5.0 Phillips Project Alternatives Analysis

The California Environmental Quality Act (CEQA), Section 15126.6, requires an Environmental Impact Report (EIR) to describe a reasonable range of alternatives to a Project or to the location of a Project that could feasibly attain its basic objectives and evaluate the comparative merits of the alternatives. This section discusses a range of alternatives to the Proposed Project, including alternative sites and a "No Project Alternative." Criteria used to evaluate the range of alternatives and remove certain alternatives from further consideration are addressed. The CEQA Guidelines, Section 15126.6, provide direction for the discussion of alternatives to the Proposed Project. This section requires:

- A description of "...a range of reasonable alternatives to the Project, or to the location of a Project, which would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project, and evaluate the comparative merits of the alternatives" (15126.6(a)).

- A setting forth of alternatives that "...shall be limited to ones that would avoid or substantially lessen any of the significant effects of the Project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the Project" (15126.6(f)).

- A discussion of the "No Project" alternative, and "...If the environmentally superior alternative is the "No Project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives" (15126.6(e)(2)).

- A discussion and analysis of alternative locations "…that would substantially lessen any of the significant effects of the Project need to be considered for inclusion in the EIR" (15126.6(f)(2)(B)).

This document has used an alternative screening analysis to define a reasonable range of alternatives to be evaluated in the EIR. The alternatives screening analysis provides a detailed explanation of why some of the alternatives were rejected from further analysis and assures that only the environmentally advantageous alternatives are evaluated and compared in the EIR.

This screening methodology also uses the *"rule of reason"* approach to alternatives as discussed in State CEQA Guidelines (Section 15126.6(f)). The rule of reason approach has been defined to require that EIR address a range of feasible alternatives that have the potential to diminish or avoid adverse environmental impacts. The State CEQA Guidelines state:

> The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the Project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the Project (Section 15126.6(f)).

In defining feasibility of alternatives, the State CEQA Guidelines state:

> Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (Section 15126.6(f)(1)).

If an alternative was found to be technically infeasible, then it was dropped from further consideration. This was the primary feasibility factor that was used to eliminate an alternative without further screening analysis.

In addition, CEQA states that alternatives should "…*attain most of the basic objectives of the project* ..." (Section 15126.6(a)). If an alternative was found to not obtain the basic objective, then it was also eliminated.

The use of a screening analysis for the alternatives ensures that the full spectrum of environmental concerns is adequately represented, and that a reasonable choice of alternatives is selected for evaluation in the EIR.

Given the CEQA mandates listed above, the remainder of this section covers: (1) a brief description of a range of reasonable alternatives to the Proposed Project; (2) a screening analysis that summarizes and compares the significant environmental effects of each alternative; and (3) an environmental analysis of the alternatives that were selected for further consideration in the EIR.

5.1 Description of Alternatives and Screening Analysis

A variety of alternatives for the Project were considered in a screening analysis to determine potential alternatives that might produce fewer significant impacts than the Proposed Project. The approach taken was to list a wide number of possible alternatives and then screen those to only the alternatives that would satisfy the following:

- The alternative is technically feasible;
- The alternative would lessen the potentially significant impacts of the Proposed Project; and
- The alternative would attain most of the basic objectives of the Project.

Since detailed analyses of the alternatives and the Proposed Project have not been completed at this stage of analysis, this assessment is preliminary and based on the best judgment of the preparers.

Alternatives considered included those associated with throughput increase quantities, transportation modes, product-unloading locations, and the use of different product transportation routes.

This section further discusses seven alternatives, including:

- No Project Alternative;
- Reduced Refinery Throughput Increase;
- Increased Rail Transport;
- Santa Maria Refinery Truck Unloading;
- Summit Pump Station Truck Unloading ;
- Orcutt Pump Station Truck Unloading; and
- Alternative Transportation Routes.

Table 5-1 lists the alternatives considered and eliminated from further consideration and those that are analyzed in the document. Figure 5-1 shows the locations of the alternatives.

Table 5-1 Evaluation and Selection of Potential Alternatives

Alternatives Eliminated from Consideration	Alternatives Evaluated in this EIR
Reduced Refinery Throughput Increase Increased Rail Transport Santa Maria Refinery Truck Unloading Orcutt Pump Station Truck Unloading	No Project Alternative Summit Pump Station Truck Unloading Alternative Transportation Routes

5.2 No Project Alternative

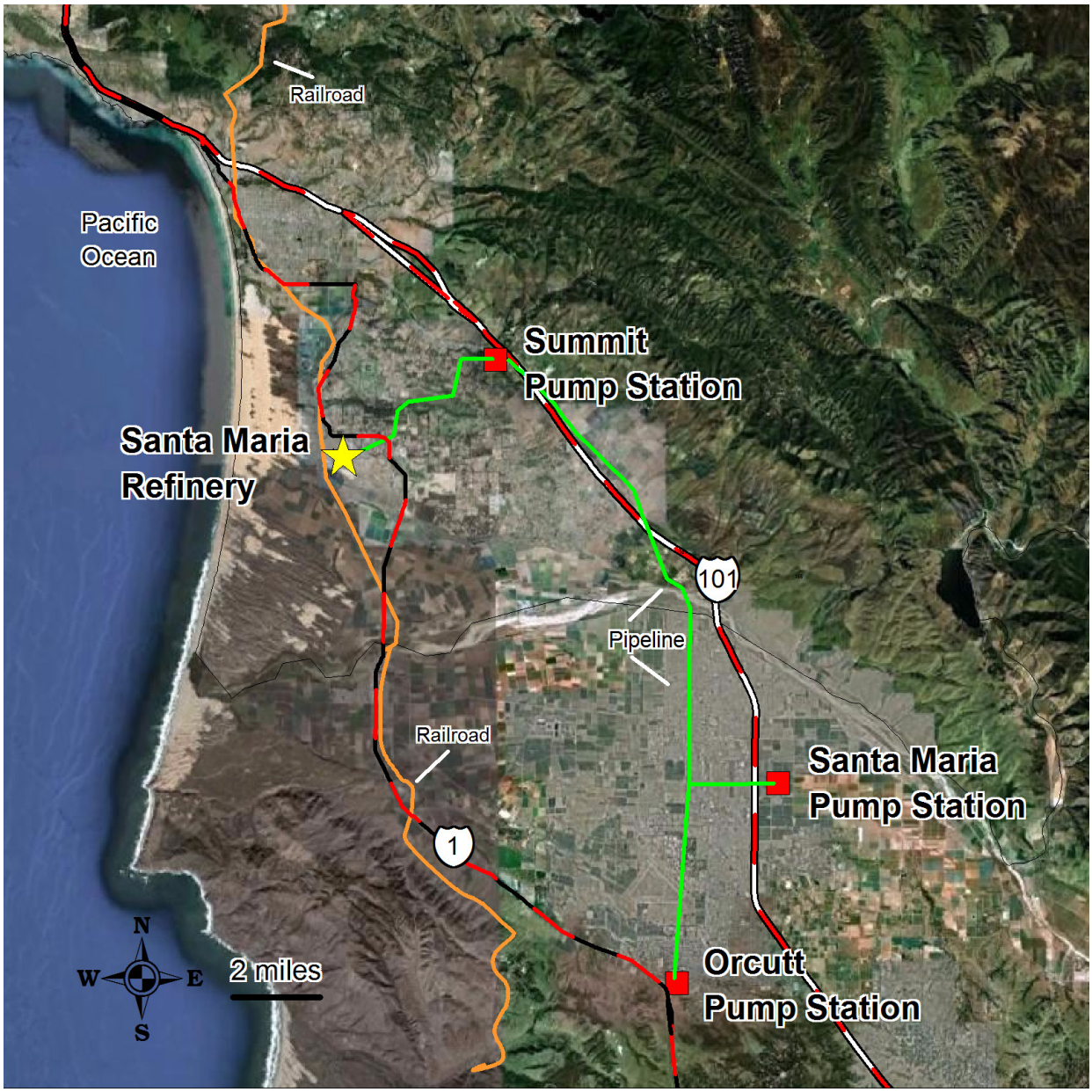
The CEQA Guidelines require that the specific alternative of the "No Project" be evaluated along with its impacts as part of the EIR (CEQA Guidelines Section 15126.6(e) (1)). For projects other than a land use or regulatory plan, the No Project Alternative is the circumstances under which the Project does not proceed. If disapproval of the Project under consideration would result in predictable actions by others, such as the proposal for another Project, this No Project consequence should be discussed (CEQA Guidelines Section 15126.6(e)(3)(B)). The CEQA Guidelines go on to say that the Lead Agency should analyze the impacts of the No Project Alternative by projecting what would reasonably be expected to occur in the foreseeable future if the Proposed Project was not approved (Guidelines Section 15126.6(e)(3)(C)).

The Applicant's Proposed Project is to increase the permitted volume of processed crude oil at the Santa Maria Refinery.

With the No Project Alternative, the throughput increase would not occur at the Santa Maria Refinery. Under the No Project Alternative, no new activity would take place at the Santa Maria Refinery.

Since CEQA requires that the No Project Alternative be analyzed in the EIR, it is assumed that this alternative would be carried forward for review in the EIR and therefore, this alternative does not need to be addressed in the screening analysis.

Figure 5-1 Location of Alternatives



5.3 Reduced Refinery Throughput Increase

With this alternative, the Project would be limited to a five percent throughput increase of crude oil at the Santa Maria Refinery, instead of the Proposed Project 10 percent increase. The daily maximum limit of crude oil would increase to 46,725 barrels per day. The 12-month rolling average of crude throughput would increase to 17,054,625 barrels per year.

As with the Proposed Project, current suppliers would provide increased volumes of crude oil but only half the increase of the Proposed Project. Trucks and rail trips would still transport coke and other products away from the Refinery (similar to the ongoing process at the Santa Maria Refinery).

No changes to the overall processing methods are proposed.

As with the Proposed Project, this alternative could cause the following changes at the Santa Maria Refinery:

- An increase in materials and volumes of crude oil shipped via pipeline from the Santa Maria Pump Station to the Santa Maria Refinery;
- An increase in volume of products leaving the Santa Maria Refinery for the Phillips Rodeo Refinery via pipeline;
- An increase in volume of green coke and sulfur production; and
- An increase in shipments of green coke and sulfur leaving the facility by either truck or railcar.

As with the Proposed Project, this alternative could cause an increase in truck trips from the Refinery. The Project could result in an increase in truck trips to/from the Santa Maria Pump Station to transport crude. The Project may increase truck trips from the Refinery to transport an increase in solid petroleum coke and sulfur. In addition, processes at the Refinery would emit more pollutants since more crude oil could be processed. It should be noted that the Santa Maria Refinery provides a relatively local site for processing of local crudes that may otherwise have to travel farther to be processed.

Impacts associated with this Project would be somewhat smaller in magnitude than the Proposed Project impacts but nonetheless similar. Truck trips and air emissions would decrease compared to the Proposed Project, but would still represent an increase in truck trips and air emissions above the baseline. However, since this alternative is simply a scaled-back version of the Proposed Project, it would not have any environmental benefits compared to the Proposed Project and it would not achieve all the objectives of the Project. Consequently, this alternative has been eliminated from further consideration.

5.4 Increased Rail Transport

Under this alternative, an increased amount of solid petroleum coke and recovered sulfur would leave the Santa Maria Refinery by rail, thereby reducing the number of truck trips. Logistically, transporting solid petroleum coke via railcars includes multiple-unit trains, typically 22 cars carrying approximately 100 tons each. Under this alternative, the amount of coke shipped by rail

would be set at a minimum level and similar rail requirements would apply to recovered sulfur transport.

Solid petroleum coke would be shipped outside of San Luis Obispo County via railcar to customers as fuel or onto ships for export. Major petroleum coke destinations include Mojave, Victorville, Cupertino, Fontana, Lebec, Gorman, and Long Beach. When market conditions allow and as logistically possible, recovered sulfur would be shipped outside of San Luis Obispo County via railcar to customers in the agricultural industry or loaded on ships for export. Sulfur destinations include the San Joaquin Valley, from Bakersfield to Fresno, and Long Beach.

Since 2003, no recovered sulfur has been transported via rail, while approximately twice as much solid petroleum coke was transported by truck than by rail. The feasibility of this scenario as a viable alternative would depend on the ability of customers to receive rail transport at their respective locations.

This alternative could reduce impacts by potentially reducing truck transport requirements, which would result in reduced air emissions and truck traffic. However, for destinations in the Central Valley, the coke may need to be offloaded and then subsequently transported by truck from Los Angeles, negating any potential reduction in impacts. In addition, market forces primarily dictate the choice to utilize rail over truck, because destinations that can utilize rail prefer it since it is less expensive. Therefore, this alternative is considered not feasible and has been eliminated from further consideration.

5.5 Santa Maria Refinery Truck Unloading

Under this alternative, the majority of the 10 percent increase in crude oil needed for the throughput increase would come from the Arroyo Grande, San Ardo, and other oil fields north of the Refinery. The crude oil would be delivered directly to the Santa Maria Refinery by truck and would bypass pipeline delivery via the Santa Maria Pump Station.

The trucks associated with the 10 percent increase in crude oil needed for the throughput increase that would typically deliver crude oil to the Santa Maria Pump Station would be re-routed to the Refinery from the Santa Maria Pump Station.

This alternative would require construction of an offloading rack (including pumps, vapor recovery, etc).This alternative would reduce air emissions from trucks transporting crude oil from northern oil fields (such as Arroyo Grande and San Ardo) since the distance from these northern fields to the Refinery is approximately 10 miles less than transporting the crude oil to the Santa Maria Pump Station. The Santa Maria Pump Station is farther south than the Refinery. However, this alternative would also increase truck traffic along area roadways between U.S. Highway 101 and the Refinery. Given the amount of community concern over truck traffic near the Refinery and the current heavy level of truck traffic contributing to noise and traffic issues, increased truck traffic in the vicinity of the Refinery would have greater impacts than the Proposed Project. Therefore, this alternative has been eliminated from further consideration.

5.6 Summit Pump Station Truck Unloading

Under this alternative, the majority of the 10 percent increase in crude oil needed for the throughput increase would come from the Arroyo Grande and San Ardo Oil Fields north of the

Refinery. The crude oil would be unloaded by truck at the Summit Pump Station rather than at the Santa Maria Pump Station. Crude oil unloaded at the Summit Pump Station would then be transferred via pipeline to the Santa Maria Refinery.

The Summit Pump Station currently consists of only pumps and minimal storage tanks. Therefore, it would be necessary to construct a new truck unloading facility, most likely including increased crude oil storage facilities. The new truck loading facility would be designed to unload one truck at a time and be constructed to hold a 2-day supply of crude oil (i.e., 10,000 barrels in a single 10,000-barrel tank). The new truck loading facility, consisting of a truck loading rack and a 10,000-barrel crude oil storage tank, would require permitting from the San Luis Obispo County Air Pollution Control District (SLOCAPCD). Due to increased truck traffic along area roads, the access road to the Summit Pump Station would also require improvement.

This alternative could have the potential benefit that in addition to the transportation of crude oil associated with the10 percent increase proposed by the Project, existing truck trips would also be re-routed to the Summit Pump Station from the Santa Maria Pump Station.

This alternative would reduce air emissions from trucks transporting crude oil from northern oil fields (such as Arroyo Grande and San Ardo) since the distance from these northern fields to the Summit Pump Station is approximately 13 miles less than the distance to the Santa Maria Pump Station. The Santa Maria Pump Station is farther south than the Summit Pump Station. However, this alternative would also increase truck traffic along area roadways between U.S. Highway 101 and the Summit Pump Station. However, the potential air quality benefits of this alternative justify retaining it for further consideration.

5.7 Orcutt Pump Station Truck Unloading

Under this alternative, crude oil from fields to the south of the Refinery in the Santa Maria and Orcutt areas, such as Greka, would be unloaded by truck at the Orcutt Pump Station instead of at the Santa Maria Pump Station. Crude oil unloaded at the Orcutt Pump Station would then be transferred via pipeline to the Santa Maria Refinery. Under this scenario, crude oil delivered by truck to the Santa Maria Pump Station from northern fields, such as Arroyo Grande and San Ardo, would continue to be transferred to the Santa Maria Pump Station by truck.

The Orcutt Pump Station currently consists of only one unheated floating roof tank with a capacity of 23,000 barrels. Therefore, it would be necessary to construct a truck loading facility designed to unload one truck at a time (TRP 2002). The truck loading facility would require a truck loading rack to receive crude oil, which would require permitting by the SLOCAPCD.

Based on 2009 truck trip numbers, annual crude deliveries to the Orcutt Pump Station by trucks from Greka and other southern fields would amount to approximately 1,300 truck trips under this alternative. These would not be new truck trips; existing truck trips would be re-routed to the Orcutt Pump Station from of the Santa Maria Pump Station.

This alternative would reduce air emissions from trucks transporting crude oil from southern oil fields since these southern fields are closer to the Orcutt Pump Station than the Santa Maria Pump Station. The Santa Maria Pump Station is approximately 5 miles farther north than the Orcutt Pump Station. However, many of the southern fields are near the Santa Maria Pump Station, particularly the Cat Canyon fields, and fields close to the Orcutt Pump Station currently

utilize the Orcutt Pump Station by transporting their crude oil in pipelines already connected to the Orcutt Pump Station. Therefore, the benefits of this alternative appear limited and it has been eliminated from further consideration.

5.8 Alternative Transportation Routes

This alternative evaluation considers alternative access roads leaving the Santa Maria Refinery traveling north, south and east for shipments of green coke and sulfur. The following access route alternatives are alternatives to the access routes included under the Proposed Project:

- Northbound Route Alternative;
- Eastbound Route Alternative; and
- Southbound Route Alternative.

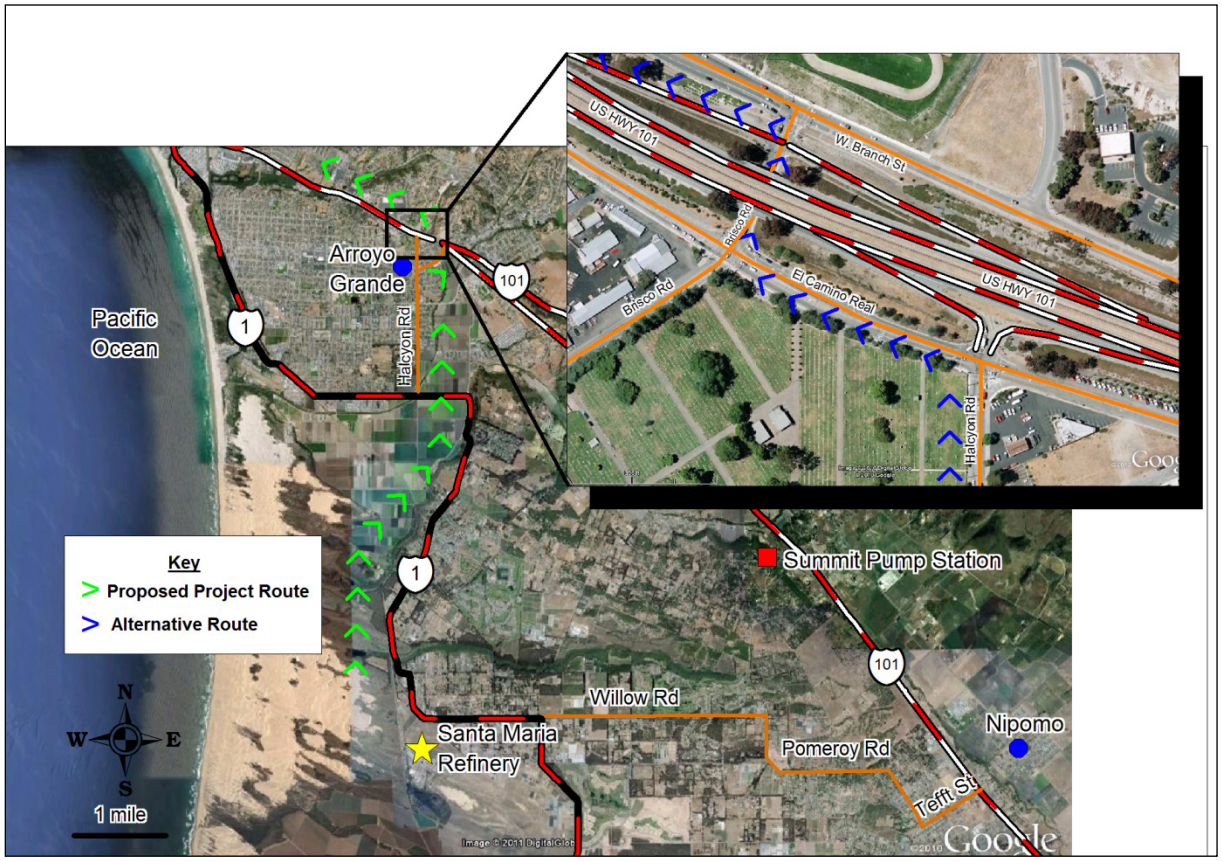
5.8.1 Northbound Route Alternative

Under this alternative, northbound U.S. Highway 101 would be accessed via Brisco Road as opposed to Grande Avenue under the Proposed Project (see Figure 5-2).

Santa Maria Refinery traffic traveling northbound from the Project site would use the following route: State Route 1 (Willow Road which turns into Mesa View Drive into Cienaga Street) north to S. Halcyon Road; S. Halcyon Road, which turns into N. Halcyon Road, to El Camino Real; west on El Camino Real to Brisco Road; and north on Brisco Road to U.S. Highway 101 NB ramp. State Route 1 intersects S. Halcyon Road twice. Truck traffic is prohibited on the segment of S. Halcyon Drive south of Arroyo Grande Creek due to a significant grade up to the Mesa (SLOC 2006).

Impacts would most likely increase under this alternative since the access to Brisco Road and Highway 101 onramps is constrained and would present potential maneuvering challenges, as well as reduce intersection levels of service with the addition of trucks headed to and from the Refinery. Therefore, this alternative route has been eliminated from further consideration.

Figure 5-2 Northbound Route Alternative



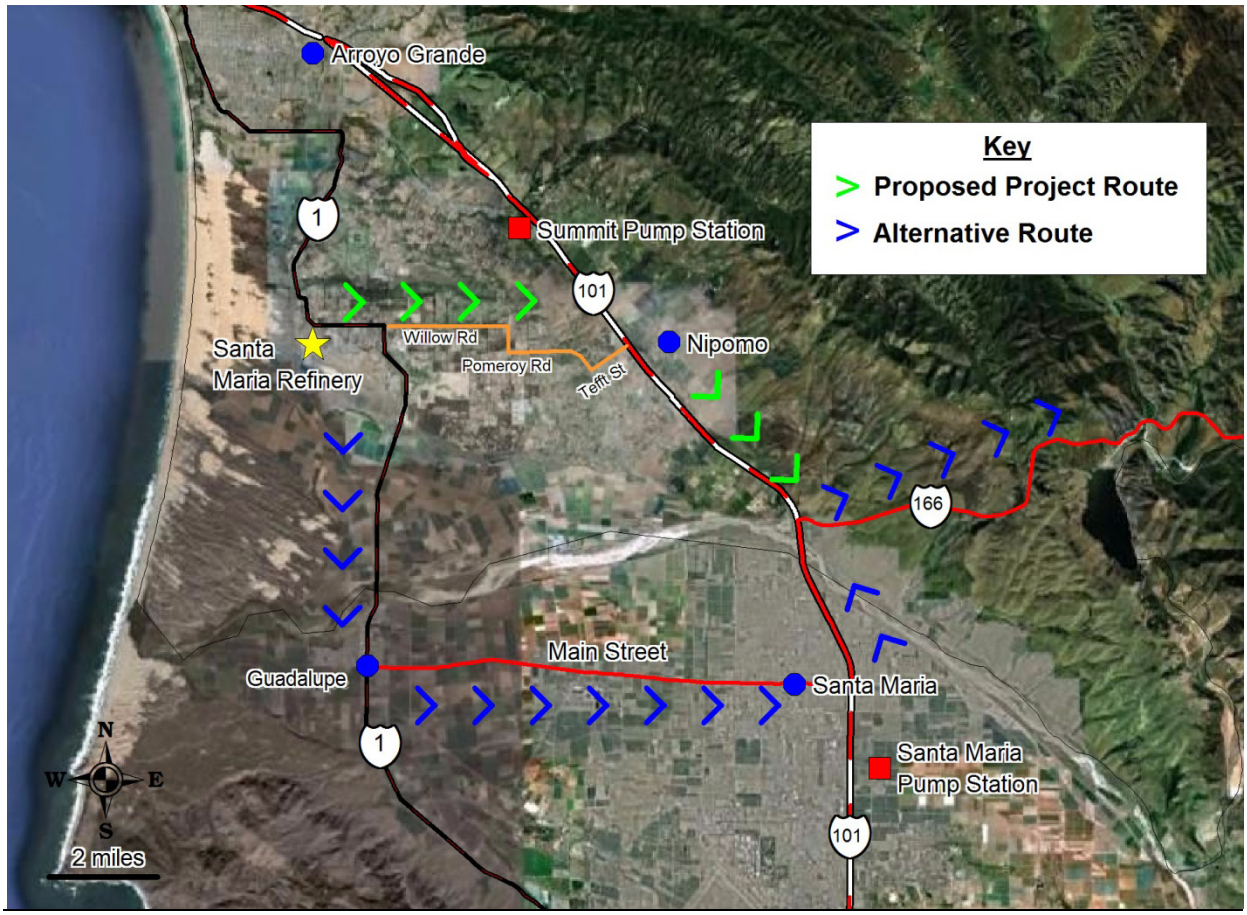
5.8.2 Eastbound Route Alternative

Under this alternative, eastbound State Route 166 would be accessed via Guadalupe and Santa Maria as opposed to Nipomo under the Proposed Project. See Figure 5-3.

Santa Maria Refinery traffic traveling eastbound to State Route 166 from the Project site would use the following route: State Route 1 (Willow Road, which turns into Guadalupe Road) east and then south to State Route 166 (W. Main Street) in Guadalupe; east on State Route 166 to U.S. Highway 101 in Santa Maria; north on U.S. Highway 101 to State Route 166 (Cuyama Highway); and east on State Route 166.

Although this route would decrease traffic impacts along Willow Road, Pomeroy Road, and Tefft Street, impacts would increase along Main Street in Santa Maria. Therefore, the benefits of this alternative route are minimal and it has been eliminated from further consideration. However, it may be considered as a mitigation measure in the traffic analysis if traffic levels become unacceptable along the Willow Road, Pomeroy Road, and Tefft Street route.

Figure 5-3 Eastbound Route Alternative



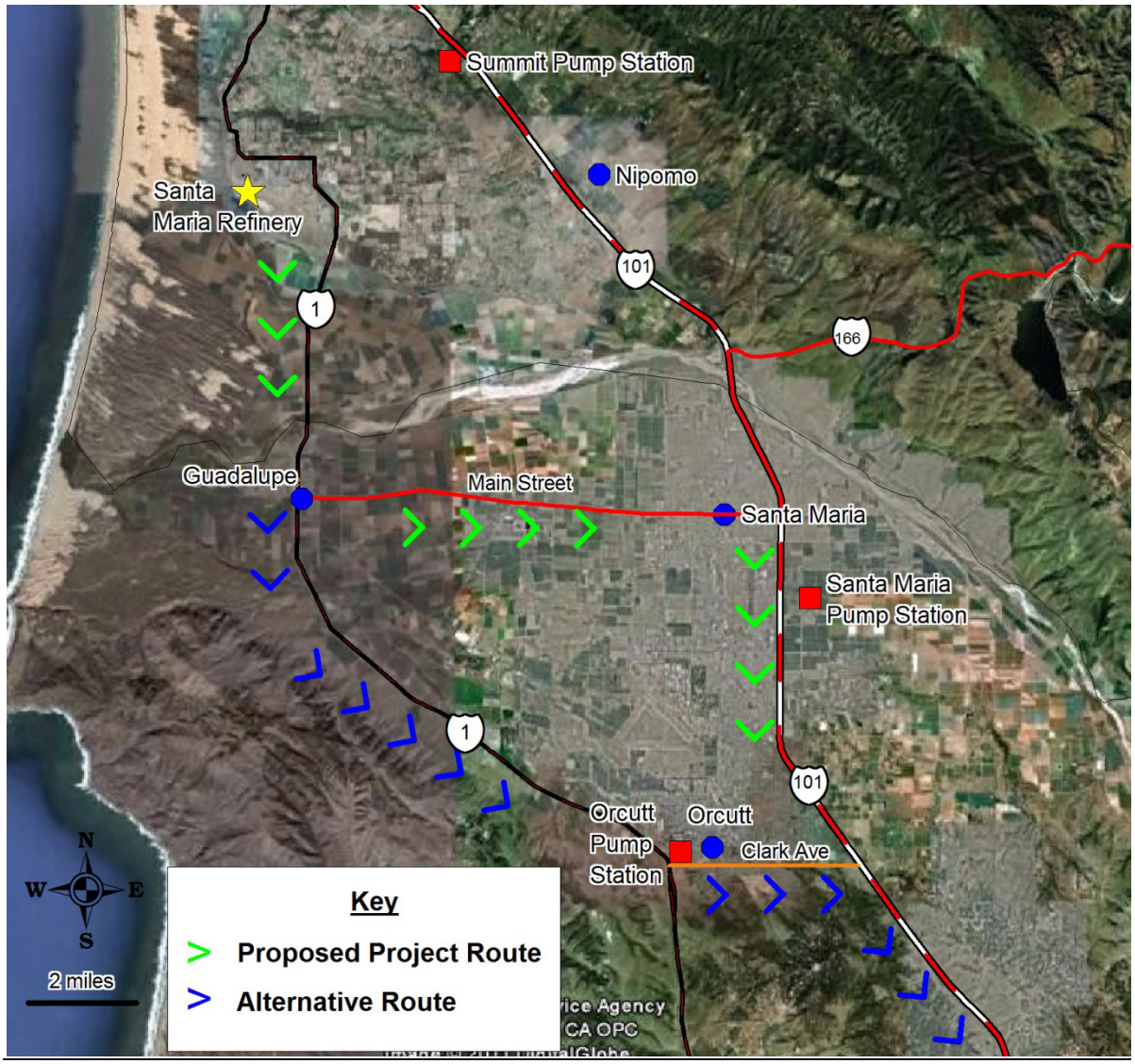
5.8.3 Southbound Route Alternative

Under this alternative, southbound U.S. Highway 101 would be accessed via Orcutt as opposed to Santa Maria under the Proposed Project. See Figure 5-4.

Santa Maria Refinery traffic traveling southbound to U.S. Highway 101 from the Project site would use the following route: State Route 1 (Willow Road, which turns into Guadalupe Road then Cabrillo Highway and lastly Casmalia Road) east and then south to W. Clark Avenue; and east on W. Clark Avenue (which becomes E. Clark Avenue) to U.S. Highway 101 SB ramp.

Since this alternative route avoids most residential areas and reduces traffic along Main Street through Santa Maria, it has been retained for further analysis.

Figure 5-4 Southbound Route Alternative



5.9 Impacts of Alternatives

Table 5-2 shows the estimated impacts of the alternatives relative to the Proposed Project for the respective issue areas.

Table 5-2 Alternative Screening Analysis – Impacts Relative to Proposed Project (Non-Transportation Routes)

Issue Area	Reduced Refinery Throughput Increase	Increased Rail Transport	Santa Maria Refinery Truck Unloading	Summit Pump Station Unloading	Orcutt Pump Station Unloading
Air Quality	Less Reduced crude throughput would generate fewer emissions.	Similar Fewer truck trips would result in reduce vehicle emissions. However, this could generate more truck trips in other areas depending on market forces and destinations.	Less distance traveled by trucks would generate fewer emissions. New construction required.	Less distance traveled by trucks would generate fewer emissions. New construction required.	Similar Not clear the extent to which the Orcutt is closer to the fields than Santa Maria.
Hazardous Wastes	Same Reduced crude throughput would not impact site contamination or the baseline.	Same	Same	Same	Same
Noise and Vibration	Less Fewer truck trips and subsequent loading would result in less vehicle-related noise and vibration.	Similar Fewer truck trips near the Refinery could reduce noise and vibration, nut more rail trips and additional trucks in other areas could also increase noise and vibration.	More Increase truck trips and subsequent unloading near the Refinery residential areas would generate more vehicle-related noise and vibration. The Santa Maria Pump Station is not located in residential areas.	More Truck trips and subsequent unloading would generate more vehicle-related noise and vibrations at the Summit Pump Station residential receptors compared to the Proposed Project.	More Truck trips and subsequent unloading would generate more vehicle-related noise and vibrations at the Orcutt Pump Station compared to the Proposed Project, which is located in a more residential area than the Santa Maria Pump Station.
Public Safety	Same	Same	Same	Same	Same
Public Services	Same	Same	Same	Same	Same

Table 5-2 Alternative Screening Analysis – Impacts Relative to Proposed Project (Non-Transportation Routes)

Issue Area	Reduced Refinery Throughput Increase	Increased Rail Transport	Santa Maria Refinery Truck Unloading	Summit Pump Station Unloading	Orcutt Pump Station Unloading
Transportation	Less Fewer truck trips would result compared to the Proposed Project.	Less Fewer truck trips would result compared to the Proposed Project.	More Truck trips would increase compared to the Proposed Project along area and residential roadways. New construction required.	More Truck trips and subsequent unloading would generate more vehicle trips at the Pump Station and along residential areas compared to the Proposed Project. New construction required.	More Truck trips and subsequent unloading would generate more vehicle trips at the Pump Station and along residential areas compared to the Proposed Project.
Water Quality	Same	Same	Same	Same	Same
Water Quantity	Less May require less water if the Refinery throughput is less than the Proposed Project	Same	Same	Same	Same
Biological Resources	Same	Same	Same	Same	Same
Land Use	Same	Same	More Increased truck trips and subsequent unloading would increase activities at the Project site compared to the Proposed Project. New construction required.	More Truck trips and subsequent unloading would increase activities at the Pump Station compared to the Proposed Project. New construction required.	More Truck trips and subsequent unloading would increase activities at the Pump Station compared to the Proposed Project.

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