

Appendix P

Energy Conservation and Infrastructure

Appendix P.1

Energy Calculations

Paseo Marina

Draft EIR

Technical Appendix for Energy

- Energy Calculations Summary
- Construction Equipment Fuel Usage
- Construction Vehicle Fuel Usage
- Construction Water Usage
- Operational Energy Summary
- Peak Electricity Demand

Paseo Marina - Energy Calculations

Summary of Energy Use During Construction

Project	
Electricity	
Water Consumption	39,876 kWh
Temporary Power Equivalent	98,482 kWh
Total:	138,357 kWh
Gasoline	
On Road	112,142 Gallons
Off Road	0
Total:	112,142 Gallons
Diesel	
On Road	317,707 Gallons
Off Road	270,691 Gallons
Total:	588,398 Gallons

Summary of Energy Use During Operations

	Baseline (Buildout)	Project Buildout no PDFs	Project with PDFs and Project Characteristics	Percent Reduction from Project Buildout no PDFs	Net (Project - Existing)
Electricity					
Electricity (building)	1,643,298	4,577,214	4,086,592 kWh/year	-11%	2,443,294
Electricity (water)	127,448	805,110	621,867 kWh/year	-23%	494,419
Electricity Total	1,770,746	5,382,324	4,708,459 kWh/year	-13%	2,937,713
Natural Gas	174,686	10,017,602	9,563,342 cu ft/year	-5%	9,388,656
Mobile					
Gasoline	159,476	712,909	281,780 Gallons/year	-60%	122,304
Diesel	4,884	21,835	8,630 Gallons/year	-60%	3,746

Calculation of Diesel Usage During Construction (Offroad Equipment):

Phase Name	Off Road Equipment Type	Units	Hours	HP	Load Factor	Avg. Daily Factor	Number of Days	Diesel Fuel Usage
Demolition	Air Compressors	1	8	78	0.48	0.6	85	763.776
Demolition	Concrete/Industrial Saws	2	8	81	0.73	0.6	85	2412.504
Demolition	Crushing/Proc. Equipment	1	8	85	0.78	0.6	85	1352.52
Demolition	Off-Highway Tractors	2	8	124	0.44	0.6	85	2226.048
Demolition	Rough Terrain Forklifts	1	8	100	0.4	0.6	85	816
Demolition	Rubber Tired Loaders	1	8	203	0.36	0.6	85	1490.832
Demolition	Signal Boards	2	8	6	0.82	0.6	85	200.736
Demolition	Skid Steer Loaders	1	8	65	0.37	0.6	85	490.62
Demolition	Welders	1	8	46	0.45	0.6	85	422.28
Grading Building 1-3	Bore/Drill Rigs	2	8	221	0.5	0.6	262	13896.48
Grading Building 1-3	Cement and Mortar Mixers	1	8	9	0.56	0.6	262	316.9152
Grading Building 1-3	Excavators	2	8	158	0.38	0.6	262	7550.6304
Grading Building 1-3	Off-Highway Tractors	2	8	84	0.74	0.6	262	7817.2416
Grading Building 1-3	Rough Terrain Forklifts	1	8	100	0.4	0.6	262	2515.2
Grading Building 1-3	Rubber Tired Loaders	2	8	203	0.36	0.6	262	9190.5408
Grading Building 1-3	Signal Boards	2	8	6	0.82	0.6	262	618.7392
Grading Building 1-3	Skid Steer Loaders	1	8	65	0.37	0.6	262	1512.264
Grading Building 1-3	Welders	2	8	46	0.45	0.6	262	2603.232
Podium Building 1	Air Compressors	1	8	78	0.48	0.6	173	1554.5088
Podium Building 1	Cement and Mortar Mixers	3	8	9	0.56	0.6	173	627.7824
Podium Building 1	Concrete/Industrial Saws	3	8	81	0.73	0.6	173	7365.2328
Podium Building 1	Cranes	1	8	231	0.29	0.6	173	2781.4248
Podium Building 1	Forklifts	2	8	89	0.2	0.6	173	1478.112
Podium Building 1	Off-Highway Tractors	3	8	124	0.44	0.6	173	6795.9936
Podium Building 1	Plate Compactors	2	8	8	0.43	0.6	173	285.6576
Podium Building 1	Rough Terrain Forklifts	1	8	100	0.4	0.6	173	1660.8
Podium Building 1	Signal Boards	2	8	6	0.82	0.6	173	408.5568
Podium Building 1	Skid Steer Loaders	1	8	65	0.37	0.6	173	998.556
Podium Building 1	Welders	2	8	46	0.45	0.6	173	1718.928
Podium Building 2	Air Compressors	1	8	78	0.48	0.6	173	1554.5088
Podium Building 2	Cement and Mortar Mixers	3	8	9	0.56	0.6	173	627.7824
Podium Building 2	Concrete/Industrial Saws	3	8	81	0.73	0.6	173	7365.2328
Podium Building 2	Cranes	1	8	231	0.29	0.6	173	2781.4248
Podium Building 2	Forklifts	2	8	89	0.2	0.6	173	1478.112
Podium Building 2	Off-Highway Tractors	3	8	124	0.44	0.6	173	6795.9936
Podium Building 2	Plate Compactors	2	8	8	0.43	0.6	173	285.6576
Podium Building 2	Rough Terrain Forklifts	1	8	100	0.4	0.6	173	1660.8
Podium Building 2	Signal Boards	2	8	6	0.82	0.6	173	408.5568
Podium Building 2	Skid Steer Loaders	1	8	65	0.37	0.6	173	998.556
Podium Building 2	Welders	2	8	46	0.45	0.6	174	1728.864
Podium Building 3	Air Compressors	1	8	78	0.48	0.6	174	1563.4944
Podium Building 3	Cement and Mortar Mixers	3	8	9	0.56	0.6	174	631.4112
Podium Building 3	Concrete/Industrial Saws	3	8	81	0.73	0.6	174	7407.8064
Podium Building 3	Cranes	1	8	231	0.29	0.6	174	2797.5024
Podium Building 3	Forklifts	2	8	89	0.2	0.6	174	1486.656
Podium Building 3	Off-Highway Tractors	3	8	124	0.44	0.6	174	6835.2768
Podium Building 3	Plate Compactors	2	8	8	0.43	0.6	174	287.3088
Podium Building 3	Rough Terrain Forklifts	1	8	100	0.4	0.6	174	1670.4
Podium Building 3	Signal Boards	2	8	6	0.82	0.6	174	410.9184
Podium Building 3	Skid Steer Loaders	1	8	65	0.37	0.6	174	1004.328
Podium Building 3	Welders	2	8	46	0.45	0.6	174	1728.864
Construction Building 1	Air Compressors	3	8	78	0.48	0.6	413	11133.1584
Construction Building 1	Concrete/Industrial Saws	1	8	81	0.73	0.6	413	5860.9656
Construction Building 1	Cranes	1	7	231	0.29	0.6	413	5810.0427
Construction Building 1	Forklifts	3	8	89	0.2	0.6	413	5293.008
Construction Building 1	Off-Highway Tractors	1	8	124	0.44	0.6	413	5407.9872
Construction Building 1	Rough Terrain Forklifts	1	8	100	0.4	0.6	413	3964.8
Construction Building 1	Rubber Tired Loaders	1	8	203	0.36	0.6	413	7243.6896
Construction Building 1	Signal Boards	2	8	6	0.82	0.6	413	975.3408
Construction Building 1	Skid Steer Loaders	1	8	65	0.37	0.6	413	2383.836
Construction Building 1	Welders	2	8	46	0.45	0.6	413	4103.568
Construction Building 2	Air Compressors	3	8	78	0.48	0.6	414	11160.1152
Construction Building 2	Concrete/Industrial Saws	1	8	81	0.73	0.6	414	5875.1568
Construction Building 2	Cranes	1	7	231	0.29	0.6	414	5824.1106
Construction Building 2	Forklifts	3	8	89	0.2	0.6	414	5305.824
Construction Building 2	Off-Highway Tractors	1	8	124	0.44	0.6	414	5421.0816
Construction Building 2	Rough Terrain Forklifts	1	8	100	0.4	0.6	414	3974.4
Construction Building 2	Rubber Tired Loaders	1	8	203	0.36	0.6	414	7261.2288
Construction Building 2	Signal Boards	2	8	6	0.82	0.6	414	977.7024
Construction Building 2	Skid Steer Loaders	1	8	65	0.37	0.6	414	2389.608
Construction Building 2	Welders	2	8	46	0.45	0.6	414	4113.504
Construction Building 3	Air Compressors	3	8	78	0.48	0.6	150	4043.52
Construction Building 3	Concrete/Industrial Saws	1	8	81	0.73	0.6	150	2128.68
Construction Building 3	Cranes	1	7	231	0.29	0.6	150	2110.185
Construction Building 3	Forklifts	3	8	89	0.2	0.6	150	1922.4
Construction Building 3	Off-Highway Tractors	1	8	124	0.44	0.6	150	1964.16
Construction Building 3	Rough Terrain Forklifts	1	8	100	0.4	0.6	150	1440

Construction Building 3	Rubber Tired Loaders	1	8	203	0.36	0.6	150	2630.88
Construction Building 3	Signal Boards	2	8	6	0.82	0.6	150	354.24
Construction Building 3	Skid Steer Loaders	1	8	65	0.37	0.6	150	865.8
Construction Building 3	Welders	2	8	46	0.45	0.6	150	1490.4
Paving Building 1	Air Compressors	2	8	78	0.48	0.6	22	395.3664
Paving Building 1	Cement and Mortar Mixers	2	8	9	0.56	0.6	22	53.2224
Paving Building 1	Concrete/Industrial Saws	1	8	81	0.73	0.6	22	312.2064
Paving Building 1	Forklifts	2	8	89	0.2	0.6	22	187.968
Paving Building 1	Pavers	1	8	130	0.42	0.6	22	288.288
Paving Building 1	Paving Equipment	1	8	132	0.36	0.6	22	250.9056
Paving Building 1	Plate Compactors	2	8	8	0.43	0.6	22	36.3264
Paving Building 1	Rollers	1	8	80	0.38	0.6	22	160.512
Paving Building 1	Rough Terrain Forklifts	1	8	100	0.4	0.6	22	211.2
Paving Building 1	Rubber Tired Loaders	1	8	203	0.36	0.6	22	385.8624
Paving Building 1	Signal Boards	2	8	6	0.82	0.6	22	51.9552
Paving Building 1	Skid Steer Loaders	1	8	65	0.37	0.6	22	126.984
Paving Building 1	Trenchers	1	8	78	0.5	0.6	22	205.92
Paving Building 1	Welders	1	8	46	0.45	0.6	22	109.296
Paving Building 2	Air Compressors	2	8	78	0.48	0.6	43	772.7616
Paving Building 2	Cement and Mortar Mixers	2	8	9	0.56	0.6	43	104.0256
Paving Building 2	Concrete/Industrial Saws	1	8	81	0.73	0.6	43	610.2216
Paving Building 2	Forklifts	2	8	89	0.2	0.6	43	367.392
Paving Building 2	Pavers	1	8	130	0.42	0.6	43	563.472
Paving Building 2	Paving Equipment	1	8	132	0.36	0.6	43	490.4064
Paving Building 2	Plate Compactors	2	8	8	0.43	0.6	43	71.0016
Paving Building 2	Rollers	1	8	80	0.38	0.6	43	313.728
Paving Building 2	Rough Terrain Forklifts	1	8	100	0.4	0.6	43	412.8
Paving Building 2	Rubber Tired Loaders	1	8	203	0.36	0.6	43	754.1856
Paving Building 2	Signal Boards	2	8	6	0.82	0.6	43	101.5488
Paving Building 2	Skid Steer Loaders	1	8	65	0.37	0.6	43	248.196
Paving Building 2	Trenchers	1	8	78	0.5	0.6	43	402.48
Paving Building 2	Welders	1	8	46	0.45	0.6	43	213.624
Paving Building 3	Air Compressors	2	8	78	0.48	0.6	45	808.704
Paving Building 3	Cement and Mortar Mixers	2	8	9	0.56	0.6	45	108.864
Paving Building 3	Concrete/Industrial Saws	1	8	81	0.73	0.6	45	638.604
Paving Building 3	Forklifts	2	8	89	0.2	0.6	45	384.48
Paving Building 3	Pavers	1	8	130	0.42	0.6	45	589.68
Paving Building 3	Paving Equipment	1	8	132	0.36	0.6	45	513.216
Paving Building 3	Plate Compactors	2	8	8	0.43	0.6	45	74.304
Paving Building 3	Rollers	1	8	80	0.38	0.6	45	328.32
Paving Building 3	Rough Terrain Forklifts	1	8	100	0.4	0.6	45	432
Paving Building 3	Rubber Tired Loaders	1	8	203	0.36	0.6	45	789.264
Paving Building 3	Signal Boards	2	8	6	0.82	0.6	45	106.272
Paving Building 3	Skid Steer Loaders	1	8	65	0.37	0.6	45	259.74
Paving Building 3	Trenchers	1	8	78	0.5	0.6	45	421.2
Paving Building 3	Welders	1	8	46	0.45	0.6	45	223.56
Total Diesel Usage for Construction (Offroad Equipment):								270,691 gallons of diesel fuel

gallons of diesel fuel per horsepower-hour= 0.05

Notes: Equipment assumptions are provide in the CalEEMod output files and fuel usage estimate of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.

EMFAC2014 Emissions Inventory

Region Type: Air Basin

Region: South Coast

Calendar Year: 2020

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Region	Veh_Class	Fuel	Speed (miles/hr)	Population (vehicles)	VMT (miles/day)	Trips (trips/day)	Fuel_Gas (1000 gallons/day)	Fuel_DSL (1000 gallons/day)	Miles per Gallon
South Coast	LDA	GAS	Aggregate	6057423.59	209765905.1	38222995.08	7586.347458	0	27.7
South Coast	LDT1	GAS	Aggregate	513376.136	17335871.67	3118562.249	746.5340341	0	23.2
South Coast	LDT2	GAS	Aggregate	2127118.46	79246264.35	13460775.55	3828.123041	0	20.7
						Construction Worker Trip (Composite LDA/LDT1/LDT2):			24.8
South Coast	T7 tractor cnstruction	DSL	Aggregate	3315.44367	297497.7758	0	0	49.06718655	6.1

Notes: Consistent with CalEEMod, a construction worker trip is assumed to be a composite of 50% LDA , 25% for LDT1, and 25% for LDT2. Used EMFAC 2011 Categories for construction as EMFAC2011 has specific categories for vehicle class T7.

Calculation of Gasoline and Diesel Usage During Construction (Onroad Vehicles):

Phase Name	Daily Woker Trips	Daily Vendor Trips	Days	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Trip Length (miles)			Total Length (miles)			Avg. Daily Factor (worker and vendor)	Gallons of Fuel	
							Worker	Vendor	Haul	Worker	Vendor	Haul		Gasoline	Diesel
Demolition	50	4	85	4250	340	5100	14.7	6.9	40.4	62475	2346	206040	0.6	1511.13	34214.95
Grading Building 1-3	185	4	262	48470	1048	31429	14.7	6.9	40.4	712509	7231.2	1269732	0.6	17233.99	210136.2
Podium Building 1	75	70	173	12975	12110	0	14.7	6.9	20	190732.5	83559	0	0.6	4613.39	8268.98
Podium Building 2	75	70	173	12975	12110	0	14.7	6.9	20	190732.5	83559	0	0.6	4613.39	8268.98
Podium Building 3	75	70	174	13050	12180	0	14.7	6.9	20	191835	84042	0	0.6	4640.057	8316.777
Construction Building 1	225	70	413	92925	28910	0	14.7	6.9	20	1365998	199479	0	0.6	33040.41	19740.4
Construction Building 2	225	70	414	93150	28980	0	14.7	6.9	20	1369305	199962	0	0.6	33120.41	19788.19
Architectural Coating	0	0	260	0	0	0	14.7	6.9	20	0	0	0	0.6	0	0
Construction Building 3	225	70	150	33750	10500	0	14.7	6.9	20	496125	72450	0	0.6	12000.15	7169.635
Paving Building 1	35	24	22	770	528	0	14.7	6.9	20	11319	3643.2	0	0.6	273.7811	360.5302
Paving Building 2	35	24	43	1505	1032	0	14.7	6.9	20	22123.5	7120.8	0	0.6	535.1177	704.6727
Paving Building 3	35	24	45	1575	1080	0	14.7	6.9	20	23152.5	7452	0	0.6	560.0069	737.4482
Total:													112,142	317,707	

Worker Miles per gallon= 24.81 gasoline
Vedor/Haul miles per gallon= 6.06 diesel

Notes: Consistent with CalEEMod worker vehicles are assumed to be gasoline and 50% LDA, 25%LDT1, and 25% LDT2. Vendor and haul trips are assumed to be 100% diesel Heavy Duty Trucks (T7)

Water Usage for Control of Fugitive Dust during Construction:

Phase	Days	Average Daily Acentage Distrubed	Gallons Per Year	Electricity (kWhr)
Demolition	85	0	0	0
Grading Building 1-3	262	4.55	3,596,186	34,980
Podium Building 1	173	0	0	0
Podium Building 2	173	0	0	0
Podium Building 3	174	0	0	0
Construction Building 1	413	0	0	0
Construction Building 2	414	0	0	0
Architectural Coating	260	0	0	0
Construction Building 3	150	0	0	0
Paving Building 1	22	1.5	100,657	979
Paving Building 2	43	1.5	196,738	1,914
Paving Building 3	45	1.5	205,889	2,003
Total:			4,099,469	39,876

Water application rate= 3020 gal/acre/day
 kWhr equivalent= 0.00973 kWhr

Notes: 1) Gallons per year of water usage for dust control is calculated based on a minimum control efficiency of 66% (three times daily) with an application rate of 3,020 gal/acre/day (Air & Waste Management Association Air Pollution Engineering Manual (1992 Edition)) and average of 26 construction days per month.

2) CalEEMod Default: Each gallon of delivered potable water in Southern California is associated with 0.009727 kWhr of electricity).

Temporary Power (lighting, tools) During Construction:

Caterpillar 40-C4.4 Generator^a

Peak Power Rating - Prime (kW)	36
Typical Load	70%
Average Output (kW)	25.2
Hours per Day	4
Average Daily Output (kWh)	100.8
Building Construction Phase Durati	977
Total Construction (kWh)	98,482
Total Construction (MWh)	98.5

^a<https://www.albanecat.com/content/uploads/2014/06/40-C4.4-Spec-Sheet.pdf>

EMFAC2014 Emissions Inventory
 Region Type: Air Basin
 Region: South Coast
 Calendar Year: 2023
 Season: Annual

Vehicle Classification: EMFAC2011 Categories

Region	CalYr	Season	Veh_Class	Fuel	MdYr	Speed	Population	VMT	Trips	Fuel_Gas		Fuel_DSL	
										(miles/hr)	(vehicles)	(miles/day)	(trips/day)
South Coast	2023	Annual	LDA	GAS	Aggregated	Aggregated	6264982.16	209913843.8	39567465	6950.725188	0		
South Coast	2023	Annual	LDA	DSL	Aggregated	Aggregated	68231.2764	2395771.457	427576.6	0	59.47674109		
South Coast	2023	Annual	LDT1	GAS	Aggregated	Aggregated	524963.824	17443322.44	3198449.4	685.9808977	0		
South Coast	2023	Annual	LDT1	DSL	Aggregated	Aggregated	566.917344	15079.56095	2949.351	0	0.530284268		
South Coast	2023	Annual	LDT2	GAS	Aggregated	Aggregated	2280873.15	82643235.78	14458786	3602.056455	0		
South Coast	2023	Annual	LDT2	DSL	Aggregated	Aggregated	4457.65336	169032.7022	28615.437	0	5.518573443		
South Coast	2023	Annual	LHD1	GAS	Aggregated	Aggregated	101835.847	2836538.916	1517202.4	256.8877602	0		
South Coast	2023	Annual	LHD1	DSL	Aggregated	Aggregated	96131.4384	3321303.353	1209212.6	0	158.9216856		
South Coast	2023	Annual	LHD2	GAS	Aggregated	Aggregated	23131.973	792817.5726	344631.93	76.60380604	0		
South Coast	2023	Annual	LHD2	DSL	Aggregated	Aggregated	42055.0468	1595083.718	528999.58	0	83.03195225		
South Coast	2023	Annual	MCY	GAS	Aggregated	Aggregated	308501.647	1969480.034	616941.59	56.14954463	0		
South Coast	2023	Annual	MDV	GAS	Aggregated	Aggregated	1435217.69	46739844.42	8932873.6	2782.188459	0		
South Coast	2023	Annual	MDV	DSL	Aggregated	Aggregated	27835.2241	1018901.6	178160.76	0	43.0452531		
South Coast	2023	Annual	MH	GAS	Aggregated	Aggregated	34406.2524	277627.0723	3442.0015	37.20200301	0		
South Coast	2023	Annual	MH	DSL	Aggregated	Aggregated	9347.50271	77260.38527	934.75027	0	7.498703852		
South Coast	2023	Annual	OBUS	GAS	Aggregated	Aggregated	8907.14328	391252.705	178214.12	53.8881013	0		
South Coast	2023	Annual	SBUS	GAS	Aggregated	Aggregated	2552.0065	93077.74203	10208.026	8.137394815	0		
South Coast	2023	Annual	T6TS	GAS	Aggregated	Aggregated	19258.4987	928087.5087	385324.04	130.9319991	0		
South Coast	2023	Annual	T7IS	GAS	Aggregated	Aggregated	845.222589	107869.2013	16911.214	22.32171747	0		
South Coast	2023	Annual	UBUS	GAS	Aggregated	Aggregated	2458.62325	269036.4331	9834.493	53.0431744	0		
South Coast	2023	Annual	UBUS	DSL	Aggregated	Aggregated	4123.34193	453343.6808	16493.368	0	92.69912806		
									MPG		Gallons Per Mile		
Totals							373,451,810.08		14,716.12	450.72	24.6	0.04	
Total (GAS)							364,406,033.63		0.98		24.8	0.04	
Total (DSL)							9,045,776.46		0.02		20.1	0.05	

Paseo Marina - Baseline (Buildout)
Los Angeles-South Coast County, Annual

Land Use Details

<i>Land Uses</i>	<i>Size</i>	<i>Metric</i>	<i>Lot Acreage</i>	<i>Floor Surface Area</i>	<i>Population</i>
Parking Lot	99.00	Space	0.89	396,000.00	0
Strip Mall	100.78	1000sqft	2.31	100,780.00	0

Trip Summary Information

<i>Land Uses</i>	<i>Average Daily Trip Rate</i>			<i>Mitigated</i>
	<i>Weekday</i>	<i>Saturday</i>	<i>Sunday</i>	
Parking Lot	0.00	0.00	0.00	0
Strip Mall	4,304.31	4,082.60	1,983.35	4,047,044
Total	4,304.31	4,082.60	1,983.35	4,047,044

Mitigated Gasoline and Diesel Usage

	<i>Gasoline</i>	<i>Diesel</i>
<i>Miles/Gallon</i>	24.8	20.1
<i>% Fleet Mix</i>	97.6%	2.4%
Total (Gallons):	159,476	4,884

Energy by Land Use - Natural Gas

<i>Land Uses</i>	<i>kBTU/yr</i>	<i>cu ft/year</i>
Parking Lot	0	0
Strip Mall	183,420	174,686
Total	183,420	174,686

Energy by Land Use - Electricity

<i>Land Uses</i>	<i>kWH/yr</i>
Parking Lot	34,848
Strip Mall	1,608,450
Total	1,643,298

Water Detail (Unmitigated)

<i>Land Uses</i>	<i>Indoor Use</i>	<i>Outdoor Use</i>	<i>Electricity Use</i>
	<i>(Mgal)</i>	<i>(Mgal)</i>	<i>(kWh/yr)</i>
Parking Lot	0	0	0
Strip Mall	7.47	4.58	127,448
Total	7.47	4.58	127,448

Notes: Indoor water results in 0.0111 kWhr of electricity usage per gallon from delivery, treatment, and distribution of water within Southern California (CalEEMod). Outdoor water results in 0.009727 kWhr of electricity usage per gallon from delivery and distribution of water within Southern California (CalEEMod).

**Paseo Marina - Project Buildout with no PDFs
Los Angeles-South Coast County, Annual**

Land Use Details

<i>Land Uses</i>	<i>Size</i>	<i>Metric</i>	<i>Lot Acreage</i>	<i>Floor Surface Area</i>	<i>Population</i>
Enclosed Parking with Elevator	609.00	Space	5.48	243,600.00	0
Unenclosed Parking with Elevator	608.00	Space	5.47	243,200.00	0
High Turnover (Sit Down Restaurant)	13.65	1000sqft	0.31	13,650.00	0
Apartment Mid Rise	658.00	Dwelling Unit	17.32	647,029.00	1882
Strip Mall	13.65	1000sqft	0.31	13,650.00	0

Trip Summary Information

<i>Land Uses</i>	<i>Average Daily Trip Rate</i>			<i>Unmitigated</i>
	<i>Weekday</i>	<i>Saturday</i>	<i>Sunday</i>	
Enclosed Parking with Elevator	0.00	0.00	0.00	0
Unenclosed Parking with Elevator	0.00	0.00	0.00	0
High Turnover (Sit Down Restaurant)	1,735.60	2,161.75	1,799.62	2,460,757
Apartment Mid Rise	4,375.70	4,204.62	3,855.88	14,615,159
Strip Mall	582.99	552.96	268.77	1,015,629
Total	6,694.29	6,919.33	5,924.27	18,091,545

Unmitigated Gasoline and Diesel Usage

	<i>Gasoline</i>	<i>Diesel</i>
<i>Miles/Gallon</i>	24.8	20.1
<i>% Fleet Mix</i>	97.6%	2.4%
Total (Gallons):	712,909	21,835

Energy by Land Use - Natural Gas (Unmitigated)

<i>Land Uses</i>	<i>kBTU/yr</i>	<i>cu ft/year</i>
Enclosed Parking with Elevator	0	0
Unenclosed Parking with Elevator	0	0
High Turnover (Sit Down Restaurant)	3,152,740	3,002,610
Apartment Mid Rise	7,343,220	6,993,543
Strip Mall	22,523	21,450
Total	10,518,483	10,017,602

Energy by Land Use - Electricity (Unmitigated)

<i>Land Uses</i>	<i>kWH/yr</i>
Enclosed Parking with Elevator	577,332
Unenclosed Parking with Elevator	471,808
High Turnover (Sit Down Restaurant)	605,651
Apartment Mid Rise	2,736,100
Strip Mall	186,323
Total	4,577,214

Water Detail (Unmitigated)

<i>Land Uses</i>	<i>Indoor Use (Mgal)</i>	<i>Outdoor Use (Mgal)</i>	<i>Electricity Use (kWh/yr)</i>
Enclosed Parking with Elevator	0.00	0.00	0
Unenclosed Parking with Elevator	0.00	0.00	0
High Turnover (Sit Down Restaurant)	4.14	0.26	48,608
Apartment Mid Rise	42.87	27.03	739,240
Strip Mall	1.01	0.62	17,262
Total	48.03	27.91	805,110

Notes: Indoor water results in 0.0111 kWhr of electricity usage per gallon from delivery, treatment, and distribution of water within Southern California (CalEEMod). Outdoor water results in 0.009727 kWhr of electricity usage per gallon from delivery and distribution of water within Southern California (CalEEMod).

Paseo Marina - Project Operations
Los Angeles-South Coast County, Annual

Land Use Details

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking with Elevator	609	Space	5.48	243600	0
Unenclosed Parking with Elevator	608	Space	5.47	243200	0
High Turnover (Sit Down Restaurant)	13.65	1000sqft	0.31	13650	0
Apartment Mid Rise	658	Dwelling Unit	17.32	647029	1882
Strip Mall	13.65	1000sqft	0.31	13650	0

Trip Summary Information

Land Uses	Average Daily Trip Rate			Mitigated
	Weekday	Saturday	Sunday	
Enclosed Parking with Elevator	0.00	0.00	0.00	0
Unenclosed Parking with Elevator	0.00	0.00	0.00	0
High Turnover (Sit Down Restaurant)	1,735.60	2,161.75	1,799.62	972,624
Apartment Mid Rise	4,375.70	4,204.62	3,855.88	5,776,698
Strip Mall	582.99	552.96	268.77	401,431
Total	6,694.29	6,919.33	5,924.27	7,150,753

Mitigated Gasoline and Diesel Usage

	Gasoline	Diesel
Miles/Gallon	24.8	20.1
% Fleet Mix	97.6%	2.4%
Total (Gallons):	281,780	8,630

Energy by Land Use - Natural Gas (Mitigated)

Land Uses	kBTU/yr	cu ft/year
Enclosed Parking with Elevator	0	0
Unenclosed Parking with Elevator	0	0
High Turnover (Sit Down Restaurant)	3,093,790	2,946,467
Apartment Mid Rise	6,926,780	6,596,933
Strip Mall	20,939	19,942
Total	10,041,509	9,563,342

Energy by Land Use - Electricity (Mitigated)

Land Uses	kWH/yr
Enclosed Parking with Elevator	460,282
Unenclosed Parking with Elevator	365,408
High Turnover (Sit Down Restaurant)	566,878
Apartment Mid Rise	2,535,090
Strip Mall	158,934
Total	4,086,592

Water Detail (Unmitigated)

Land Uses	Indoor Use (Mgal)	Outdoor Use (Mgal)	Electricity Use (kWh/yr)
Enclosed Parking with Elevator	0.00	0.00	0
Unenclosed Parking with Elevator	0.00	0.00	0
High Turnover (Sit Down Restaurant)	3.31	0.21	38,886
Apartment Mid Rise	32.30	21.62	569,171
Strip Mall	0.81	0.50	13,810
Total	36.42	22.12	621,867

Notes: Indoor water results in 0.0111 kWhr of electricity usage per gallon from delivery, treatment, and distribution of water within Southern California (CalEEMod). Outdoor water results in 0.009727 kWhr of electricity usage per gallon from delivery and distribution of water within Southern California (CalEEMod).

Peak Electricity Demand Calculations

Electrical Load Factor Equation

Load Factor (%)¹ **52%**

Project Electricity Demand (Operational)

Annual Demand

Building (MWh)	2,443
Water (MWh)	494
Total (MWh)	2,938

Average Daily Demand

Building (kWh)	6,694
Water (kWh)	1,355
Total (kWh)	8,049

Average Load

Building (kW)	279
Water (kW)	56
Total (kW)	335

Peak Load Calculation

Peak Load (kW)	593
Systemwide Peak Load (MWh)	5,854
Percent of Peak	0.010%

¹2017 Report: System Efficiency of California's Electric Grid. California Public Utilities Commission. 2017. Page 11, Figure 6. Visual estimate.

EMFAC Emission inventories for County

EMFAC2014 (v1.0.7) Emissions Inventory

Region Type: County

Region: Los Angeles

Calendar Year: 2016

Season: Annual

Vehicle Classification: EMFAC2011 Categories

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Fuel_Gasoline (1000 gallons/day)	Fuel_DSL (1000 gallons/day)
Los Angeles	2016	All Other B	Aggregatec	Aggregatec	DSL	0.00	21.11
Los Angeles	2016	LDA	Aggregatec	Aggregatec	DSL	0.00	29.15
Los Angeles	2016	LDT1	Aggregatec	Aggregatec	DSL	0.00	0.63
Los Angeles	2016	LDT2	Aggregatec	Aggregatec	DSL	0.00	2.47
Los Angeles	2016	LHD1	Aggregatec	Aggregatec	DSL	0.00	82.60
Los Angeles	2016	LHD2	Aggregatec	Aggregatec	DSL	0.00	41.79
Los Angeles	2016	MDV	Aggregatec	Aggregatec	DSL	0.00	18.19
Los Angeles	2016	MH	Aggregatec	Aggregatec	DSL	0.00	4.04
Los Angeles	2016	Motor Coa	Aggregatec	Aggregatec	DSL	0.00	18.34
Los Angeles	2016	PTO	Aggregatec	Aggregatec	DSL	0.00	19.50
Los Angeles	2016	SBUS	Aggregatec	Aggregatec	DSL	0.00	15.18
Los Angeles	2016	T6 Ag	Aggregatec	Aggregatec	DSL	0.00	0.34
Los Angeles	2016	T6 CAIRP h	Aggregatec	Aggregatec	DSL	0.00	0.83
Los Angeles	2016	T6 CAIRP si	Aggregatec	Aggregatec	DSL	0.00	2.55
Los Angeles	2016	T6 instate c	Aggregatec	Aggregatec	DSL	0.00	13.42
Los Angeles	2016	T6 instate c	Aggregatec	Aggregatec	DSL	0.00	36.35
Los Angeles	2016	T6 instate f	Aggregatec	Aggregatec	DSL	0.00	94.70
Los Angeles	2016	T6 instate s	Aggregatec	Aggregatec	DSL	0.00	242.96
Los Angeles	2016	T6 OOS he	Aggregatec	Aggregatec	DSL	0.00	0.48
Los Angeles	2016	T6 OOS sm	Aggregatec	Aggregatec	DSL	0.00	1.46
Los Angeles	2016	T6 Public	Aggregatec	Aggregatec	DSL	0.00	7.76
Los Angeles	2016	T6 utility	Aggregatec	Aggregatec	DSL	0.00	1.91
Los Angeles	2016	T7 Ag	Aggregatec	Aggregatec	DSL	0.00	0.38
Los Angeles	2016	T7 CAIRP	Aggregatec	Aggregatec	DSL	0.00	165.01
Los Angeles	2016	T7 CAIRP ci	Aggregatec	Aggregatec	DSL	0.00	14.53
Los Angeles	2016	T7 NNOOS	Aggregatec	Aggregatec	DSL	0.00	196.09
Los Angeles	2016	T7 NOOS	Aggregatec	Aggregatec	DSL	0.00	66.49
Los Angeles	2016	T7 POLA	Aggregatec	Aggregatec	DSL	0.00	195.66
Los Angeles	2016	T7 Public	Aggregatec	Aggregatec	DSL	0.00	22.04
Los Angeles	2016	T7 Single	Aggregatec	Aggregatec	DSL	0.00	78.43
Los Angeles	2016	T7 single c	Aggregatec	Aggregatec	DSL	0.00	36.16
Los Angeles	2016	T7 SWCV	Aggregatec	Aggregatec	DSL	0.00	75.82
Los Angeles	2016	T7 tractor	Aggregatec	Aggregatec	DSL	0.00	212.42
Los Angeles	2016	T7 tractor c	Aggregatec	Aggregatec	DSL	0.00	27.15
Los Angeles	2016	T7 utility	Aggregatec	Aggregatec	DSL	0.00	1.63
Los Angeles	2016	UBUS	Aggregatec	Aggregatec	DSL	0.00	115.03
Los Angeles	2016	LDA	Aggregatec	Aggregatec	ELEC	0.00	0
Los Angeles	2016	LDT1	Aggregatec	Aggregatec	ELEC	0.00	0
Los Angeles	2016	LDA	Aggregatec	Aggregatec	GAS	5175.68	0
Los Angeles	2016	LDT1	Aggregatec	Aggregatec	GAS	530.59	0
Los Angeles	2016	LDT2	Aggregatec	Aggregatec	GAS	2524.56	0
Los Angeles	2016	LHD1	Aggregatec	Aggregatec	GAS	255.89	0
Los Angeles	2016	LHD2	Aggregatec	Aggregatec	GAS	59.34	0
Los Angeles	2016	MCY	Aggregatec	Aggregatec	GAS	30.30	0
Los Angeles	2016	MDV	Aggregatec	Aggregatec	GAS	2139.17	0
Los Angeles	2016	MH	Aggregatec	Aggregatec	GAS	27.02	0
Los Angeles	2016	OBUS	Aggregatec	Aggregatec	GAS	35.64	0
Los Angeles	2016	SBUS	Aggregatec	Aggregatec	GAS	3.56	0
Los Angeles	2016	T6TS	Aggregatec	Aggregatec	GAS	96.97	0
Los Angeles	2016	T7IS	Aggregatec	Aggregatec	GAS	14.35	0
Los Angeles	2016	UBUS	Aggregatec	Aggregatec	GAS	30.02	0
						3,986,927,263	679,846,446
					Fuel Usage for Project Construction	112,142	588,398
					Percentage of County for Construction	0.0028%	0.087%
					Net Fuel Usage for Project Operation	122,304	3,746
					Percentage of County for Operation	0.0031%	0.0006%

Appendix P.2

LADWP “Will Serve” Letter



POWER SYSTEM
ENGINEERING
DIVISION

METROPOLITAN SERVICE PLANNING

NEW BUSINESS & CUSTOMER
SUPPORT SUBSECTION

2633 Artesian Street, Suite 250, Los Angeles CA 90031 (213) 367-6000 FAX: (213) 367-6089

Antoine S. Raad
District Engineer

November 4, 2014

Mr. Johnathan Pyles
Moran Utility Services, Inc.
27127 Calle Arroyo, Suite 1907
San Juan Capistrano, CA 92675

Dear Mr. Pyles:

4325 Glencoe Avenue
Marina Del Rey, CA 90292

This is in response to your letter dated November 4, 2014 regarding electric service for the proposed project at the above address.

Electric service is available and will be provided in accordance with the Department of Water and Power Rules and Regulations. The estimated power requirement for this proposed project is part of the total load growth forecast for the City and has been taken into account in the planned growth of the power system

If you have any questions regarding this matter, please call Mr. Eugene Ramirez at (213) 367-6231.

Sincerely,



EUGENE RAMIREZ
Design Engineer
Metro West Service Planning

Appendix P.3

SoCal Gas “Will Serve” Letter



A  Sempra Energy utility®

January 28, 2015

Attn: Johnathan Pyles
Moran Utility Services, Inc.
27127 Calle Arroyo, Suite 1907
San Juan Capistrano, CA. 92675

RE: Will Serve Letter Request for – Job ID# 43-2015-01-00019: 4325 Glencoe Ave.
Marina Del Rey, CA. 90292

Dear Sir/Madam:

Thank you for inquiring about the availability of natural gas service for your project. We are pleased to inform you that Southern California Gas Company (SoCalGas) has facilities in the area where the above named project is being proposed. The service would be in accordance with SoCalGas' policies and extension rules on file with the California Public Utilities Commission (Commission) at the time contractual arrangements are made.

This letter should not be considered a contractual commitment to serve the proposed project, and is only provided for informational purposes only. The availability of natural gas service is based upon natural gas supply conditions and is subject to changes in law or regulation. As a public utility, SoCalGas is under the jurisdiction of the Commission and certain federal regulatory agencies, and gas service will be provided in accordance with the rules and regulations in effect at the time service is provided. Natural gas service is also subject to environmental regulations, which could affect the construction of a main or service line extension (for example, if hazardous wastes were encountered in the process of installing the line). Applicable regulations will be determined once a contract with SoCalGas is executed.

If you need assistance choosing the appropriate gas equipment for your project, or would like to discuss the most effective applications of energy efficiency techniques, please contact our area Service Center at 800-427-2200.

Thank you again for choosing clean, reliable, and safe natural gas, your best energy value.

Sincerely,

Pedro Reyes
Pipeline Planning Associate
Compton Headquarters