

## 6.0 Comparison of Proposed Project and Alternatives

This chapter summarizes the environmental advantages and disadvantages associated with the proposed Project and the alternatives. Based upon this discussion, the environmentally superior alternative is selected as required by the California Environmental Quality Act (CEQA.). The State CEQA Guidelines, Section 15126 (d) (2), state that if the environmentally superior alternative is the No Project Alternative, then the next most environmentally preferred alternative must also be identified.

CEQA does not provide specific direction regarding the methodology of comparing alternatives and the proposed Project. Each Project must be evaluated for the issues and impacts that are most important; this will vary depending on the project type and the environmental setting. Issue areas with significant long-term impacts are generally given more weight in comparing alternatives. Impacts that are short-term (e.g., construction-related impacts) or those that are mitigable to less than significant levels are generally considered to be less important.

This comparison is designed to satisfy the requirements of State CEQA Guidelines, Section 15126.6(d), Evaluation of Alternatives, which state that:

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

In accordance with State CEQA Guidelines Section 15126.6(d) as presented above, this Environmental Impact Report (EIR) provides sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project and the other alternatives. It should be noted that assumptions made regarding the alternatives' descriptions could differ from actual proposals and the analyses are not presented to a project-level of detail. Different alternative Project configurations and a project-level environmental analysis could result in different conclusions from those presented herein.

The following methodology was used to compare alternatives and the proposed Project in this EIR:

- **Step 1: Identification of Alternatives.** Alternatives screening process (described in Section 5.0) was used to identify a range of alternatives to the proposed Project. That screening analysis selected alternatives for further consideration. The No Project Alternative is also evaluated in the EIR as required by CEQA.
- **Step 2: Determination of Environmental Impacts.** The environmental impacts of the selected alternatives are identified in Section 6.1.
- **Step 3: Comparison of Proposed Project with Alternatives.** Section 6.1 includes the analysis of the impacts that could occur with the alternatives selected for further review.

This section discusses how these impacts would vary for each alternative relative to the proposed Project.

- **Step 4: Selection of the Environmentally Superior Alternative.** Section 6.2, Environmentally Superior Alternative, provides a detailed comparison of the environmental effects of the proposed Project and the selected alternatives.

## **6.1 Environmental Analysis of Selected Alternatives**

The six alternatives considered in Section 5.0, Alternatives, are:

- No Project;
- Savage Canyon Landfill Site;
- North Site;
- Upper Canada Canyon Consolidated Site;
- Consolidated Upper Colima Road Site; and
- Historical Chevron Processing Facility Site.

Based on the screening analysis in Section 5.0, Alternatives, one alternative location (in addition to the No Project Alternative), the Savage Canyon Landfill Site was selected for further evaluation in this EIR.

The alternative access roads considered in Section 5.0, Alternatives, are

- The Loop Trail Road;
- Hadley Street Access; and
- Catalina Avenue Access (for all phases of the Project).

Based on the screening analysis in Section 5.0, the Loop Trail Road Alternative was selected for further evaluation.

The three alternative pipeline alignments considered in Section 5.0, Alternatives, are:

- Lambert Railroad Right-of-Way Alignment;
- La Habra Heights Pipeline Alignment; and
- Western Pipeline Alignments

Finally, based on the screening analysis, the Lambert Road alignment was the one alternative pipeline alignment selected for further evaluation,

The remainder of this section presents an analysis of the environmental impacts of the alternatives selected for further evaluation.

### **6.1.1 No Project Alternative**

The No Project Alternative would neither install processing equipment nor conduct well drilling operations. The Applicant's proposed Project is construction and operation of drilling and production facilities for exploration and production of oil and gas resources from the Whittier Main Oil and Gas Field.

With the No Project Alternative, the field would not be developed and the resources of the field would not be utilized. No new equipment would be installed within the Preserve.

Therefore, impacts associated with the Project construction and development would not occur and the area would remain in its current condition.

However, it should be noted, as stated elsewhere in this document, that without the Project moving forward and as a result of the Puente Hills Landfill projected closing in 2014, a significant source of funding for the Preserve's activities of restoration and preservation would not be available and other significant sources of funding would have to be identified.

Additionally, if oil production does not occur in the area, this may result in continued importation of crude oils from overseas that would otherwise be produced locally. The supply of crude oil is driven by the demand for refined products (gasoline, diesel and jet fuel). Currently, the demand for refined products is met through supply to California refineries of crude oil from California domestic production, foreign imports of crude oil, imports of crude oil from Alaska, and imports of refined products. There are no crude oil pipelines that bring crude oil into California. This means that the only sources of crude oil to meet refinery crude oil demand are from California production, Alaska production, or from foreign sources brought into ports by tanker ships.

California production of crude oil per year has been in decline since 1986, when production peaked at slightly over 400 million barrels. The decline has averaged about 1.7% per year since 1995.

The production of Alaska North Slope (ANS) crude oil has experienced decline due to the age of the reservoirs. ANS production has declined since its peak in 1989 of about 328 million barrels annually. The average rate of decline since 1995 has been above 4%.

The combination of declining California and ANS production along with a relatively constant, flat demand for crude oil/refined products in California equates to an increase in foreign crude oil imports. Foreign crude oil imports since 1995 have increased by an average of almost 38%.

Oil imports delivered to California from foreign sources by ocean going tankers come from Saudi Arabia (35%), Ecuador (25%), Iraq (12%), Mexico (7%) and others. The use of foreign crude oil is associated with substantial emissions associated with transportation as foreign crude oil needs to be transported from between 4,000 miles (Ecuador) and 13,000 miles (Saudi Arabia)

one-way to get to California. ANS crude travels about 2,500 miles from Alaska. This causes the greenhouse gas (GHG) lifecycle emissions associated with foreign crude oil to be substantially higher than California crude oil as well as increasing the worldwide spill risks associated with tinkering crude oil and the resulting impacts on marine biology.

Based on analysis conducted by the CEC and others (CEC 2003, 2005, 2007), the production of crude oil from the proposed Project could displace crude oil from foreign sources. From California in particular, there is a demonstrated progressive reduction of crude produced in the state, which points to a continued need for tankered crudes from foreign countries to satisfy demands. The potential displacement of those tankered crudes from foreign sources by the proposed project could cause a reduction in GHG emissions and the risk of oil spills from tankers as less crude oil would need to be transported from as far away as Saudi Arabia, at 13,000 miles.

### **6.1.2 Savage Canyon Landfill Site Alternative**

Impacts associated with the Savage Canyon Landfill Site Alternative are discussed below for each issue area.

#### **6.1.2.1 Air Quality**

Construction and operations at the Savage Canyon Landfill site would be similar to the proposed Project in terms of area graded, cut and fill, and the amount of emissions from drilling and operations. The location of the operations and drilling would be farther from residences, the South Coast Air Quality Management District (SCAQMD) defines localized impacts as the impacts on the “nearest exposed individual”, which, in this case, would be residences approximately 2,500 feet away (SCAQMD 2008). Therefore, impacts for local thresholds would be less than the proposed Project as it is located farther from receptors.

Impacts for regional thresholds would be the same as the proposed Project since emissions would be similar.

*Impact AQ.1*, related to construction emissions, would be the same as the proposed Project. Mitigation measures AQ-1a through AQ-1d would apply.

*Impact AQ.2* would be the same as the proposed Project since operational emissions would be the same. Operational equipment would be the same since the gas and oil plants at the proposed Project Site and the same number of wells and the same equipment would be used. Mitigation measures AQ-2a and AQ-2b would apply.

*Impact AQ.3* related to odors would be the same or less than the proposed Project, as the facilities would be farther from residences. Mitigation measures AQ-3a through AQ-3e would still apply.

*Impact AQ.4* related to greenhouse gases would be the same as the proposed Project and mitigation measure AQ-4 would apply.

**Impact AQ.5** related to emissions of toxic air contaminants and potential health risks would be less than the proposed Project since emissions associated with drilling would be located farther away from residential areas. Mitigation measure AQ-5a would apply, since unmitigated emissions would exceed the peak year cancer risk threshold requirement. Cancer impacts associated with diesel truck operating along Penn Street were determined to be less than significant for the proposed Project and would be with this alternative also.

#### **6.1.2.2 Biological Resources**

This alternative would include production from a series of previously disturbed areas within the Savage Canyon Landfill and would eliminate facilities, drilling activities, and operational impacts within the Preserve. Table 6.1 describes the impacts to the different vegetation communities. Most of the proposed facilities for this alternative would be located within the previously disturbed area of the Landfill. This alternative would encompass approximately 5 acres. The Processing Pad would be located in an area of the Landfill that includes both disturbed and natural habitats including approximately 0.48 acres of coastal sage scrub habitat. This Alternative has the advantage over the proposed Project of:

- Greatly reducing the direct loss of all habitats (including sensitive species habitat and sensitive coastal sage scrub and riparian habitats) by placing most of the activities in previously disturbed areas within the Landfill; and
- Reducing the impacts to wildlife movement along corridors.

However, this Alternative has the disadvantages of:

- Placing the construction and drilling disturbances closer to known occupied California gnatcatcher habitat; and
- Placing the construction and drilling disturbances closer to habitat described as “High Quality” habitat in the RMP which could have an overall negative effect on wildlife movement through the area.

**Impact BIO.1**, related to impacts to sensitive species, would be less severe than those impacts described for the proposed Project. This Alternative would reduce the total amount of habitat loss and would reduce the threat to individual sensitive animals; however, this alternative would still result in a loss of approximately 0.48 acres of coastal sage scrub, which is designated as critical habitat for the federally listed coastal California gnatcatcher. However, this alternative would focus all of the construction activities and drilling operations (i.e., noise, human presence, lighting, night-time activities, etc.) into an area that is closer to known occupied California gnatcatcher habitat and areas where gnatcatchers have been recently observed. Implementation of mitigation measure BIO-1a through BIO-1d would require a 3:1 replacement ratio for every acre of habitat loss which would offset the proposed grading impacts to coastal sage scrub, and would reduce impacts to sensitive species with potential to occur on the site, to levels less than significant with mitigation.

**Impact BIO.2**, impacts to sensitive riparian habitat, would be less than impacts described for the proposed Project. Locating all facilities near the landfill property would eliminate impacts to all riparian habitats.

**Table 6.1 Landfill Alternative Vegetation Impacts**

Vegetative Type	Landfill Alternative		
	Pads	Permanent Fuel Mod	Temporary Construction Grading
Coastal Sage Scrub			
Mixed Sage Scrub			
Encelia Scrub			
Black Sage Scrub			
Sagebrush Scrub	0.48		
Coyote Brush Scrub			
Mixed Sage Scrub/Grassland Ecotone			
Sagebrush-monkey Flower Scrub			
Purple Sage Scrub/Toyon-Sumac Chaparral			
Sage Scrub Restoration			
<b>Total Coastal Sage Scrub</b>	<b>0.48</b>	<b>0.00</b>	<b>0.00</b>
Chaparral			
Toyon-Sumac Chaparral			
Toyon-Sumac Chaparral/Annual Grassland			
<b>Total Chaparral</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Annual Grassland			
Annual Grassland and Ruderal			
Ornamental Plantings			
Eucalyptus Woodland/Forest			
Ruderal			
<b>Total Annual Grassland</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Riparian			
Mulefat Scrub			
Riparian Habitats (Streambed)			
<b>Total Riparian</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total Vegetative Communities Disturbed</b>	<b>0.48</b>	<b>0.00</b>	<b>0.00</b>
Currently Disturbed	3.99		
<b>Total Area Encompassed by Project</b>	<b>4.47</b>	<b>0.00</b>	<b>0.00</b>

Notes: Data in all tables is based on Habitat Authority Vegetative layers as provided by the Habitat Authority

**Impact BIO.3**, related to impacts to wildlife, sensitive species, and sensitive habitat resulting from potential leaks or ruptures would be less than the proposed Project. However, this alternative would still present some threat of spills that could affect sensitive species and sensitive habitats. The Savage Canyon Landfill Site is not near any riparian or wetland habitat, which decreases the chance for a spill into a sensitive wetland habitat, but spills could still drain into the Preserve and impacts sensitive areas. Implementation of mitigation measures BIO-3a and 3b and other mitigation required in the Water Quality Resource section and Safety and Risk of Upset mitigation measures would contribute to limiting the potential for spills and associated significant impacts. Potential impacts to biological resources associated with possible oil spills from future oil development under this alternative would be considered less than significant with mitigation.

**Impact BIO.4** related to wildlife corridors would eliminate direct impacts within the Preserve and within the Core Habitat Management Zone (La Cañada Verde) and could therefore reduce the Project's impacts to wildlife nursery sites, and the impact to wildlife corridors would be less than the proposed Project. This alternative would focus all of the construction activities and drilling operations (i.e., noise, human presence, lighting, night-time activities, etc.) closer to habitat described as "High Quality" making it likelier to be used by wildlife as a travel corridor. However, the wildlife moving through the open habitats near the Landfill are already accustomed to continuous day-time noise, human presence, large machinery, and regular vehicle traffic associated with the Landfill operations. The location of all construction activities for this Alternative would increase negative impacts to wildlife movement through the general area, but is likely to be less than those described for the proposed Project which is located within the Preserve boundary where wildlife are less accustomed to human disturbances. Implementation of mitigation measure BIO-1 through BIO-4n would require habitat replacement (BIO-1 and BIO-2), minimization of noise impacts (BIO-4a), designing project lighting to be shielded and directed away from open space areas (BIO-4b), reducing speed limits and night driving (BIO-4c), a biological monitor to be present onsite during ground disturbance activities to ensure protection measures are being implemented (BIO-4k), and the implementation of a biological resources training program (BIO-4l), all of which would reduce significant impacts to wildlife corridors/linkages to levels less than significant with mitigation.

**Impact BIO.5**, related to impacts resulting from the project conflicting with local policies, would be less than the proposed Project. This alternative would have no activities and new facilities being installed and operated in areas designated as open space of "high sensitivity" under the City of Whittier General Plan and within an area zoned as open space (OS) under the City of Whittier Municipal Code. It would also eliminate direct impacts within the Core Habitat Management Zone (La Cañada Verde) identified in the Preserve's Resource Management Plan.

### **6.1.2.3 Safety, Risk of Upset, and Hazardous Materials**

This alternative would relocate all well drilling and processing from the proposed Project Site to the northeast area of the Savage Canyon Landfill.

**Impact SR.1** would be less than the proposed Project as the facilities would be located farther from residences and sensitive receptors. Drilling would be moved farther from residences and impacts would be less than significant. Mitigation measure SR-1a and 1b related to site security and audits would still apply.

**Impact SR.2** related to natural gas impacts along Colima Road would be the same as the proposed Project as the pipeline would still be installed along Colima Road, and mitigation measures SR-2a and 2b, related to automatic valves and warning tape, would still apply.

**Impact SR.3** related to soil contamination, would be the same as the proposed Project and mitigation would still apply.

Spill frequencies associated with piping within the Preserve would be greater than the proposed Project since more pipelines (by about 1.8 miles) would be located within the Preserve. Spill volumes would be greater than the proposed Project depending on the release location. since more pipeline would connect the Landfill Site with the crude pipeline along Colima Road and the potential for drain down of the pipeline volume within the Preserve. These impacts are discussed in hydrology.

#### **6.1.2.4 Geological Resources**

Under this Alternative, all processing and drilling equipment would be located within the northeast corner of the Savage Canyon Landfill. Geotechnical impacts for this alternative would be similar to those for the proposed Project and the same impacts and mitigation measures would apply.

#### **6.1.2.5 Noise and Vibration**

Under this Alternative, all drilling and processing equipment would be located within the northeast corner of the Savage Canyon Landfill. Impacts would be less than those associated with the proposed Project and the mitigated proposed Project since the noise-producing equipment would be farther away from sensitive residential receptors.

**Impact N.1** related to construction noise levels would be less than those for the proposed Project as the construction activities would be located farther away from receptors. Residential receptors would be located farther away from the proposed Project Site. There also would not be recreational receptors located in the immediate vicinity. Impacts would be less than significant with mitigation measures N-1a through N.1b. Therefore, construction impacts with mitigation would be less than significant.

**Impact N.2** related to drilling impacts would be less than the impacts of the proposed Project, but mitigation measures N-2a, N-2b, and N-2c would still apply.

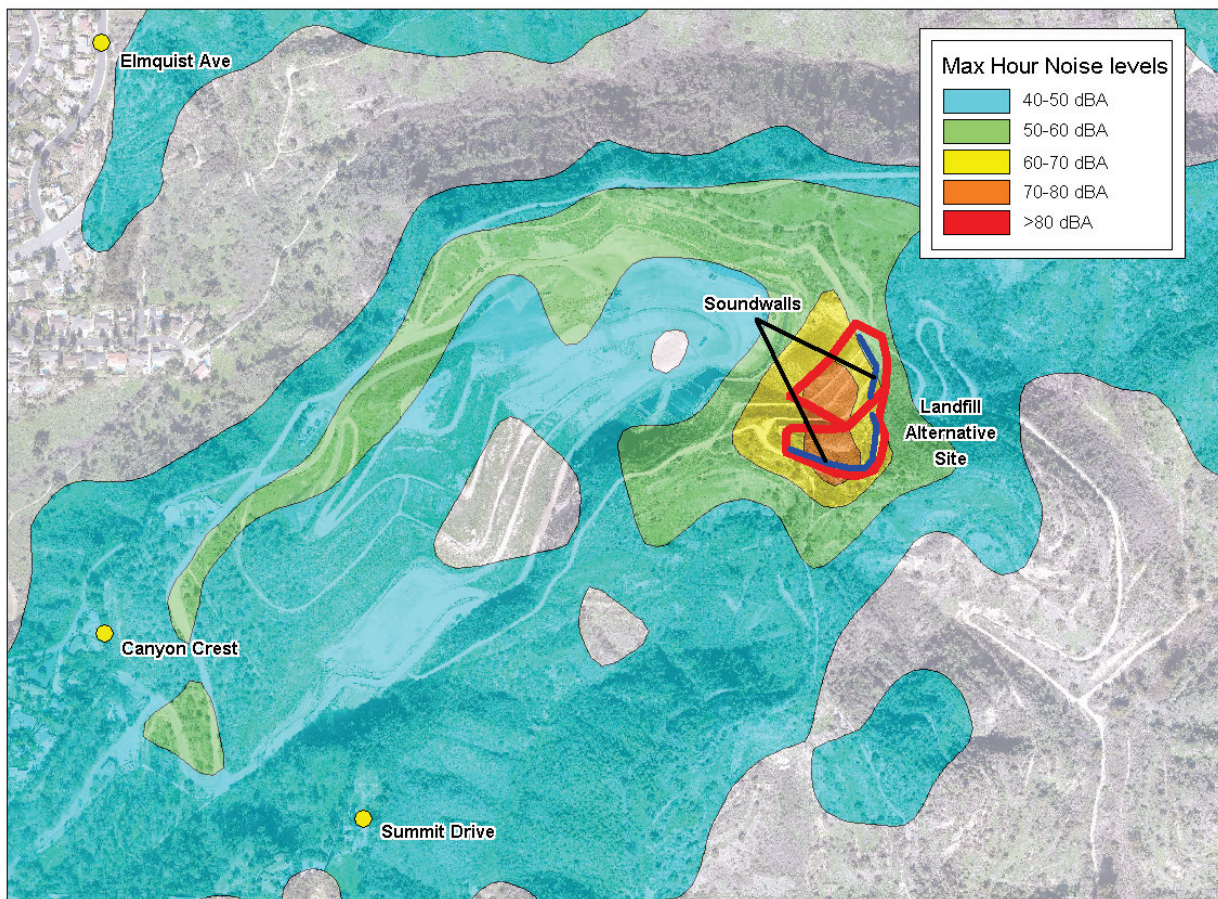
**Impact N.3** related to vibration impacts would also be less than significant as the residential receptors would be located farther away from the alternative project site.



For operations, noise levels would be less at receptors than to those under the proposed Project (*impact N.4*) after applying mitigation measure N-4. The combined operations and drilling (*impact N.5*) would also be less than the proposed Project with mitigation measures N-2a, 2b and 2c and N-4. The residential area near of the Savage Canyon Landfill located along Elmquist Ave, along Canyon Crest Ave and houses located along the ridgeline along Summit Ave, could be exposed to increased noise levels due to the processing equipment along the open ridgeline. Noise modeling indicates that operations concurrent with drilling would generate noise levels of approximately 44 A-weighted decibel (dBA) equivalent noise level (Leq) maximum hour after implementing mitigation measures N-2 and N-4. Mitigation measures would include the use of sound walls along the south, east and north sides of the project site. Impacts are estimated to be up to a 2 dBA noise level increase over the minimum nighttime baseline hour. Noise levels above 60 dBA are also limited to areas within the Landfill and do not intrude into the Preserve area. Mitigated noise contours are shown in Figure 6-1.

Therefore, impacts with mitigation would be less than significant.

**Figure 6-1 Maximum Hour Noise Contours – Landfill Site Alternative Operations and Drilling Mitigated**



### 6.1.2.6 Aesthetics and Visual Resources

Installing the equipment and conducting drilling at the upper Savage Canyon Landfill site would have visual impacts less than *impact AE.1 and AE.2* related to a degradation of visual quality to recreational resources (views from Deer Loop Trail, for example) because of the installation of equipment farther from primary hiking trails and recreational areas. However, impacts could be more severe to residential and other areas for both AE.1 and AE.2 as more equipment, including the processing site tanks and other equipment, would be visible from the residences and areas throughout the City that are relatively near to the landfill, although it would be a small and distant feature. Mitigation measures AE-1a and AE-1b would still be applicable as landscaping and painting could reduce the visual impacts. See Figure 6-2 for views from Summit Drive with the Project components.

*Impact AE.3* would be more severe than the proposed Project but would remain less than significant. The proposed Project North Access Road would not be constructed, and would therefore not be visible from residences located to the north of the Preserve. However, these residences would be able to view portions of the drill rig and the processing equipment (as in AE.1 and AE.2 above), although they would be a distant feature (close to 1 mile distant).

*Impact AE.4* related to illumination impacts would be the same as the proposed Project and mitigation measure AE-5 would still apply.



**Figure 6-2 View of Landfill Site Alternative from Summit Drive**



#### **6.1.2.7 Transportation**

This alternative would relocate all well drilling and processing from the proposed Project Site, to an area within the northeast corner of the Savage Canyon Landfill.

Traffic patterns would change since all traffic would utilize Penn Street and the entrance to the Landfill for ingress and egress. Appendix E includes tables showing the impacts on area intersections of the use of Penn Street and other streets that could be used by area traffic to access the alternative Project Site at the Landfill.

**Impact T.1**, related to project traffic impacts, would be less than the proposed Project as no project traffic would utilize Catalina Avenue and Mar Vista Street. However, this alternative would route all traffic through Penn Street as the North Access Road would not be used. Impacts, though, would be less than significant as levels of service along Penn Street are acceptable. There would be no additional significant impacts during any of the Phases with this

alternative above those identified with the proposed Project. Impacts would be realized at Hadley Street and Whittier Blvd for the am peak hour, as with the proposed Project. The Freeway analysis would be the same as the proposed Project.

The traffic volumes for the related (cumulative) projects in the area were added to the future existing with ambient growth and the Project volumes to determine whether significant impact thresholds would be exceeded. If these thresholds would be exceeded, the percentage of Project impact is identified for the intersection or segment and time period. Details on the cumulative analysis for the alternatives are shown in Appendix E.

**Impact T.2**, related to traffic impacts during pipeline construction, would be the same for this alternative as the pipeline would still be constructed down Colima Road. No additional significant impacts associated with this alternative would occur that were not identified in the proposed Project analysis. Impacts at Hadley Street and Whittier Blvd would be the only significant cumulative impacts associated with this alternative as project traffic would not utilize Catalina Avenue, Mar Vista Street or Colima Road.

#### **6.1.2.8 Hydrology and Water Resources**

The Savage Canyon Landfill Site Alternative would relocate the oil drilling and processing from the proposed Project Site to the northeast corner of the Savage Canyon Landfill.

Hydrology **impacts WR.1 and WR.2** for this alternative would be similar to those of the proposed Project. Impervious areas would be increased and existing drainage patterns would be altered, which would contribute to an increase in surface runoff that could affect surrounding areas.

Water resource **impacts WR.3, WR.4 and WR.5** would also be similar to the proposed Project impacts. Drilling operations, road construction, and truck traffic could continue to significantly impact water quality due to sedimentation and pollution transport. This alternative would move the drilling operations to alternative locations; however, the potential for oil spills or other detrimental conditions would remain.

#### **6.1.2.9 Cultural Resources**

This alternative would include production from an area within the northeast of the Savage Canyon Landfill. This alternative would encompass pads covering approximately 5 acres. No cultural resources were identified during the records search or site inspection. The 1985 EIR for the expansion of the Savage Canyon Landfill did not identify any known archaeological, historic or paleontological resources at the site.

**Impact CR.1**, impacts to historical resources such as historic well pads, roadways, and the landscape due to ground disturbance, would be the same as for the proposed Project. Impacts could be reduced to less than significant with mitigation incorporated. Mitigation measure CR-1 would apply to this alternative.

**Impact CR.2**, unanticipated disturbance to human remains due to site clearance and construction, would be the same as for the proposed Project. While no formal cemeteries or other places of human interment are known to exist within the construction site, unanticipated discoveries of human remains would require treatment as outlined with CR-2. If human remains were disturbed there would be a significant environmental impact.

**Impact CR.3**, unanticipated disturbance to paleontological resources due to site clearance and construction, would be the same as for the proposed Project. Implementation of mitigation measure CR-3 would reduce impacts to less than significant with mitigation incorporated.

#### **6.1.2.10 Wastewater**

The Savage Canyon Landfill Site Alternative would relocate the oil drilling production site from the proposed Project Site to an area within the northeast corner of the Savage Canyon Landfill. This alternative would have similar wastewater impacts (**impact WAS.1**) compared to the proposed Project.

#### **6.1.2.11 Land Use and Policy Consistency Analysis**

This alternative would relocate all well drilling and processing from the proposed Project Site to a site in the northeast area of the Savage Canyon Landfill.

As stated previously, impacts to recreation in the core habitat area would be minimized since all development would occur outside of the Preserve except for construction of the pipelines within the existing Preserve roads.

Noise impacts (**impact LU.1**) on recreational land uses during drilling would be considered mitigable due to the large distance to recreational receptors from the Landfill Site.

Noise impacts (**impact LU.2**) on adjacent residential land uses when drilling and operations are combined would be considered less than significant with mitigation due to these activities taking place farther away from residential uses than the proposed Project.

View impacts (**impact LU.3**) on adjacent land uses would remain unchanged from the proposed Project and considered significant and unavoidable.

Lighting impacts (**impact LU.4**) would remain unchanged from the proposed Project and considered less than significant with mitigation.

Emissions and odor impacts (**impact LU.5**) would remain less than significant with mitigation as sensitive receptors due to recreational use of the area could experience odors and operational equipment would be the same at the gas and oil plants as in the proposed Project and the same number of wells and the same equipment would be used.

**Impact LU.6** would remain the same as the proposed Project.

An additional impact, *Impact LU.Alt 1*, would occur as a result of the potential for incompatibility with the Landfill operations.

Impact #	Impact Description	Phase	Residual Impact
LU.Alt.1	The placement of oil and gas facilities within the Landfill and the permitting of those facilities by State agencies is speculative and could potentially reduce the life of the Landfill.	All	Significant and Unavoidable

This alternative would require significant amendments to the existing Landfill permits with the State that could take a long time to achieve. It is also unknown whether such an activity would even be approvable within the constraints of Landfill operations and state and federal regulations. In addition, utilization of existing Landfill areas could reduce the areas available for Landfill activities, in turn potentially reducing the life of the Landfill. The Landfill currently provides for waste disposal for the City of Whittier for the next 45 years. Reduction of the life of the Landfill life would require transportation of materials to a different Landfill. Because the permitting and operations of drilling and production within the Landfill are speculative and out of the jurisdictional control of the City, this is considered a significant and unavoidable impact.

#### 6.1.2.12 Fire Protection and Emergency Services

This alternative would relocate all well drilling and processing from the proposed Project Site to a site in the northeast area of the Savage Canyon Landfill.

*Impacts FP.1 and FP.2* would remain unchanged from the proposed Project and mitigation measures FP-1a through FP-1d and FP-2a through FP-2b would still apply to address the facility’s fire fighting capabilities by establishing emergency response plans, public notification systems, appropriate fire prevention design, and the availability of adequate fire water supplies. The Landfill alternative site would still back up to the Preserve area, so some potential wildfire impacts could occur (impact FP.2). Therefore, impacts related to fire water supplies, fire protection and emergency response would remain less than significant with mitigation.

#### 6.1.2.13 Public Services and Utilities

This alternative would relocate all well drilling and processing from the proposed Project Site to a site in the northeast area of the Savage Canyon Landfill.

*Impacts PS.1 and PS.2* would remain unchanged from the proposed Project and mitigation measure PS-1 would still be recommended for recycling to further reduce potential solid waste impacts. Therefore, impacts related to an increased demand for potable water and the generation of solid wastes would remain less than significant.

#### **6.1.2.14 Recreation**

This alternative would relocate all well drilling and processing from the proposed Project Site to a site in the northeast area of the Savage Canyon Landfill.

Impacts to recreation in the core habitat area would be minimized since all development would occur outside of the recreational areas and outside of the Preserve. However, this alternative could have temporary impacts as a result of constructing the oil and gas pipelines within the existing Preserve Roads. Those impacts would be temporary and mitigable.

Impacts would be similar to *impact REC.1*, and mitigation measures REC-1a and REC-1b would still apply to maintain safe pedestrian access and use on the Arroyo Pescadero Trailhead, but limited to construction of the internal pipelines. Therefore, impact REC.1 would remain less than significant with mitigation.

*Impact REC.2* due to noise impacts and REC.4 due to affected views would be eliminated as a result of being sufficiently far away from the recreational users at the Preserve once construction of the pipelines is completed.

Odor impacts (*impact REC.3*) generated during drilling and operations would remain less than significant with mitigation since sensitive recreational receptors could experience odors.

*Impact REC.4* related to view impacts on recreation would be significantly reduced in comparison to the proposed Project. Some areas on top of the ridge within the Landfill site would remain visible to recreational users along Deer Loop Trail, but the site would be substantially farther away than the proposed Project Site would be. This impact would be considered significant and mitigable by implementation of mitigation measures AE-1a, AE-1b and AE-4.

#### **6.1.2.15 Energy and Mineral Resources**

This alternative would relocate all well drilling and processing from the proposed Project Site to a site in the northeast area of the Savage Canyon Landfill.

*Impacts ER.1 and ER.2* would remain unchanged from the proposed Project since operations would require the same energy levels. Therefore, impacts from increased electricity demand and fossil fuel use would be less than significant.

#### **6.1.2.16 Environmental Justice**

This alternative would relocate all well drilling and processing from the proposed Project Site to a site in the northeast area of the Savage Canyon Landfill.

*Impact EJ.1* would remain unchanged from the proposed Project since the minority percentages in the study area and the communities of comparison would not change due to the alternative site. Therefore, impacts would not meet or exceed a level of significance.

### **6.1.3 Lambert Railroad Right-of-Way Alignment Alternative**

#### **6.1.3.1 Air Quality**

The pipeline realignment under this alternative would be longer than the proposed Project pipeline. This would increase total emissions from the pipeline construction. However, peak day emissions would be the same as the proposed Project. Since emissions thresholds are based on peak day, impacts would be the same as the proposed Project.

#### **6.1.3.2 Biological Resources**

This alternative would construct the crude oil pipeline down Colima Road to Lambert Road and then onto the Union Pacific railroad right-of-way. Impacts to biological resources resulting from this alternative would be the same for all impacts described for the proposed Project except for impact BIO.3, related to impacts to sensitive resources including wetland habitats; due to the longer pipeline, the potential for impacts to sensitive resources would increase. Impacts resulting from this alternative from increased potential for spills and ruptures would be greater than those described for the proposed Project but would remain less than significant with mitigation.

#### **6.1.3.3 Safety, Risk of Upset, and Hazardous Materials**

The pipeline realignment along Lambert Road would have a similar risk level as the proposed Project. However, since the pipeline would be longer, a worst case rupture of the pipeline near the tie-in location along Leffingwell Road could spill approximately 500 barrels more than the proposed Project. The longer pipeline would also have a somewhat higher potential for failure due to the longer length.

#### **6.1.3.4 Geological Resources**

Realigning the pipeline along Lambert Road would not change the geotechnical hazards compared to the proposed Project. The proposed realignment would only impact possible easements and utility lines.

#### **6.1.3.5 Noise and Vibration**

Construction of the pipeline would generate noise levels at nearby residences. However, if construction is limited to the hours prescribed by the City Municipal Code (see *Impact N.1*), impacts would be less than significant. Realignment of the pipeline along Lambert Avenue would create the same impacts as the proposed Project (Impact N.1).



#### **6.1.3.6 Aesthetics and Visual Resources**

The pipeline realignment would not impact visual resources since the pipeline would be underground and the construction period would be short. Therefore, realignment would also not have an impact on visual resources.

#### **6.1.3.7 Transportation**

Realigning the pipeline along Lambert Road would not change the traffic impacts of installing a pipeline along Colima Road (**Impact T.2**), and mitigation measure T-2 would still apply. However, impacts to traffic along La Mirada Boulevard would no longer occur as all of the construction would take place along the right-of-way out of the traffic lanes along Lambert Road. The right-of-way is large enough to accommodate all of the construction spread without impacting Lambert Road. Although traffic impacts along La Mirada Boulevard could be mitigated with mitigation measure T-2, impacts would be less severe under this alternative since less length of pipeline would need to be installed within roadways.

#### **6.1.3.8 Hydrology and Water Resources**

The Lambert Railroad Right-of-Way Alignment Alternative would align the pipeline along the existing railroad right-of-way. Hydrology and water quality impacts from siltation and erosion during construction activities would be similar to the proposed Project and could be mitigated with appropriate best management practice, similar to those recommended for impacts WR.1 through WR.4.

#### **6.1.3.9 Cultural Resources**

This alternative would construct the crude oil pipeline down Colima Road to Lambert Road and then onto the Union Pacific railroad right-of-way for a distance of 1.5 miles. The records search was limited to a mile radius around the proposed Project and did not cover the full extent of this alternative. Nonetheless, no known historical, archaeological, or paleontological resources have been previously reported within that one mile radius study area other than the Whittier Main Oil Field (19-003341) that may be affected by the proposed Lambert Railroad Right-of-Way Alignment Alternative. Further, it is unlikely that previously recorded historical or archaeological resources lie within the railroad right-of-way except for the Southern Pacific railroad (now the Union Pacific). It is assumed that along the Lambert Railroad right-of-way, the crude oil pipeline would be buried and would not directly impact any physical aspects of the Southern Pacific Railroad.

**Impact CR-1**, impacts to cultural resources such as historic well pads, roadways, and the landscape, as well as historic elements of the Southern Pacific Railroad (including but not limited to historic signage, crossings, or other landscape elements) due to ground disturbance, would be the same as for the proposed Project. Impacts could be reduced to less than significant with mitigation incorporated. Mitigation measure CR-1 would apply to this alternative.

**Impact CR-2**, unanticipated disturbance to human remains due to site clearance and construction, would be the same as for the proposed Project. While no formal cemeteries or other places of human interment are known to exist within the Lambert Railroad right-of-way alignment, unanticipated discoveries of human remains would require treatment as outline under CR-2. If human remains were disturbed there would be a significant environmental impact.

**Impact CR-3**, unanticipated disturbance to paleontological resources due to site clearance and construction, would be the same as for the proposed Project. Implementation of mitigation measure CR-3 would reduce impacts to less than significant with mitigation incorporated.

At present, the Resource Management Plan provides mitigation measures that should be applied to the proposed Project and proposed Project Alternatives. The alternatives assessment determined that impacts to cultural resources would be less, or the same at the proposed alternative sites. Any impacts to human remains would be significant. The current study findings support the previously proposed mitigation measures.

#### **6.1.3.10 Wastewater**

The Lambert Railroad Right-of-Way Alignment Alternative would align the pipeline along the existing railroad right-of-way. Wastewater impacts would not be affected by the pipeline realignment and would be similar to those impacts outlined for the proposed Project.

#### **6.1.3.11 Land Use and Policy Consistency Analysis**

As stated previously, the pipeline realignment along Lambert Road would have advantages over the proposed Project since it would avoid temporary land use impacts related to construction within La Mirada Boulevard. Temporary impacts also include construction noise that could affect nearby residences. However, in general, this alternative would have the same noise impacts related to adjacent land uses as the proposed Project.

#### **6.1.3.12 Fire Protection and Emergency Services**

The pipeline realignment along Lambert Road would have the same effect on fire protection and emergency services as the proposed Project.

#### **6.1.3.13 Public Services and Utilities**

The pipeline realignment along Lambert Road would have the same effect on public services and utilities as the proposed Project.

#### **6.1.3.14 Recreation**

The Lambert Road pipeline alternative would not have an effect on recreational activities.

**6.1.3.15 Energy and Mineral Resources**

As a result of utilizing existing infrastructure, the pipeline realignment along Lambert Road would reduce the energy impact and would, therefore, remain less than significant.

**6.1.3.16 Environmental Justice**

The pipeline realignment along Lambert Road would have the same effect as the proposed Project with regard to environmental justice.

#### **6.1.4 Loop Trail Road Alternative**

The Loop Trail Road Alternative would direct construction and operations traffic to come in directly into the Preserve through the exiting gate at Colima Road and improve and utilize the existing Loop Trail Road for access to the Project Site. This would eliminate access through the Penn Street and would not require improvements to the Landfill Road and the North Access Road into the Preserve. Under this alternative, traffic would not utilize Catalina Avenue for any of the phases of the Project. This alternative discussion is specific to the access to the Project Site and does not change any other aspect of the proposed Project.

##### **6.1.4.1 Air Quality**

Mitigation measures associated with *impacts AQ.1 through AQ.5* would still apply to the fixed facilities located within the Preserve. Emissions associated with the improvements of the North Access Road would no longer be applicable, but some emissions would be generated by the improvements to the Loop Trail Road and the modifications to the Loop Trail Road to allow for the Loop Trail Road to intersect Colima Road at the Church traffic signal. However, the construction emissions associated with improving the Loop Trail Road would most likely be less than those associated with the improvements to the North Access Road.

Emissions from offsite mobile sources would most likely be similar to the proposed Project as trucks approaching the Project Site from the west could have a longer route under this alternative, but vehicles approaching from the east could have a shorter route. However, the offsite emissions associated with the transportation of export soils to the Landfill, or other location, would most likely be greater as trucks carrying soils could no longer use the North Access Road to access the Landfill. The truck route during construction for exported soils to the landfill would most likely take Colima Road south to Mar Vista Street and the Mar Vista Street towards the Landfill or some other route. This would be a longer route (approximately 4.3 miles versus 1.8 miles one way). This would increase emissions associated with soil export. This impact could be mitigated with AQ-1d requiring arrangements at the Landfill to accept the soil and/or the use of cleaner/newer trucks.

Emissions associated with grading and constructing the Project Site would be similar to those associated with the proposed Project. However, since the access through the Landfill would not be improved and the North Access Road into the site would also not be improved it would lead to some decrease in emissions.

Air quality impacts related to health risk from the roadway traffic were assessed utilizing the SCAQMD guidelines for assessing mobile diesel truck impacts by modeling with Aermid along Penn Street. For operations, impacts related to diesel particulate emissions (discussed in more detail under impact AQ.5) would be less than 1 in a million along Penn Street (see Appendix B). Impacts along the Loop Roadway would be expected to be similar. Roadway traffic represents a minor contribution to the overall health risk from the proposed Project, which is dominated by diesel engine emissions during well drilling. Therefore, this alternative is similar to the proposed Project in terms of mobile source (truck) health risk.

#### **6.1.4.2 Biological Resources**

This alternative would utilize an existing road within the Preserve that would be widened and improved for all construction and operations traffic. This alternative would eliminate the proposed Project's North Access Road which would result in similar but substantially reduced impacts as the Proposed Project. The Loop Trail Road alternative would reduce impacts to Core Habitat inside the Preserve, sensitive species, sensitive species habitat, and sensitive riparian and coastal sage scrub habitats. Widening the existing paved and dirt road would still result in impacts to both coastal sage scrub and riparian habitats (Table 6.2).

Under this alternative, the installation of pipelines within the Preserve would utilize the existing Loop Trail Road to minimize impacts to undisturbed areas. Areas impacted by the grading and widening of the Loop Trail Road and the implementation of a 10-foot wide fuel modification zone are shown in Table 6-2. Impacts to vegetation assumes a 20 foot wide road and 10 feet on each side of the road for fuel modification as per County Fire Department requirements for all "driveable" roadways (verbal communication with Keith Condon on 2/16/2011). The requirement for 20 foot width is per verbal communication with the Los Angeles County Fire Department (on 2/28/2011 with Claudia Soiza) regarding requirements for all roadways into the site.

Compared to the proposed Project North Access Road, the Loop Trail Road Alternative would reduce the area of permanent loss of the sensitive coastal sage scrub habitat, riparian habitat and total vegetation loss. In addition, the Loop Trail Road Access Road would substantially reduce impacts to individual wildlife and the wildlife travel corridor located in the Preserve's Core Habitat. Although this alternative does direct more traffic towards the important wildlife corridor within the Service Tunnel, the end of the Loop Trail Road and Colima Road intersection is more than 2,000 feet away from the Service Tunnel and therefore not expected to substantially interfere with the Tunnel's use as a travel corridor. Impacts to wildlife movement and all biological resources would be mitigable to less than significant through the implementation of mitigation measure BIO-1.a through BIO-4.n.

**Table 6-2 Areas of Impacted Plant Communities Summary, Loop Road Alternative, acres**

Vegetative Type	Loop Road Access		
	Existing Roads	Permanent Fuel Mod	Temporary Construction Grading
Coastal Sage Scrub			
Mixed Sage Scrub	0.01	0.05	0.04
Encelia Scrub			
Black Sage Scrub			
Sagebrush Scrub	0.00	0.10	
Coyote Brush Scrub			
Mixed Sage Scrub/Grassland Ecotone	0.00	0.04	
Sagebrush-monkey Flower Scrub			
Purple Sage Scrub/Toyon-Sumac Chaparral			
Sage Scrub Restoration			
<b>Total Coastal Sage Scrub</b>	<b>0.01</b>	<b>0.18</b>	<b>0.04</b>
Chaparral			
Toyon-Sumac Chaparral	0.02	0.22	
Toyon-Sumac Chaparral/Annual Grassland			
<b>Total Chaparral</b>	<b>0.02</b>	<b>0.22</b>	<b>0.00</b>
Annual Grassland			
Annual Grassland and Ruderal	0.15	0.51	0.66
Ornamental Plantings	0.03	0.03	0.15
Eucalyptus Woodland/Forest	0.25	0.40	0.17
Ruderal			
<b>Total Annual Grassland</b>	<b>0.44</b>	<b>0.94</b>	<b>0.97</b>
Riparian			
Mulefat Scrub		0.01	
Riparian Habitats (Streambed)			
<b>Total Riparian</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>
<b>Total Vegetative Communities Disturbed</b>	<b>0.47</b>	<b>1.35</b>	<b>1.01</b>
Currently Disturbed	1.44	0.42	0.20
<b>Total Area Encompassed by the Road</b>	<b>1.91</b>	<b>1.77</b>	<b>1.21</b>

Notes: Data in all tables is based on Habitat Authority Vegetative layers as provided by the Habitat Authority

Under this alternative, the installation of pipelines within the Preserve would utilize the existing Loop Trail Road to minimize impacts to undisturbed areas. In addition, the existing Catalina Road would be required for Fire Department access which would require fuel modifications along the Catalina Road. This would be performed for the test phase, but would continue through all phases of the Project.

#### **6.1.4.3 Safety, Risk of Upset, and Hazardous Materials**

The Loop Road alternative would not produce any additional impacts to safety and risk over the proposed Project. The routing of the pipelines within the Preserve would take a route along the Loop Road, which would be the same impacts as under this alternative. The metering station would still be located in the same location as the proposed Project, which would still introduce some risk, although acceptable. All mitigation measures would still apply.

#### **6.1.4.4 Geological Resources**

Utilization of the Loop Road would not change the geotechnical hazards compared to the proposed Project. However, the additional roadway length and elevation change could increase short-term construction grading activities particularly within the landfill area where upgrades to the road would be necessary to allow easy, all weather access into the Preserve. All geological mitigation measures from the proposed Project in Section 4.0 of this document would apply.

#### **6.1.4.5 Noise and Vibration**

Under this alternative, traffic would be directed from Colima Road onto the Preserve and then through the existing Loop Trail Road improved to allow for heavy vehicle traffic.

*Impact N.1*, related to construction, would be similar to the proposed Project, except for traffic noise. During construction, modeling indicates that noise levels would be as high as 78 dBA maximum hourly along the Loop Trail Road for a recreational receptor during daytime hours with construction, due primarily to the passing of soil export trucks. Impacts at the closest residential receptor would be as high as 65 dBA maximum hourly daytime average at the closest residential receptors to the Loop Trail Road. Construction noise levels would be allowed by the Municipal Code if construction activities are limited to specific hours (mitigation measure N-1a and N-1b). These impacts would only occur during daylight hours and would be relatively temporary. Impacts for construction noise would therefore be less than significant.

Single truck levels ranging up to 72 dBA 50 feet from the roadway for heavy trucks and 63 dBA for medium trucks (FHA 1995) as a peak level with a single truck passing.

*Impacts N.2 and N.4*, related to drilling and operations, noise levels along the Loop Trail Road would be nearly 59 dBA maximum hourly for a recreational receptor during daytime hours with concurrent operations and drilling, with impacts at the closest residential receptor being 46 dBA maximum hour. However, the closest residential receptors to the Loop Trail Road are also located in close proximity to Colima Road, which generates a substantial amount of noise. The

additional noise from the Loop Trail Road activities would not be noticeable to the residences relative to the Colima Road traffic noise during the daytime. However, impacts to recreational users would be potentially significant.

**Impact N.3** related to vibration, would be the same as the proposed Project.

Impact #	Impact Description	Phase	Residual Impact
N.Alt.1	The use of the Loop Road could increase noise levels to recreational receptors.	Drilling Operations	Significant and Unavoidable

The Loop Trail Road runs east from the Project Site in a circuitous route to Colima Road, passing by residences near Colima Road. The Loop Trail Road is currently used as a recreational trail (the Deer Loop Trail). Noise levels would increase for both recreational and residential receptors located close to the Loop Trail Road. Noise levels for recreational users would increase by more than the 5 dBA threshold and would be considered a significant impact.

**Mitigation Measures**

No new mitigation measures applied.

**Residual Impacts**

Some mitigation measures recommended in other sections, such as AQ-1a, to limit vehicle speeds would also limit noise levels along the Loop Trail Road. However, due to the close proximity of recreational activities to the Loop Trail Road area, the impacts would remain significant and unavoidable.

**6.1.4.6 Aesthetics and Visual Resources**

The use of the Loop Road would impact visual resources since the Loop Trail Road would be visible from the recreational areas or from residences along the south side of the Preserve. Views would include the intermittent presence of vehicles traveling along the Loop Roadway during the daytime. During construction, peak traffic levels would generate approximately a vehicle passing on average every 4 minutes during daylight hours (assuming 10 hours of daylight). During operations, a vehicle would pass during the peak day on average once every 12 minutes. During these periods of vehicles passing, impacts would be potentially significant.

Impact #	Impact Description	Phase	Residual Impact
AE.Alt.1	The use of the Loop Trail Road could degrade public viewsheds.	Drilling Operations	Significant and Unavoidable



The Loop Trail Road runs east from the Project Site in a circuitous route to Colima Road, passing close by residences near Colima Road. The Loop Trail Road is currently used for a recreational trail (the Deer Loop Trail). The roadway and accompanying traffic would be visible from nearby residences and recreational areas and trails in close proximity to the Loop Trail Road. This would degrade the visual quality for both residences and recreational users and would be considered a significant impact. Installing berm walls and vegetation, as per mitigation measure AE-1a, could reduce the impacts of the use of the Loop Trail Road but would also block existing views of the Preserve from residences. Even with mitigation, therefore, this would still be a significant impact.

#### *Mitigation Measures*

Implement mitigation measures AE-1a.

#### *Residual Impacts*

With the application of mitigation measures AE-1a, the potential visual impacts from the increased use of the Loop Trail Road would be reduced but would remain significant and unavoidable.

#### **6.1.4.7 Transportation**

This alternative would route all Project traffic through the improved Loop Trail Road and out to Colima Road. This alternative could be applied to the proposed Project but not to the Savage Canyon Landfill Site Alternative. During Phase 1, project traffic would utilize Catalina Avenue and Mar Vista Street as with the proposed Project. Impacts during Phase 1 would be the same for this alternative as for the proposed Project.

This alternative incorporates changes in access that create different Project traffic distribution patterns, primarily directing traffic onto Colima Road. Therefore, the alternative access location was evaluated in detail to determine the effects on traffic in the area. See Appendix E for detailed traffic tables. The analysis process is the same as with the proposed Project analysis.

Under this alternative, project traffic would use only Colima Road for the construction and operations phases, which would eliminate traffic on Catalina Avenue and eliminate traffic in the Hadley Street, Penn Street, and Painter Avenue area. Some traffic would continue to use Mar Vista Street.

**Impact T.1**, related to project traffic impacts, would be the same for Phase 1 and would generate a significant impact at Mar Vista Street and Catalina Avenue, as per the proposed Project, during Phase 1. It would be mitigated to less than significant with mitigation measures T-1a through T-1d.

This alternative would cause significant impacts only at the intersection of Colima Road and Whittier Blvd during Phase 2. All other intersections would operate at less than significant levels during Phase 2 and 3. All roadway segments would also operate at acceptable levels for Phase 2 and 3.

The export of soils from the Project Site, if deposited at the Savage Canyon Landfill, would require the movement of trucks most likely south on Colima Road then west on Mar Vista Street. This could generate traffic impacts on Mar Vista Street. Mar Vista Street currently operates at an LOS of F during both a.m. and p.m. peak periods and as a daily LOS. Traffic utilizing Mar Vista Street in excess of 1%, or 13 PCE during the peak hour or 163 PCE during the day would be considered a significant impact. Movement of soils during Phase 2 of the project would exceed these levels.

With the application of mitigation measures T-1c, which limits traffic on Mar Vista Street, impacts would be less than significant. However, this level of traffic specified in T-1c might not be sufficient to move all of the soil in the project timeframe. Therefore, soils would need to be deposited in other locations or the North Access Road could be utilized only for the soils export, which would require some improvements, but not to the level required for permanent use as in the proposed Project.

For the freeway analysis, impacts would be the same as the proposed Project.

The Loop Trail Road would connect with Colima Road at the Whittier Community Church traffic signal recently installed as part of the Church renovation project along Colima Road. Colima Road north of Mar Vista Street is a curvilinear roadway with some terrain. Limited visibility is provided at the Loop Trail Road connection point. The traffic to and from the site would not be in such volumes as to meet standard guidelines to warrant a new traffic signal. However, with the neighboring church expansion of 34,000 square feet, a new traffic signal was warranted due to large Sunday volumes. An operational analysis on weekdays (as there will rarely be project traffic on the weekends) is provided in Appendix E. The new signal will continue to operate within minimum standards with no significant traffic impacts. However, it is recommended that trucks be encouraged to access the site by making right turns so as to reduce delays on Colima Road during peak hours. A southbound right turn lane should be installed on Colima Road north of the Loop Trail Road. Exits should be restricted to right turn only as much as possible to further reduce delays during peak hours. An acceleration and merge lane for the trucks should be provided south of the Loop Roadway connection point if adequate right-of way is available.

**Impact T.2**, related to pipeline construction traffic impacts, would be the same as the proposed Project.

### **Loop Trail Road Alternative with Cumulative Projects**

The traffic volumes for the related (cumulative) projects in the area were added to the future existing with ambient growth and the Project volumes to determine whether significant impact thresholds would be exceeded. If these thresholds were exceeded, the percentage of Project impact is identified for the intersection and time period. Details on the cumulative analysis for the alternatives are shown in Appendix E.

There would be no new significant impacts with this alternative and cumulative projects. Phase 1 impacts would be the same as the proposed Project.

There would no longer be a significant impact at Catalina Avenue and Mar Vista Street during Phase 2 or a significant impact at Colima Road and Mar Vista Street due to cumulative projects.

There would no longer be a significant impact at Catalina Avenue and Mar Vista Street during Phase 3.

Roadway segments were analyzed in a similar manner as the intersections. The existing roadway traffic volumes were increased by 1% per year for ambient growth and project traffic was added to this future volume. A comparison of the future without and future with project volumes was conducted and compared to the impact criteria to determine if significant impacts occur. Tables in Appendix E display the results of this analysis. If an impact would be deemed significant, the percentage of Project traffic which contributes to the impact is identified.

There would be a new significant impact at Colima Road south of Mar Vista Street during the p.m. peak hour during Phase 2 that would be mitigated with the implementation of mitigation measure T-1b and T-1c as applied to Colima Road south of Mar Vista Street. The segment of Mar Vista Street west of Colima Road would no longer be significantly impacted.

The segment of Mar Vista Street west of Colima Road during Phase 3 would no longer be significantly impacted.

#### **6.1.4.8 Hydrology and Water Resources**

The Loop Trail Road Alternative would provide site access via the existing road within the site through Colima Road. Access via the existing Loop Trail Road would eliminate the need to construct a new access road, which would reduce temporary water quality impacts from construction. However, since construction impacts would be temporary and could be mitigated, the overall impacts would be similar to the proposed Project.

#### **6.1.4.9 Cultural Resources**

This alternative would utilize existing roads that would be widened and improved. The records search identified the historic Whittier Main Oil Field as an archaeological site (19-003341). No other cultural resources were identified during the records search or site inspection. Access through the Loop Trail Road Alternative is within the boundaries of this archaeological site and could result in impacts to the oil field and any previously undocumented resources.

**Impact CR-1**, impacts to historical resources such as historic well pads, roadways, and the landscape due to ground disturbance, would be the same as for the proposed Project. Impacts could be reduced to less than significant with mitigation incorporated. Mitigation measure CR-1 would apply to this alternative.

**Impact CR-2**, unanticipated disturbance to human remains due to site clearance and construction, would be the same as for the proposed Project. While no formal cemeteries or other places of human interment are known to exist within the Landfill alternative, unanticipated discoveries of

human remains would require treatment as outline under CR-2. If human remains were disturbed there would be a significant environmental impact.

**Impact CR-3**, unanticipated disturbance to paleontological resources due to site clearance and construction, would be the same as for the proposed Project. Implementation of mitigation measure CR-3 would reduce impacts to less than significant with mitigation incorporated.

#### **6.1.4.10 Wastewater**

The Loop Trail Road Alternative would provide site access via the existing entrance from Colima Road into the Preserve. Wastewater impacts would not be affected by the alternate access road and would be similar to those impacts outlined for the proposed Project, **impact WAS.1**.

#### **6.1.4.11 Land Use and Policy Consistency Analysis**

The use of Loop Trail Road would direct traffic to the site through the Colima Road entrance into the Preserve. This would take the place of the Catalina Avenue access and the proposed North Access Road.

Overall impacts (**impacts LU.1 through LU.5**) to adjacent land uses would remain similar to the proposed Project's impacts since oil field activities would still occur with the goal of achieving the same production results. That is, reduced impacts in certain areas would not entirely eliminate general impacts resulting from increased activity in a concentrated area.

#### **6.1.4.12 Fire Protection and Emergency Services**

The use of Loop Trail Road would direct traffic east from the Project Site to Colima Road. This would take the place of the Catalina Avenue access and the proposed North Access Road.

**Impacts FP.1 and FP.2** would remain unchanged from the proposed Project and mitigation measures FP-1a through FP-1e and FP-2a through FP-2b would still apply to address the facility's fire fighting capabilities and risk of wildfires.

The Loop Trail Road would be improved for access, including increased width. Some clearing would need to take place to ensure proper width and clearance of 10 feet along both sides. Emergency vehicles could also access the site from the existing Catalina Avenue gate into the Preserve. This would allow for multiple accesses, according to LACoFD requirements, and would therefore be a less than significant impact. Both of these roads could need improvements according to LACoFD requirements for road width and all-weather capability for emergency vehicle access.

This alternative may decrease fire protection impacts since the Loop Trail Road passes through areas less vulnerable to wildfire and more accessible to fire protection services than the North Access Road. However, the Applicant indicates that all roadways would have a 10-foot clearance along both sides, as required by the LACoFD, which would mitigate this impact.

**6.1.4.13 Public Services and Utilities**

The use of Loop Trail Road for primary site traffic would have the same effect on public services and utilities as the proposed Project.

**6.1.4.14 Recreation**

The use of the Loop Trail Road would direct traffic east from the Project Site along the Loop Trail Road to Colima Road. This would take the place of the Catalina Avenue access and the proposed North Access Road.

Impacts to recreation would be more than the proposed Project since the Loop Trail Road is currently used as a trail; the Deer Loop Trail. Therefore, traffic impacts generated from use of Loop Trail Road would have a potentially significant impact on recreational resources.

Impact #	Impact Description	Phase	Residual Impact
REC.1	Newly generated traffic from the proposed Project could reduce planning efforts to protect recreational resources.	Drilling, Construction, Operations	Less Than Significant With Mitigation

Construction, drilling, and new operations would generate traffic on the Loop Road congruent with and on portions of each of the three Arroyo Pescadero Trailhead trails between Colima Road and the Project Site. Pedestrians currently use these trails for recreation, such as hiking, jogging, and dog walking.

On a peak construction day, there would be the most one-way trips to the proposed Project Site during all project phases. Vehicles include trucks, pickup trucks, and autos. The operations and maintenance phase would generate substantially fewer one-way vehicle trips per peak day than the construction phase (see Section 2.0, Project Description).

The introduction of traffic along portions of the Arroyo Pescadero Trailhead would increase the likelihood of injury to recreational pedestrians due to vehicle collisions, which would have an adverse effect on the overall recreational experience.

Based on the data and analysis, the impacts to recreation would be potentially significant but mitigable if these mitigation measures are implemented.

*Mitigation Measures*

*REC-1a The Applicant shall construct and maintain a pedestrian trail along the proposed new road, existing roadways running congruent with existing trails, and the Truck Loading Facility to maintain pedestrian access on the Arroyo Pescadero Trailhead and protect recreational pedestrians from vehicle traffic. New trails and existing trails shall be separated from the access road with appropriate fencing or barriers, as approved by the Habitat Authority,*

*to ensure vehicle-pedestrian separation. These trails should also take advantage of existing oil field roads and minimize potential disturbances to existing habitat. Additionally, consideration shall be given to the installation of speed bumps on existing and proposed new roads near the intersection of said roads and pedestrian trails.*

*REC-1b The Applicant shall work with the Preserve and a trail expert to develop an alternative pedestrian trail(s) that would minimize impacts to recreational users from the proposed Project. The new trail(s) should also take advantage of existing oil field roads and minimize potential disturbances to existing habitat.*

#### *Residual Impacts*

The residual impacts would be less than significant with mitigation.

#### **6.1.4.15 Energy and Mineral Resources**

The use of Loop Trail Road for primary site traffic would have the same effect on energy and mineral resources as the proposed Project.

#### **6.1.4.16 Environmental Justice**

The use of Loop Trail Road for primary site traffic would have the same effect as the proposed Project with regard to environmental justice.

## 6.2 Comparison of Proposed Project and Alternatives

The CEQA Guidelines (Section 15126.6 [d]) require that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project. The Guidelines (Section 15126.6 [e][2]) further state, in part, that “if the environmentally superior alternative is the ‘No Project Alternative,’ the EIR shall also identify an environmentally superior alternative among the other alternatives.”

The following discussion compares impacts associated with the proposed Project with those associated with the No Project Alternative and the other alternatives. These impacts are identified as a result of the analysis provided in Section 4.0 Environmental Analysis and Section 6.0. An alternative would be considered superior to the proposed Project if there would be a reduction in impact classification. In cases where the impact from an alternative is in the same class as for the proposed Project, differences in severity of the impact are analyzed.

Table 6-3 provides a comparison between the proposed Project and each of the alternatives for each impact identified in the issue areas. For impacts that are the same classification, an increase or decrease in severity is denoted with an up or down arrow, respectively.

Table 6-4 summarizes the mitigation measures and their applicability to each of the alternatives.

**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

NI = No Impact; NA = Not Applicable; NC = Not Classified

↑ ↓ = Increase/decrease in severity

- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

Impact #	Impact Description	Proposed Project	Savage Canyon Landfill	Loop Trail Road Access	Lambert ROW	Explanation
<b>Section 4.1 Air Quality</b>						
AQ.1	Construction activities would generate emissions	Significant and Unavoidable	Significant and Unavoidable	-	-	Construction would exceed SCAQMD thresholds on the peak day for all scenarios.
AQ.2	Operational activities would generate emissions	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	All scenarios would have similar operational emissions.
AQ.3	Odor events	Less Than Significant With Mitigation	Less Than Significant With Mitigation ↓	-	-	Odor events would be less severe for the Landfill as they would be farther from residences



**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

NI = No Impact; NA = Not Applicable; NC = Not Classified

↑ ↓ = Increase/decrease in severity

- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

<b>Impact #</b>	<b>Impact Description</b>	<b>Proposed Project</b>	<b>Savage Canyon Landfill</b>	<b>Loop Trail Road Access</b>	<b>Lambert ROW</b>	<b>Explanation</b>
AQ.4	GHG Emissions	Significant and Unavoidable	Significant and Unavoidable	-	-	GHG would be similar for all scenarios
AQ.5	Health Risk	Less Than Significant With Mitigation	Less Than Significant With Mitigation ↓	-	-	Health risk would be less severe for the landfill it would be farther from residences
<b>Section 4.2 Biological Resources</b>						
BIO.1	Clearing of vegetation	Less Than Significant With Mitigation	Less Than Significant With Mitigation ↓	↓	-	Impacts would be less severe for the Landfill as it would involve less grading of new areas

**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

NI = No Impact; NA = Not Applicable; NC = Not Classified

↑ ↓ = Increase/decrease in severity

- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

Impact #	Impact Description	Proposed Project	Savage Canyon Landfill	Loop Trail Road Access	Lambert ROW	Explanation
BIO.2	Loss of listed plants species	Less Than Significant With Mitigation	Less Than Significant With Mitigation	Less Than Significant	-	Impacts would be less for the Landfill as it would not be constructed near or impact Riparian areas.
BIO.3	Spills	Less Than Significant With Mitigation	Less Than Significant With Mitigation ↓	-	-	Impacts would be less severe for the Landfill as it would not be located within the Preserve nor sensitive riparian habitats.
BIO.4	Wildlife corridor	Less Than Significant With Mitigation	Less Than Significant With Mitigation ↓	↑	-	Impacts would be less for the Landfill as it would not be located within the Preserve. Impacts for the North Access Road would be greater than the Loop Road or Catalina as the North Access Road is located farther into the core area.

**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

NI = No Impact; NA = Not Applicable; NC = Not Classified

↑ ↓ = Increase/decrease in severity

- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

<b>Impact #</b>	<b>Impact Description</b>	<b>Proposed Project</b>	<b>Savage Canyon Landfill</b>	<b>Loop Trail Road Access</b>	<b>Lambert ROW</b>	<b>Explanation</b>
BIO.5	Conflict with policies	Less Than Significant With Mitigation	No Impact	Less Than Significant With Mitigation	Less Than Significant With Mitigation	Impacts would be less for the Landfill as it would not be located within the Preserve.
<b>Section 4.3 Safety, Risk of Upset, and Hazardous Materials</b>						
SR.1	Accidental releases	Less Than Significant With Mitigation	Less Than Significant With Mitigation ↓	-	-	Accidental releases risk would be less severe for the Landfill as it would be farther from residences
SR.2	Soil contamination	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Soil contamination would be Same for all scenarios

**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

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- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

<b>Impact #</b>	<b>Impact Description</b>	<b>Proposed Project</b>	<b>Savage Canyon Landfill</b>	<b>Loop Trail Road Access</b>	<b>Lambert ROW</b>	<b>Explanation</b>
<b>Section 4.4 Geological Resources</b>						
GR.1	Seismically induced ground shaking	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
GR.2	Seismically induced ground movement	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
GR.3	Liquefaction	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios

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- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

<b>Impact #</b>	<b>Impact Description</b>	<b>Proposed Project</b>	<b>Savage Canyon Landfill</b>	<b>Loop Trail Road Access</b>	<b>Lambert ROW</b>	<b>Explanation</b>
GR.4	Expansive soils	Less Than Significant	Less Than Significant With Mitigation	-	-	Same for all scenarios
GR.5	Uncertified fill	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
GR.6	Landslides	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
GR.7	Slope stability	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios

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- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

<b>Impact #</b>	<b>Impact Description</b>	<b>Proposed Project</b>	<b>Savage Canyon Landfill</b>	<b>Loop Trail Road Access</b>	<b>Lambert ROW</b>	<b>Explanation</b>
GR.8	Temporary Excavations	Less Than Significant	Less Than Significant	-	-	Same for all scenarios
GR.9	Stockpile erosion	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
GR.10	Corrosion	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
GR.11	Ground subsidence	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
<b>Section 4.5 Noise</b>						

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- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

<b>Impact #</b>	<b>Impact Description</b>	<b>Proposed Project</b>	<b>Savage Canyon Landfill</b>	<b>Loop Trail Road Access</b>	<b>Lambert ROW</b>	<b>Explanation</b>
N.1	Construction noise	Less Than Significant With Mitigation	Less Than Significant With Mitigation	↑	-	Construction noise would be similar for both sites except somewhat less Landfill as it would be located farther from receptors. The Loop Road would have a more severe impact on residences as the North Access Road would be located farther from residences
N.2	Drilling noise	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Noise would be less severe for the Landfill site as it is located farther from residences
N.3	Drilling vibration	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Vibration would be less than significant for both sites

**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

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- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

Impact #	Impact Description	Proposed Project	Savage Canyon Landfill	Loop Trail Road Access	Lambert ROW	Explanation
N.4	Operational noise	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Operational noise would be similar, but less severe for the Landfill site.
N.5	Operations and drilling simultaneously	Less Than Significant With Mitigation	Less Than Significant With Mitigation	Significant and Unavoidable	-	Noise would be less severe for the Landfill. Noise levels for the Loop Road would have a significant impact on recreational receptors.

**Section 4.6 Aesthetic and Visual Resources**

AE.1	Drilling equipment viewshed degradation	Significant and Unavoidable	Significant and Unavoidable	-	-	Views of drilling equipment would remain for all scenarios
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**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

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- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

<b>Impact #</b>	<b>Impact Description</b>	<b>Proposed Project</b>	<b>Savage Canyon Landfill</b>	<b>Loop Trail Road Access</b>	<b>Lambert ROW</b>	<b>Explanation</b>
AE.2	Oil processing equipment	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Similar impacts for all scenarios
AE.3	Access road views	Less Than Significant	Less Than Significant	Significant and Unavoidable	-	The North Access Road would be minimally visible from residences and recreational receptors. The Loop Road would have significant impacts on recreational receptors.
AE.4	Nighttime lighting and glare	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios

**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

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↑ ↓ = Increase/decrease in severity

- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

Impact #	Impact Description	Proposed Project	Savage Canyon Landfill	Loop Trail Road Access	Lambert ROW	Explanation
<b>Section 4.7 Transportation and Circulation</b>						
T.1	Operations traffic	Less Than Significant With Mitigation	Less Than Significant With Mitigation ↓	Less Than Significant With Mitigation ↓	-	The Landfill site and the exclusive use of Penn Street would have reduced impacts on Mar Vista Street, which is currently impacted (LOS F). The use of the Loop Road would reduce impacts on Mar Vista Street as well.
T.2	Pipeline construction	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	Less Than Significant With Mitigation ↓	Lambert ROW would disturbed street traffic less
<b>Section 4.8 Hydrology and Water Resources</b>						

**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

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- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

<b>Impact #</b>	<b>Impact Description</b>	<b>Proposed Project</b>	<b>Savage Canyon Landfill</b>	<b>Loop Trail Road Access</b>	<b>Lambert ROW</b>	<b>Explanation</b>
WR.1	Increase in impervious surfaces	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
WR.2	Drainage and increased erosion	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
WR.3	Increased surface runoff/ flooding	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
WR.4	Leaks degrade runoff	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios

**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

NI = No Impact; NA = Not Applicable; NC = Not Classified

↑ ↓ = Increase/decrease in severity

- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

<b>Impact #</b>	<b>Impact Description</b>	<b>Proposed Project</b>	<b>Savage Canyon Landfill</b>	<b>Loop Trail Road Access</b>	<b>Lambert ROW</b>	<b>Explanation</b>
WR.5	Spills impact waterways	Significant and Unavoidable	Significant and Unavoidable	-	-	Impacts at the Landfill would be less severe as it is not located within the Preserve. However, pipelines would still be located within the Preserve.
<b>Section 4.9 Cultural Resources and Archeology</b>						
CR.1	Historical resources	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
CR.2	Human remains	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios

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↑ ↓ = Increase/decrease in severity

- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

<b>Impact #</b>	<b>Impact Description</b>	<b>Proposed Project</b>	<b>Savage Canyon Landfill</b>	<b>Loop Trail Road Access</b>	<b>Lambert ROW</b>	<b>Explanation</b>
CR.3	Paleontological resources	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
<b>Section 4.10 Wastewater</b>						
WAS.1	Wastewater generation	Less Than Significant	Less Than Significant	-	-	Same for all scenarios
<b>Section 4.11 Land Use and Policy Consistency Analysis</b>						
LU.1	Noise from drilling	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Noise would be less severe with the Landfill

**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

NI = No Impact; NA = Not Applicable; NC = Not Classified

↑ ↓ = Increase/decrease in severity

- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

<b>Impact #</b>	<b>Impact Description</b>	<b>Proposed Project</b>	<b>Savage Canyon Landfill</b>	<b>Loop Trail Road Access</b>	<b>Lambert ROW</b>	<b>Explanation</b>
LU.2	Combined noise	Less Than Significant With Mitigation	Less Than Significant With Mitigation	Significant and Unavoidable	-	Noise would be less severe with the Landfill. However, the Loop Road would generate significant impacts to recreational users.
LU.3	Views of the drilling rig or access roads	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable	-	Same for all scenarios. The Loop Road would generate significant impacts to recreational users.
LU.4	Nighttime lighting	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
LU.5	Emissions and odors	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios

**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

NI = No Impact; NA = Not Applicable; NC = Not Classified

↑ ↓ = Increase/decrease in severity

- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

Impact #	Impact Description	Proposed Project	Savage Canyon Landfill	Loop Trail Road Access	Lambert ROW	Explanation
LU.6	Land use conflicts	Significant and Unavoidable	Significant and Unavoidable	-	-	Same for all scenarios. However, there are additional land use compatibility impacts associated with the speculative nature of obtaining permits for oil and gas production facilities within a Landfill from State Agencies.

#### Section 4.12 Fire Protection and Emergency Services

FP.1	Fire protection and emergency response	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	Same for all scenarios
FP.2	Wildfire	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	The Landfill site would be less severe as it is not located within the Preserve.

**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

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↑ ↓ = Increase/decrease in severity

- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

Impact #	Impact Description	Proposed Project	Savage Canyon Landfill	Loop Trail Road Access	Lambert ROW	Explanation
<b>Section 4.13 Public Services</b>						
PS.1	Solid Wastes	Less Than Significant	Less Than Significant			Same for all scenarios
PS.2	Potable Water	Less Than Significant	Less Than Significant			Same for all scenarios
<b>Section 4.14 Recreation</b>						
REC.1	Noise impacts on recreation	Less Than Significant With Mitigation	Less Than Significant With Mitigation	Significant and Unavoidable	-	The Loop Road would have significant impacts on recreational users.
REC.2	Odor impacts on recreation	Less Than Significant With Mitigation	Less Than Significant With Mitigation	-	-	



**Table 6-3 Summary of Environmental Impacts for the Proposed Project and Alternatives**

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- For the Loop Trail Road, and the Lambert Right-of-Way (ROW) alternatives, these are alternatives to the Proposed Project (PP) components and are listed with a dash if they would not affect the PP impacts.

<b>Impact #</b>	<b>Impact Description</b>	<b>Proposed Project</b>	<b>Savage Canyon Landfill</b>	<b>Loop Trail Road Access</b>	<b>Lambert ROW</b>	<b>Explanation</b>
REC.3	View impacts on recreation	Significant and Unavoidable	Less Than Significant	Significant and Unavoidable	-	The Landfill would not have significant impacts visual on recreational users. The Loop Road would have significant visual impacts on recreational users.
<b>Section 4.15 Energy and Mineral Resources</b>						
ER.1	Electrical use	Less Than Significant	Less Than Significant	-	-	Same for all scenarios
ER.2	Increased fossil fuel use	Less Than Significant	Less Than Significant	-	-	Same for all scenarios
<b>Section 4.16 Environmental Justice</b>						
EJ.1	Impacts on minorities	Less Than Significant	Less Than Significant	-	-	Same for all scenarios

<b>Table 6-4 Applicability of Mitigation Measures to the Alternatives</b>	
<b>Alternative</b>	<b>Applicable Mitigation Measures</b>
Savage Canyon Landfill Site	<p>All mitigation measures would be applicable to the Landfill Site Alternative EXCEPT:</p> <ul style="list-style-type: none"> <li>• BIO-4h, Installing native screening around the service tunnel</li> <li>• N-1c, relocating staging and parking areas</li> <li>• T-1a, improvements to Catalina Ave</li> <li>• T-1c, limits on Catalina Avenue and Mar Vista Street Traffic</li> <li>• T-1d, measures related to area improvements and pavement monitoring</li> <li>• REC-1a, interpretive signage within the Preserve</li> </ul>
Loop Trail Road	<p>The following measures would be applicable to the Loop Trail Road Alternative related to construction and roadway operational issues: Note: This alternative assumes that Catalina Avenue would be used for phase 1 of the project.</p> <ul style="list-style-type: none"> <li>• AQ-1a: Fugitive dust</li> <li>• AQ-1c: Road treatment before facility construction</li> <li>• AQ-1d: Tier 3 engine on construction equipment</li> <li>• BIO-1a: Replacement of loss of sage scrub (if applicable)</li> <li>• BIO-1b: Re-vegetation</li> <li>• BIO-2a: Replacement of riparian habitat (if applicable)</li> <li>• BIO-4c: Road use during daylight hours only</li> <li>• BIO-4d: Landscaping with native species</li> <li>• BIO-4e: Nesting songbirds and construction timing</li> <li>• BIO-4f: Nesting hawks and owls and construction</li> <li>• BIO-4g: Nesting bats and construction</li> <li>• GR-1b: Roadway slopes</li> <li>• GR-6b: Slope repair</li> </ul>

<b>Table 6-4 Applicability of Mitigation Measures to the Alternatives</b>	
<b>Alternative</b>	<b>Applicable Mitigation Measures</b>
	<ul style="list-style-type: none"> <li>• GR-9a: Best management practices for erosion and sediment control</li> <li>• GR-9b: Covering of stockpiles</li> <li>• N-1a: Construction activities timing</li> <li>• N-1b: Maintenance of construction equipment</li> <li>• AE-1a: Landscaping along roadway</li> <li>• WR-1a: Minimize impervious surfaces</li> <li>• WR-1b, WR-1e and WR-2a: Best management practices</li> <li>• WR-2c: Drainage plan</li> <li>• FP-1a: Fire water supplies along roadway with hydrants</li> <li>• FP-2b: Wildfire risk</li> <li>• PS-1: Recycling plan during roadway construction</li> </ul>
Lambert Railroad Right-of-Way Alignment	<p>The following mitigation measures would be applicable to the Lambert Railroad Right-of-Way Alignment Alternative related to construction and pipeline issues:</p> <ul style="list-style-type: none"> <li>• AQ-1a: Fugitive Dust measures</li> <li>• AQ-1d: Tier 3 diesel engines on construction equipment</li> <li>• AQ-2a: SCAQMD regulations</li> <li>• SR-2a: Gas Pipeline automatic valves</li> <li>• SR-2b: Pipeline warning tape</li> <li>• GR-1c: Buried pipeline measures</li> <li>• GR-10b: Coating of pipelines</li> <li>• N-1a: Limits on construction hours</li> <li>• N-1b: Maintenance of construction machinery</li> <li>• T-2: Pipeline construction traffic management plan</li> <li>• WR-2a: Storm water best management practices</li> <li>• PS-1: Recycling plan</li> </ul>

### 6.3 Environmentally Superior Alternative Analysis

The approach taken in this EIR is to provide an assessment of a number of different alternatives to the components of the proposed Project; including:

- Alternative Production and Drilling sites;
- Alternative Access Roads to the Project sites; and
- Alternative Pipeline alignments.

The Environmentally Superior Alternative analysis then combines these alternative components together, along possibly with components of the proposed Project, to present an Environmentally Superior Alternative.

CEQA does not provide specific direction regarding the methodology of comparing alternatives and the proposed Project. Each project must be evaluated for the issues and impacts that are most important; this will vary depending on the project type and the environmental setting. Issue areas that are generally given more weight in comparing alternatives are those with significant long-term impacts. Impacts that are short-term (e.g., construction-related impacts) or those that are mitigable to less than significant levels are generally considered to be less important.

This comparison is designed to satisfy the requirements of State CEQA Guidelines Section 15126.6(d), Evaluation of Alternatives, which states that:

The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the Project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the Project as proposed.

In accordance with State CEQA Guidelines Section 15126.6(d) as presented above, this EIR provides sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project and the other alternatives. It should be noted that assumptions made regarding the alternatives' descriptions could differ from actual proposals and the analyses are not presented to a project-level of detail. Different alternative project configurations and a project-level environmental analysis could result in different conclusions from those presented herein.

#### 6.3.1 Proposed Project Versus Alternatives

To facilitate a clear understanding of the relative merits of the various alternatives, this section highlights the major differences between the significant impacts of the proposed Project and the various alternatives. The alternatives that were described in Chapter 5 and evaluated earlier in this Chapter address three aspects to alternatives: alternative locations for the drilling and processing sites, alternatives access roads, and alternative pipeline alignments.

In addition to the No project Alternative, the following alternative locations were assessed.

- Savage Canyon Landfill Site;

In this analysis, it was assumed that the Landfill Site would utilize access only from the Landfill and Penn Street. The proposed Project pipeline route would be used along with a connecting pipeline system underneath existing Preserve roadways to connect to the Landfill Site.

In addition, alternatives to the specific project components were addressed including access to the sites, and pipeline routes. These included the following:

- Loop Road; and
- Lambert Railroad Pipeline Right-of-Way Alignment;

Each of these is compared to the respective proposed Project component to assess the respective advantage or disadvantage over the proposed Project and alternatives.

A summary comparison of the advantages and disadvantages of these alternatives compared to the proposed Project is provided in Table 6-5. A discussion of each alternative compared to the proposed Project follows.

As per Table 6-18, the proposed Project would generate 6 significant unavoidable impacts, the Landfill Alternative Site would generate 6 significant and unavoidable impacts and the use of the Loop Trail Road Alternative could add an additional 2 significant and unavoidable impacts to the proposed Project.

**Table 6-5 Proposed Project Versus Alternative Sites Significant Unavoidable Impacts**

<b>Impact</b>	<b>Proposed Project</b>	<b>Landfill Site Alternative</b>	<b>Proposed Project with Loop Trail Road</b>
<b>1. Aesthetics:</b> views of the drilling rig			
<b>2. Air Quality:</b> construction emissions			
<b>3. Air Quality:</b> GHG Emissions			
<b>4. Hydrology:</b> oil spills into the environment			
<b>5. Land use:</b> aesthetic impacts to adjacent land uses			
<b>6. Recreation:</b> aesthetic impacts on recreational areas			
<b>7. Recreation:</b> noise impacts on recreational areas			
<b>8. Aesthetics:</b> views of the access roads			
<b>9. Land Use:</b> Speculative permitting of oil and gas facilities within the Landfill, reduction of Landfill life			
<b>Number of Significant Impacts</b>	<b>6</b>	<b>6</b>	<b>8</b>

Shaded = significant impact that cannot be mitigated to less than significant

### 6.3.1.1 Proposed Project Versus the No Project Alternative

With the No Project Alternative, no development of the oil and gas resources would occur. There would be no drilling and no construction of the access road or processing facility. None of the impacts associated with the proposed Project would occur. No new impacts would occur under the No Project Alternative.

### 6.3.1.2 Proposed Project Versus the Landfill Site Alternative

The Landfill Site Alternative has advantages over the proposed Project because it would be farther from residential locations and would be located entirely outside of the Preserve. This reduces the impact in biology, safety and risk of upset as well as noise, air quality and odors. However, none of these are significant impacts associated with the proposed Project.

As there would not be any development within the Preserve, there would be benefits in terms of policies related to biology, impacts to nursery and nesting areas within the core habitat area and reducing the total loss of habitats. In addition, impacts to wildlife movement for this Alternative would be less than those described for the Proposed Project, which is located within the Preserve where wildlife are less accustomed to human disturbances. In addition, there would not be any traffic utilizing Catalina Avenue and Mar Vista Street and traffic impacts would be reduced over the proposed Project as Penn Street currently operates at an acceptable level of service.

The disadvantages of this alternative over the proposed Project are that there would be a substantial reduction in the amount of oil that could be recovered from the reservoirs, estimated at recovering 52 to 59 percent of the amount that the proposed Project could recover. There would also be potential impacts to the life of the Landfill as the development could infringe upon areas of the Landfill that are planned for future waste disposal. In addition, there could still be biological impacts to occupied California gnatcatcher habitat and to the wildlife corridor as the location is closer to “High Quality” habitat, thereby potentially impacting wildlife movements through the corridor. Finally, permitting of oil and gas facilities within a Landfill operation is considered speculative and the outcome of an application for such a Project is unknown.

According to Table 6-5, this alternative would generate six significant unavoidable impacts, the same as the proposed Project. It would not have the recreational impact associated with proximity to recreational users than the proposed Project has, but would have an additional significant and unavoidable impact associated with land use issues related to permitting and Landfill life.

### **6.3.1.3 Proposed Project Versus the Loop Trail Road Alternative**

This alternative is included as an alternative to the proposed Project component of utilizing the existing North Access Road and accessing the Project Site from Penn Street. The purpose of the proposed Project North Access Road would be to prevent traffic impacts along Mar Vista Street and Catalina Avenue. Mar Vista Street is currently heavily impacted with traffic and use of Catalina Avenue and Mar Vista would impact Mar Vista Street as well as the Catalina Avenue/Mar Vista Street intersection. Under this alternative, the North Access Road would not be improved, and instead existing Preserve roadways (the Loop Trail Road) would be improved and utilized, and would connect the Project Site with Colima Road to the east.

This alternative has the advantage over the proposed Project North Access Road in that it allows for Project traffic to directly access an arterial roadway instead of utilizing more residential, collector roadways such as Penn Street. Penn Street is a two lane roadway that has residences with driveways that directly access the street, and is host to periodic events associated with the William Penn Park and Whittier College. These events impact the neighborhood by periodically increasing traffic and limiting parking. Colima Road, on the other hand, is a four lane arterial, more major roadway. Traffic levels on Penn Street average close to 2,700 vehicles per day while traffic on Colima Road averages close to 36,000 vehicles per day. The Loop Trail Road alternative, like the North Access Road, would prevent traffic impacts along Mar Vista Street and Catalina Avenue during the construction and operations phases.

The traffic analysis did not identify any significant and unavoidable impacts along Penn Street associated with the proposed Project use of the North Access Road, since it currently operates at an acceptable level of service.

In addition, the Loop Trail Road would reduce impacts to individual wildlife and the wildlife travel corridor located in the Preserve's Core Habitat associated with the North Access Road. Although this alternative does direct more traffic towards the important wildlife corridor within the Service Tunnel, the end of the Loop Trail Road and Colima Road intersection is more than 2,000 feet away from the Service Tunnel and therefore not expected to substantially interfere with the Tunnel's use as a travel corridor.

However, the Loop Trail Road is currently used as a recreational trail (the Deer Loop Trail). Noise levels would increase for both recreational and residential receptors located close to the Loop Trail Road. Noise levels for recreational users would increase by more than the 5 dBA threshold and would be considered a significant and unavoidable impact.

The roadway and accompanying traffic would also be visible from nearby residences and recreational areas and trails in close proximity to the Loop Trail Road. This would degrade the visual quality for both residences and recreational users and would be considered a significant impact. Installing berm walls and vegetation, as per mitigation measure AE-1a, could reduce the impacts of the use of the Loop Trail Road by Project vehicles but would also block existing views of the Preserve from residences. Even with mitigation, therefore, this would still be a significant and unavoidable impact.

These impacts could be somewhat mitigated by the development of new trails, but the recreational experience of the Arroyo Pescadero Canyon and trails would be significantly impacted by the passage of traffic through the area.

#### **6.3.1.4 Proposed Project Versus the Lambert Railroad Pipeline Right-of-Way Alignment Alternative**

This alternative is included as an alternative to the proposed Project component of a pipeline route that runs down Colima Road to La Mirada Boulevard to connect to the crude oil pipeline that runs along Leffingwell Road. The alternative route would utilize an existing railroad right-of-way that runs down Lambert Road (which intersects Colima Road before La Mirada Boulevard) to Leffingwell Road, where the same existing crude pipeline could be utilized.

This alternative would be advantageous since there would be construction of less pipeline within area streets, thereby reducing impacts on traffic. Since the alternative pipeline would be slightly longer, it might increase total air emissions due to the additional construction requirements.

#### **6.3.2 Environmentally Superior Alternative**

The proposed Project has been specifically designed to reduce the number of impacts to the lowest level possible and still obtain the objectives of the Project. The alternatives provide an alternative site and an alternative access road that allows for a selection of different components of the project that could provide for a different mix of impacts.



### 6.3.2.1 Selection of the Environmentally Superior Alternative Components

The Savage Canyon Landfill Site could reduce some impacts of the proposed Project as the alternative would locate all facilities outside of the Preserve. It also reduces impacts on recreational areas as the alternative Landfill site is not located immediately adjacent to recreational areas.

However, with the Landfill Alternative, there would be a potential reduction to the Landfill life and there would be difficulties associated with permitting the alternative within an operating landfill. There would also be a reduction in recoverable reserves from the reservoir thereby preventing this alternative from achieving all of the Project objectives. Therefore, this scenario is not selected as the environmentally superior alternative.

A project recently proposed by Matrix in La Habra Heights (see Section 3.0, Cumulative Projects) might be able to provide some access to the eastern end of the reservoir that could not be easily reached by drilling from the Landfill Alternative site and thereby recover more reserves under the Landfill Alternative. It is estimated, based on target locations for the test wells provide by Matrix for the proposed Project, that recoverable reserves from the La Habra Heights site into the proposed Project reservoirs could reach some of the recoverable reserves. However, even with the additional access to the eastern portions of the reservoir from La Habra Heights, the shallower portions of the reservoir located midway between the La Habra Heights location and the Landfill Alternative site would not be accessible. The percent of the recoverable reserves are estimated to be between 60 and 70 percent of the proposed Project levels with access from both the Landfill and the La Habra Heights sites.

However, there are a number of uncertainties with this scenario. Matrix indicates that the La Habra Heights site is not feasible to drill “targets” on the Whittier project site economically as they are too shallow and that contractually they cannot assume Sempra would allow drilling to hit “targets” within the Whittier project area. In addition, the project is not built at this time and the timeframe for permitting and construction is not known. The La Habra Heights site is also outside the jurisdiction of the lead agency. Therefore, this scenario is not selected as the environmentally superior alternative.

As the proposed Project Site would satisfy the objectives of the project, would enable recovery of 100 percent of the recoverable reserves from that location and would minimize the environmental impacts, the proposed Project Site is selected as the environmentally preferred site.

The impacts of the proposed Project North Access Road related to the residential, collector roadway of Penn Street and the impacts to biology and the wildlife corridor within the Preserve could be effectively reduced by utilizing the Loop Trail Road. However, neither of these impacts was identified as a significant and unavoidable impact in the proposed Project analysis. The use of the Loop Trail Road would introduce additional significant and unavoidable impacts related to noise and aesthetic impacts on recreational users. Therefore, the North Access Road and Penn Street, utilized as per the proposed Project, are selected as the preferred access route.

Limited use of Catalina Avenue would be conducted throughout the life of the Project. Section 4.7, Traffic and Circulation, impact T.1, limits Catalina Avenue traffic to 40 round-trips per day and 12 one-way trips during the peak hour. Trucks would be prohibited from using Catalina Avenue and would use the North Access Road during the construction and operations phases of the Project.

The Lambert Railroad right-of-way pipeline route presents advantages over the proposed Project pipeline route as less disruptive to traffic and is also selected as the preferred pipeline alignment components.

### **6.3.2.2 The Environmentally Superior Alternative Conclusion**

The environmentally preferred alternative is the mitigated proposed Project with the North Access Road through Penn Street and the mitigated proposed Project Catalina Avenue Access for accessing the site, and the Lambert Railroad Right-Of-Way for the pipeline route. This Project still produces six significant, unavoidable impacts to aesthetics, recreation, land use (views of the drilling rig), air quality (from construction and emissions of GHG), and hydrology (due to the potential for spills).