 ADT or more.
- <sup>4</sup> For County arterials, which are identified in SANDAG's Regional Transportation plan and Congestion Management Plan as regionally significant arterials, significance may be measured based on an increase in ADT. The allowable change in ADT due to project impacts in this instance would be identified in the table.
- <sup>5</sup> Signalized intersections
- sec. = seconds of delay per vehicle; min. = minutes of delay per vehicle; V/C = volume-to-capacity ratio; mph = miles per hour

Signalized Intersections

2. Traffic volume increases from public or private projects that result in one or more of the following criteria being exceeded will have a significant traffic volume or LOS traffic impact on a road segment if:
  - a. The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F as identified for signalized intersections in the County Threshold table above;
  - b. The additional or redistributed ADT generated by the proposed project will cause a signalized intersection to operate at LOS E or LOS F as identified for signalized intersections in the County Threshold table above; or

- c. Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.

### Unsignalized Intersections

3. Traffic volume increases from public or private projects will have a significant traffic impact on a road segment if:
  - a. The additional or redistributed ADT generated from the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate below LOS D;
  - b. The additional or redistributed ADT generated from the proposed project will add 21 or more peak hour trips to a critical movement of an unsignalized intersection and the unsignalized intersection currently operate at LOS E;
  - c. The additional or redistributed ADT generated from the proposed project will add six or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F;
  - d. The additional or redistributed ADT generated from the proposed project will add six or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F; or
  - e. Based on an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance, or other factors, the project would significantly impact the operations of the intersections.

### Regionally Significant Arterials

4. Traffic volume increases from public or private projects will have a significant traffic volume or LOS traffic impact on a Regionally Significant Arterial if:
  - a. The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Regionally Significant Arterial currently operating at LOS E or F as identified in the County Threshold Table above.

### Ramps

5. Additional or redistributed ADT generated by the proposed project may significantly increase congestion at a freeway ramp, if the thresholds in the County Threshold table above are exceeded. Other factors affecting these values will be considered, including ramp metering, location (rural vs. urban), ramp design, and the proximity of adjacent intersections.

### Traffic Hazards

6. A significant traffic hazard impact due to a design feature would occur if the proposed project would (on a case-by-case basis):
  - a. Have design features/physical configurations of access roads that would adversely affect the safe transport of vehicles along the roadway;
  - b. Result in a percentage or magnitude of increased traffic on the road that would affect the safety of the roadway;
  - c. Result in physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers, that could result in vehicle conflicts with other vehicles and/or stationary objects; or
  - d. Does not conform to the requirements of the private or public road standards, as applicable.
7. A significant traffic hazard impact to pedestrians and/or bicyclists would occur if the proposed project would (on a case-by-case basis):
  - a. Result in design features/physical configurations that would adversely affect the visibility of pedestrians and/or bicyclists to drivers entering and exiting the site, and the visibility of cars to pedestrians and bicyclists;
  - b. Result in an amount of pedestrian activity at the proposed project access points that may adversely affect pedestrian safety;
  - c. Result in the preclusion or substantial hindrance of the provision of a planned bike lane or pedestrian facility on a roadway adjacent to the Project site;
  - d. Result in a percentage and/or magnitude of increased traffic on the road due to the proposed project that may adversely affect pedestrian and bicycle safety;
  - e. Result in physical conditions on the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers, that could result in vehicle/pedestrian, vehicle/bicycle conflicts;
  - f. Not conform to the requirements of the private or public road standards, as applicable; or
  - g. Result in a substantial increase in pedestrian or bicycle activity without the presence of adequate facilities.

#### **4.7.1.2 City of San Diego**

The City uses significance thresholds that are outlined in Section O, Transportation/Circulation and Parking, of the *Significance Determination Thresholds* (City 2010). Section O thresholds

apply to all projects deemed complete on or after January 1, 2007. Per the City thresholds, project impacts would be significant if:

8. Any intersection, roadway segment, or freeway segment affected by a project would operate at LOS E or LOS F under either direct or cumulative conditions, as identified in the City Thresholds table below.

CITY TRAFFIC THRESHOLDS						
LOS with Project*	Allowable Change Due to Project Impact**					
	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)
E (or ramp meter delays above 15 min.)	0.010	1.0	0.02	1.0	2.0	2.0
F (or ramp meter delays above 15 min.)	0.005	0.5	0.01	0.5	1.0	1.0

Notes:

- The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS E is 2 minutes.
- The allowable increase in delay at a ramp meter with more than 15 minutes delay and freeway LOS F is 1 minute.
- \* All LOS measurements are based on Highway Capacity Manual (HCM) procedures for peak hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual. The acceptable LOS for freeways, roadways, and intersections is generally LOS D (LOS C for undeveloped locations). For metered freeway ramps, LOS does not apply. Ramp meter delays above 15 minutes are considered excessive.
- \*\* If a proposed project's traffic causes the values shown on the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable, or if the project adds a significant amount of peak hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating the project's direct significant and/or cumulatively considerable traffic impacts.

sec. = seconds of delay per vehicle; min. = minutes of delay per vehicle; V/C = volume-to-capacity ratio; mph = miles per hour

9. A project exceeds the thresholds at any ramp meter location with delays above 15 minutes, as identified in the City Thresholds table above.
10. A project would add a substantial amount of traffic to a congested freeway segment, interchange, or ramp, as shown in the City Thresholds table above.
11. A project would increase traffic hazards to motor vehicles, bicyclists, or pedestrians due to proposed non-standard design features (e.g., poor sight distance, proposed driveway onto an access-restricted roadway).

#### 4.7.1.3 California Department of Transportation

The *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2002) requires that State highway facilities (i.e., freeway segments, signalized intersections, on- or off-ramps, etc.) maintain a target LOS at the transition between LOS C and LOS D. Appendix A of the TIS includes excerpts from Caltrans traffic impact guidelines. Per Caltrans guidance, project impacts would be significant if:

12. Any intersection, freeway segment or ramp affected by a project would operate at below LOS D under either direct or cumulative conditions, as identified in the Caltrans Thresholds.

## **4.7.2 Proposed Project**

### **4.7.2.1 Analysis of Project Effects and Determination as to Significance**

#### Study Area

To determine the study area for the Project, the County of San Diego's and City of San Diego's criteria were used, depending on the applicable jurisdiction. The County of San Diego's criteria recommends the inclusion of all transportation facilities that receive 25 or more peak hour trips from the Proposed Project. The City's criteria require the analysis of all regionally significant arterial system segments and intersections where the Proposed Project will add 50 or more peak hour trips in either direction and all mainline freeway locations where the Project will add 100 or more two-way peak hour trips.

#### Project Trip Generation

As noted above, none of the standard sources for trip generation rates used in the San Diego area have published rates for a facility similar to the Proposed Project; therefore, the trip generation was estimated based on the anticipated operating characteristics of the Proposed Project (i.e., number of employees, volume of material produced, etc.).

The volume of material for production and import of concrete, asphalt, CTB, and rock was estimated based on the discussions with the Project applicant and is as follows:

#### Average Daily Trip Generation

- The construction aggregate production would be comprised of 1,000 cy of concrete production along with 1,000 tons, 200 tons, and 1,800 tons of asphalt production, CTB production, and rock sales, respectively;
- Sand import would be comprised of 375 and 100 tons for concrete and asphalt production, respectively;
- Cement import would be comprised of 250 and 6 tons for concrete and CTB production, respectively;
- Approximately 50 tons of oil would need to be imported to the Project site each day to support the proposed asphalt production; and
- Trips to support 1,200 tons of recycling production and recycling import combined.

### Maximum Daily Trip Generation

- The construction aggregate production would be comprised of 1,500 cy of concrete production along with 2,000 tons, 1,000 tons, and 3,000 tons of asphalt production, CTB production, and rock sales, respectively;
- Sand import would be comprised of 375 and 200 tons for concrete and asphalt production, respectively;
- Cement import would be comprised of 250 and 20 tons for concrete and CTB production, respectively;
- Approximately 100 tons of oil would need to be imported to the Project site each day to support the proposed asphalt production; and
- Trips to support 2,000 tons of recycling production and recycling import combined.

Table 4.7-1, *Trip Generation Rates*, summarizes the trip generation rates for the Project by phase. It is estimated that about 15 employees would be working in the processing plant and approximately 20 truck drivers would be employed for transporting the production and import for the quarry.

Table 4.7-2, *Estimation of Truck Trip Generation*, shows the estimated number of trucks that would be required for each phase of development. It is possible that the number of truck trips shown in Table 4.7-2 will vary depending on product demand. The sum of the maximum daily trips represents a worst-case scenario and would not be exceeded.

The trip generation calculations for the average and maximum operating conditions are summarized in Table 4.7-3, *Trip Generation Calculations for Proposed Project*. It should be noted that the maximum operating conditions would occur in rare situations, thus the trip generation calculations for the maximum operating conditions summarized in Table 4.7-3 should be considered a worst-case scenario. As summarized in Table 4.7-3, Phase 1 of the Proposed Project is estimated to generate 148 average daily PCE trips, 25 AM PCE trips and 25 PM PCE trips.

Based on the average production scenario, Phase 2 and 3 (independently) are estimated to generate 1,332 average daily PCE trips, 83 AM PCE trips, and 97 PM PCE trips. A portion of the trips generated during Phases 2 and 3 are internal trips (i.e., 50 percent of the trips attributed to rock sales all stay on-site), thus based on the average production scenario, Phase 2 and 3 (independently) are estimated to generate 1,196 external average daily PCE trips, 77 external AM PCE trips and 91 external PM PCE trips. Based on the maximum production scenario, Phase 2 and 3 (independently) are estimated to generate 2,154 average daily PCE trips, 127 AM PCE trips and 141 PM PCE trips.

Based on the average production scenario, Phase 4 (independently) is estimated to generate 390 average daily PCE trips, 33 AM PCE trips, and 47 PM PCE trips. Based on the maximum production scenario, Phase 4 (independently) is estimated to generate 598 average daily PCE trips, 46 AM PCE trips and 60 PM PCE trips.



Since the combination of Phases 1 and 2 generate the highest number of trips to occur thru 2042, the TIS analyzed the Project impacts associated with the addition of the traffic generated by the combination of Phases 1 and 2 based on maximum production scenarios. The combination of Phases 1 and 2, per the maximum production scenario, is estimated to generate 2,302 average daily PCE trips, 152 AM PCE trips, and 166 PM PCE trips. Since Phases 2 and 3 would develop independently, the Phase 1 and 2 analysis would also address Phases 1 and 3 impacts.

The Project site is currently zoned per the EOMSP to have 62 acres of Mixed Industrial Land Use and 254 acres of Rural Residential Land Use. The remaining Project site acreage is outside the EOMSP. As part of the Proposed Project, the current EOMSP would need to be amended to designate the quarry footprint as all Mixed Industrial. It would also be necessary to eliminate the Mixed Industrial designation from areas of the site that would not be affected by extractive operations and to designate those areas as Conservation/Limited Use. The proposed SPA would create a total of 105 acres of Mixed Industrial Land Use and 305 acres of Conservation/Limited Use. This is a net increase of 43 acres of Mixed Industrial Land Use, a net decrease of 254 acres of Rural Residential, and a net increase of 211 acres of Conservation/Limited Use within the Project site. Table 4.7-4, *Comparison of Trip Generation Rates from the Project Site per Use Specified by EOMSP and Proposed SPA*, provides a summary of the trip generation calculations for the Project site based on the existing Specific Plan land use designations and the proposed SPA land use designations. As shown in Table 4.7-4, the proposed SPA will result in an increase of 1,783 average daily trips over what was assumed in the EOMSP.

#### Project Traffic Distribution and Assignment

Because the combination of Phases 1 and 2 generate the highest number of trips, the TIS focuses on the potential impacts that would be associated with the addition of the traffic generated by the combination of Phases 1 and 2 of the Proposed Project based on the maximum production scenario. Therefore, only the traffic generated by Phases 1 and 2 of the Proposed Project were distributed and assigned to the adjacent roadway network. Project distribution and Project Traffic for Phases 1 and 2 is presented in Figure 5 of the TIS in Appendix I of this EIR.

Per the Proposed Project timeline, based on Phase 1 starting in the Year 2019, Phase 2 of the Proposed Project is not anticipated to start until around the Year 2020 and Phase 4 of the Proposed Project is not anticipated to start until around the Year 2045. However, in order to determine the Project's potential direct and cumulative impacts, the Project traffic for Phases 1 through 2 was distributed and assigned to the roadway network under Existing and Opening Year 2019 conditions.

The Proposed Project is anticipated to last for 120± years bringing the end of the Project to approximately the Year 2142. At the end of the Proposed Project, the impact footprint portion of the Project site could then be redeveloped per its proposed SPA with Mixed Industrial land uses. Since the Year 2142 is too far in the future to be able to predict what the traffic conditions would be with any kind of accuracy, the TIS analyzes the potential impacts of the proposed SPA under the Year 2050 conditions, the analysis year for the buildout analysis provided in the EOMSP. The trip distribution percentages for 2050 conditions were estimated based on the SANDAG Series 12 2050 Model Base Forecasts.

### Roadway Segments (Guideline Nos. 1 and 8)

Table 4.7-5, *Opening Year 2019 + Project (Phases 1 & 2) Maximum Production Scenario Conditions - Roadway Segment Daily LOS Summary*, summarizes the daily roadway segment level of service analysis under opening year 2019 plus Project (Phases 1 and 2) conditions based on the maximum production scenario. Table 4.7-6, *Opening Year 2019 + Project – SR 905 Mainline Operation Summary*, summarizes mainline freeway operating conditions based on Caltrans Peak Hour criteria. As shown in Tables 4.7-5 and 4.7-6, based on the maximum production scenario, SR 905 mainline freeway segments and all key roadway segments continue to operate at an acceptable LOS D or better under Opening Year 2019 plus Project conditions, with the exception of Otay Mesa Road west of Alta Road, which would operate at LOS E under opening year 2019 plus Project traffic (Phases 1 and 2) conditions resulting in a significant direct impact on this roadway segment (Impact TR-1).

### Intersections (Guideline Nos. 2, 3, 8 and 12)

#### Synchro Analysis

Tables 4.7-7, *Opening Year 2019 + Project (Phases 1 and 2) Intersection LOS Summary – Maximum Production Scenario*, summarize the Opening Year 2019 plus Project (Phases 1 and 2) conditions intersection level of service summary during the AM and PM peak hours for the maximum production scenarios, respectively. As shown in Table 4.7-6, all intersections continue to operate at an acceptable LOS C or better under Opening Day 2019 plus Project (Phases 1 and 2) conditions for maximum production scenarios, except Otay Mesa Road at Alta Road which operates at LOS F in the AM peak hour for both the Opening Year 2019 and Opening Year 2019 plus Project conditions. The Proposed Project would add 44.7 seconds of delay at this intersection; therefore; the Proposed Project would have a significant direct impact on the intersection at Otay Mesa Road and Alta Road (Impact TR-2).

### Project Access and On-Site Circulation (Guideline Nos. 1, 2, 3, 8 and 12)

The Project proposes to take access off Alta Road via Calzada de la Fuente located north of the Old Otay Mesa Road/Lone Star Road (Paseo de la Fuente) intersection. A cul-de-sac at the end of Calzada de la Fuente terminates the public road prior to entering the Project (Figure 2-11). The cul-de-sac would provide direct access to/from Calzada de la Fuente such that the vehicles would be able to enter and exit the site without requiring any extensive turning movements.

### Traffic Hazards (Guideline Nos. 6, 7 and 11)

The Proposed Project would take access from Alta Road via Calzada de la Fuente located north of Old Otay Mesa Road/Lone Star Road (Paseo de la Fuente) intersection. Project access was designed so that vehicles can enter/exit without requiring any extensive turn movements. Project access intersection LOS analysis was completed. As shown in Table 4.7-7, the Project access would operate at acceptable levels under all scenarios. It is noted that adequate sight distance would be included in the Project plans in accordance with County requirements. Therefore, no traffic hazard impact related to access would occur due to the Project.

The Project does not propose any hazards or barriers for pedestrians or bicyclists on adjacent roadways. All roads would be constructed to County road standards. Improvements would be constructed to maintain and enhance existing conditions as they relate to pedestrians and bicyclists. Because of these provisions, impacts to pedestrian and bicyclist safety would be less than significant.

#### **4.7.2.2 Cumulative Impact Analysis (Guideline Nos. 1 through 12)**

The traffic forecast (Year 2050) was prepared by Darnell & Associates and based on the SANDAG Series 12 Model Base Forecasts. The cumulative year 2050 analysis is based on the amendment to the EOMSP (SPA 14-002) that was approved by the County Board of Supervisors on April 22, 2015 and the associated build-out roadway conditions depicted on Figure 4.7-1, *Adopted Circulation Plan for East Otay Mesa*. It should be noted that the proposed SPA that is being processed as part of the Proposed Project to modify the land use designations does not propose any changes to the circulation network depicted in Figure 4.7-1. Table 4.7-8, *Year 2050 Segment Daily LOS Summary*, shows that all road segments in the study area would operate at a LOS D or better in the year 2050 and would continue to operate at LOS D or better with the addition of Project traffic. Additionally, as a condition of MUP approval, the Project proponent would be required to pay the appropriate TIF (described in Subsection 3.7.1.4), as determined by the County. Based on the acceptable LOS on road segments in the study area in the year 2050 with the Project traffic included, the Project would not have a cumulative impact related to traffic.

#### **4.7.2.3 Significance of Impacts Prior to Mitigation**

Prior to mitigation, the Proposed Project would result in the following significant direct impacts:

Impact TR-1 The Proposed Project, based on the Opening Year 2019 plus Project maximum production scenario, would have a significant direct impact to Otay Mesa Road from east of Enrico Fermi Drive to Alta Road.

Impact TR-2 The Proposed Project, based on the Opening Year 2019 plus Project maximum production scenario, would have a significant direct impact on the intersection at Otay Mesa Road and Alta Road.

#### **4.7.2.4 Mitigation Measures**

The following mitigation measure would be implemented to reduce direct transportation impacts associated with the Proposed Project:

M-TR-1 Within 180 days of MUP approval, the applicant shall re-stripe the segment of Otay Mesa Road between Alta Road and Enrico Fermi Drive to provide two lanes plus a continuous center turn lane, which will improve the level of service of the roadway to LOS D.

M-TR-2 Within 180 days of MUP approval, the applicant shall install a traffic signal control at the intersection of Otay Mesa Road and Alta Road, which will improve the level of service to LOS B in the AM peak and LOS A in the PM peak hours.

#### **4.7.2.5 Conclusion**

The combination of Phases 1 and 2 of the Proposed Project, based on the Opening Year 2019 plus Project maximum production scenario, would have a significant direct impact on Otay Mesa Road from east of Enrico Fermi Drive to Alta Road and at the intersection of Otay Mesa Road (Old Otay Mesa Road) and Alta Road. These impacts would be mitigated through traffic improvements such as striping and the installation of a traffic signal (M-TR-1 and M-TR-2). Analysis of the Future 2050 traffic forecasts with the addition of Project traffic from the proposed 105 acres of Mixed Industrial and 305 acres of Conservation/Limited Use land use found that approval of the proposed SPA would result in the addition of 1,783 additional trips from the Project area to the 2050 traffic forecasts. Analysis of the additional traffic generated concluded that the proposed SPA would not create significant cumulative impacts and would not require any changes to the adopted EOMSP Circulation Element.

#### **4.7.3 Extraction to Natural Grade Alternative**

##### **4.7.3.1 Analysis of Project Effects and Determination as to Significance**

The Extraction to Natural Grade Alternative would include the same operations and footprint as the Proposed Project. However, only Phases 1 and 2 would be included and the IDEFO associated with Phase 3 of the Proposed Project would be eliminated under this alternative. Thus, the Phase 2 trip generation from the Proposed Project would represent the maximum trip potential for this alternative. Table 4.7-9, *Project Alternatives Trip Generation Rates and Calculations Summary*, indicates that estimated ADT volumes for this alternative would be 1,332 for average production and 1,664 for maximum production, which is respectively 312 and 520 ADT less than the Proposed Project. Direct impacts would be significant under the Extraction to Natural Grade Alternative.

##### **4.7.3.2 Significance of Impacts Prior to Mitigation**

A direct impact would occur on Otay Mesa Road (Old Otay Mesa Road) from east of Enrico Fermi Drive to Alta Road and at the intersection of Otay Mesa Road and Alta Road (identical to the direct impacts identified for the Proposed Project, Impact TR-1 and Impact TR-2).

##### **4.7.3.3 Mitigation Measures**

Mitigation measures M-TR-1 and M-TR-2 identified for the Proposed Project in Subsection 4.7.3.4 would be implemented to reduce direct transportation impacts associated with the Extraction to Natural Grade Alternative.

##### **4.7.3.4 Conclusion**

The Extraction to Natural Grade Alternative would result in the same impacts as the Proposed Project and would therefore mitigate these direct impacts through traffic improvements such as striping and the installation of a traffic signal. Since no cumulative impacts would occur, no related mitigation would be required.

#### **4.7.4 Extraction to Varying Depth Alternative**

##### **4.7.4.1 Analysis of Project Effects and Determination as to Significance**

The Extraction to Varying Depth Alternative would include the same operations and footprint as the Proposed Project and would be comprised of four phases consistent with Phases 1 through 4 of the Proposed Project, except that the extraction depth would be reduced to between 50 feet and 200 feet below the existing grade (the Proposed Project would extend to a depth of approximately 525 feet below the existing grade). Phase 1 would include site preparation and the construction of the processing plant. Phase 2 would include cutting the landform to the natural grade elevation that exists along the western perimeter of the site and extraction of material that would extend to a maximum pit floor elevation between 580 feet and 630 feet AMSL. Extraction would progress in a north to south direction. Phase 3 would extend below the Phase 2 area, extracting material to a maximum pit floor elevation between 380 and 530 feet AMSL. Phase 4 would involve backfilling the pit with inert fill material and compacting the material to form pad areas (IDEFO). Similar to the Proposed Project, the pit would be backfilled consecutively with extraction that occurs during Phase 3. Since the daily production activities based on the average and maximum production scenarios would be the same for the Extraction to Varying Depth Alternative as they are for the Proposed Project, the trip generation for this alternative would be the same as the Proposed Project. Table 4.7-9 indicates that estimated ADT volumes for this alternative would be 1,644, which is the same as the Proposed Project. Direct impacts would be significant under the Extraction to Varying Depth Alternative and the same as the Proposed Project (Impacts TR-1 and TR-2).

##### **4.7.4.2 Significance of Impacts Prior to Mitigation**

A direct impact would occur on Otay Mesa Road (Old Otay Mesa Road) east of Enrico Fermi Drive to Alta Road, and on the intersection at Otay Mesa Road and Alta Road (identical to the direct impact identified for the Proposed Project, Impact TR-1 and Impact TR-2).

##### **4.7.4.3 Mitigation Measures**

Mitigation measures M-TR-1 and M-TR-2 identified for the Proposed Project in Subsection 4.7.3.4 would be implemented to reduce direct transportation impacts associated with the Extraction to Varying Depth Alternative.

##### **4.7.4.4 Conclusion**

The Extraction to Varying Depth Alternative would result in the same impacts as the Proposed Project and would therefore mitigate these direct impacts through traffic improvements such as striping and the installation of a traffic signal. Since no cumulative impacts would occur, no related mitigation would be required.

#### **4.7.5 No Project/Existing Plan Alternative**

##### **4.7.5.1 Analysis of Project Effects and Determination as to Significance**

The No Project/Existing Plan Alternative assumes that the Project site would be developed per the existing land uses approved in the EOMSP, which allows for 62 acres of Mixed Industrial and

254 acres of Rural Residential uses within the Project site. The hillside areas within the site allow for low-density (one dwelling unit per 20 acres) rural residential use. The Mixed Industrial District permits uses such as wholesale storage and distribution, research services, and general industrial along with compatible commercial uses of construction sales and services, automotive and equipment uses, and custom manufacturing, to be built under its land use designation. At full 2030 buildout, this alternative would be expected to comprise approximately 12 dwelling units on approximately 254 acres and 62 acres of mixed industrial uses.

Table 4.7-9 indicates that estimated ADT volumes for this alternative would be 8,628 which is approximately five times the anticipated ADT volumes for the Proposed Project.

The TIS did not analyze the No Project/Existing Plan Alternative in detail; however, since ADT volumes for this alternative would be much greater than the Proposed Project's ADT volumes, the associated direct traffic impacts could be expected to be significant and greater than the Proposed Project's impacts (Impact TR-1).

#### **4.7.5.2 Significance of Impacts Prior to Mitigation**

Although the TIS did not analyze the No Project/Existing Plan Alternative in detail, it is assumed that extensive mitigation measures would be required to mitigate all the significant traffic impacts likely to result from implementation of the No Project/Existing Plan Alternative.

#### **4.7.5.3 Mitigation Measures**

All of the mitigation measures discussed in Subsection 4.7.2.4 for the Proposed Project would also be required for the No Project/Existing Plan Alternative. In addition, even though the TIS did not analyze this alternative in detail, it is assumed that additional mitigation measures beyond those required for the Proposed Project would be necessary to mitigate the significant traffic impacts likely to result from implementation of the No Project/Existing Plan Alternative.

#### **4.7.5.4 Conclusion**

Although the TIS did not analyze the No Project/Existing Plan Alternative in detail, traffic generation under this alternative would be expected to be approximately two times greater than traffic generation by the Proposed Project, with consequently greater significant traffic impacts and more extensive required mitigation measures.

### **4.7.6 No Project Alternative**

#### **4.7.6.1 Analysis of Project Effects and Determination as to Significance**

Under this alternative, the Project site would remain completely undeveloped. Accordingly, there would be no direct traffic impacts.

#### **4.7.6.2 Significance of Impacts Prior to Mitigation**

No impacts are anticipated since no development would occur under this alternative.

#### **4.7.6.3 Mitigation Measures**

No mitigation measures are necessary.

#### **4.7.6.4 Conclusion**

Under this alternative, the Project site would remain completely undeveloped. As a consequence, there would be no Project-level, cumulative or growth-induced traffic impacts and no required mitigation measures.

<b>Table 4.7-1 TRIP GENERATION RATES</b>							
Land Use/Activity	Daily	AM Peak Hour			PM Peak Hour		
		Total – % of Daily	% In	% Out	Total – % of Daily	% In	% Out
<b>Phase 1 Trip Generation Rates</b>							
Construction Workers	2.5 Trips/Employee	40%	100%	0%	40%	0%	100%
Vendors	2.0 Trips/Vendor	0% <sup>a</sup>	0%	0%	0% <sup>a</sup>	0%	0%
Equipment/Plant Deliveries	4 PCE Trips/Truck <sup>b</sup>	12.5% <sup>c</sup>	50%	50%	12.5% <sup>c</sup>	50%	50%
<b>Phase 2 or 3 Trip Generation Rates</b>							
Concrete Production/Asphalt Production/Recycle	4 PCE Trips/Truck <sup>b</sup>	5.9% <sup>d</sup>	50%	50%	5.9% <sup>d</sup>	50%	50%
CTB Production/Rock Sales	4 PCE Trips/Truck <sup>b</sup>	5.9% <sup>d</sup>	50%	50%	5.9% <sup>d</sup>	50%	50%
Sand Import/Cement Import- Concrete Production/Asphalt Production/Oil Import	4 PCE Trips/Truck <sup>b</sup>	4.2% <sup>e</sup>	50%	50%	4.2% <sup>e</sup>	50%	50%
Rock Sales/ Cement Import - CTB Production	4 PCE Trips/Truck <sup>b</sup>	4.2% <sup>e</sup>	50%	50%	4.2% <sup>e</sup>	50%	50%
Recycle Production & Import	4 PCE Trips/Truck <sup>b</sup>	5.9% <sup>d</sup>	50%	50%	5.9% <sup>d</sup>	50%	50%
<b>Phase 4 Trip Generation Rates</b>							
Land Filling Activities	4 PCE Trips/Truck <sup>b</sup>	5.9% <sup>d</sup>	50%	50%	5.9% <sup>d</sup>	50%	50%
<b>Employee Trip Generation Rates (Phases 2, 3 or 4)</b>							
Employee Trips – Processing Plant	2.5 Trips/Employee	5%	90%	10%	33%	10%	90%
Employee Trips – Truck Drivers	2.0 Trips/Employee	5%	90%	10%	33%	10%	90%

Source: Darnell & Associates 2017

<sup>a</sup> Assumes that the Vendors deliver materials to the site during non-peak hours.

<sup>b</sup> Assumes 2 Trips per Truck (1 inbound, 1 outbound), and that 1 Truck trip is equivalent to 2 passenger car equivalent (PCE) trips.

<sup>c</sup> Assumes Trucks are distributed equally throughout an 8 hour day.

<sup>d</sup> Assumes Trucks are distributed equally throughout a 17 hour day between 5:00 AM to 10:00 PM, the primary operation hours for the processing activities.

<sup>e</sup> Assumes imports and internal rock sales occur 24 hours a day and that the trucks are distributed equally throughout the day.



<b>Table 4.7-2 ESTIMATION OF TRUCK TRIP GENERATION</b>						
<b>Activity</b>	<b>Average Daily No. of Units</b>	<b>Unit</b>	<b>Truck Capacity (Units/ Truck)</b>	<b>Average Daily No. of Trucks</b>	<b>Max. Daily No. of Units</b>	<b>Max. Daily No. of Trucks</b>
<b>Estimation of Truck Trips for Phase 1</b>						
Construction Workers	-	-	-	0	-	0
Vendors	-	-	-	0	-	0
Equipment/Plant Deliveries	-	-	-	20	-	20
<b>Total Phase 1</b>				<b>20</b>	<b>-</b>	<b>20</b>
<b>Estimation of Truck Trips for Phase 2 or 3</b>						
<b>Quarry Production</b>						
Concrete Production	1,000	Cubic Yards	8.4	119	1,500	179
Asphalt Production	1,000	Tons	27	37	2,000	74
CTB Production	200	Tons	27	8	1,000	37
Rock Sales	1,800	Tons	54	68	3,000	112
<b>Subtotal</b>				<b>232</b>	<b>-</b>	<b>401</b>
<b>Sand Import</b>						
Concrete Production	375	Tons	27	14	375	14
Asphalt Production	100	Tons	27	4	200	7
<b>Subtotal</b>				<b>18</b>	<b>-</b>	<b>21</b>
<b>Cement Import</b>						
Concrete Production	250	Tons	27	10	250	10
CTB Production	6	Tons	27	1	20	1
<b>Subtotal</b>				<b>11</b>	<b>-</b>	<b>11</b>
<b>Oil Import</b>						
Asphalt Production	50	Tons	27	2	100	4
<b>Subtotal</b>				<b>2</b>	<b>-</b>	<b>4</b>
<b>Recycle</b>						
Recycle Production	600	Tons	27	23	1,000	37
Recycle Import	600	Tons	22	28	1,000	45
<b>Subtotal</b>				<b>51</b>	<b>-</b>	<b>82</b>
<b>Total Phase 2 Or 3</b>				<b>314</b>	<b>-</b>	<b>519</b>
<b>Estimation of Truck Trips for Phase 4</b>						
<b>Land Fill</b>						
Infill Material	2,106	Tons	27	78	3,510	130
<b>Total Phase 4</b>				<b>78</b>	<b>-</b>	<b>130</b>

Source: Darnell & Associates 2017

**Table 4.7-3  
TRIP GENERATION CALCULATIONS FOR PROPOSED PROJECT**

Land Use	Average Production								Maximum Production							
	Total # Units	Daily	AM Peak Hour			PM Peak Hour			Total # Units	Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out			Total	In	Out	Total	In	Out
<b>Phase 1 – Site Preparation</b>																
Construction Workers	15 Workers	38	15	15	0	15	0	15	15 Workers	38	15	15	0	15	0	15
Vendors	15 Vendors	30	0	0	0	0	0	0	15 Vendors	30	0	0	0	0	0	0
Equipment/Plant Deliveries	20 Trucks	80	10	5	5	10	5	5	20 Trucks	80	10	5	5	10	5	5
<b>Subtotal Phase 1</b>	<b>-</b>	<b>148</b>	<b>25</b>	<b>20</b>	<b>5</b>	<b>25</b>	<b>5</b>	<b>20</b>	<b>-</b>	<b>148</b>	<b>25</b>	<b>20</b>	<b>5</b>	<b>25</b>	<b>5</b>	<b>20</b>
<b>Phase 2 or 3 – Extraction</b>																
<b>Quarry Production</b>																
Concrete Production	119 Trucks	476	28	14	14	28	14	14	179 Trucks	714	42	21	21	42	21	21
Asphalt Production	137 Trucks	148	9	5	4	9	4	5	74 Trucks	296	17	9	8	17	8	9
CTB Production	8 Trucks	32	2	1	1	2	1	1	37 Trucks	148	9	5	4	9	4	5
Rock Sales - Outside	34 Trucks	136	6	3	3	6	3	3	56 Trucks	222	9	5	4	9	4	5
Rock Sales – Inside <sup>a</sup>	34 Trucks	136	6	3	3	6	3	3	56 Trucks	222	9	5	4	9	4	5
<i>Subtotal Production</i>	<i>232 Trucks</i>	<i>928</i>	<i>51</i>	<i>26</i>	<i>25</i>	<i>51</i>	<i>25</i>	<i>26</i>	<i>401 Trucks</i>	<i>1,602</i>	<i>86</i>	<i>45</i>	<i>41</i>	<i>86</i>	<i>42</i>	<i>44</i>
<b>Sand Import</b>																
Concrete Production	14 Trucks	56	2	1	1	2	1	1	14 Trucks	56	2	1	1	2	1	1
Asphalt Production	4 Trucks	15	1	1	0	1	0	1	7 Trucks	30	1	1	0	1	0	1
<i>Subtotal Sand Import</i>	<i>18 Trucks</i>	<i>71</i>	<i>3</i>	<i>2</i>	<i>1</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>21 Trucks</i>	<i>86</i>	<i>3</i>	<i>2</i>	<i>1</i>	<i>3</i>	<i>1</i>	<i>2</i>
<b>Cement Import</b>																
Concrete Production	10 Trucks	40	2	1	1	2	1	1	10 Trucks	40	2	1	1	2	1	1
CTB Production	1 Trucks	4	0	0	0	0	0	0	1 Trucks	3	0	0	0	0	0	0
<i>Subtotal Cement Import</i>	<i>11 Trucks</i>	<i>44</i>	<i>2</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>1</i>	<i>11 Trucks</i>	<i>43</i>	<i>2</i>	<i>1</i>	<i>1</i>	<i>2</i>	<i>1</i>	<i>1</i>
<b>Oil Import</b>																
Asphalt Production	2 Trucks	7	0	0	0	0	0	0	4 Trucks	15	1	1	0	1	0	1
<i>Subtotal Oil Import</i>	<i>2 Trucks</i>	<i>7</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>4 Trucks</i>	<i>15</i>	<i>1</i>	<i>1</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>1</i>
<b>Recycle</b>																
Recycle Production	23 Trucks	92	5	3	2	5	2	3	37 Trucks	148	9	5	4	9	4	5
Recycle Import	28 Trucks	112	7	4	3	7	3	4	45 Trucks	182	11	6	5	11	5	6
<i>Subtotal Recycle</i>	<i>51 Trucks</i>	<i>204</i>	<i>12</i>	<i>7</i>	<i>5</i>	<i>12</i>	<i>5</i>	<i>7</i>	<i>82 Trucks</i>	<i>330</i>	<i>20</i>	<i>11</i>	<i>9</i>	<i>20</i>	<i>9</i>	<i>11</i>
<b>Subtotal Phases 2 &amp; 3</b>	<b>314 Trucks</b>	<b>1,254</b>	<b>68</b>	<b>36</b>	<b>32</b>	<b>68</b>	<b>32</b>	<b>36</b>	<b>519 Trucks</b>	<b>2,076</b>	<b>112</b>	<b>60</b>	<b>52</b>	<b>112</b>	<b>53</b>	<b>59</b>

**Table 4.7-3 (cont.)  
TRIP GENERATION CALCULATIONS FOR PROPOSED PROJECT**

Land Use	Average Production								Maximum Production							
	Total # Units	Daily	AM Peak Hour			PM Peak Hour			Total # Units	Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out			Total	In	Out	Total	In	Out
<b>Phase 4 – Land Fill Operation</b>																
<b>Land Fill</b>																
Infill Operation	78 Trucks	312	18	9	9	18	9	9	130 Trucks	520	31	16	15	31	16	15
<b>Subtotal Phase 4</b>	<b>78 Trucks</b>	<b>312</b>	<b>18</b>	<b>9</b>	<b>9</b>	<b>18</b>	<b>9</b>	<b>9</b>	<b>130 Trucks</b>	<b>520</b>	<b>31</b>	<b>16</b>	<b>15</b>	<b>31</b>	<b>16</b>	<b>15</b>
<b>Employees for Phases 2, 3 or 4</b>																
Processing Plant	15 Employees	38	2	2	0	2	0	2	15 Employees	38	2	2	0	2	0	2
Truck Drivers	20 Employees	40	13	12	1	27	14	13	20 Employees	40	13	12	1	27	14	13
<b>Total Employee Trips</b>	<b>35 Employees</b>	<b>78</b>	<b>15</b>	<b>14</b>	<b>1</b>	<b>29</b>	<b>14</b>	<b>15</b>	<b>35 Employees</b>	<b>78</b>	<b>15</b>	<b>14</b>	<b>1</b>	<b>29</b>	<b>14</b>	<b>15</b>
<b>Trip Generation Totals with Employee Trips</b>																
<b>Total Trip Generation for Phase 1</b>	-	<b>148</b>	<b>25</b>	<b>20</b>	<b>5</b>	<b>25</b>	<b>5</b>	<b>20</b>	-	<b>148</b>	<b>25</b>	<b>20</b>	<b>5</b>	<b>25</b>	<b>5</b>	<b>20</b>
<b>Total Trip Generation for Phase 2</b>	-	<b>1,332</b>	<b>83</b>	<b>50</b>	<b>33</b>	<b>97</b>	<b>46</b>	<b>51</b>	-	<b>2,154</b>	<b>127</b>	<b>74</b>	<b>53</b>	<b>141</b>	<b>67</b>	<b>74</b>
<b>Total Trip Generation for Phase 3</b>	-	<b>1,332</b>	<b>83</b>	<b>50</b>	<b>33</b>	<b>97</b>	<b>46</b>	<b>51</b>	-	<b>2,154</b>	<b>127</b>	<b>74</b>	<b>53</b>	<b>141</b>	<b>67</b>	<b>74</b>
<b>Total Trip Generation for Phase 4</b>	-	<b>390</b>	<b>33</b>	<b>23</b>	<b>10</b>	<b>47</b>	<b>23</b>	<b>24</b>	-	<b>598</b>	<b>46</b>	<b>30</b>	<b>16</b>	<b>60</b>	<b>30</b>	<b>30</b>

Source: Darnell & Associates 2017

<sup>a</sup> Half of the rock sales are generated internally within the Project site; therefore, these Project trips would not exit the Project site.

<b>Table 4.7-4 COMPARISON OF TRIP GENERATION RATES FROM THE PROJECT SITE PER USE SPECIFIED BY EOMSP AND PROPOSED SPA</b>				
<b>Land Use</b>	<b>Trip Rate</b>	<b>No. of Units</b>	<b>Unit</b>	<b>Daily Trip Generation</b>
<b>Existing Use (per EOMSP)</b>				
Mixed Industrial	90 Trips/Acre	62	Acres	5,580
Rural Residential	12 Trips/Acre	254	Acres	3,048
Conservation/Limited Use	1 Trip/Acre	0	Acres	0
<b>Total</b>	<b>-</b>	<b>316<sup>a</sup></b>	<b>Acres</b>	<b>8,628</b>
<b>Proposed Use</b>				
Mixed Industrial	90 Trips/Acre	105	Acres	9,450
Rural Residential	12 Trips/Acre	0	Acres	0
Conservation/Limited Use	1 Trip/Acre	211	Acres	211
<b>Total</b>	<b>-</b>	<b>316<sup>a</sup></b>	<b>Acres</b>	<b>9,661</b>
<b>Net Difference</b>				
Mixed Industrial	90 Trips/Acre	<b>43</b>	<b>Acres</b>	<b>3,870</b>
Rural Residential	12 Trips/Acre	<b>(254)</b>	<b>Acres</b>	<b>(3,048)</b>
Conservation/Limited Use	1 Trip/Acre	<b>211</b>	<b>Acres</b>	<b>211</b>
<b>Total</b>	<b>-</b>	<b>0</b>	<b>Acres</b>	<b>1,033</b>

Source: Darnell & Associates 2017

<sup>a</sup> Note that the remaining 94 acres of the Project site are located outside the EOMSP and would be part of the Otay Hills Conservation Area.

**Table 4.7-5  
OPENING YEAR 2019+ PROJECT (PHASES 1 AND 2) MAXIMUM PRODUCTION SCENARIO  
CONDITIONS ROADWAY SEGMENT DAILY LOS SUMMARY**

Roadway Segment	Jurisdiction	Class	Capacity (LOS E)	Opening Year 2019			Opening Year + Project (Phases 1 & 2)					
				ADT	V/C	LOS	Proj. Tr	ADT	V/C	LOS	ΔV/C	Sig
<b>Otay Mesa Road (Old Otay Mesa Road)</b>												
SB SR 125 to NB SR 125	County/City/Caltrans	4M(m)	47,000 <sup>a</sup>	12,275	0.272	A	760	13,035	0.273	A	0.001	No
Harvest Road to Sanyo Ave.	County/City	4M	37,000	11,805	0.319	A	1,056	12,861	0.347	A	0.028	No
Sanyo Ave. to Enrico Fermi Drive	County	2.2C	16,200	5,805	0.358	C	1,104	6,909	0.430	C	0.072	No
East of Enrico Fermi Drive	County	2.2E	19,000	9,972	0.524	D	2,095	12,067	0.745	D	0.221	No
West of Alta Road	County	2.2C	16,200	9,972	0.615	D	2,095	12,067	<b>0.745</b>	<b>E</b>	<b>0.13</b>	<b>Yes</b>
<b>Calzada de la Fuente</b>												
East of Alta Road	County	2-I/C	16,200	1,316	0.08	A	539	1,855	0.111	A	0.035	No
<b>Enrico Fermi Drive</b>												
Otay Mesa Road to SR-905	County	2.2C	16,200	7,998	0.421	C	990	8,988	0.555	C	0.134	No
SR-905 to Airway Road	County	2.2C	19,000	5,392	0.284	B	299	5,691	0.310	B	0.026	No
<b>Alta Road</b>												
Calzada de la Fuente to Lone Star Road (Paseo de la Fuente)	County	2.2C	19,000	7,975	0.42	C	2,302	810,277	0.541	C	0.121	No
Lone Star Road (Paseo de la Fuente) to Otay Mesa Road	County	2.2E	16,200	8,704	0.537	D	2,258	10,962	0.679	D	0.142	No

Source: Darnell & Associates 2017

City = Capacity of City segments is based on the upper limits of LOS E per the City of San Diego;

County = Capacity of County segments is based on the upper limits of LOS E per the County of San Diego;

Bold = Jurisdiction which capacity is based on; ADT= Average Daily Traffic; LOS= Level of Service; Class = Roadway Classification; v/c = Volume-to LOS E Capacity Ratio

6P = 6-Lane Prime Arterial; 4M(m) = Modified 4-Lane Major Road; 4M = 4-Lane Major Arterial; TC = Town Collector; LC = Light Collector; 2-I/C = 2-Lane Industrial/Commercial Collector;

<sup>a</sup> Additional lanes may be provided to accommodate turning movements and freeway access; hence the roadway capacity 45,000 for City or 47,000 for County at LOS E (half-way between a 4-lane Major & 6-Lane Prime Arterial)

**Table 4.7-6  
OPENING YEAR 2019 + PROJECT - SR 905 MAINLINE OPERATION SUMMARY**

	Direction	Number of Lanes	Capacity	Opening Year 2019						Opening Year 2019 + Project									
				Peak Hour Volume		V/C		LOS		Project Peak Hour Volume		2019 + Project Peak Hour Volume		V/C		LOS		Significant Impact	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
SR 905 west of Siempre Viva Road	WB	3M	6,000	1,420	2,063	0.24	0.34	A	B	17	28	1,427	2,091	0.24	0.35	A	B	NO	NO
	EB	3M+1A	7,200	1,051	805	0.15	0.25	A	A	86	66	1,137	871	0.16	0.12	A	A	NO	NO
SR 905 west of Enrico Fermi Drive	WB	2M	4,000	220	516	0.04	0.13	A	A	17	28	237	544	0.06	0.14	A	A	NO	NO
	EB	2M	4,000	448	156	0.11	0.04	A	A	86	66	543	222	0.14	0.06	A	A	NO	NO

Source: Darnell & Associates, Inc. 2017

Key: EB = Eastbound Approach; WB = Westbound Approach; M = Mainline; A = Auxiliary Lane; Capacity of M = 2,000 vehicles per hour; Capacity of A = 1,200 vehicles per hour; V/C = Volume to Capacity ratio; LOS = Level of Service.

LOS V/C

- A= <0.41
- B= >0.41 and <0.62
- C= >0.62 and <0.80
- D= >0.80 and <0.92
- E= >0.92 and <1.0

**Table 4.7-7  
OPENING YEAR 2019 + PROJECT (PHASES 1 AND 2) INTERSECTION LOS SUMMARY – MAXIMUM PRODUCTION SCENARIO**

Intersection	Jurisdiction	Traffic Control	Critical Move	Opening Year 2019				Opening Year 2019 + Project (Phases 1 & 2) Maximum Production									
				AM Peak		PM Peak		AM Peak					PM Peak				
				Delay	LOS	Delay	LOS	Delay	LOS	Proj. Trips	Δ Delay	Sig.	Delay	LOS	Proj. Trips	Δ Delay	Sig.
Otay Mesa Road (E-W) at SR 125 SB (N-S)	County/City/SBX	Sig	Int	13.8	B	17.3	B	14.0	B	61	0.2	No	17.5	A	64	0.2	No
Otay Mesa Road (E-W) at SR 125 NB (N-S)	County/City/SBX	Sig	Int	4.1	A	7.3	A	3.9	A	68	0.2	No	6.8	A	74	-0.5	No
Otay Mesa Road (E-W) at Sanyo Ave. (N-S)	County/City	Sig	Int	7.9	A	10.4	B	8.0	A	23	0.1	No	11.3	B	37	0.9	No
Otay Mesa Road (E-W) at Enrico Fermi Drive (N-S)	County	Sig	Int	15.8	A	16.0	B	17.4	A	138	1.6	No	20.4	C	161	3.4	No
Otay Mesa Road (E-W) at Alta Road (N-S)	County	AWSC	<b>EB</b>	<b>61.5</b>	<b>F</b>	<b>9.4</b>	<b>A</b>	<b>118.5</b>	<b>F</b>	<b>86</b>	<b>0.57</b>	<b>Yes</b>	10.9	B	66	1.5	No
			<b>Int</b>	<b>54.1</b>	<b>F</b>	<b>11.9</b>	<b>B</b>	<b>98.8</b>	<b>F</b>	<b>144</b>	<b>44.7</b>		16.6	C	157	0.33	
Enrico Fermi Drive (N-S) at SR-905 WB On Ramp	County/Caltrans	OWSC	Int	3.2	A	6.7	A	3.2	A	65	0.4	No	6.7	A	71	0.0	No
Enrico Fermi Drive (N-S) at SR-905 EB Off Ramp	County/Caltrans	OWSC	Int	14.4	B	11.4	B	16.1	C	48	1.7	No	14.0	B	46	3.6	No
Enrico Fermi Drive (N-S) at Airway Road (E-W)	County/City	Sig	Int	26.4	C	23.2	C	26.8	C	20	0.4	No	23.4	C	22	0.2	No
Alta Road (N-S) at Calzada de la Fuente (E-W)	County	OWSC	WB	16.1	C	14.4	B	18.8	C	152	2.7	No	17.8	C	166	3.4	No
Alta Road (N-S) at Lone Star Road/Paseo de la Fuente (E-W)	County	Sig	Int	3.1	A	2.3	A	3.8	A	150	0.7	No	2.4	A	166	0.1	No

Source: Damell & Associates 2017

LOS=Level of Service; Delay is measured in seconds/vehicle; Sig=signalized; AWSC=All Way Stop Controlled; OWSC=One Way Stop Controlled;

Int = Intersection; EB = Eastbound Approach; WB = Westbound Approach; NB = Northbound Approach; SB = Southbound Approach; E-W = East-West Roadway; N-S = North-South Roadway;

**Bold** = Jurisdiction which significance criteria is based on; Δ Delay = Increase (decrease) in delay; Occasionally adding traffic to a critical movement optimizes the intersection resulting in a decrease in delay

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**Table 4.7-8  
YEAR 2050 SEGMENT DAILY LOS SUMMARY**

Roadway Segment	Jurisdiction	Class	Capacity (LOS E)	2050 EOMSP			2050 + Proposed Otay Hills SPA					
				ADT	V/C	LOS	Proj. Tr	ADT	V/C	LOS	ΔV/C	Sig
<b>Otay Mesa Road</b>												
SR 125 to Harvest Road	County	6P	57,000	46,100	0.81	D	261	46,361	0.82	D	0.01	No
Harvest Road to Sanyo Ave.	County	6P	57,000	46,100	0.81	D	261	46,361	0.82	D	0.01	No
Sanyo Ave. to Vann Centre	County	6P	57,000	46,100	0.81	D	261	46,361	0.82	D	0.01	No
Vann Centre to Michael Faraday	County	6P	57,000	34,100	0.60	B	261	34,361	0.61	B	0.01	No
Michael Faraday to Enrico Fermi Drive	County	6P	57,000	27,500	0.48	B	261	27,761	0.49	B	0.02	No
East of Enrico Fermi Drive	County	4M	37,000	15,500	0.42	B	434	15,934	0.43	B	0.04	No
West of Alta Road	County	4M	37,000	15,500	0.42	B	434	15,934	0.43	B	0.04	No
<b>Calzada de la Fuente</b>												
East of Alta Road	County	2-I/C	16,200	2,000	0.13	B	1,070	3,070	0.19	C	0.06	No
<b>Lone Star Road (Paseo de la Fuente)</b>												
Alta Road to Enrico Fermi Drive	County	4M	37,000	23,400	0.63	B	834	24,234	0.66	B	0.03	No
West of Enrico Fermi Drive	County	4M	37,000	23,600	0.64	B	435	34,035	0.65	B	0.01	No
West of Sunroad Boulevard	County	4M	37,000	23,600	0.64	D	348	23,948	0.65	D	0.01	No
<b>Enrico Fermi Drive</b>												
Lone Star Road (Paseo de la Fuente) to Otay Mesa Road	County	4M	37,000	26,300	0.71	C	357	26,657	0.72	C	0.031	No
Otay Mesa Road to SR-905	County	4M(m)	47,000 <sup>a</sup>	22,200	0.47	B	608	22,808	0.49	B	0.02	No
SR-905 to Airway Road	County	4M	37,000	15,700	0.42	B	87	15,787	0.43	B	0.01	No
Airway Road to Siempre Viva Road	City	4M	40,000	7,000	0.18	A	53	7,053	0.18	A	0.0	No

**Table 4.7-8 (cont.)  
YEAR 2050 SEGMENT DAILY LOS SUMMARY**

Roadway Segment	Jurisdiction	Class	Capacity (LOS E)	2050 EOMSP			2050 + Proposed Otay Hills SPA					
				ADT	V/C	LOS	Proj. Tr	ADT	V/C	LOS	ΔV/C	Sig
<b>Alta Road</b>												
Calzada de la Fuente to Lone Star Road (Paseo de la Fuente)	County	4C	34,200	21,100	0.62	B	1,034	22,134	0.65	C	0.03	No
Lone Star Road (Paseo de la Fuente) to Otay Mesa Road	County	4M	37,000	12,400	0.34	A	535	12,935	0.35	A	0.04	No
South of Otay Mesa Road	County	4M	37,000	19,500	0.53	A	89	19,589	0.53	B	0.0	No

Source: Darnell & Associates 2017

<sup>a</sup> Additional lanes may be provided to accommodate turning movements and freeway access; hence the roadway capacity was assumed to be 47,000 ADT at LOS E (half way between a 4M & 6P).

<sup>b</sup> Capacity is 2,300 vehicles per hour per lane, LOS is based on Caltrans District 11 & HCM procedures.

ADT= Average Daily Traffic; LOS= Level of Service; V/C = Volume-to LOS E Capacity Ratio; 8-Fwy = 8-Lane Freeway; 4-Toll = 4-Lane Toll Facility; 6P = 6-Lane Prime Arterial; 4M(m)= 4-Lane Modified Major Arterial; 4M = 4-Lane Major Arterial; 4C = 4-Lane Collector; 2-I/C = 2-Lane Industrial/Commercial Collector

City = Capacity of City segments is based on the upper limits of LOS E per the City of San Diego

County = Capacity of County segments is based on the upper limits of LOS E per the County of San Diego

**Bold** = Jurisdiction which capacity is based on

**Table 4.7-9  
PROJECT ALTERNATIVES TRIP GENERATION RATES AND  
CALCULATIONS SUMMARY**

<b>Trip Generation Rates</b>																
<b>Land Use/ Activity</b>	<b>Daily Trip Rate</b>	<b>AM Peak Hour Trip Rate</b>						<b>PM Peak Hour Trip Rate</b>								
		<b>Total % of Daily</b>		<b>% In</b>		<b>% Out</b>		<b>Total % of Daily</b>		<b>% In</b>		<b>% Out</b>				
Mixed Industrial	90 Trips/acre	11%		90%		10%		12%		20%		80%				
Rural Residential	12 Trips/ acre (a)	8%		30%		70%		10%		70%		30%				
<b>Trip Generation Calculations</b>																
<b>Land Use</b>	<b>Average Production</b>								<b>Maximum Production</b>							
	<b>Total # Units</b>	<b>Daily</b>	<b>AM Peak Hour</b>			<b>PM Peak Hour</b>			<b>Total # Units</b>	<b>Daily</b>	<b>AM Peak Hour</b>			<b>PM Peak Hour</b>		
			<b>Total</b>	<b>In</b>	<b>Out</b>	<b>Total</b>	<b>In</b>	<b>Out</b>			<b>Total</b>	<b>In</b>	<b>Out</b>	<b>Total</b>	<b>In</b>	<b>Out</b>
<b>Proposed Project (1)</b>																
Proposed Project (Phases 3 & 4)	(b)	1,644	101	59	42	115	55	60	(b)	2,674	158	90	68	172	83	89
<b>Extraction to Natural Grade Alternative (2)</b>																
Extraction to Natural Grade (Phase 2)	(c)	1,332	83	50	33	97	46	51	(c)	2,154	127	74	53	141	67	74
<b>Difference btwn Alt 2 &amp; Proposed Proj</b>	-	<b>(312)</b>	<b>(18)</b>	<b>(9)</b>	<b>(9)</b>	<b>(18)</b>	<b>(9)</b>	<b>(9)</b>	-	<b>(520)</b>	<b>(31)</b>	<b>(16)</b>	<b>(15)</b>	<b>(31)</b>	<b>(16)</b>	<b>(15)</b>
<b>Extraction to Varying Depth Alternative (3)</b>																
Extraction to Varying Depth	(d)	1,644	101	59	42	115	55	60	(d)	2,674	158	90	68	172	83	89
<b>Difference btwn Alt 3 &amp; Proposed Proj</b>	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>No Project/Existing Plan Alternative (4)</b>																
Mixed Industrial	62 acres	5,580	614	552	61	670	134	536	62 acres	5,580	614	552	61	670	134	536
Rural Residential	254 acres	3,048	244	73	171	305	213	91	254 acres	3,048	244	73	171	305	213	91
<b>Total Alternative 4</b>	<b>316 acres</b>	<b>8,628</b>	<b>858</b>	<b>626</b>	<b>232</b>	<b>974</b>	<b>347</b>	<b>627</b>	<b>316 acres</b>	<b>8,628</b>	<b>858</b>	<b>626</b>	<b>232</b>	<b>974</b>	<b>347</b>	<b>627</b>
<b>Difference btwn Alt 4 &amp; Proposed Project</b>	-	<b>6,984</b>	<b>757</b>	<b>567</b>	<b>190</b>	<b>859</b>	<b>292</b>	<b>567</b>	-	<b>5,954</b>	<b>700</b>	<b>536</b>	<b>164</b>	<b>802</b>	<b>264</b>	<b>538</b>

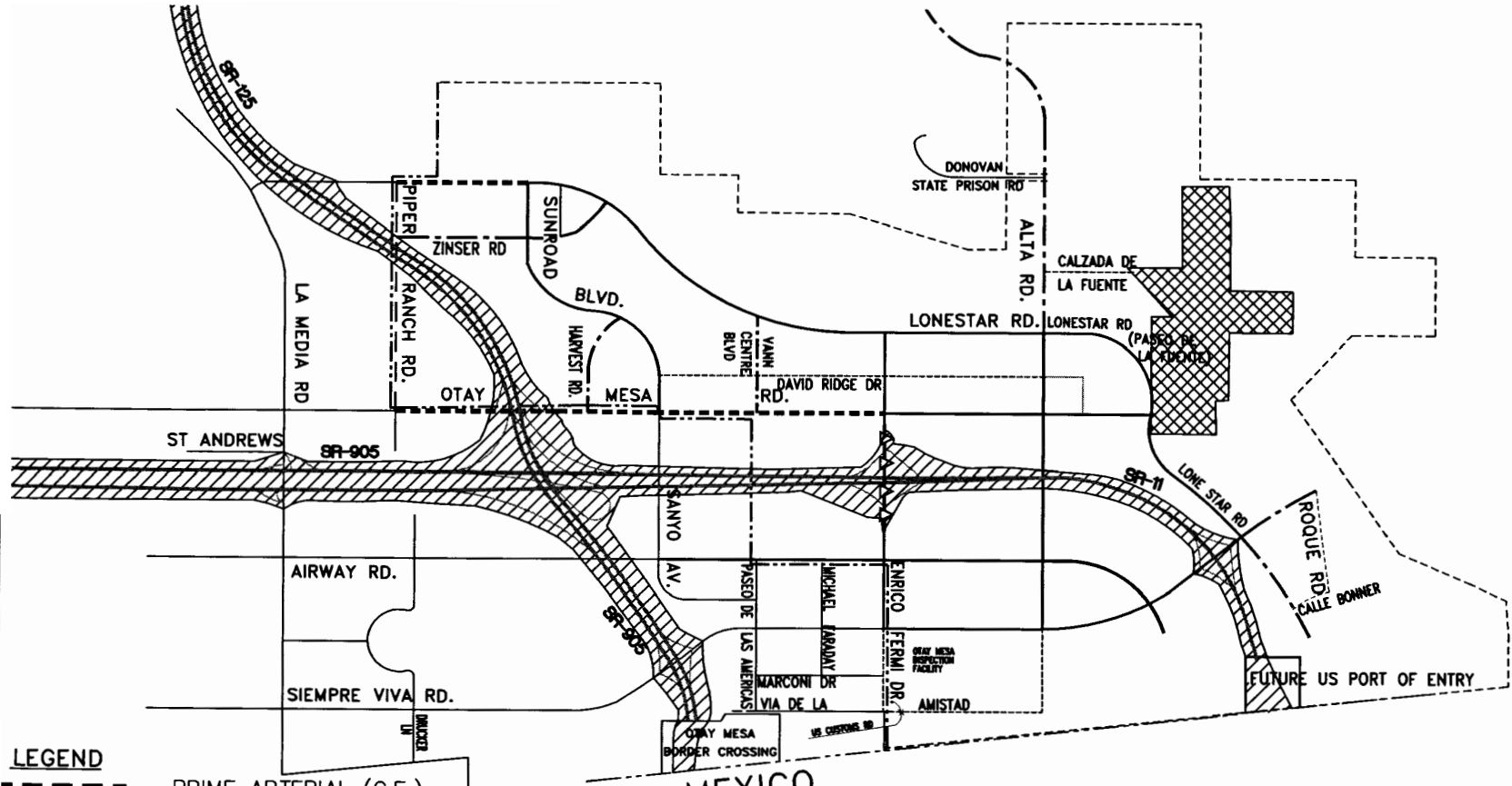
**Table 4.7-9 (cont.)  
PROJECT ALTERNATIVES TRIP GENERATION RATES AND  
CALCULATIONS SUMMARY**

No Project/No Development Alternative (5)																
Land Use	Average Production								Maximum Production							
	Total # Units	Daily	AM Peak Hour			PM Peak Hour			Total # Units	Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out			Total	In	Out	Total	In	Out
No Development	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	
<b>Difference btwn Alt 5 &amp; Proposed Project</b>	-	(1,644)	(101)	(59)	(42)	(115)	(55)	(60)	-	(2,674)	(158)	(90)	(68)	(172)	(83) (89)	

Source: Darnell & Associates 2017

Notes:

- (a) Assumes one (1) dwelling unit per acre
- (b) See Table 4 in Section III for details on the trip generation break down
- (c) Alternative 3 would only extend out to Phase 2 of the proposed project. Thus, the Phase 2 trip generation from the proposed project would represent the maximum trip generation potential for Alternative 3. See Table 4 in Section III for details on the trip generation break down.
- (d) Project Alternative 4 would have the same daily average and maximum production levels as the proposed project, only the overall duration of project will vary depending on final extraction depth. Therefore, the daily and peak hour trip generation for Alternative 4 is the exact same as the proposed project. See Table 4 in Section III for details on the trip generation break down.



**LEGEND**

- PRIME ARTERIAL (C.E.)
  - ▲-▲- ENHANCED MAJOR ROAD(C.E.)(REQUIRES ADDITIONAL RIGHT-OF-WAY TO ACCOMODATE TURN MOVEMENTS AND FREEWAY ACCESS FROM OTAY MESA ROAD TO SR-11)
  - MAJOR ROAD (C.E.)
  - - - 4-LANE COLLECTOR ROAD (C.E.)
  - - - 4-LANE ROAD (S.P.)
  - - - 2-LANE ROAD (S.P.)
  - CITY ROAD/OTHER ROAD
  - - - CITY/COUNTY BOUNDARY
  - - - EAST OTAY MESA BOUNDARY
  - [Hatched Box] - FREEWAY RIGHT-OF-WAY
  - [Cross-hatched Box] - PROJECT SITE
- NOTE:**  
 C.E. - CIRCULATION ELEMENT ROAD  
 S.P. - SPECIFIC PLAN ROAD

MEXICO

Source: Darnell & Associates 2017  
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**Adopted Circulation Plan for East Otay Mesa**

OTAY HILLS EIR

Figure 4.7-1