

**BIOGAS RENEWABLE GENERATION PROJECT
FINAL INITIAL STUDY / MITIGATED NEGATIVE DECLARATION**

ENVIRONMENTAL SETTING, IMPACTS AND MITIGATION MEASURE
March 9, 2018

3.16 TRANSPORTATION AND TRAFFIC

3.16.1 Setting

This section discusses the roadways and existing traffic in the vicinity of the Proposed Project, the increase in traffic associated with the construction and operation of the Proposed Project, and a discussion of the level of significance of those increases.

For the purposes of this section, the network of freeways and roadways surrounding the Proposed Project site is referred to as the existing roadway system. Although the Proposed Project site is located within the City of Glendale, California, the roadway system used to access the site is primarily located within the City of Los Angeles, California. Therefore, this section focuses on those roadways relevant to the Proposed Project within the City of Los Angeles.

Existing Roadway System

Roadways

The existing roadway network with the potential to be impacted by the Proposed Project includes:

State Route 134

State Route 134 (SR-134) is an east-west state route through Los Angeles County that provides interregional access to the Proposed Project site via the interchange with N. Figueroa Street. Part of the Congestion Management Program (CMP), SR-134 originates at the Route 134/170/101 interchange and runs a distance of 13.34 miles, terminating at the Route 134/210 interchange. SR-134 is classified as an urban principal arterial and contains four travel lanes and a high occupancy vehicle lane in each direction in the study area.

North Figueroa Street

Figueroa Street is a two- to four-lane north-south Secondary Highway that extends north from John S Gibson Blvd. in Los Angeles and terminates at SR-134 near Eagle Rock. The roadway provides access to the urbanized areas south of SR-134 and Scholl Canyon Road north of SR-134. The SR-134 Eastbound Ramps/N. Figueroa Street intersection is controlled by a traffic signal and the SR-134 Westbound Ramps/N. Figueroa Street intersection is controlled by an all-way stop.

Project Site Primary Access

The Proposed Project location is accessed exclusively by Scholl Canyon Road. North Figueroa Street turns into Scholl Canyon Road at the SR-134 Westbound Ramps/North Figueroa Street intersection. Scholl Canyon Road is a two-lane road that terminates at the Scholl Canyon Landfill.

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Project Trip Generation

The Proposed Project is anticipated to be conducted over the course of approximately 18 months. Construction activities will occur in three phases as described below. Operational activities will be ongoing following completion of all construction activities.

Construction Activities

Construction Phase 1 – Removal and Relocation of Existing Equipment

Removal and relocation of existing facility equipment will be conducted over approximately 100 workdays (Monday through Friday). During this time, a maximum of approximately five four-axle trucks (Federal Highway Administration [FHWA] Class 7) and 10 worker vehicles (FHWA Class 1-3) will be driven each way to the Proposed Project location each workday. To provide for a worst-case scenario, all traffic is assumed to occur during peak AM and PM hours.

Construction Phase 2 – Grading and Construction

Grading and construction will be conducted over approximately 200 workdays. During this time, a maximum of approximately 10 FHWA Class 7 trucks and 12 FHWA Class 1-3 worker vehicles will be driven each way to the Proposed Project location each workday during peak hours.

Construction Phase 3 – System Startup

System startup will be conducted over approximately 60 workdays. During this time, a maximum of approximately three FHWA Class 7 trucks and 20 FHWA Class 1-3 worker vehicles will be driven each way to the Proposed Project location each workday during peak hours.

Operation Activities

Once construction been completed and the plant has become operational, it is estimated that approximately six FHWA Class 1-3 worker vehicles will be driven each way to the Proposed Project location each workday during peak hours. This will be conducted seven days a week while the plant is operational.

Passenger Car Equivalent Trips

Due to the additional space and time for turning movements, start up, and acceleration inherent with medium or heavy trucks, the maximum daily truck trips for each Project phase have been converted to Passenger Car Equivalent (PCE) trips. FHWA Class 1 through 3 vehicles are each equivalent to one PCE and FHWA Class 7 vehicles are equivalent to three PCEs. The maximum estimated daily number of round trips and PCEs for construction and operation activities is summarized in the following tables.

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Construction PCE Trips

Table 3.16.1 Estimated Maximum Daily Round Trips and PCE Required for Project Construction Activities

Phase	Estimated Phase Duration (Days)	Maximum Estimated Daily Number of Round Trips ¹	Passenger Car Equivalents (PCEs) of the Estimated Maximum Daily Number of Round Trips		
			1 PCE (FHWA Classes 1-3)	3 PCE (FHWA Class 7)	Total PCE
Phase 1 - Removal and Relocation of Existing Equipment	100	15	10	15	25
Phase 2 - Plant Construction	200	22	12	30	42
Phase 3 - System Startup	60	23	20	9	29
Maximum PCE for Construction Activities ²					42
1 = All trips are assumed to be conducted during AM and PM peak hours.					
2 = The maximum daily PCE for construction activities was used in all traffic calculations to show worst-case scenario.					

Operation PCE Trips

Table 3.16.2 Estimated Maximum Daily Round Trips and PCE Required for the Project Operation Activities

Phase	Maximum Estimated Daily Number of Round Trips ¹	Passenger Car Equivalents (PCEs) of the Estimated Maximum Daily Number of Round Trips		
		1 PCE (FHWA Classes 1-3)	2 PCE (FHWA Classes 4-6)	Total PCE
System Operation	6	6	0	6
Maximum PCE for Operation Activities				6
1 = All trips are assumed to be conducted during AM and PM peak hours.				

Project Trip Distribution Assumptions

Construction

The majority of vehicle trips related to construction will be made by FHWA Class 7 vehicles. During the most impacted construction phase, approximately one third of trips will be generated by construction workers. Of these trips, about 10 percent is expected to access the site via Figueroa Street. All other traffic is expected to access the site via SR-134.

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Operation

It is anticipated that four operators and two technicians will be responsible for routine operation and maintenance of the Proposed Project during operation. For the purposes of this section it is assumed that one third of all operation traffic will originate from the west via SR-134 eastbound, one third from the east via SR-134 westbound, and one third from the south via Figueroa Street. Because this amounts to two vehicles trips per day per route, the traffic increases associated with operation of the plant is considered negligible and will not be included in the analysis.

Study Methodology

Level of Service Criteria

The standard measure used to identify intersection and ramp operating conditions is known as the Level of Service (LOS). LOS compares the volume of traffic at an intersection to the capacity the intersection is capable of handling and is expressed as a volume to capacity ratio (V/C). A LOS letter scale from 'A' to 'F' is then assigned to the intersection with LOS A representing free flow conditions and LOS F representing overly congested conditions.

The SR-134 Westbound Ramps/N. Figueroa Street intersection and the SR-134 Eastbound Ramps/ N. Figueroa Street intersection (collectively the 'study area') includes signalized and unsignalized intersections. Table 3.16.3 summarizes the LOS definitions for signalized intersections. The City of Los Angeles does not have thresholds for unsignalized intersections.

Table 3.16.3 Level of Service Standards for Signalized Intersections

LOS	Description	V/C Ratio
A	Excellent. No vehicles waits longer than one red light and no approach phase is fully used.	0.000 – 0.600
B	Very good. An occasional approach is fully utilized; mainly drivers begin to feel somewhat restricted within groups of vehicles	0.601 – 0.700
C	The number of vehicles stopping becomes significant, though many still pass through the intersection without stopping	0.701 – 0.800
D	The influence of congestion becomes more noticeable. Many vehicles stop and the proportion of vehicles not stopping declines.	0.801 – 0.900
E	Results in delay considered to be unacceptable.	0.901 – 1.000
F	Considered unacceptable to most drivers, often occurs with oversaturation, when arriving traffic exceeds the capacity at the intersection	>1.000

Los Angeles Department of Transportation, Los Angeles Department of Transportation Traffic Study Policies and Procedures, 2013.

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The study area intersections are also within Caltrans' jurisdiction which triggers a review using the Highway Capacity Manual (HCM)⁴ method for evaluating intersections. The HCM method measures the 'control delay' (CD) which is the wait time at the intersection in seconds per vehicle. According to the HCM, the following LOS standards are used for intersections at Caltrans ramps:

Table 3.16.4 Level of Service Standards for Intersections at Caltrans Ramps

LOS	Description	Control Delay (Signalized)	Control Delay (Un-Signalized)
A	Very low delay. Most vehicles do not stop at the intersection.	≤10 seconds/vehicle	≤10 seconds/vehicle
B	More vehicles stop than with LOS A, causing higher delays.	>10 – 20 seconds/vehicle	>10 – 15 seconds/vehicle
C	The number of vehicles stopping becomes significant, though many still pass through the intersection without stopping	>20 - 35 seconds/vehicle	>15 – 25 seconds/vehicle
D	The influence of congestion becomes more noticeable. Many vehicles stop and the proportion of vehicles not stopping declines.	>35 - 55 seconds/vehicle	>25 – 35 seconds/vehicle
E	Results in delay considered to be unacceptable.	>55 - 80 seconds/vehicle	>35 – 50 seconds/vehicle
F	Considered unacceptable to most drivers, often occurs with oversaturation, when arriving traffic exceeds the capacity at the intersection	>50 seconds/vehicle	>50 seconds/vehicle

Transportation Research Board, Highway Capacity Manual, 2010.

The study area also contains metered and non-metered on/off ramps. According to the Caltrans Ramp Meter Design Manual, a single lane metered on-ramp can generally handle at most 900 vehicles per hour per lane (vphpl). According to the Highway Design Manual a single non-metered off ramp can accommodate up to 1,500 vphpl. Based on this, the following LOS standards are used for the west and east bound ramps:

⁴ Highway Capacity Manual, Transportation Research Board, 2010.

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Table 3.16.5 Level of Service Standards for Ramps

Ramp Structure	Capacity (vphpl)	LOS A (V/C=0.6)	LOS B (V/C=0.7)	LOS C (V/C=0.8)	LOS D (V/C=0.9)	LOS E (V/C=1.0)	LOS F (V/C>1.0)
Metered one lane on-ramp	900	540	630	720	810	900	>900
Metered 1.5 lanes on-	1,500	900	1,050	1,200	1,350	1,500	>1,500
Non-Metered one lane	1,500	900	1,050	1,200	1,350	1,500	>1,500

vphpl = vehicles per hour per lane ; V/C = vehicles to capacity
1 = Two mixed flow lanes at the meter that merge to one lane post meter

Existing Levels of Service

To determine the existing LOS at the subject area, Stantec subcontracted National Data & Surveying Services of Beverly Hills, California to conduct traffic counts on Thursday May 26, 2016. Traffic count results are provided in Appendix I.1 and summarized below.

Table 3.16.6 Existing AM and PM Peak Hour Intersection Levels of Service

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	(V/C) / LOS	CD / LOS	(V/C) / LOS	CD / LOS
Figueroa Street/SR-134 Eastbound Ramps	0.706 / C	12.2 sec / B	0.697 / B	13.2 sec / B
Figueroa Street/SR-134 Westbound Ramps	N/A	59.30 sec / F	N/A	16.91 sec / C

Table 3.16.7 Existing Level of Service Standards for Ramps

Ramp Segment	Ramp Conditions	Capacity (vphpl)	A.M. Peak Hour			P.M. Peak Hour		
			PCE Vol.	V/C	LOS	PCE Vol.	V/C	LOS
SR-134 eastbound on-ramp at Figueroa Street	Metered One Lane	900	581	0.646	B	389	0.432	A
SR-134 eastbound off-ramp at Figueroa Street	Non-Metered One Lane	1,500	604	0.403	A	775	0.517	A
SR-134 westbound on-ramp at Figueroa Street	Metered 1.5 Lanes	1,500	748	0.499	A	522	0.348	A

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Ramp Segment	Ramp Conditions	Capacity (vphpl)	A.M. Peak Hour			P.M. Peak Hour		
			PCE Vol.	V/C	LOS	PCE Vol.	V/C	LOS
SR-134 westbound off-ramp at Figueroa Street	Non-Metered 1.5 lanes	1,500	282	0.188	A	286	0.191	A

Thresholds of Significance

The following thresholds were used to determine if a significant impact will result from traffic increases associated with the Proposed Project.

Ramps

Based on the Los Angeles County Congestion Management Program, a significant adverse traffic impact would occur on a CMP highway network if:

- Traffic from the Proposed Project results in a ramp operating at an unacceptable LOS of D or F and an increase in the V/C ratio of greater than or equal to 0.02.

Intersections

The City of Los Angeles does not have thresholds for unsignalized intersections. Based on the impact threshold criteria contained in the LADOT Traffic Study Policies and Procedures⁵, a significant adverse traffic impact would occur at a signalized intersection if:

- Traffic from the Proposed Project results in an intersection operating at a LOS C and an increase in the V/C of greater than or equal to 0.04.
- Traffic from the Proposed Project results in an intersection operating at a LOS D and an increase in the V/C of greater than or equal to 0.02.
- Traffic from the Proposed Project results in an intersection operating at a LOS E or F and an increase in the V/C of greater than or equal to 0.01.
- Traffic increases associated with the Proposed Project cause any intersection to operate at a LOS E or LOS F when pre-project operation was at a LOS A through LOS D.

Caltrans has established the LOS C/D range as the target level of service standard for State Highway facilities.

⁵ Traffic Study Policies and Procedures, City of Los Angeles Department of Transportation, June 2013.

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Traffic Analysis and Impact Results

The study area traffic analysis includes the SR-134 Westbound Ramps/N. Figueroa Street intersection and the SR-134 Eastbound Ramps/ N. Figueroa Street intersection. The Transportation Research Board, Circular 212 Critical Movement Analysis Planning Method, was used to analyze traffic operating conditions at signalized intersections, and the results are shown as a volume to capacity ratio. Proposed Project traffic impacts are shown in Appendix I.2, existing plus Proposed Project traffic impacts are shown in Appendix I.3.

Level of Service Impact for Intersections

As shown below, temporary construction traffic associated with the Proposed Project would not exceed the City's traffic impact thresholds during the AM and PM peak hours. No project-specific intersection impacts are therefore generated. It is noted that the SR-134 Westbound Ramps/North Figueroa Street intersection currently operates in the LOS F range and will continue to operate at LOS F under Project-specific conditions.

Table 3.16.8 Existing plus Construction Traffic AM and PM Peak Hour Intersection Levels of Service

Intersection	A.M. Peak Hour			P.M. Peak Hour		
	(V/C) / LOS	CD / LOS	Change (V/C) / CD	(V/C) / LOS	CD / LOS	Change (V/C) / CD
Figueroa Street/SR-134 Eastbound Ramps	0.716/C	12.5 sec / B	0.010 / 0.3 sec	0.710/ C	13.3 sec / B	0.013/ 0.1 sec
Figueroa Street/SR-134 Westbound Ramps	N/A	59.68 sec / F	0.38 sec	N/A	17.36 sec / C	0.45 sec

Level of Service Impact for Ramps

Levels of service for the unsignalized intersections in the study area were calculated using Highway Capacity Software (HCS) and levels of service for signalized intersections were calculated using Synchro software. Both programs apply the methodologies outlined in the HCM. As shown below, all ramps are expected to continue to operate in the LOS A or B range under Project-specific conditions. The project would not generate any significant impacts.

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Table 3.16.9 Existing plus Construction Traffic AM and PM Peak Hour Ramp Levels of Service

Ramp Segment	Ramp Conditions	Capacity (vphpl)	A.M. Peak Hour			P.M. Peak Hour		
			PCE Vol.	V/C	LOS	PCE Vol.	V/C	LOS
SR-134 eastbound on-ramp at Figueroa Street	Metered One Lane	900	581	0.646	B	408	0.453	A
SR-134 eastbound off-ramp at Figueroa Street	Non-Metered One Lane	1,500	623	0.415	A	775	0.517	A
SR-134 westbound on-ramp at Figueroa Street	Metered 1.5 Lanes	1,500	748	0.499	A	541	0.361	A
SR-134 westbound off-ramp at Figueroa Street	Non-Metered 1.5 lanes	1,500	301	0.201	A	286	0.191	A

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3.16.2 Impact Analysis

Issues	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
<u>TRANSPORTATION AND TRAFFIC:</u> Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

There would be no significant traffic impacts to the study area intersections or ramps as a result of the Proposed Project.

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- a) *Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?*

Less Than Significant Impact

The construction of the Proposed Project is short term (18 months) and would involve up to 42 PCE vehicle trips on peak days. It is expected that six PCE vehicle trips per day would be generated during the Proposed Project's long-term operation. Although construction of the Proposed Project will increase the volume of traffic present in the existing roadway network, the increase will not cause the LOS to exceed the thresholds for significant impact. Therefore, impacts would be less than significant.

Mitigation Measures

None required.

- b) *Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?*

Less Than Significant Impact

Ramps

The Los Angeles County Congestion Management Program states that a significant adverse traffic impact would occur on a CMP highway network if traffic from a Proposed Project results in a ramp operating at an unacceptable LOS of D or F and an increase in the V/C ratio of greater than or equal to 0.02. The existing LOS for ramps in the study area are all currently operating at a LOS A or B. These LOS will not change as a result of the traffic associated with the Proposed Project; all ramps would continue to operate at a LOS A or B. Therefore, there is no significant impact.

Intersections

The City of Los Angeles does not have thresholds for unsignalized intersections. The LADOT Traffic Study Policies and Procedures states that a significant adverse traffic impact would occur at a signalized intersection if: traffic from the Proposed Project results in an intersection operating at a LOS C and an increase in the V/C of greater than or equal to 0.04; traffic from the Proposed Project results in an intersection operating at a LOS D and an increase in the V/C of greater than or equal to 0.02; or traffic from the Proposed Project results in an intersection operating at a LOS E or F and an increase in the V/C of greater than or equal to 0.01. The existing LOS for signalized

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intersections in the study area is LOS C in the AM and LOS B in the PM. The LOS in the AM will remain the same; however, the LOS in the PM will change to LOS C as a result of the traffic associated with construction of the Proposed Project. The V/C increase associated with the PM change in LOS (0.013) is less than 0.04. Therefore, there is no significant impact.

The study area intersections are also within Caltrans jurisdiction, which triggers an additional review using the Highway Capacity Manual method for evaluating intersections. The existing LOS for intersections in the study area is LOS B in the AM and PM (for eastbound ramps) and LOS F in the AM and LOS C in the PM (for westbound ramps). These LOS will not change as a result of the traffic associated with the Proposed Project. Therefore, there is no significant impact.

Mitigation Measures

None required.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact

The Proposed Project does not involve air traffic in any way. No impact would occur.

Mitigation Measures

None required.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact

There are no existing hazardous design features in the study area. Only on-road vehicles will be accessing the site via the existing roadway network. Therefore, there is no impact.

Mitigation Measures

None required.

e) Result in inadequate emergency access?

No Impact

The Proposed Project does not include any component that would result in inadequate emergency access to the site or surrounding areas. Vehicles are not anticipated to block

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roadways or intersections, reduce speed below the speed limit on roadways, or to interfere with access of emergency vehicles. Therefore, there is no impact.

Mitigation Measures

None required.

f) *Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?*

No Impact

There are no designated bicycle facilities, public transportation, bus service, or pedestrian facilities in the study area. Therefore, there is no impact.

Mitigation Measures

None required.

