Table C: Olinda Alpha Landfill PCE Trip Rates and Proposed High-Tonnage Trip Generation

Land Use	Size	Unit	Vehicle Type	ADT	AM Peak Hour		
					In	Out	Total
Trip Rates[1]							
Landfill	1	Ton	PCE	0.3231	0.0373	0.0373	0.0746
Trip Generation							
Landfill	2,900	Ton	PCE	937	108	108	216

[1] Trip rates derived from the existing 7,100-ton landfill operation (i.e., surveys conducted between Monday and Friday, January 6, 2014 and January 10, 2014).

ADT = average daily traffic
PCE = passenger car equivalent

Data Collection. LSA reviewed both the *Olinda Alpha Landfill Implementation EIR Traffic Analysis* (Bryan A. Strirrat & Associates 2004) and the *La Floresta Traffic Study* (Austin-Foust Associates, Inc. [AFA] 2006) to determine the appropriate analysis study area, scenarios, and methodologies to be used in this traffic analysis, as well as obtain the most updated information in this area. Based on this data collection effort, LSA obtained year 2012 and year 2025 peak-hour traffic volumes at the following eight intersections:

1. Valencia Avenue/Lambert Road–Carbon Canyon Road
2. Valencia Avenue/Birch Street–Rose Drive
3. Valencia Avenue/Imperial Highway
4. Kraemer Boulevard/Imperial Highway
5. Placentia Avenue/Imperial Highway
6. Associated Road/Imperial Highway
7. SR-57 northbound ramps/Imperial Highway
8. SR-57 southbound ramps/Imperial Highway

To determine the peak-hour LOS of the study area intersections, the intersection capacity utilization (ICU) methodology was used (the ICU worksheets are provided in Attachment A). LOS E (ICU not to exceed 1.00) is the performance standard for three County CMP intersections in the study area (Valencia Avenue/Imperial Highway, SR-57 northbound ramps/Imperial Highway, and SR-57 southbound ramps/Imperial Highway). However, LOS D (ICU not to exceed 0.90) is the performance standard for all other study area intersections. A project causes a significant impact if it contributes more than 0.03 to an ICU when the performance standard is exceeded for CMP intersections. A project causes a significant impact if it contributes more than 0.01 to an ICU when the performance standard is exceeded for all other intersections. When an intersection operating at satisfactory LOS (LOS E or better for CMP intersections, and LOS D or better for non-CMP intersections) degrades from the proposed project, but continues to operate at satisfactory LOS, a significant project impact does not occur. For example, if an intersection degrades from LOS A to LOS B, or even from LOS A to LOS D, this does not constitute a significant impact as the LOS standard is not exceeded.

Traffic analysis Tables D and E provide an intersection LOS summary for year 2012 and year 2025 (baseline and plus project) conditions, respectively. As these tables indicate, all study area intersections are forecast to operate at satisfactory LOS during the a.m. peak hour.

Table D: Year 2012 Intersection Level of Service Summary

	Intersection	Baseline AM Peak Hour		Plus Project AM Peak Hour		Δ
		ICU	LOS	ICU	LOS	ICU
1	Valencia Avenue/Lambert Road-Carbon Canyon Road	0.56	A	0.59	A	0.03
2	Valencia Avenue/Birch Street-Rose Drive	0.60	A	0.63	B	0.03
3	Valencia Avenue/Imperial Highway	0.65	B	0.68	B	0.03
4	Kraemer Boulevard/Imperial Highway	0.77	C	0.79	C	0.02
5	Placentia Avenue/Imperial Highway	0.61	B	0.63	B	0.02
6	Associated Road/Imperial Highway	0.79	C	0.81	D	0.02
7	SR-57 Northbound Ramps/Imperial Highway	0.79	C	0.82	D	0.03
8	SR-57 Southbound Ramps/Imperial Highway	0.70	B	0.70	B	0.00

ICU = intersection capacity utilization
LOS = level of service
SR-57 = State Route 57

Table E: Year 2025 Intersection Level of Service Summary

	Intersection	Baseline AM Peak Hour		Plus Project AM Peak Hour		Δ
		ICU	LOS	ICU	LOS	ICU
1	Valencia Avenue/Lambert Road-Carbon Canyon Road	0.67	B	0.70	B	0.03
2	Valencia Avenue/Birch Street-Rose Drive	0.65	B	0.68	B	0.03
3	Valencia Avenue/Imperial Highway	0.79	C	0.83	D	0.04
4	Kraemer Boulevard/Imperial Highway	0.85	D	0.86	D	0.01
5	Placentia Avenue/Imperial Highway	0.68	B	0.70	B	0.02
6	Associated Road/Imperial Highway	0.87	D	0.89	D	0.02
7	SR-57 Northbound Ramps/Imperial Highway	0.84	D	0.87	D	0.03
8	SR-57 Southbound Ramps/Imperial Highway	0.87	D	0.87	D	0.00

ICU = intersection capacity utilization
LOS = level of service
SR-57 = State Route 57

Year 2012 and Year 2025 Analysis. Applying the project trip distribution percentages obtained from the *Olinda Alpha Landfill Implementation EIR Traffic Analysis,* LSA determined the project trip assignment through the study area intersections for the landfill. The entire PCE trip generation for an additional 2,900 tpd (216 a.m. peak-hour trips [108 inbound and 108 outbound]) was manually assigned to year 2012 and 2025 traffic volumes. The resulting "plus project" traffic volumes (in PCEs) were examined to determine peak-hour intersection LOS based on the appropriate criteria.

LSA analyzed "plus project" conditions (i.e., an additional 2,900 tpd of solid waste for a maximum of 10,000 total tpd on site during high-tonnage days) at the study area intersections to

determine whether impacts to the circulation system would occur when the project is added to the baseline (7,100 tpd) condition. As previously discussed, the trips generated by the additional tonnage would mostly occur outside the a.m. peak hour. However, to present a conservative analysis, a portion of this trip generation was assumed in the critical a.m. peak hour based on the existing trip-generating characteristics of the landfill. Tables D and E provide an intersection LOS summary for year 2012 and year 2025 plus project conditions, respectively. As shown in these tables, all study area intersections would continue to operate at satisfactory LOS. Therefore, a maximum operation of 10,000 tpd at the OAL during high-tonnage days would not cause a significant project impact in year 2012 or year 2025.

Conclusion. The evaluation of the study area intersection LOS shows that the addition of project (high-tonnage) traffic to year 2012 and year 2025 conditions would not create any significant impacts. The LOS standard at the study area intersections is not exceeded as a result of the project. Therefore, a maximum daily disposal capacity of 10,000 tpd of solid waste could be processed at the OAL.

2.2.2 Noise Impacts

Ambient Noise Measurements. LSA conducted 15-minute ambient noise measurements at two representative locations along the access roads to the landfill. The first ambient noise measurement location was in the Olinda Ranch residential community north of the Valencia Avenue/Lambert Road intersection, at the Olinda Ranch playground near 3620 Mockingbird Lane, approximately 20 ft north of the property wall. Primary noise sources at this location included traffic on Valencia Avenue and Lambert Road. The second location for the ambient noise measurement was just outside the construction area at La Floresta residential development near the intersection of Imperial Highway and Valencia Avenue, approximately 80 ft from the property wall. Primary noise sources at this location included traffic on Imperial Highway and construction activity noise such as power saws, hammering, and construction vehicles. Table F lists the noise measurement results at these two representative locations in the project vicinity. Noise measurement survey sheets are included in Attachment B of this White Paper.

Table F: Ambient Noise Level (dBA)

Location	Time Period	L_{eq}	L_{50}	L_8	L_2	L_{max}
Olinda Ranch	11:50 a.m.–12:05 p.m.	55.5	53.3	58.6	62.2	70
La Floresta	1:57 p.m.–2:12 p.m.	54.6	53.2	57.9	60.1	65

Source: LSA Associates, Inc., February 2014.
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level

Table F shows that ambient noise levels in the project vicinity are moderate in the two residential communities along the project's access roads, even at intersections near major arterials. These noise levels are lower than those projected with 24-hour traffic volumes along these roadway segments, as will be shown later in this chapter.

Off-Site Traffic Noise Impacts. As previously discussed, large vehicles utilize more roadway capacity than passenger vehicles due to their larger size, slower start-up times, and reduced maneuverability. In order to account for the increase in roadway capacity utilized by large vehicles, PCE factors are used. These factors are applied to the vehicle trip generation to account for the differences in operational characteristics of heavy vehicles. To determine the PCE for the transfer trucks that utilize the landfill, LSA consulted the HCM adjustments for heavy vehicles and the San Bernardino County CMP. Based on this information and a PCE factor of 3, the PCE trip generation of the existing 7,100 tpd landfill is approximately 2,294 ADT, 530 a.m. peak-hour trips (265 inbound and 265 outbound).

As previously discussed, the City allows the landfill to process a maximum of 10,000 tpd of solid waste on site during high-tonnage days. Based on existing weekday operations of 7,100 tpd, the landfill could accommodate an additional 2,900 tpd of solid waste. As shown in Table C, an additional 2,900 tpd on site would generate approximately 937 ADT and 216 a.m. peak-hour trips (108 inbound and 108 outbound) in PCEs based on the time-of-day trip generating characteristics of the existing landfill.

The Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate highway traffic-related noise conditions along roadway segments in the project vicinity. A traffic analysis was prepared for the proposed project by LSA in February 2014. The potential noise impacts were calculated using the traffic volumes along Valencia Avenue leading to the landfill. ADT volumes were provided for Valencia Avenue in the project area, and the vehicle mix for Valencia Avenue was used for traffic on this roadway segment. The modeled 24-hour CNEL levels are shown in Tables G, H, I, and J for the Existing No Project, Existing With Project, 2025 No Project, and 2025 With Project scenarios, respectively. These noise levels represent the worst-case scenario, which assumes no shielding is provided between traffic and the location where the noise contours are drawn. Attachment B includes the model printouts for this roadway segment.

As shown in Tables H and J, traffic noise level increases in the project vicinity along Valencia Avenue and other affected roadway segments from implementation of the proposed project would be 1.3 dBA or less under existing and 2025 conditions, except along Castlegate Lane north of Imperial Highway where the project-related increase would be 2.3 dBA under the 2025 with project condition. However, the 70 dBA CNEL noise contour along this segment of the road would remain confined within the roadway right-of-way. The 65 dBA CNEL contour would extend to 59 ft from the centerline of the road. No outdoor living areas such as backyards or patios along this segment of Castlegate Lane would be impacted by traffic noise exceeding the exterior noise standard of 65 dBA CNEL. Therefore, project-related traffic noise impacts along landfill access roads would be less than significant, and no mitigation measures would be required.

On-Site Operational Noise Impacts. Based on the air quality impact analysis, the additional waste intake is still within the operational capacity of the landfill, no additional equipment is needed to handle the on-site operations. Since the existing landfill operations do not generate any significant noise impacts to land uses adjacent to the landfill, it is not expected that operations to handle this additional waste importation would result in any significant noise impacts. No mitigation measures are required.

Table G: Existing Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Imperial Hwy. west of SR-57 SB Ramps	53,950	376	807	1,737	80.2
Imperial Hwy. between SR-57 NB Ramps and Associated Rd.	45,665	337	722	1,554	79.5
Imperial Hwy. between Associated Rd. and Placentia Ave.	41,365	316	676	1,455	79.1
Imperial Hwy. between Placentia Ave. and Kraemer Blvd.	38,410	301	644	1,385	78.7
Imperial Hwy. between Kraemer Blvd. and Valencia Ave.	36,670	292	624	1,343	78.5
Imperial Hwy. east of Valencia Ave.	38,840	303	649	1,395	78.8
Valencia Ave. north of Carbon Canyon Rd.	5,790	79	164	350	70.5
Valencia Ave. between Carbon Canyon Rd. and Rose Dr.	16,890	156	332	714	75.1
Valencia Ave. between Rose Dr. and Imperial Hwy.	12,240	126	268	576	73.7
Valencia Ave. south of Imperial Hwy.	11,110	119	252	540	73.3
Lambert Rd. west of Valencia Ave.	22,390	164	352	758	75.9
Carbon Canyon Rd. east of Valencia Ave.	24,480	198	425	914	76.7
Birch St. west of Valencia Ave.	12,020	125	265	569	73.6
Rose Dr. east of Valencia Ave.	17,730	103	222	477	74.0
Kraemer Blvd. north of Imperial Hwy.	21,750	184	393	845	76.2
Kraemer Blvd. south of Imperial Hwy.	19,800	173	369	793	75.8
Castlegate Ln. north of Imperial Hwy.	1,120	< 50	< 50	76	62.0
Placentia Ave. south of Imperial Hwy.	8,580	88	186	400	71.8
Associated Rd. north of Imperial Hwy.	11,030	118	250	537	73.3
Associated Rd. south of Imperial Hwy.	10,810	117	247	530	73.2

Source: LSA Associates, Inc., February 2014.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
Modeled using the Soft setting and the fleet percentages based on traffic counts observed February 10, 2014.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot, feet
NB = northbound
SB = southbound
SR-57 = State Route 57

Table H: Existing With Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Imperial Hwy. west of SR-57 SB Ramps	53,950	376	807	1,737	80.2	0.0
Imperial Hwy. between SR-57 NB Ramps and Associated Rd.	46,805	342	734	1,580	79.6	0.1
Imperial Hwy. between Associated Rd. and Placentia Ave.	42,885	323	693	1,490	79.2	0.1
Imperial Hwy. between Placentia Ave. and Kraemer Blvd.	39,930	308	661	1,421	78.9	0.2
Imperial Hwy. between Kraemer Blvd. and Valencia Ave.	38,290	300	642	1,382	78.7	0.2
Imperial Hwy. east of Valencia Ave.	39,080	304	651	1,401	78.8	0.0
Valencia Ave. north of Carbon Canyon Rd.	7,950	96	202	432	71.9	1.4
Valencia Ave. between Carbon Canyon Rd. and Rose Dr.	18,850	167	357	768	75.6	0.5
Valencia Ave. between Rose Dr. and Imperial Hwy.	14,160	139	295	635	74.4	0.7
Valencia Ave. south of Imperial Hwy.	11,170	119	253	542	73.3	0.0
Lambert Rd. west of Valencia Ave.	22,590	165	354	762	76.0	0.1
Carbon Canyon Rd. east of Valencia Ave.	24,480	198	425	914	76.7	0.0
Birch St. west of Valencia Ave.	12,020	125	265	569	73.6	0.0
Rose Dr. east of Valencia Ave.	17,770	103	222	478	74.0	0.0
Kraemer Blvd. north of Imperial Hwy.	21,750	184	393	845	76.2	0.0
Kraemer Blvd. south of Imperial Hwy.	19,900	173	370	796	75.8	0.0
Castlegate Ln. north of Imperial Hwy.	1,120	< 50	< 50	76	62.0	0.0
Placentia Ave. south of Imperial Hwy.	8,580	88	186	400	71.8	0.0
Associated Rd. north of Imperial Hwy.	11,030	118	250	537	73.3	0.0
Associated Rd. south of Imperial Hwy.	10,810	117	247	530	73.2	0.0

Source: LSA Associates, Inc., February 2014.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
Modeled using the Soft setting and the fleet percentages based on traffic counts observed February 10, 2014.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot, feet
NB = northbound
SB = southbound
SR-57 = State Route 57

Table I: 2025 Without Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane
Imperial Hwy. west of SR-57 SB Ramps	68,400	440	945	2,034	81.2
Imperial Hwy. between SR-57 NB Ramps and Associated Rd.	51,950	367	787	1,694	80.0
Imperial Hwy. between Associated Rd. and Placentia Ave.	46,550	341	731	1,574	79.6
Imperial Hwy. between Placentia Ave. and Kraemer Blvd.	42,950	323	693	1,492	79.2
Imperial Hwy. between Kraemer Blvd. and Valencia Ave.	43,100	324	695	1,495	79.2
Imperial Hwy. east of Valencia Ave.	50,000	358	767	1,651	79.9
Valencia Ave. north of Carbon Canyon Rd.	7,800	95	199	427	71.8
Valencia Ave. between Carbon Canyon Rd. and Rose Dr.	20,300	175	375	807	75.9
Valencia Ave. between Rose Dr. and Imperial Hwy.	16,550	154	328	704	75.0
Valencia Ave. south of Imperial Hwy.	14,000	138	293	630	74.3
Lambert Rd. west of Valencia Ave.	32,000	208	447	961	77.5
Carbon Canyon Rd. east of Valencia Ave.	35,000	251	539	1,160	78.3
Birch St. west of Valencia Ave.	15,000	144	307	660	74.6
Rose Dr. east of Valencia Ave.	21,200	116	250	538	74.8
Kraemer Blvd. north of Imperial Hwy.	30,800	231	495	1,065	77.7
Kraemer Blvd. south of Imperial Hwy.	27,100	212	455	978	77.2
Castlegate Ln. north of Imperial Hwy.	1,400	< 50	< 50	88	63.0
Placentia Ave. south of Imperial Hwy.	10,100	98	208	446	72.5
Associated Rd. north of Imperial Hwy.	11,900	124	263	565	73.6
Associated Rd. south of Imperial Hwy.	12,000	125	265	568	73.6

Source: LSA Associates, Inc., February 2014.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
Modeled using the Soft setting and the fleet percentages based on traffic counts observed February 10, 2014.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot, feet
NB = northbound
SB = southbound
SR-57 = State Route 57

Table J: 2025 With Project Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 CNEL (ft)	Centerline to 65 CNEL (ft)	Centerline to 60 CNEL (ft)	CNEL (dBA) 50 ft from Centerline of Outermost Lane	Increase CNEL (dBA) 50 ft from Centerline of Outermost Lane
Imperial Hwy. west of SR-57 SB Ramps	71,300	452	971	2,091	81.4	0.2
Imperial Hwy. between SR-57 NB Ramps and Associated Rd.	60,825	407	874	1,881	80.7	0.7
Imperial Hwy. between Associated Rd. and Placentia Ave.	48,050	348	747	1,608	79.7	0.1
Imperial Hwy. between Placentia Ave. and Kraemer Blvd.	46,200	339	728	1,566	79.5	0.3
Imperial Hwy. between Kraemer Blvd. and Valencia Ave.	49,550	355	763	1,641	79.8	0.6
Imperial Hwy. east of Valencia Ave.	54,700	379	814	1,753	80.3	0.4
Valencia Ave. north of Carbon Canyon Rd.	8,100	97	204	438	71.9	0.1
Valencia Ave. between Carbon Canyon Rd. and Rose Dr.	24,600	199	426	917	76.8	0.9
Valencia Ave. between Rose Dr. and Imperial Hwy.	17,550	160	341	732	75.3	0.3
Valencia Ave. south of Imperial Hwy.	15,300	146	311	668	74.7	0.4
Lambert Rd. west of Valencia Ave.	31,700	207	444	955	77.5	0.0
Carbon Canyon Rd. east of Valencia Ave.	37,600	263	565	1,216	78.6	0.3
Birch St. west of Valencia Ave.	18,900	167	358	769	75.6	1.0
Rose Dr. east of Valencia Ave.	24,500	128	275	592	75.4	0.6
Kraemer Blvd. north of Imperial Hwy.	35,500	253	544	1,171	78.4	0.7
Kraemer Blvd. south of Imperial Hwy.	32,800	241	516	1,111	78.0	0.8
Castlegate Ln. north of Imperial Hwy.	2,400	< 50	59	126	65.3	2.3
Placentia Ave. south of Imperial Hwy.	9,800	96	204	437	72.4	-0.1
Associated Rd. north of Imperial Hwy.	15,100	145	308	662	74.6	1.0
Associated Rd. south of Imperial Hwy.	14,400	140	299	642	74.4	0.8

Source: LSA Associates, Inc., February 2014.
Note: Traffic noise within 50 ft of the roadway centerline should be evaluated with site-specific information.
Modeled using the Soft setting and the fleet percentages based on traffic counts observed February 10, 2014.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
ft = foot, feet
NB = northbound
SB = southbound
SR-57 = State Route 57

2.2.3 Air Quality Impacts

On days that the OAL accepts 10,000 tpd of permitted waste, overall daily project emissions would increase compared to current typical emissions where approximately 7,000 tpd are processed. This White Paper analyzes these increased emissions to determine if the air quality impacts shown in the Final EIR 588 would be exceeded.

The primary sources of operational air emissions from the OAL are from the heavy-duty diesel trucks that are used to haul waste to the landfill. The operation of diesel trucks produces air pollutants including: carbon monoxide (CO), reactive organic gases (ROG), oxides of nitrogen (NO_X), oxides

of sulfur (SO_X), fine particulate matter equal to or less than 10 microns in size (PM_{10}), fine particulate matter equal to or less than 2.5 microns in size ($PM_{2.5}$), and carbon dioxide (CO_2). These emissions were computed in Final EIR 588 based on the average distance traveled to haul the waste (22.8 miles), emissions factors using the model current in 2004 (EMFAC2002[1]), and the number of trucks per day (892) needed to haul 7,000 tons of Municipal Solid Waste (MSW) and 4,000 tons of exempt commodity to the values shown in Table K, which also lists the rest of the operational emissions from the Final EIR 588.

Table K: Final EIR 588 Daily Operational Emissions in 2004

Emissions Source	Emission Rates (lbs/day)				
	CO	ROG	NO_X	SO_X	PM_{10}
Waste Haul Vehicles	259	24	516	5.8	11
Other Vehicles	164	26	287	35	22
Stationary Sources	487	607	412	70	81
Total Operational Emissions	910	657	1,215	111	114

Source: Final EIR for the RELOOC Strategic Plan-Olinda Alpha Landfill Implementation (Final EIR 588), Table 5.6-8, June 15, 2004.

CO = carbon monoxide
EIR = Environmental Impact Report
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in diameter
RELOOC=Regional Landfill Options for Orange County
ROG = reactive organic gases
SO_X = oxides of sulfur

Note that Final EIR 588 made the following assumptions: (1) the in-County and out-of-County trucks are the same types, and (2) average miles traveled are the same for in-County and out-of-County trucks. Since the emission profile presented in Table K is incorporated in the Final EIR, it became the emission thresholds currently certified for OAL. Note also that in 2004, the emissions of $PM_{2.5}$ were not included.

To determine the current level of operational emissions from the OAL, data for the period of November 1, 2013, through January 8, 2014, is considered representative of the current average OAL waste processing. Information analyzed includes the total number of loads by vehicle type, the tonnage by vehicle type and tonnage by commodity. Over the approximately 9-week period a daily average of 6,750 tons of MSW and 4,890 tons of exempt commodity were accepted. Table L shows the waste haul vehicle emissions from these current operations, which were computed based on the average distance traveled to haul the waste (25 miles), emissions factors using the current model (EMFAC2011), and the 9-week operating data described above. See Attachment C for worksheets documenting these emissions.

Table M shows the current operational emissions, including all sources other than the waste haul vehicles as calculated in the June 2013 White Paper by Tetra Tech (included in Attachment C).[2]

[1] EMFAC2002 is an emission model issued by the California Air Resources Board (ARB) in 2002 for estimating emissions from on-road vehicles operating in California. It was the latest model available in 2004 for the Final EIR 588 analysis.

[2] Air Quality Analysis for Additional Waste Importation and Greenhouse Gas Inventory Olinda Alpha Landfill, June 2013.

Table L: Current Average Daily Regional Haul Vehicle Emissions (6,800 Tons per Day)

Emissions Source	Emission Rates (lbs/day)				
	CO	ROG	NO_X	PM_{10}	$PM_{2.5}$
Waste Haul Vehicles (for approx. 6,800 tons of permitted waste)	41	6.3	180	5.1	4.7
Final EIR 588 Waste Haul Vehicles Emissions Thresholds Currently Certified for OAL	**259**	**24**	**516**	**10.9**	**N/A**
Significant?	**No**	**No**	**No**	**No**	**N/A**

Source: LSA Associates, Inc., February 2014.

CO = carbon monoxide
lbs/day = pounds per day
N/A = not applicable
NO_X = nitrogen oxides
OAL = Olinda Alpha Landfill
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
PM_{10} = particulate matter less than 10 microns in diameter
ROG = reactive organic gases

Table M: Final EIR 588 Daily Operational Emissions

Emissions Source	Emission Rates (lbs/day)				
	CO	ROG	NO_X	SO_X	PM_{10}
Other (Non-Waste Haul) Vehicles	2.7	0.20	1.8	0.03	0.50
Landfill Processing Equipment	82	19	161	0	8.1
Stationary Sources (Fugitive and Processed Landfill Gas)	487	607	412	70	81

Source: Air Quality Analysis for Additional Waste Importation and Greenhouse Gas Inventory Olinda Alpha Landfill, Tetra Tech, June 2013, Table 3.

CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in diameter
RELOOC=Regional Landfill Options for Orange County
ROG = reactive organic gases

To determine the total air quality impact from increasing the waste input from 6,800 tpd to 10,000 tpd (and a corresponding increase in exempt commodity from 4,890 to 7,190 tpd), it was assumed that the increased material processed at OAL would consist of the same percentages observed in the 9-week period described above. Assuming the other (non-waste haul) vehicles and landfill processing equipment would increase proportionally to the increase in daily material processed (and assuming that the $PM_{2.5}$ emissions rate would be approximately 80 percent of the PM_{10} emissions rate), the resulting pollutant emissions are shown in Table N.

Table N shows that on days for which OAL accepts 10,000 tons of commodities, the operational emissions would remain under the emission thresholds currently certified for OAL in Final EIR 588.

Table N: Daily Regional Haul Vehicle Emissions for 10,000 Tons per Day

Emissions Source	Emission Rates (lbs/day)				
	CO	ROG	NO_X	PM_{10}	$PM_{2.5}$
Waste Haul Vehicles (for approximately 10,000 tons of permitted waste)	59	9.1	260	7.4	6.9
Other (Non-Waste Haul) Vehicles	4	0.29	2.6	0.74	0.59
Landfill Processing Equipment	120	28	240	12	9.6
Stationary Sources (Fugitive and Processed Landfill Gas)	487	607	412	81	65
Total Operational Emissions	670	644	915	101	82
Final EIR 588 Emissions Thresholds Currently Certified for OAL	**910**	**657**	**1,215**	**114**	**91**
Significant?	**No**	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc., February 2014.
CO = carbon monoxide
CO_2 = carbon dioxide
EIR = Environmental Impact Report
lbs/day = pounds per day
NO_X = nitrogen oxides
OAL = Olinda Alpha Landfill
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
PM_{10} = particulate matter less than 10 microns in diameter
ROG = reactive organic gases

2.2.4 Climate Change Impacts

In addition, a calculation of the GHG emissions from operations as described in Final EIR 588 were calculated in the June 2013 White Paper by Tetra Tech (attached in Appendix C), as shown in Table O.

Table O: Greenhouse Gas Emissions Per Final EIR 588 Conditions in 2004

GHG Sources	GHGs, CO_2e (MT)
Waste Haul Vehicles	10,336
Other (Non-Waste Haul) Vehicles	2,748
Flare Operation	166,393
Total GHG Emissions	179,477

Source: Air Quality Analysis for Additional Waste Importation and Greenhouse Gas Inventory Olinda Alpha Landfill, Tetra Tech, June 2013.
CO2e = carbon dioxide equivalent
EIR = Environmental Impact Report
GHGs = greenhouse gases
MT = metric tons

In comparing these emissions to the SCAQMD-tiered interim GHG significance criteria, it is not exempt as described in Tier 1, nor is there a GHG reduction plan in the Orange County General Plan or any other GHG reduction plan applicable to the project, per Tier 2. The Tier 3 screening significance threshold level for industrial projects is 10,000 tons per year of CO_2e. As shown in Table O, the project exceeds this threshold, and the emissions of GHGs would have been considered significant if they had been included in the Final EIR 588 using the current SCAQMD draft interim GHG threshold.

Table P shows the current (2014) GHG emissions as described in the June 2013 White Paper by Tetra Tech. The total GHG emissions are 475,084 MT per year of CO_2e. Fugitive emissions of landfill gas (LFG) from buried waste are not required to be addressed in CEQA by the SCAQMD at this time.

Table P: Current (2013) Greenhouse Gas Emissions (6,800 Tons per Day)

GHG Sources	GHGs, CO_2e (MT)
Waste Haul Vehicles	16,026
Other (Non-Waste Haul) Vehicles	2,748
Flare Operation	166,390
Fugitive LFG	451,000
Gas-to-Energy Credit	-161,080
Net GHG Emissions (including Fugitive LFG)	475,084
Net GHG Emissions (excluding Fugitive LFG)	24,084

Source: Air Quality Analysis for Additional Waste Importation and Greenhouse Gas Inventory Olinda Alpha Landfill, Tetra Tech, June 2013, Table 6.
CO_2e = carbon dioxide equivalent LFG = landfill gas
GHG = greenhouse gas MT = metric tons

These emissions are 95 percent of the total operational GHG emissions. If the fugitive LFG emissions are not included, the total operational GHG emissions are 24,084 MT per year. The appropriate screening significance threshold level is still the 10,000 tons per year of CO_2e for industrial projects. As shown in Table P, the project currently exceeds this threshold. However, using the same criteria used for the air quality impacts above, comparing the current emissions to the Final EIR 588 approved levels, the current emissions of GHGs shown in Table P would be less than those that would have been included in Final EIR 588 and thus, would be considered less than significant.

To determine the total climate change/greenhouse gas impact from increasing the waste input from 6,800 tpd to 10,000 tpd, the same assumptions used in the air quality analysis described above were used. The resulting greenhouse gas emissions are shown in Table Q.

Table Q: 10,000 Tons per Day Greenhouse Gas Emissions (in 2013)

GHG Sources	GHGs, CO2e (MT)
Waste Haul Vehicles	23,568
Other (Non-Waste Haul) Vehicles	4,041
Flare Operation	166,390
Fugitive LFG	451,000
Gas-to-Energy Credit	-161,080
Net GHG Emissions (including Fugitive LFG)	483,919
Net GHG Emissions (excluding Fugitive LFG)	32,919

Source: LSA Associates, Inc., February 2014.
CO_2e = carbon dioxide equivalent LFG = landfill gas
GHG = greenhouse gas MT = metric tons

Again, using the same criteria used above, comparing the emissions from 10,000 tpd operating level to the Final EIR 588 approved levels, the resulting emissions of GHGs shown in Table Q would be less than those that would have been included in Final EIR 588 and thus, would be considered less than significant.

3.0 CONCLUSION

The information included in this White Paper supports the conclusion that the proposed maximum daily waste collection project would not result in any new significant environmental (noise, air quality, traffic, and/or GHG emissions) effects or a substantial increase in the severity of impacts previously identified in the certified Final EIR 588.