

4.10 TRANSPORTATION

This section discusses the potential traffic impacts that would occur in association with implementation of the proposed Energy Source Mineral ATLiS Project. This analysis includes a discussion of the effects of Project construction and operational traffic on Highway 111, McDonald Road, and Sinclair Road. Information contained in this section is summarized from the Transportation Impact Analysis (TIA) prepared by Linscott, Law & Greenspan Engineers (June 22, 2021), included in Appendix K: Traffic Impact Study of this EIR.

4.10.1 Existing Environmental Setting

Regional Setting

The following roadway classifications are derived from the County of Imperial General Plan Circulation and Scenic Highways Element (County 2008):

Expressway

The main function of this classification is to provide regional and intra-county travel services. Features include high design standards with six travel lanes; wide landscaped medians; highly restricted access; provisions for public transit lands, including but not limited to, bus lanes, train lanes, or other mass transit type means; and no parking. Minimum right-of-way (ROW) is 210 feet consisting of three travel lanes per direction, a 56-foot median, and shoulders along both sides of the travel way. The ROW width is exclusive of necessary adjacent easements, such as for the IID facilities, as these vary. The minimum intersection spacing is 1 mile (ROWs may be greater if the road segment also serves as a corridor for public utilities).

Prime Arterial

The main function of this classification is to provide regional, subregional, and intra-county travel services. Features include high design standards with four to six travel lanes; raised and landscaped medians; highly restricted access, which in most cases will be a 1-mile minimum; provisions for public transit lanes, including but not limited to bus lanes, train lanes, or other mass transit type means; and no parking. The absolute minimum ROW without public transit lanes is 136 feet. ROW dimensions are specified in the standards for specific road segments.

Minor Arterial

These roadways provide intra-county and subregional service. Access and parking may be allowed but will be closely restricted in such a manner as to ensure proper function of this roadway. Typical standards include the provision for four and six travel lanes with raised, landscaped medians for added safety and efficiency by providing protected left turn lanes at selected locations. Some may also contain provisions for public transit lanes or other mass transit type means. Minimum ROW is 102 feet for four lanes and 126 feet for six lanes.

Major Collector (Collector)

These roadways are designed to provide intra-county travel as a link between the long haul facilities and the collector/local facilities. Although this type of roadway frequently provides direct access to abutting properties, that is not its primary purpose. Typical design features include provision for four travel lanes

without a raised median, and some may also contain provisions for public transit lanes or other mass transit type means. Minimum ROW is 84 feet. Parking is generally not permitted.

Minor Local Collector (Local Collector)

This roadway is designed to connect local streets with adjacent Collectors or the arterial street system. Design standards include provision for two travel lanes and parking, except in specific locations where parking is removed to provide a turn lane at intersections. Local Collector streets frequently provide direct access to abutting properties, although that should be avoided where feasible. Minimum ROW is 70 feet.

Residential Street

This street type includes residential cul-de-sac and loop streets and is designed to provide direct access to abutting properties and to give access from neighborhoods to the Local Street and Collector Street system. This classification should be discontinuous in alignment, such that through trips are discouraged. Typical design standards include provision for two travel lanes, parking on both sides, and direct driveway access. Minimum ROW is 60 feet.

Existing Street Network

State Route 111 (Highway 111) is classified as a State Highway/Expressway in the Imperial County General Plan Circulation Element. Highway 111 is a north-south highway connecting the three largest cities in Imperial County — Calexico, El Centro, and Brawley — and runs from Interstate 10 in Riverside County to the international border. Outside the towns of Calipatria and Niland, Highway 111 is constructed as a two-lane undivided north-south roadway, providing one lane of travel per direction; and the posted speed limit is generally 65 mph.

Hazard Road is an east-west route through Imperial County. Hazard Road is currently an unpaved two-lane roadway within the Project vicinity.

Sinclair Road is an east-west route through Imperial County. Sinclair Road is currently a paved two-lane undivided roadway within the Project vicinity.

English Road is a north-south route through Imperial County. English Road is currently an unpaved two-lane roadway north of Sinclair Road and constructed as a two-lane paved roadway south of Sinclair Road.

McDonald Road is an east-west route though Imperial County. Currently, McDonald Road is an unpaved two-lane roadway west of Highway 111 of Sinclair Road and constructed as a two-lane paved roadway east of Highway 111. It is proposed to improve the intersection at Highway 111 and pave McDonald Road between Highway 111 and the site (west of Highway 111) prior to construction of the Project; thus the “Operations” analysis reflects these improvements.

Traffic Study Areas

The following is a list and brief description of the roadways that would be utilized for access to the Project site during construction and subsequent operational activities.

Intersections:

1. Highway 111 / Hazard Road
2. Highway 111 / McDonald Road
3. Highway 111 / Sinclair Road
4. English Road / McDonald Road
5. English Road / Sinclair Road

Segments:

Highway 111:

- North of Hazard Road
- Hazard Road to McDonald Road
- McDonald Road to Sinclair Road
- South of Sinclair Road

McDonald Road:

- Project Site to English Road (currently unpaved)
- English Road to Highway 111 (currently unpaved)

Sinclair Road:

- English Road to Highway 111

The TIA evaluates the project trip generation created during construction and operation of the Project and roadway conditions for roads that would be utilized to access the Project site for construction and operation.

Existing Traffic Volumes in the Project Area

Average Daily Traffic (ADT) volumes on study area segments along Highway 111 were obtained from the Caltrans Traffic Census Program for Year 2017, the latest available as of the date of this report. AM and PM peak-hour intersection turning movement volume counts at study area intersections were commissioned by LLG Engineers (LLG) in September 2019. Table 4.10-1 below summarizes the segment ADT volumes on all the study area segments. It should be noted that all segment ADT volumes were applied a growth factor of 2 percent per year to represent Year 2021 conditions. In addition, it should be noted that for the unpaved segments along McDonald Road and Sinclair Road, the ADTs were estimated based on a relationship that the PM peak-hour volumes comprise approximately 10 percent of the ADT.

Table 4.10-1: Existing Traffic Volumes

Street Segment		Source	ADT ^a
Highway 111	North of Hazard Road	Caltrans	3,800
	Hazard Road to McDonald Road	Caltrans	3,800
	McDonald Road to Sinclair Road	Caltrans	3,800
	South of Sinclair Road	Caltrans	6,400
McDonald Road	Project Site to English Road	LLG	270E
	English Road to Highway 111	LLG	220E
Sinclair Road	English Road to Highway 111	LLG	320E

Notes:

^a A 2% growth factor per year (8%) was applied to the 2017 Caltrans segment ADTs to reflect 2021 conditions

E – Estimated volumes since road is unpaved

Existing Peak Hour Intersection Levels of Service

The Project study area is located in a rural setting, and all intersections are unsignalized. All studied intersections currently operate at a Level of Service (LOS) B or better during both AM and PM peak hours as shown in Table 4.10-2.

Table 4.10-2: Existing Intersection Operations

Intersection	Control Type ^b	Peak Hour	Existing	
			Delay ^a	LOS
1. Highway 111/Hazard Road	TWSC	AM	0.0	A
		PM	0.0	A
2. Highway 111/McDonald Road	TWSC	AM	8.9	A
		PM	8.9	A
3. English Road/McDonald Road	TWSC	AM	9.0	A
		PM	0.0	A
4. English Road/Sinclair Road	TWSC	AM	0.7	A
		PM	1.0	A
5. Highway 111/Sinclair Road	TWSC	AM	10.2	B
		PM	9.6	A

Notes:

^a. Delay per Vehicle in Seconds

^b. TWSC – Minor Street STOP Controlled intersection. Minor street left-turn delay is reported. (Two-Way STOP Controlled Intersection)

Project Site

The Project site is located approximately 3.8 miles southwest of the community of Niland, a census-designated place, in the unincorporated area of Imperial County. The Project site is located on three parcels (APN 020-100-025, 020-100-044, and 020-100-046) north of West Schrimpf Road, east of Davis Road, and south of McDonald Road. Traffic currently exists to and from the site for the operation and

maintenance of the HR1 Facility. Currently, two driveways for access to the site exist along McDonald Road.

4.10.2 **Regulatory Setting**

State

Level of Service and Vehicle Miles Traveled

LOS is a professional industry standard by which the operating conditions of a given roadway segment or intersection are measured. LOS ranges from A through F, where LOS A represents the best operating conditions and LOS F represents the worst operating conditions. LOS A facilities are characterized as having free-flowing traffic conditions with no restrictions on maneuvering or operating speeds; traffic volumes are low and travel speeds are high. LOS F facilities are characterized as having forced flow with many stoppages and low operating needs. Additionally, with the growth of Imperial County, transportation management and systems management will be necessary to preserve and increase roadway “capacity.” LOS standards are used to assess the performance of a street or highway system and the capacity of a roadway.

On December 28, 2018, the California Natural Resources Agency adopted revised CEQA Guidelines. Among the changes to the guidelines was the removal of vehicle delay and LOS from consideration for transportation impacts under CEQA. Beginning July 1, 2020, as required in CEQA section 15064.3, transportation impacts are to be evaluated based on the vehicle miles of travel associated with a project.

California Department of Transportation

Caltrans manages more than 50,000 miles of California's highway and freeway lanes, provides inter-city rail services, permits more than 400 public-use airports and special-use hospital heliports, and works with local agencies. Specifically, Caltrans is responsible for the design, construction, maintenance, and operation of the California State Highway System. As it relates to the Proposed Project and potential construction access routes, Caltrans is responsible for maintaining and managing Highway 111.

A project is considered to have a significant impact on Caltrans facilities if the new project traffic has decreased the operations of surrounding roadways by a defined threshold. If the project exceeds the thresholds addressed in Table 4.10-3, then the project may be considered to have a significant project impact. A feasible mitigation measure will need to be identified to return the impact within the thresholds (pre-project + allowable increase) or the impact will be considered significant and unmitigated when affecting any state highway facilities.

Table 4.10-3: Intersection LOS & Delay Ranges

Level of Service	Delay (seconds/vehicle)
A	≤ 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	≥ 50.1

Regional

2016-2040 Regional Transportation Plan/Sustainable Communities Strategy

On April 7, 2016, the SCAG adopted the 2016-2040 RTP/SCS (SCAG 2016). The RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. It receives input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses, and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The RTP/SCS demonstrates how the region will reduce emissions from transportation sources to comply with Senate Bill 375 and meet the NAAQS set forth by the Clean Air Act.

The updated RTP/SCS contains thousands of individual transportation projects that aim to improve the region’s mobility and air quality and revitalize the economy. Since adoption of the RTP/SCS, the county transportation commissions have identified new project priorities and have experienced technical changes that are time sensitive. Additionally, the new amendments for the plan have outlined minor modifications to project scopes, costs, and/or funding and updates to completion years. The amendments to the RTP/SCS do not change any other policies, programs, or projects in the plan.

Local

County of Imperial Circulation and Scenic Highways Element

The Circulation and Scenic Highways Element identifies the location and extent of transportation routes and facilities. It is intended to meet the transportation needs of local residents and businesses and serve as a source for regional coordination. The inclusion of Scenic Highways provides a means of protecting and enhancing scenic resources within highway corridors in Imperial County. The purpose of the Circulation and Scenic Highways Element is to provide a comprehensive document which contains the latest knowledge about the transportation needs of the County and the various modes available to meet these needs. Additionally, the purpose of this Element is to provide a means of protecting and enhancing scenic resources within both rural and urban scenic highway corridors.

The County of Imperial does not have published significance criteria for circulation. However, the County General Plan does state that the level of service (LOS) goal for intersections and roadway segments is to operate at LOS C or better. Therefore, if an intersection or segment degrades from LOS C or better to LOS D or worse with the addition of project traffic, the impact is considered significant. If the location operates at LOS D or worse with and without project traffic, the impact is considered significant if the project causes the intersection delta to increase by more than two seconds or the volume to capacity (V/C) ratio to increase by more than 0.02. These amounts are consistent with those used in the City of El Centro and the County of Imperial in numerous traffic studies. Table 4.10-4 analyzes the consistency of the Project with specific policies contained in the Imperial County General Plan associated with transportation and traffic.

Table 4.10-4: General Plan Consistency

General Plan Policies	Consistency with General Plan	Analysis
-----------------------	-------------------------------	----------

Circulation and Scenic Highways Element		
<i>Safe, Convenient, and Efficient Transportation System</i>		
<p>Goal 1 – The County will provide and require an integrated transportation system for the safe and efficient movement of people and goods within and through the County of Imperial with minimum disruption to the environment.</p>	<p>Consistent</p>	<p>A TIA was prepared for the Project by Linscott, Law & Greenspan Engineers (LLG). The analysis examined a worst-case scenario during construction and operations of the Project to provide a conservative estimate of impacts to movement throughout the County. In order to prevent traffic delays related to the Project, the Applicant shall construct a two-way stop control at the intersection of Highway 111 and McDonald Road in compliance with mitigation measure TRA-1. Therefore, the Project is consistent with this objective.</p>
<p>Objective 1.1 – Maintain and improve the existing road and highway network, while providing for future expansion and improvement based on travel demand and the development of alternative travel modes.</p>	<p>Consistent</p>	<p>In order to improve the existing road and highway network, the Applicant shall construct a two-way stop control at the intersection of Highway 111 and McDonald Road in compliance with mitigation measure TRA-1. A two-way stop control will provide for safe future expansion if travel demand increases. Therefore, the Project is consistent with this objective.</p>
<p>Objective 1.2 – Require a traffic analysis for any new development which may have a significant impact on County roads. A traffic analysis may not be necessary in every situation, such as when the size or location of the project will not have a significant impact upon and generate only a small amount of traffic. Also, certain types of projects, due to the trip generation characteristics, may add virtually no traffic during peak periods. These types of projects may be exempt from the traffic analysis requirements. Whether a particular project qualifies for any exemption will be determined by the Department of Public Works Road Commissioner.</p>	<p>Consistent</p>	<p>A TIA was prepared for the Project by LLG. The analysis examined a worst-case scenario during construction and operations of the Project to provide a conservative estimate of impacts. Therefore, the Project is consistent with this objective.</p>

County of Imperial Bicycle Master Plan Update: Final Plan

In 2012, the County of Imperial adopted an updated Bicycle Master Plan to serve as the guiding document for the development of an integrated network of bicycle facilities and supporting programs designed to link the unincorporated areas and attractive land uses throughout the County. This document is an update to the previously adopted Countywide Bicycle Master Plan and was prepared to accomplish the following goals:

1. To promote bicycling as a viable travel choice for users of all abilities in the County

2. To provide a safe and comprehensive regional connected bikeway network
3. To enhance environmental quality, public health, recreation, and mobility benefits for the County through increased bicycling

The County of Imperial's General Plan, Circulation and Scenic Highways Element and Conservation and Open Space Element provide a solid planning basis for the Bicycle Master Plan. In spite of the fact that Imperial County has a limited number of bicycle facilities and no comprehensive bicycle system, interest in cycling is growing; and numerous cyclists bike on a regular basis for both recreation and commuting to work and school.

4.10.3 Thresholds of Significance

In order to assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have an impact on transportation if it would:

- | | |
|---------------------|--|
| Threshold a) | Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities? |
| Threshold b) | Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? |
| Threshold c) | Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? |
| Threshold d) | Result in inadequate emergency access? |

Please refer to **Section 6.1: Effects Found Not to Be Significant** for an evaluation of those topics that were determined to be less than significant or have no impact and do not require further analysis in the EIR.

4.10.4 Methodology

Proposed Project

Construction

As discussed in Chapter 3.0: Project Description, it is estimated that on average 20 to 25 trucks per day will travel in and out of the Project site during construction except during grading when about 50 to 60 trucks will be traveling in and out of the Project site per day. An average of 100 workers will commute to the Project site during construction. It is initially anticipated that the majority of construction workers and trucks will be from the proximate local population centers of Calipatria, Brawley, and El Centro. During the construction phase of the Project, McDonald Road will not be a viable option for construction traffic since it will be unpaved. Construction traffic from the south will utilize the paved Sinclair Road as opposed to the unpaved McDonald Road as east/west access to reach the site during construction.

Operation

Operation of the ATLiS plant may produce multiple products for offsite shipment to market by truck. The average annual amount of product shipped out of the ATLiS plant is estimated at 19,000 metric tons of lithium product, 10,000 to 20,000 metric tons of zinc product(s), and up to 60,000 metric tons of manganese product(s). Products will be transported by freight truck on existing roadways to shipping distribution points. Other products of the production operations may be generated by the proprietary technology on the ATLiS plant site and would also be shipped off site to market by truck. Trucking will generally be to markets in the greater Los Angeles basin, Arizona, and Texas.

It is estimated that approximately 24 trucks per day will travel in and out of the Project site during normal operations. The truck traffic includes about 10 trucks per day of outgoing products, including one truck load of dry lithium, two truckloads of 31-percent hydrochloric acid, three truckloads of zinc, and four truckloads of manganese. Truck traffic also includes about eight truck deliveries of reagent chemicals, cooling tower treatment chemicals, consumptive media, product packaging materials, and fuel. The estimate also includes six trucks of outgoing waste generated on the site. The majority of the outgoing waste generated on site is expected to be delivered to and processed at the Burrtec Solid Waste Facility. However, it is estimated that up to 10 percent of trucks carrying filter cakes (waste debris mix of silica, sand, and iron) from the plant would be required to be delivered to a waste treatment facility in Arizona.

In order to support the Project, at the junction of McDonald Road and Highway 111, improvements will also be constructed to meet the requirements of the County and Caltrans. As currently planned, these improvements will include:

- Relocation of the IID drain exit structure on the west side of Highway 111
- Relocation of the IID canal gates on the west side of Highway 111
- Addition of a northbound left turn lane on Highway 111 (or as required by an approved Traffic Study)

A short power line will be constructed between the current IID/HR1 switchyard and the plant site along McDonald Road to the Project site.

Project Site Access

Two primary entry driveways that serve as the access to the Project site will be constructed from McDonald Road. A secondary access entrance to the Project site will serve as an emergency-only access point and will be constructed off Davis Road. Construction traffic from the south will utilize the paved Sinclair Road as opposed to the unpaved McDonald Road as east/west access to reach the site during construction. Primary highway access to the Project site will be via Highway 111. The Applicant will obtain encroachment permits from the County Department of Public Works for the driveway access. The unpaved portion of McDonald Road between Highway 111 and English Road will be paved.

Project Trip Generation Forecast

Construction Trip Generation

In calculating daily trip generation for the construction portion of the Project, the total construction staff and truck activity were calculated based on the construction information above. As shown on Table 4.10-5, the construction portion of the Project would generate a total of 375 ADT with 84 total AM peak-hour trips and 82 total PM peak-hour trips during Project construction.

Table 4.10-5: Construction Trip Generation

Trip Type	Daily Total (ADT) ^a	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Employees ^b	280	70	0	70	0	70	70
Trucks (w/ PCE) ^c	75	5	5	10	5	5	10
Misc. Trips	20	2	2	4	1	1	2
Total	375	77	7	84	6	76	82

Notes:

- a. ADT = Average Daily Traffic (24-hour total bi-directional traffic on a roadway segment).
- b. Assumes half of total employees begin or leave shift during peak hour.
- c. PCE = Passenger Car Equivalent (2.5), used to reflect the additional impacts of heavy vehicles in the technical analyses.
(15 Inbound Trucks * 2 (In + Out) * 2.5 (PCE) = 75 total trips)

Day-to-Day Operations Trip Generation

Trip generation for the day-to-day operations portion of the Project was also obtained from the Project description as stated above. As shown on Table 4.10-6, a total of 179 ADT with 47 total AM peak-hour trips and 55 total PM peak-hour trips would occur during Project operations.

Table 4.10-6: Day-to-Day Operations Trip Generation

Trip Type	Daily Total (ADT) ^a	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Employees (42) ^b	84	30	0	30	0	30	30
Trucks (w/ PCE) ^c	75	10	5	15	13	8	21
Misc. Trips/Deliveries	20	1	1	2	2	2	4
Total	179	41	6	47	15	40	55

Notes:

- a. ADT = Average Daily Traffic (24-hour total bi-directional traffic on a roadway segment).
- b. Assumes half of total employees begin or leave shift during peak hour.
- c. PCE = Passenger Car Equivalent (2.5), used to reflect the additional impacts of heavy vehicles in the technical analyses.
(15 Inbound Trucks * 2 (In + Out) * 2.5 (PCE) = 75 total trips)

Trip Distribution

Separate trip distributions were derived for the construction and operations phases of the Project. During the construction phase of the Project, McDonald Road will not be a viable option for Project construction

traffic since it will be unpaved. Construction traffic from the south will utilize the paved Sinclair Road as opposed to the unpaved McDonald Road as east / west access to reach the site during construction. During the operations distribution, McDonald Road will be paved between Highway 111 and the Project site before the start of operations; and thus McDonald Road would serve as the primary road utilized by Project traffic.

Vehicle Miles Traveled

Significance Threshold

Since the County has not yet adopted its own threshold for VMT, the County is relying on the guidance provided in the Technical Advisory published by the Governor's Office of Planning and Research (OPR) in December 2018 (the "OPR Guidance") for purposes of evaluating the potential VMT impacts of development projects. The OPR Guidance for VMT states that depending on the type of project, different thresholds of significance are applicable. The "Recommended Numeric Thresholds for Residential, Office, and Retail Project" section of the OPR Guidance includes a section on "Other Project Types" which applies to the Project:

"Of land use projects, residential, office, and retail projects tend to have the greatest influence on VMT. For that reason, OPR recommends the quantified thresholds described [in the Residential, Office, and Retail Project section] for purposes of analysis and mitigation. Lead agencies, using more location-specific information, may develop their own more specific thresholds, which may include other land use types..."

Guidance from OPR's Technical Advisory is used to establish a significance threshold of a minimum 15-percent reduction or more from the regional average VMT per employee for this project evaluation. That means that if the Project's VMT per employee is more than 15 percent below the regional average, no significant transportation impact would result. It should be noted that the Technical Advisory has no guidelines for truck trips.

VMT Methodology

The VMT assessment was conducted using California Statewide Travel Demand Model (CSTDm) data provided by Caltrans. The following is a summary of steps involved in calculating the trip length and region-wide VMT:

- Step 1. Determine the project analysis zone.
- Step 2. Determine the VMT per Employee for the zone where proposed project is located.
- Step 3. Determine the average VMT per Employee within the County of Imperial representing the Regional VMT.
- Step 4. Using the average VMT from Step 2, compare the zone VMT against the Regional VMT. It should be noted that this step differs from the typical approach of comparing VMT per Capita because there is no associated population for the Project.

Using the CSTDm, the VMT per Employee can be utilized at both the regional and census tract level.

4.10.5 Project Impact Analysis

Threshold a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities?

The construction phase of the Project would generate a maximum of 375 ADT total. The employee and miscellaneous portion of the construction phase would generate a maximum of 300 ADT, with 74 trips during the AM peak hour and 72 trips during the PM peak hour. Approximately 15 trucks are estimated during construction of the Project. In this analysis, a Passenger Car Equivalent (PCE) of 2.5 is applied to truck trips to account for the reduced performance characteristics (stopping, starting, maneuvering, etc.) of heavy vehicles in the traffic flow, resulting in a maximum of 75 truck trips total. An analysis of the analyzed intersections and street segments is provided in the tables below.

Intersection LOS During Project Construction

Table 4.10-7 summarizes the intersection operations throughout the Project study area during the construction phase of the Project. As shown, all of the intersections in the study area are calculated to operate at LOS B or better during the AM and PM peak hours.

Table 4.10-7: Existing Plus Construction Intersection Operations

Intersection	Control Type	Peak Hour	Existing	
			Delay ^a	LOS ^b
1. Highway 111 / Hazard Road	TWSC ^c	AM	10.0	A
		PM	10.1	B
2. Highway 111 / McDonald Road	TWSC	AM	8.9	A
		PM	9.0	A
3. English Road / McDonald Road	TWSC	AM	10.2	B
		PM	7.2	A
4. English Road / Sinclair Road	TWSC	AM	0.2	A
		PM	0.7	A
5. Highway 111 / Sinclair Road	TWSC	AM	10.8	B
		PM	9.5	A

Notes:

- a. Delay per vehicle in seconds
- b. LOS - Level of service
- c. TWSC - Minor street STOP Controlled intersection. Minor street left-turn delay is reported. TWSC - Two-Way STOP Controlled intersection.

Segment LOS During Project Construction

Table 4.10-8 summarizes the street segment operations throughout the Project study area during the construction phase of the Project. As shown, all of the street segments in the study area are forecasted to operate at LOS A on a daily basis.

Table 4.10-8: Existing Plus Construction Street Segment Operations

Street Segment		Functional Roadway Classification ^a	Capacity (LOS E) ^b	ADT ^c	LOS ^d	V/C ^e
Highway 111	North of Hazard Road	2-Lane Expressway	22,700	3,853	A	0.170
	Hazard Road to McDonald Road	2-Lane Expressway	22,700	3,845	A	0.169
	McDonald Road to Sinclair Road	2-Lane Expressway	22,700	3,800	A	0.167
	South of Sinclair Road	2-Lane Expressway	22,700	6,720	A	0.230
McDonald Road	Project Site to English Road	2-Lane Roadway	1,500	645	A	0.430
	English Road to Highway 111	2-Lane Roadway	1,500	220	A	0.147
Sinclair Road	English Road to Highway 111	2-Lane Roadway	1,500	645	A	0.427

Notes:

- a. County of Imperial roadway classification
- b. Roadway capacity corresponding to Level of Service E from Imperial County Standard Street Classification, Average Daily Vehicle Trips table.
- c. Average Daily Traffic volumes
- d. Level of Service
- e. Volume / Capacity Ratio.

Trip generation for the day-to-day operations portion of the Project would generate a maximum of 179 ADT total. The employee and miscellaneous portion of the operations would generate a maximum of 104 ADT, with 32 trips during the AM peak hour and 34 trips during the PM peak hour. Day-to-day operations are estimated to generate 15 truck trips. A PCE of 2.5 is applied to these trips to account for the reduced performance characteristics (stopping, starting, maneuvering, etc.) of heavy vehicles in the traffic flow, resulting in a maximum of 75 truck trips total. An analysis of the analyzed intersections and street segments is provided in the tables below.

Intersection LOS During Project Operation

Table 4.10–9 summarizes the intersection operations throughout the Project study area during the operations phase of the Project. As shown, all the intersections in the study area are calculated to continue to operate at LOS B or better during the AM and PM peak hours.

Table 4.10-9: Existing Plus Project Intersection Operations

Intersection	Control Type ^c	Peak Hour	Existing Plus Project		Change Delay ^b	Impact Type
			Delay ^a	LOS		
1. Highway 111/Hazard Road	TWSC	AM	0.0	A	0.0	None
		PM	0.0	A	0.0	
2. Highway 111/McDonald Road	TWSC	AM	9.1	A	0.2	None
		PM	9.2	A	0.3	
3. English Road/McDonald Road	TWSC	AM	9.3	A	0.3	None
		PM	0.0	A	0.0	

Table 4.10-9: Existing Plus Project Intersection Operations

Intersection	Control Type ^c	Peak Hour	Existing Plus Project		Change Delay ^b	Impact Type
			Delay ^a	LOS		
4. English Road/Sinclair Road	TWSC	AM	0.7	A	0.0	None
		PM	1.0	A	0.0	
5. Highway 111/Sinclair Road	TWSC	AM	10.6	B	0.4	None
		PM	9.9	A	0.3	

Notes:

^a Average delay expressed in seconds per vehicle

^b Denotes an increase in delay due to project

^c TWSC – Minor Street STOP Controlled intersection. Minor street left-turn delay is reported. (Two-Way STOP Controlled Intersection)

Segment LOS During Project Operation

Table 4.10–10 summarizes the street segment operations throughout the Project study area during the operations phase of the Project. As shown, all the street segments in the study area are calculated to continue to operate at LOS A on a daily basis.

Table 4.10-10: Existing Plus Construction Street Segment Operations

Street Segment	Capacity (LOS E) ^b	Existing Plus Project			Impact Type	
		ADT ^c	LOS ^d	V/C ^e		
Highway 111	North of Hazard Road	22,700	3,824	A	0.170	None
	Hazard Road to McDonald Road	22,700	3,824	A	0.169	None
	McDonald Road to Sinclair Road	22,700	3,950	A	0.167	None
	South of Sinclair Road	22,700	6,555	A	0.230	None
McDonald Road	Project Site to English Road	1,500	449	A	0.430	None
	English Road to Highway 111	1,500	394	A	0.147	None
Sinclair Road	English Road to Highway 111	1,500	325	A	0.427	None

Notes:

a. County of Imperial roadway classification

b. Roadway capacity corresponding to Level of Service E from Imperial County Standard Street Classification, Average Daily Vehicle Trips table.

c. Average Daily Traffic volumes

d. Level of Service

e. Volume / Capacity Ratio.

The capacity analyses performed for the key roadway segments and unsignalized and signalized intersections indicate that impacts would be considered less than significant during the construction or day-to-day operations of the Project.

Threshold b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

The Project’s VMT amount was calculated for the operational phase of the Project using CSTDM data provided by Caltrans. Caltrans provides Transportation Analysis Zone (TAZ) maps which offer VMT information for each project analysis zone. The Project site is located in the County of Imperial, which includes a total of 17 zones representing the Imperial Region. The Project site is located in the TAZ 5600. The VMT per employee for TAZ 5600 is 20.84.

Table 4.10-11 tabulates the average regional VMT per employee, the significance threshold (15 percent below the regional average VMT), and the VMT per employee for TAZ 5600. The VMT per employee for TAZ 5600, where the Project is located, is 20.84.

Table 4.10-11: VMT per Employee Comparison and Threshold

Regional ¹	Significance Threshold ²	TAZ (Project)
24.51	20.83	20.84

Notes:

1. Regional VMT per Employee is calculated by Averaging VMT per Employee for 17 TAZs located in the Imperial County.
2. Based on 15% below the Regional VMT Average.

The Project’s VMT amount is 0.01 more than the significance threshold of 20.83; therefore, the Project is not 15 percent below the regional VMT average (Table 4.10-11). In accordance with OPR’s Guidance for VMT, this concludes a significant transportation impact would result from the Project and mitigation measures are needed. A Commute Trip Reduction (CTR) program would be required by Mitigation Measure (MM) TRA-1 to encourage carpooling, ride-matching assistance, preferential carpool parking, half time transportation coordination, vanpool assistance, and bicycle end-trip facilities. With implementation of MM TRA-1, the potential significant impacts would be mitigated and impacts would be less than significant.

Threshold c) Substantially increases hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

A significant safety impact could potentially occur from traffic going to the Project site if improvements are not implemented at the Highway 111/McDonald Road intersection. Mitigation Measure (MM) TRA-2 would require that Highway 111/McDonald Road intersection be improved to Caltrans’ satisfaction prior to the Project’s certificate of occupation, including the installation of a northbound left-turn pocket prior to the Project’s opening utilizing one of the four intersection control methods (existing two-way stop, all-way stop, signal, roundabout) which was analyzed in an Intersection Control Evaluation (ICE). Providing a southbound right-turn lane was considered but rejected due to the low volumes. The maximum peak hour volume in this movement is 12 during construction and 7 during operations. With the implementation MM TRA-2, the potential significant impact would be fully mitigated; and impacts would be less than significant.

4.10.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines Section 15355). Stated in another way, “a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts” (CEQA Guidelines Section 15130 [a][1]).

To account for potential cumulative project traffic increases that may be unforeseen, a 10-percent growth factor was applied to the existing traffic volumes at the study area intersections and segments. This 10-percent growth would conservatively represent the amount of traffic that may utilize the street system in the Project vicinity based on future development projects planned in Imperial County.

Intersection LOS Cumulative with Project

Table 4.10–12 summarizes the intersection operations throughout the Project study area during the operations phase of the Project and the addition of cumulative growth. As shown, all of the intersections in the study area are calculated to continue to operate at LOS B or better during the AM and PM peak hours.

Table 4.10-12: Cumulative Plus Project Intersection Operations

Intersection	Control Type ^c	Peak Hour	Cumulative Plus Project		Change Delay ^b	Impact Type
			Delay ^a	LOS		
1. Highway 111/Hazard Road	TWSC	AM	0.0	A	0.0	None
		PM	0.0	A	0.0	
2. Highway 111/McDonald Road	TWSC	AM	9.2	A	0.3	None
		PM	9.3	A	0.4	
3. English Road/McDonald Road	TWSC	AM	9.3	A	0.3	None
		PM	0.0	A	0.0	
4. English Road/Sinclair Road	TWSC	AM	0.7	A	0.0	None
		PM	1.0	A	0.0	
5. Highway 111/Sinclair Road	TWSC	AM	10.7	B	0.5	None
		PM	10.1	B	0.5	

Notes:

^a. Average delay expressed in seconds per vehicle

^b Denotes an increase in delay due to project

^c. TWSC – Minor Street STOP Controlled intersection. Minor street left-turn delay is reported. (Two-Way STOP Controlled Intersection)

Segment LOS Cumulative with Project

Table 4.10–13 summarizes the street segment operations throughout the Project study area during the operations phase of the Project and the addition of cumulative growth. This table shows that all of the street segments in the study area are calculated to continue to operate at LOS A on a daily basis.

Table 4.10-13: Cumulative Plus Construction Street Segment Operations

Street Segment		Capacity (LOS E) ^b	Cumulative Plus Project			Impact Type
			ADT ^c	LOS ^d	V/c ^e	
Highway 111	North of Hazard Road	22,700	4,204	A	0.185	None
	Hazard Road to McDonald Road	22,700	4,204	A	0.185	None
	McDonald Road to Sinclair Road	22,700	4,330	A	0.191	None
	South of Sinclair Road	22,700	7,195	A	0.317	None
McDonald Road	Project Site to English Road	1,500	476	A	0.317	None
	English Road to Highway 111	1,500	416	A	0.277	None
Sinclair Road	English Road to Highway 111	1,500	357	A	0.238	None

Notes:

- a. County of Imperial roadway classification
- b. Roadway capacity corresponding to Level of Service E from Imperial County Standard Street Classification, Average Daily Vehicle Trips table.
- c. Average Daily Traffic volumes
- d. Level of Service
- e. Volume / Capacity Ratio.

Intersection Control Evaluation

An Intersection Control Evaluation (ICE) has been completed under separate cover. The Highway 111/McDonald Road intersection requires improvement to Caltrans' satisfaction, including the installation of a northbound left-turn pocket prior to the Project's opening. Providing a southbound right-turn lane was considered but rejected due to the low volumes. The maximum peak hour volume in this movement is 12 during construction and 7 during operations. Table 4.10-14 shows the operation of four alternatives that could be implemented at the Highway 111/McDonald Road intersection.

Table 4.10-14: Alternative Intersection Analysis

Intersection	Control Type	Peak Hour	Cumulative	
			Delay	LOS
Highway 111/ McDonald Road	Two-Way Stop	AM	9.2	A
		PM	9.3	A
	All-Way Stop	AM	8.2	A
		PM	8.1	A
	Traffic Signal	AM	5.8	A
		PM	6.8	A
	Single-Lane Roundabout	AM	4.2	A
		PM	4.2	A

Notes:

- a. Delay per vehicle in seconds
 - b. LOS - Level of service
 - c. TWSC - Minor street STOP Controlled intersection. Minor street left-turn delay is reported.
- TWSC - Two-Way STOP Controlled intersection.

Source: LLG 2020

Implementation of the Project in combination with other proposed, approved, and reasonably foreseeable projects in the region would not result in cumulative impacts to any street segments or intersections. Additionally, related projects would similarly undergo CEQA review, and determinations regarding the significance of impacts of the related projects on transportation would be made on a case-by-case basis. If necessary, the applicants of the related projects would be required to implement appropriate mitigation measures. Therefore, implementation of related projects and other anticipated growth in Imperial County would not combine with the Proposed Project to result in cumulatively considerable impacts on transportation.

4.10.7 Mitigation Measures

In order to minimize potential impacts to transportation, specifically to safety, the following mitigation measures shall be implemented:

TRA-1: A Commute Trip Reduction (CTR) program shall be implemented to discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking. The CTR program could include features such as carpooling encouragement, ride-matching assistance, preferential carpool parking, half-time transportation coordinator, vanpool assistance, and bicycle end-trip facilities (parking, showers, and lockers) and provide employees with assistance in using alternative modes of travel.

TRA-2: The Highway 111/McDonald Road intersection shall be improved to Caltrans' satisfaction prior to the Project's certificate of occupation, including the installation of a northbound left-turn pocket prior to the Project's opening, utilizing one of the four intersection control methods (existing two-way stop, all-way stop, signal, roundabout) which was analyzed in an Intersection Control Evaluation (ICE) analysis.

4.10.8 Level of Significance After Mitigation

With the implementation of MM TRA-1 and MM TRA-2, the Project would ensure potential impacts related to transportation and circulation would remain less than significant.