

5.10 CIRCULATION

5.10.1 BACKGROUND

This section addresses the potential constraints to developing new oil and gas processing facilities posed by existing roadways and surface transportation infrastructure within the Study Area. The most significant circulation issue raised by oil and gas development is the need for safe transportation of natural gas liquids. This safety issue is discussed in section 5.1, Public Safety and Hazardous Materials. The policies of the general plan express a clear preference for pipeline transportation as a method of transporting hydrocarbons and hazardous materials. For the purposes of this siting study, it is assumed that oil and gas will be pipelined to the maximum extent feasible. Nevertheless, new oil and gas processing facilities could involve multiple daily truck trips transporting crude oil, sulfur, or NGL's from a new facility. This discussion focuses on the major roadway capacities and physical abilities of roads within the Study Area to handle the traffic associated with potential new facilities.

Due to its high viscosity, a large fraction of the oil produced from the Northern Santa Maria Basin may not be able to be transported by pipeline. Heavy oil will likely require transportation by rail or truck to an asphalt refinery. The potential exists for as much as 10,000 barrels per day of asphalt to require transportation either by truck or by rail. The COOGER Study estimates this volume to require either 21 tank rail cars or 71 truck trips per day. COOGER assumes that a unit train would carry 70 cars, thereby requiring two train trips of asphalt per week. For the asphalt to be transported by rail, the processing facility would either have to be close to an existing rail line, or a rail spur would have to be constructed to connect the facility with the main line. The maximum development scenario in COOGER estimates the production of as much as 75,000 barrels per day from the Lion Rock Unit in 2015. This production level would result in approximately 30,000 barrels per day of asphalt, and require the loading of 63 tank cars per day and thus six to seven unit trains per week. If transported by truck, this scenario would require 214 truck trips each day (MMS, 1999). This production level would exceed the market demand for the western USA and require export to other markets and is therefore considered unrealistic and potentially infeasible.

5.10.2 REGIONAL OVERVIEW

One major freeway (U.S. 101), and several major highways (Routes 1, 33, 135, 154, 166, 192, and 246) serve the Study Area, as well as arterial, major, and collector roads. The circulation system of the rural areas consists primarily of a network of local and collector roads that link rural areas to highways, arterial roadways, and urban areas. Collector roads in rural areas are generally high-speed roadways (45 mph or more). Much of the County's rural road network is characterized by narrow pavement widths, numerous curves, and limited sight distances. Because of deferred maintenance, many of these roads also have deteriorated pavement, poor drainage and other problems (County of Santa Barbara, 1998).

Lompoc Valley: Route 1 is a winding, high-speed rural highway, which serves as a major entry into the City of Lompoc and carries commuter traffic between Lompoc and the South Coast. Route 246 is a rural highway connecting the City of Lompoc to the Santa Ynez Valley. Harris Grade Road runs north-south connecting Highway 135 in the San Antonio Valley with the communities of Mission Hills and

Vandenberg Village. Drum Canyon Road runs north-south connecting Highway 246 (east of Lompoc) with Los Alamos. Miguelito Canyon Road extends south from Ocean Avenue, and Santa Rosa Road extends from Route 1 south of Lompoc to Buellton. Within the Lompoc Valley, state and county highways make up the principal high capacity thoroughfares. The major transportation issues in the Lompoc region include: high peak hour volumes of commuter traffic affecting Route 1 and its intersection with Route 246; and increasing commuters residing in the Lompoc Valley and working on the South Coast. While none of the current traffic flows of these roads exceeds capacity, projected increases in commuter travel combined with uncontrolled access from ranches along Route 1 may raise safety issues (County of Santa Barbara, 1998).

Los Alamos / San Antonio Valley: Roadways serving this area include U.S. 101, Route 135, Cat Canyon Road, and Alisos Canyon Road. Cat Canyon and Alisos Canyon Roads provide access from the region's rural areas to Los Alamos. None of these road's current traffic flows exceeds capacity. However, Highway 135, Cat Canyon and Alisos Canyon Roads are potentially constrained by narrow pavement width, line of sight, and curves which may affect capacity and safety (County of Santa Barbara, 1982).

Santa Maria Valley: Major roads in this area include Route 1, Rancho Sisquoc Road, Tepesquet Road, Black Road, Foxen Canyon Road, Cat Canyon Road, Palmer Road, Dominion Road and Lompoc-Casmalia Road. Route 1 and the more rural collector roads do not exceed their capacity, however are characterized by at grade crossings and some driveways where line of site may be a safety concern. U.S.101 bisects the Santa Maria Valley and provides the main route for NGL trucks travelling north to access Route 166 (County of Santa Barbara, 1982).

Union Pacific Railroad: The Union Pacific Railroad follows the coastline along the Gaviota Coast through Hollister Ranch and Bixby Ranch and into Vandenberg Air Force Base. This continues north until Shuman Canyon. A spur of the Union Pacific railroad enters the City of Lompoc from the west, running parallel to Laurel Avenue, and then trends southwestward through the city to San Miguelito Road. The railroad passes through the base, and includes sidings at or near Sudden Creek, Oil Well Canyon, Point Arguello, Honda Creek, Surf Beach, and Purisima Point, north of San Antonio Creek, and south of Shuman Canyon. Two spurs of the railroad traverse through the base, including one into the north base's main cantonment area, and one immediately adjacent to the north side of Highway 246 (Ocean Avenue). From Casmalia northward, the railroad first parallels Black Road and then generally parallels Highway 1. Two spurs of the Santa Maria Valley Railroad merge at Betteravia Junction and then trend towards the City of Guadalupe.

5.10.3 CONSTRAINTS

Oil and gas processing facilities, in general, do not require many personnel to operate and therefore do not generate many trips travelling to and from a facility. During normal operations, a typical processing facility will generate truck trips carrying sulfur and natural gas liquids that are removed from the gas streams that are piped in and out of the facility. During construction and abandonment phases, a significant number of workers are required onsite and could result in significant short-term impacts to local roadways. The siting of a facility would not necessarily affect how many trips are necessary in and out of a facility, either during construction, abandonment, or normal operation. However, the siting of a facility should consider the potential transportation impacts to the local roadways. The use of trucks to

transport oil that cannot be piped out of a facility may present significant impacts to local roadways. The use of railways to transport oil that cannot be piped would be an issue for railroad operations. The potential need to incorporate additional trains on local railways does not appear to be a significant issue for the railroad (MMS, 1999).

Development of a facility would increase the number of trips added to any rural roadways and intersections in the area. This traffic increase associated with a new facility would be relatively low during normal production if no oil is transported by truck. The number of truck trips associated with a new facility would be directly associated with the methods of transportation for the produced oil and gas. The more oil and gas that can be transported by pipeline, the fewer truck trips or unit train transportation needed. Development of a facility could also create potentially significant circulation safety hazards due to increased traffic on the roadways with non-standard subsection and unfavorable design features, conflicts between private cars and farm-related traffic, and the addition of private roads/driveways along high-speed public roads with potentially inadequate sight distances.

Many of the rural roads have unfavorable design features (e.g., narrow lane width, absence of shoulders, roadside ditches, sharp curves, and poor sight distance) and have high (greater than 45 mph) posted speed limits. These roads are commonly used to move farm equipment, produce, and livestock, and may also be used for recreation (e.g., bicycling and horseback riding). Facility related traffic may be incompatible with the agricultural traffic and may create unsafe situations (e.g., attempts by motorists to pass slow moving farm equipment). Turning movements from new driveways could create additional traffic safety hazards where private roads and driveways intersect high speed local and collector roads with inadequate site distances. Improving and widening these roads to accommodate increased traffic could involve secondary constraint issues such as biology and visual resources.

The areas of highest transportation constraint would likely be those that are furthest from the main highways (135, 1) and US 101. Conversely, the less constrained areas would be closer to urban areas where roadways are in better condition and have better line-of-sight aspects. Roadways that involve a high number of at grade crossings would also be a serious safety consideration, which is more typical of the more rural roadways. The areas of greatest constraint include areas such as Foxen Canyon Road in the Garey-Sisquoc area, Cat Canyon Road, Palmer Road, and Dominion Road. To the south, areas such as Jalama Road and Miguelito Canyon involve tight rural roads that may involve some safety hazards. To the west, Black and Brown Road are less constrained than the roads in the eastern portion of the study due to the shorter distances, proximity to major roadways and relative lack of at-grade crossings. However, trucks may have to traverse more urbanized areas to access US 101, which therefore may require some consideration of roadway improvements or the setting of standard truck routes to avoid potential impacts.

5.10.4 POLICIES

The Circulation Element of the Comprehensive Plan contains policies pertaining to levels of service at existing roadways and intersections. The Roadway and Intersection Standards section defines how the policy capacity levels that are defined for the various roadway classifications in this Element will be applied in making findings of project consistency with this Element. The policy capacities may be reduced if special conditions exist such as the presence of curves, slopes, narrow pavement, problematic

turning movements, substantial use of pedestrians, bicycles, equestrians or agricultural equipment, or a prevalence of on-street parking. This section also defines intersection standards in terms of level of service and provides methodology for determining project consistency with these standards. Generally, a project is found to be inconsistent with these policies if the intersection level of service would be reduced below Level of Service (LOS) C, or if roadways would be congested beyond their acceptable capacities.

The adopted 1991 Siting Gas Processing Facilities Screening and Siting Criteria do not provide specific direction regarding circulation and traffic issue, however, some of the public safety siting criterion (#5, #6, & #7) do address some transportation issues.

5. Site sufficiently close to oil processing, storage, upgrading, refining, or pipeline facilities to accommodate blending or heavier gas liquids with crude oil.
6. Avoid sites that would introduce truck transportation of hazardous materials on county or city roadways of high risk, considering the level of population exposure to potential hazards
7. Prefer sites in close proximity to the Southern Pacific railway if large volumes of hazardous materials will be shipped via rail.

5.10.5 DISCUSSION

The areas of least constraint for circulation issues are those areas close to urban centers and major roadways. This inevitably conflicts with other siting issues such as public safety, visual resources, noise and other nuisance issues that may be less easily mitigated. While consideration should be given to potential circulation impacts, consideration of other constraint, in particular public safety, should be given precedent. Minimizing at-grade crossings and avoiding areas with low road quality should be the most important circulation considerations. Consistency with these policies would likely be determined by whether or not asphalt is trucked out of a new facility and the corresponding roads serving the facility. If a future facility requires high volumes of truck trips involving the transportation of asphalt, then roadway improvements may be necessary.

5.10.6 REFERENCES

- County of Santa Barbara Planning and Development Department. 1982. *Santa Barbara County Comprehensive Plan, Circulation Element*. Includes text amendments through October 1992.
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- Dames & Moore, Minerals Management Service. 1999. *Draft California Offshore Oil and Gas Energy Resources Study, Chapter* .

North County Siting Study

Index

- [Cover and Table of Contents](#)
- [1.0 - Executive Summary](#)
- [2.0 - Introduction](#)
- [3.0 - Potential Future Development](#)
- [4.0 - Existing Facility Infrastructure](#)
- [5.0 - Environmental Constraints Analysis](#)
 - [5.1 - Public Safety and Hazardous Materials](#)
 - [5.2 - Geology and Hydrology](#)
 - [5.3 - Agricultural Resources](#)
 - [5.4 - Biological Resources](#)
 - [5.5 - Visual Resources](#)
 - [5.6 - Cultural Resources](#)
 - [5.7 - Land Use](#)
 - [5.8 - Public Services](#)
 - [5.9 - Noise](#)
 - [5.10 - Circulation](#)
 - [5.11 - Air quality](#)
- [6.0 - Site Analysis](#)
- [7.0 - Conclusions and Recommendations](#)
- [8.0 - Limitations of the Study](#)
- [9.0 - List of Preparers](#)
- [10.0 - Acronyms](#)