

Appendix M

Energy Calculations

One San Pedro Specific Plan Construction Energy Demand

Last Updated: 05/17/2023

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors [1]:

HP: 0 to 100	0.0588	HP: Greater than 100	0.0529
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Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT						
Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phase	Fuel Used (gallons)
Trenchers	1	8	78	0.5	327 Harbor Site Preparation	165.01
Excavators	2	8	158	0.38	327 Harbor Site Grading	457.01
Air Compressors	2	8	78	0.48	327 Harbor Site Grading	316.82
Plate Compactors	1	8	8	0.43	327 Harbor Site Grading	14.55
Pumps	1	8	84	0.74	327 Harbor Site Grading	263.00
Scrapers	1	8	367	0.48	327 Harbor Site Grading	670.44
Sweepers/Scrubbers	1	4	64	0.46	327 Harbor Site Grading	62.28
Tractors/Loaders/Backhoes	3	7	97	0.37	327 Harbor Site Grading	398.61
Welders	2	8	46	0.45	327 Harbor Site Grading	175.16
Rough Terrain Forklifts	1	8	100	0.4	327 Harbor Site Grading	169.24
Air Compressors	1	8	78	0.48	327 Harbor Site Utilities Trenching	158.41
Concrete/Industrial Saws	1	8	81	0.73	327 Harbor Site Utilities Trenching	250.18
Excavators	1	8	158	0.38	327 Harbor Site Utilities Trenching	228.50
Generator Sets	1	8	84	0.74	327 Harbor Site Utilities Trenching	263.00
Paving Equipment	1	8	132	0.36	327 Harbor Site Utilities Trenching	180.85
Rollers	1	8	80	0.38	327 Harbor Site Utilities Trenching	128.62
Rubber Tired Loaders	2	8	203	0.36	327 Harbor Site Utilities Trenching	556.26
Signal Boards	2	8	6	0.82	327 Harbor Site Utilities Trenching	41.63
Surfacing Equipment	1	8	263	0.3	327 Harbor Site Utilities Trenching	300.28
Sweepers/Scrubbers	1	4	64	0.46	327 Harbor Site Utilities Trenching	62.28
Tractors/Loaders/Backhoes	2	8	97	0.37	327 Harbor Site Utilities Trenching	303.70
Cranes	1	4	231	0.29	327 Harbor Site Building Construction	6,388.01
Cement and Mortar Mixers	1	8	9	0.56	327 Harbor Site Building Construction	1,068.59
Plate Compactors	1	8	8	0.43	327 Harbor Site Building Construction	729.35
Rough Terrain Forklifts	1	8	100	0.4	327 Harbor Site Building Construction	8,480.85
Sweepers/Scrubbers	1	4	64	0.46	327 Harbor Site Building Construction	3,120.95
Cement and Mortar Mixers	2	8	9	0.56	327 Harbor Site Architectural Coating	1,066.22
Pressure Washers	1	8	13	0.3	327 Harbor Site Architectural Coating	412.52
Air Compressors	1	6	78	0.48	327 Harbor Site Architectural Coating	2,970.18
Pavers	1	7	130	0.42	327 Harbor Site Paving	101.01
Generator Sets	1	8	84	0.74	327 Harbor Site Paving	146.11
Paving Equipment	1	8	132	0.36	327 Harbor Site Paving	100.47
Signal Boards	1	8	6	0.82	327 Harbor Site Paving	11.56
Sweepers/Scrubbers	4	8	64	0.46	327 Harbor Site Paving	276.80
Rollers	1	7	80	0.38	327 Harbor Site Paving	62.53
Tractors/Loaders/Backhoes	8	8	97	0.37	OSP Specific Plan Site Phase 1 Demolition	16,332.47
Concrete/Industrial Saws	4	8	81	0.73	OSP Specific Plan Site Phase 1 Demolition	13,454.15
Excavators	8	8	158	0.38	OSP Specific Plan Site Phase 1 Demolition	24,576.78
Generator Sets	4	8	84	0.74	OSP Specific Plan Site Phase 1 Demolition	14,143.58
Rubber Tired Loaders	4	8	203	0.36	OSP Specific Plan Site Phase 1 Demolition	14,957.29
Sweepers/Scrubbers	4	4	64	0.46	OSP Specific Plan Site Phase 1 Demolition	3,349.32
Trenchers	4	8	78	0.5	OSP Specific Plan Site Phase 1 Site Preparation	4,473.60
Tractors/Loaders/Backhoes	12	8	97	0.37	OSP Specific Plan Site Phase 1 Grading	24,498.70
Plate Compactors	4	8	8	0.43	OSP Specific Plan Site Phase 1 Grading	782.72
Air Compressors	8	8	78	0.48	OSP Specific Plan Site Phase 1 Grading	17,037.83
Excavators	8	8	158	0.38	OSP Specific Plan Site Phase 1 Grading	24,576.78
Generator Sets	4	8	84	0.74	OSP Specific Plan Site Phase 1 Grading	14,143.58
Pumps	4	8	84	0.74	OSP Specific Plan Site Phase 1 Grading	14,143.58
Rough Terrain Forklifts	4	8	100	0.4	OSP Specific Plan Site Phase 1 Grading	9,101.40
Scrapers	2	8	367	0.48	OSP Specific Plan Site Phase 1 Grading	18,027.34
Sweepers/Scrubbers	4	4	64	0.46	OSP Specific Plan Site Phase 1 Grading	3,349.32
Welders	8	8	46	0.45	OSP Specific Plan Site Phase 1 Grading	9,419.95
Tractors/Loaders/Backhoes	8	8	97	0.37	OSP Specific Plan Site Phase 1 Utilities Trenching	16,332.47
Concrete/Industrial Saws	4	8	81	0.73	OSP Specific Plan Site Phase 1 Utilities Trenching	13,454.15
Air Compressors	4	8	78	0.48	OSP Specific Plan Site Phase 1 Utilities Trenching	8,518.91
Excavators	4	8	158	0.38	OSP Specific Plan Site Phase 1 Utilities Trenching	12,288.39
Generator Sets	4	8	84	0.74	OSP Specific Plan Site Phase 1 Utilities Trenching	14,143.58
Rubber Tired Loaders	8	8	203	0.36	OSP Specific Plan Site Phase 1 Utilities Trenching	29,914.57
Paving Equipment	4	8	132	0.36	OSP Specific Plan Site Phase 1 Utilities Trenching	9,725.92
Rollers	4	8	80	0.38	OSP Specific Plan Site Phase 1 Utilities Trenching	6,917.07
Signal Boards	8	8	6	0.82	OSP Specific Plan Site Phase 1 Utilities Trenching	2,238.95
Surfacing Equipment	4	8	263	0.3	OSP Specific Plan Site Phase 1 Utilities Trenching	16,148.47
Sweepers/Scrubbers	4	4	64	0.46	OSP Specific Plan Site Phase 1 Utilities Trenching	3,349.32

Cranes	4	7	231	0.29	OSP Specific Plan Site Phase 1 Building Construction	138,312.40
Cement and Mortar Mixers	4	8	9	0.56	OSP Specific Plan Site Phase 1 Building Construction	13,221.10
Air Compressors	4	8	78	0.48	OSP Specific Plan Site Phase 1 Building Construction	98,213.92
Rough Terrain Forklifts	4	8	100	0.4	OSP Specific Plan Site Phase 1 Building Construction	104,929.40
Sweepers/Scrubbers	4	4	64	0.46	OSP Specific Plan Site Phase 1 Building Construction	38,614.02
Generator Sets	4	8	84	0.74	OSP Specific Plan Site Phase 1 Paving	2,337.78
Signal Boards	4	8	6	0.82	OSP Specific Plan Site Phase 1 Paving	185.04
Sweepers/Scrubbers	4	4	64	0.46	OSP Specific Plan Site Phase 1 Paving	553.61
Pavers	4	8	130	0.42	OSP Specific Plan Site Phase 1 Paving	1,847.10
Paving Equipment	4	8	132	0.36	OSP Specific Plan Site Phase 1 Paving	1,607.59
Rollers	4	8	80	0.38	OSP Specific Plan Site Phase 1 Paving	1,143.32
Plate Compactors	4	8	8	0.43	OSP Specific Plan Site Phase 1 Paving	129.38
Cement and Mortar Mixers	8	8	9	0.56	OSP Specific Plan Site Phase 1 Architectural Coating	13,230.58
Pressure Washers	4	8	13	0.3	OSP Specific Plan Site Phase 1 Architectural Coating	5,118.97
Air Compressors	4	6	78	0.48	OSP Specific Plan Site Phase 1 Architectural Coating	36,856.62
Concrete/Industrial Saws	4	8	81	0.73	OSP Specific Plan Site Phase 2 Demolition	77,611.54
Excavators	8	8	158	0.38	OSP Specific Plan Site Phase 2 Demolition	141,773.47
Tractors/Loaders/Backhoes	8	8	97	0.37	OSP Specific Plan Site Phase 2 Demolition	94,215.39
Generator Sets	4	8	84	0.74	OSP Specific Plan Site Phase 2 Demolition	81,588.59
Rubber Tired Loaders	4	8	203	0.36	OSP Specific Plan Site Phase 2 Demolition	86,282.52
Trenchers	4	8	78	0.5	OSP Specific Plan Site Phase 2 Site Preparation	2,786.83
Excavators	8	8	158	0.38	OSP Specific Plan Site Phase 2 Grading	15,436.65
Plate Compactors	4	8	8	0.43	OSP Specific Plan Site Phase 2 Grading	491.63
Air Compressors	8	8	78	0.48	OSP Specific Plan Site Phase 2 Grading	10,701.44
Generator Sets	4	8	84	0.74	OSP Specific Plan Site Phase 2 Grading	8,883.57
Pumps	4	8	84	0.74	OSP Specific Plan Site Phase 2 Grading	8,883.57
Rough Terrain Forklifts	4	8	100	0.4	OSP Specific Plan Site Phase 2 Grading	5,716.58
Tractors/Loaders/Backhoes	12	8	97	0.37	OSP Specific Plan Site Phase 2 Grading	15,387.61
Scrapers	2	8	367	0.48	OSP Specific Plan Site Phase 2 Grading	11,322.95
Sweepers/Scrubbers	4	8	64	0.46	OSP Specific Plan Site Phase 2 Grading	4,207.41
Welders	8	8	46	0.45	OSP Specific Plan Site Phase 2 Grading	5,916.66
Tractors/Loaders/Backhoes	8	8	97	0.37	OSP Specific Plan Site Phase 2 Utilities Trenching	10,258.41
Concrete/Industrial Saws	4	8	81	0.73	OSP Specific Plan Site Phase 2 Utilities Trenching	8,450.54
Air Compressors	4	8	78	0.48	OSP Specific Plan Site Phase 2 Utilities Trenching	5,350.72
Excavators	4	8	158	0.38	OSP Specific Plan Site Phase 2 Utilities Trenching	7,718.33
Generator Sets	4	8	84	0.74	OSP Specific Plan Site Phase 2 Utilities Trenching	8,883.57
Signal Boards	4	8	6	0.82	OSP Specific Plan Site Phase 2 Utilities Trenching	703.14
Rubber Tired Loaders	4	8	203	0.36	OSP Specific Plan Site Phase 2 Utilities Trenching	9,394.66
Paving Equipment	4	8	132	0.36	OSP Specific Plan Site Phase 2 Utilities Trenching	6,108.84
Rollers	4	8	80	0.38	OSP Specific Plan Site Phase 2 Utilities Trenching	4,344.60
Surfacing Equipment	4	8	263	0.3	OSP Specific Plan Site Phase 2 Utilities Trenching	10,142.84
Sweepers/Scrubbers	4	4	64	0.46	OSP Specific Plan Site Phase 2 Utilities Trenching	2,103.70
Cranes	4	8	231	0.29	OSP Specific Plan Site Phase 2 Building Construction	99,488.61
Air Compressors	4	8	78	0.48	OSP Specific Plan Site Phase 2 Building Construction	61,814.92
Rough Terrain Forklifts	4	8	100	0.4	OSP Specific Plan Site Phase 2 Building Construction	66,041.58
Sweepers/Scrubbers	4	4	64	0.46	OSP Specific Plan Site Phase 2 Building Construction	24,303.30
Cement and Mortar Mixers	4	8	9	0.56	OSP Specific Plan Site Phase 2 Building Construction	8,321.24
Pavers	4	8	130	0.42	OSP Specific Plan Site Phase 2 Paving	1,847.10
Paving Equipment	4	8	132	0.36	OSP Specific Plan Site Phase 2 Paving	1,607.59
Rollers	4	8	80	0.38	OSP Specific Plan Site Phase 2 Paving	1,143.32
Plate Compactors	4	8	8	0.43	OSP Specific Plan Site Phase 2 Paving	129.38
Generator Sets	4	8	84	0.74	OSP Specific Plan Site Phase 2 Paving	2,337.78
Signal Boards	4	8	6	0.82	OSP Specific Plan Site Phase 2 Paving	185.04
Sweepers/Scrubbers	4	4	64	0.46	OSP Specific Plan Site Phase 2 Paving	553.61
Cement and Mortar Mixers	8	8	9	0.56	OSP Specific Plan Site Phase 2 Architectural Coating	8,321.24
Air Compressors	4	8	78	0.48	OSP Specific Plan Site Phase 2 Architectural Coating	30,907.46
Pressure Washers	4	8	13	0.3	OSP Specific Plan Site Phase 2 Architectural Coating	3,219.53
Concrete/Industrial Saws	4	8	81	0.73	OSP Specific Plan Site Phase 3 Demolition	6,449.10

Excavators	8	8	158	0.38	OSP Specific Plan Site Phase 3 Demolition	11,780.60
Tractors/Loaders/Backhoes	8	8	97	0.37	OSP Specific Plan Site Phase 3 Demolition	7,828.79
Sweepers/Scrubbers	4	4	64	0.46	OSP Specific Plan Site Phase 3 Demolition	1,605.46
Generator Sets	4	8	84	0.74	OSP Specific Plan Site Phase 3 Demolition	6,779.57
Rubber Tired Loaders	4	8	203	0.36	OSP Specific Plan Site Phase 3 Demolition	7,169.61
Trenchers	4	8	78	0.5	OSP Specific Plan Site Phase 3 Site Preparation	2,126.79
Excavators	8	8	158	0.38	OSP Specific Plan Site Phase 3 Grading	11,780.60
Plate Compactors	4	8	8	0.43	OSP Specific Plan Site Phase 3 Grading	375.19
Air Compressors	8	8	78	0.48	OSP Specific Plan Site Phase 3 Grading	8,166.89
Generator Sets	4	8	84	0.74	OSP Specific Plan Site Phase 3 Grading	6,779.57
Pumps	4	8	84	0.74	OSP Specific Plan Site Phase 3 Grading	6,779.57
Rough Terrain Forklifts	4	8	100	0.4	OSP Specific Plan Site Phase 3 Grading	4,362.66
Tractors/Loaders/Backhoes	12	8	97	0.37	OSP Specific Plan Site Phase 3 Grading	11,743.18
Scrapers	2	8	367	0.48	OSP Specific Plan Site Phase 3 Grading	8,641.20
Sweepers/Scrubbers	4	4	64	0.46	OSP Specific Plan Site Phase 3 Grading	1,605.46
Welders	8	8	46	0.45	OSP Specific Plan Site Phase 3 Grading	4,515.35
Tractors/Loaders/Backhoes	8	8	97	0.37	OSP Specific Plan Site Phase 3 Utilities Trenching	7,828.79
Concrete/Industrial Saws	4	8	81	0.73	OSP Specific Plan Site Phase 3 Utilities Trenching	6,449.10
Air Compressors	4	8	78	0.48	OSP Specific Plan Site Phase 3 Utilities Trenching	4,083.45
Excavators	4	8	158	0.38	OSP Specific Plan Site Phase 3 Utilities Trenching	5,890.30
Generator Sets	4	8	84	0.74	OSP Specific Plan Site Phase 3 Utilities Trenching	6,779.57
Signal Boards	8	8	6	0.82	OSP Specific Plan Site Phase 3 Utilities Trenching	1,073.21
Rubber Tired Loaders	4	8	203	0.36	OSP Specific Plan Site Phase 3 Utilities Trenching	7,169.61
Paving Equipment	4	8	132	0.36	OSP Specific Plan Site Phase 3 Utilities Trenching	4,662.01
Rollers	4	8	80	0.38	OSP Specific Plan Site Phase 3 Utilities Trenching	3,315.62
Surfacing Equipment	4	8	263	0.3	OSP Specific Plan Site Phase 3 Utilities Trenching	7,740.59
Sweepers/Scrubbers	4	8	64	0.46	OSP Specific Plan Site Phase 3 Utilities Trenching	3,210.91
Cranes	4	7	231	0.29	OSP Specific Plan Site Phase 3 Building Construction	66,627.91
Cement and Mortar Mixers	4	8	9	0.56	OSP Specific Plan Site Phase 3 Building Construction	6,368.88
Air Compressors	4	8	78	0.48	OSP Specific Plan Site Phase 3 Building Construction	47,311.65
Rough Terrain Forklifts	4	8	100	0.4	OSP Specific Plan Site Phase 3 Building Construction	50,546.63
Sweepers/Scrubbers	4	4	64	0.46	OSP Specific Plan Site Phase 3 Building Construction	18,601.16
Pavers	4	8	130	0.42	OSP Specific Plan Site Phase 3 Paving	1,847.10
Paving Equipment	4	8	132	0.36	OSP Specific Plan Site Phase 3 Paving	1,607.59
Rollers	4	8	80	0.38	OSP Specific Plan Site Phase 3 Paving	1,143.32
Plate Compactors	4	8	8	0.43	OSP Specific Plan Site Phase 3 Paving	129.38
Generator Sets	4	8	84	0.74	OSP Specific Plan Site Phase 3 Paving	2,337.78
Signal Boards	4	8	6	0.82	OSP Specific Plan Site Phase 3 Paving	185.04
Sweepers/Scrubbers	4	4	64	0.46	OSP Specific Plan Site Phase 3 Paving	553.61
Pressure Washers	4	8	13	0.3	OSP Specific Plan Site Phase 3 Architectural Coating	2,464.15
Cement and Mortar Mixers	8	8	9	0.56	OSP Specific Plan Site Phase 3 Architectural Coating	6,368.88
Air Compressors	4	8	78	0.48	OSP Specific Plan Site Phase 3 Architectural Coating	23,655.82

Total Fuel Used **2,197,131.10**
(Gallons)

Construction Phase	Days of Construction
327 Harbor Site Preparation	9
327 Harbor Site Grading	9
327 Harbor Site Utilities Trenching	9
327 Harbor Site Building Construction	451
327 Harbor Site Paving	5
327 Harbor Site Architectural Coating	225
OSP Specific Plan Site Phase 1 Demolition	121
OSP Specific Plan Site Phase 1 Site Preparation	61
OSP Specific Plan Site Phase 1 Grading	121
OSP Specific Plan Site Phase 1 Utilities Trenching	121
OSP Specific Plan Site Phase 1 Building Construction	1395
OSP Specific Plan Site Phase 1 Paving	20
OSP Specific Plan Site Phase 1 Architectural Coating	698
OSP Specific Plan Site Phase 2 Demolition	76

OSP Specific Plan Site Phase 2 Site Preparation	38
OSP Specific Plan Site Phase 2 Grading	76
OSP Specific Plan Site Phase 2 Utilities Trenching	76
OSP Specific Plan Site Phase 2 Building Construction	878
OSP Specific Plan Site Phase 2 Paving	20
OSP Specific Plan Site Phase 2 Architectural Coating	439
OSP Specific Plan Site Phase 3 Demolition	58
OSP Specific Plan Site Phase 3 Site Preparation	29
OSP Specific Plan Site Phase 3 Grading	58
OSP Specific Plan Site Phase 3 Utilities Trenching	58
OSP Specific Plan Site Phase 3 Building Construction	672
OSP Specific Plan Site Phase 3 Paving	20
OSP Specific Plan Site Phase 3 Architectural Coating	336
Total Days	6079

WORKER TRIPS				
Constuction Phase	MPG [2]	Trips	Trip	Fuel Used
327 Harbor Site Preparation	25.3	3	14.7	15.69
327 Harbor Site Grading	25.3	38	14.7	198.71
327 Harbor Site Utilities Trenching	25.3	33	14.7	172.57
327 Harbor Site Building Construction	25.3	35	14.7	9171.52
327 Harbor Site Paving	25.3	25	14.7	72.63
327 Harbor Site Architectural Coating	25.3	7	14.7	915.12
OSP Specific Plan Site Phase 1 Demolition	25.3	80	14.7	3532.65
OSP Specific Plan Site Phase 1 Site Preparation	25.3	20	14.7	441.58
OSP Specific Plan Site Phase 1 Grading	25.3	145	14.7	6402.92
OSP Specific Plan Site Phase 1 Utilities Trenching	25.3	60	14.7	30608.54
OSP Specific Plan Site Phase 1 Building Construction	25.3	504	14.7	5856.76
OSP Specific Plan Site Phase 1 Paving	25.3	70	14.7	17854.98
OSP Specific Plan Site Phase 1 Architectural Coating	25.3	101	14.7	3403.66
OSP Specific Plan Site Phase 2 Demolition	25.3	80	14.7	1347.98
OSP Specific Plan Site Phase 2 Site Preparation	25.3	20	14.7	673.99
OSP Specific Plan Site Phase 2 Grading	25.3	145	14.7	4886.44
OSP Specific Plan Site Phase 2 Utilities Trenching	25.3	60	14.7	23427.04
OSP Specific Plan Site Phase 2 Building Construction	25.3	504	14.7	5856.76
OSP Specific Plan Site Phase 2 Paving	25.3	70	14.7	13665.77
OSP Specific Plan Site Phase 2 Architectural Coating	25.3	101	14.7	356738.79
OSP Specific Plan Site Phase 3 Demolition	25.3	80	14.7	2695.97
OSP Specific Plan Site Phase 3 Site Preparation	25.3	20	14.7	337.00
OSP Specific Plan Site Phase 3 Grading	25.3	145	14.7	4886.44
OSP Specific Plan Site Phase 3 Utilities Trenching	25.3	60	14.7	2021.98
OSP Specific Plan Site Phase 3 Building Construction	25.3	504	14.7	196787.10
OSP Specific Plan Site Phase 3 Paving	25.3	70	14.7	813.44
OSP Specific Plan Site Phase 3 Architectural Coating	25.3	101	14.7	19717.75
Total Fuel Used				712,503.77

HAULING AND VENDOR TRIPS				
Trip Class	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
HAULING TRIPS				
327 Harbor Site Preparation	7.6	0	20.0	0.00
327 Harbor Site Grading	7.6	280	20.0	736.84
327 Harbor Site Utilities Trenching	7.6	0	20.0	0.00
327 Harbor Site Building Construction	7.6	0	20.0	0.00
327 Harbor Site Paving	7.6	0	20.0	0.00
327 Harbor Site Architectural Coating	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 1 Demolition	7.6	711	20.0	1871.05
OSP Specific Plan Site Phase 1 Site Preparation	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 1 Grading	7.6	13435	20.0	35355.26
OSP Specific Plan Site Phase 1 Utilities Trenching	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 1 Building Construction	7.6	0	20.0	0.00

OSP Specific Plan Site Phase 1 Paving	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 1 Architectural Coating	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 2 Demolition	7.6	686	20.0	1805.26
OSP Specific Plan Site Phase 2 Site Preparation	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 2 Grading	7.6	6878	20.0	18100.00
OSP Specific Plan Site Phase 2 Utilities Trenching	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 2 Building Construction	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 2 Paving	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 2 Architectural Coating	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 3 Demolition	7.6	686	20.0	1805.26
OSP Specific Plan Site Phase 3 Site Preparation	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 3 Grading	7.6	8295	20.0	21828.95
OSP Specific Plan Site Phase 3 Utilities Trenching	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 3 Building Construction	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 3 Paving	7.6	0	20.0	0.00
OSP Specific Plan Site Phase 3 Architectural Coating	7.6	0	20.0	0.00

Total Fuel Used **81,502.63**

VENDOR TRIPS

327 Harbor Site Preparation	7.6	0	6.9	0.00
327 Harbor Site Grading	7.6	0	6.9	0.00
327 Harbor Site Utilities Trenching	7.6	0	6.9	0.00
327 Harbor Site Building Construction	7.6	5	6.9	2047.30
327 Harbor Site Paving	7.6	0	6.9	0.00
327 Harbor Site Architectural Coating	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 1 Demolition	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 1 Site Preparation	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 1 Grading	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 1 Utilities Trenching	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 1 Building Construction	7.6	95	6.9	120318.75
OSP Specific Plan Site Phase 1 Paving	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 1 Architectural Coating	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 2 Demolition	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 2 Site Preparation	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 2 Grading	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 2 Utilities Trenching	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 2 Building Construction	7.6	90	6.9	71741.84
OSP Specific Plan Site Phase 2 Paving	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 2 Architectural Coating	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 3 Demolition	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 3 Site Preparation	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 3 Grading	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 3 Utilities Trenching	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 3 Building Construction	7.6	138	6.9	84194.53
OSP Specific Plan Site Phase 3 Paving	7.6	0	6.9	0.00
OSP Specific Plan Site Phase 3 Architectural Coating	7.6	0	6.9	0.00

Total Fuel Used **278,302.42**

Total Gasoline Consumption (gallons)	712,503.77
Total Diesel Consumption (gallons)	2,556,936.15

Sources:

[1] United States Environmental Protection Agency. 2018. *Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES2014b*. July 2018. Available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100UXEN.pdf>.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2022. *National Transportation Statistics*. Available at: <https://www.bts.gov/topics/national-transportation-statistics>.

**One San Pedro Specific Plan
Electricity Use from Water Usage During Construction**

Assumptions

- 9,727 KWh/million gallons¹
- 0.009727 kWh/gallon
- 2,013 gal/acre/day²
- 1,000 kWhr/MWhr

Construction Electricity Consumption from Water Use

Phase	Const. Phase	Days	Site Acres	Gallons	Electricity (kWhr)	MWhr	
Harbor	Demolition	0	0.56	0	0		
Harbor	Site Preparation	9	0.56	10,147	99		
Harbor	Grading	9	0.56	10,147	99		
Harbor	Utilities/Trenching	9	0.56	10,167	99	0.30	
PA1	Demolition	121	7.31	1,785,719	17,370		
PA1	Site Preparation	61	7.31	892,860	8,685		
PA1	Grading	121	7.31	1,785,719	17,370		
PA1	Utilities/Trenching	121	7.31	1,785,719	17,370	61	
PA2	Demolition	76	5.92	910,046	8,852		
PA2	Site Preparation	38	5.92	455,023	4,426		
PA2	Grading	76	5.92	910,046	8,852		
PA2	Utilities/Trenching	76	5.92	910,046	8,852	31	
PA3	Demolition	58	7.14	840,526	8,176		
PA3	Site Preparation	29	7.14	420,263	4,088		
PA3	Grading	58	7.14	840,526	8,176		
PA3	Utilities/Trenching	58	7.14	840,526	8,176	29	
Total					120,688	120,688	121

1 CalEEMod User Guide Appendix D Table 9.2 *Water and wastewater Electricity Intensity.*

2 Air & Waste Management Association Air Pollution Engineering Manual (1992 Edition)

3020 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.

1,007 Gallons/waterting/acre

2,013 2 waterings per day for fugitive dust mitigation based on SCAQMD requirements.

One San Pedro Specific Plan Electricity use from Equipment

Assumptions

Electric Equipment

	<u>Type</u>	<u>HP</u>	<u>LF</u>	<u>Typical Load</u>
CMM	Cement and Mortar Mixers	9	0.56	5
PC	Plate Compactor	8	0.43	3
SB	Signal Board	6	0.82	5
W	Welders	46	0.45	21
PW	Pressure Washer	13	0.3	4

0.7457 KWhr/HPh
1,000 kWhr/MWhr

Summary Construction Electricity Consumption from Equipment Use

	<u>kWh</u>	<u>MWhr</u>
Harbor	78,956	79
PA1	211,580	212
PA2	133,763	134
PA3	102,826	103
Total	527,124	527

Construction Electricity Consumption from Equipment Use

<u>Phase</u>	<u>Const. Phase</u>	<u>Equipment</u>	<u>Number</u>	<u>Hrs/day</u>	<u>Days</u>	<u>Total Hrs</u>	<u>Total HP</u>	<u>kWh</u>	<u>MWhr</u>
327 Harbor	Grading	PC	1	8	9	72	577	430	
	Grading	W	2	8	9	72	3,318	2,474	
	Utilities Trenching	SB	2	8	9	72	433	323	
	Building Construction	CMM	1	8	451	3,607	32,462	24,207	
	Building Construction	PC	1	8	451	3,607	28,855	21,517	78,956
	Paving	PC	1	8	5	40	320	239	
	Paving	SB	1	8	5	40	240	179	
	Architectural Coating	CMM	2	8	225	1,803	16,231	12,103	
	Architectural Coating	PW	1	8	225	1,803	23,445	17,483	

**One San Pedro Specific Plan
Electricity use from Equipment**

Phase	Const. Phase	Equipment	Number	Hrs/day	Days	Total Hrs	Total HP	kWh	MWhr	
Phase 1	Grading	PC	4	8	121	971	7,765	5,791	211,580	212
	Grading	W	8	8	121	971	44,651	33,296		
	Utilities Trenching	SB	8	8	121	971	5,824	4,343		
	Building Construction	CMM	4	8	1,395	11,163	100,464	74,916		
	Paving	PC	4	8	20	160	1,280	954		
	Paving	SB	4	8	20	160	960	716		
	Architectural Coating	CMM	8	8	698	5,581	50,232	37,458		
	Architectural Coating	PW	4	8	698	5,581	72,557	54,106		
Phase 2	Grading	PC	4	8	76	611	4,887	3,644	133,763	134
	Grading	W	8	8	76	611	28,098	20,953		
	Utilities Trenching	SB	4	8	76	611	3,665	2,733		
	Building Construction	CMM	4	8	878	7,024	63,220	47,143		
	Paving	PC	4	8	20	160	1,280	954		
	Paving	SB	4	8	20	160	960	716		
	Architectural Coating	CMM	8	8	439	3,512	31,610	23,572		
	Architectural Coating	PW	4	8	439	3,512	45,659	34,048		
Phase 3	Grading	PC	4	8	58	468	3,742	2,790	102,826	103
	Grading	W	8	8	58	468	21,517	16,045		
	Utilities Trenching	SB	8	8	58	468	2,807	2,093		
	Building Construction	CMM	4	8	672	5,379	48,414	36,102		
	Paving	PC	4	8	20	160	1,280	954		
	Paving	SB	4	8	20	160	960	716		
	Architectural Coating	CMM	8	8	336	2,690	24,207	18,051		
	Architectural Coating	PW	4	8	336	2,690	34,965	26,074		

One San Pedro Specific Plan Transportation Energy Demand

Last Updated: 05/17/2023

Populate one of the following tables (Leave the other blank):

Annual VMT [1]	OR	Daily Vehicle Trips
Annual VMT: 33,717,240		Daily Vehicle Trips: Average Trip Distance:

Fleet Class	Fleet Mix	Fuel Economy (MPG) [2]	
Light Duty Auto (LDA)	0.516633	Passenger Vehicles	25.3
Light Duty Truck 1 (LDT1)	0.070991	Light-Med Duty Trucks	18.2
Light Duty Truck 2 (LDT2)	0.195744	Heavy Trucks/Other	7.6
Medium Duty Vehicle (MDV)	0.128836	Motorcycles	44
Light Heavy Duty 1 (LHD1)	0.026081		
Light Heavy Duty 2 (LHD2)	0.007842		
Medium Heavy Duty (MHD)	0.01197		
Heavy Heavy Duty (HHD)	0.007437		
Other Bus (OBUS)	0.000933		
Urban Bus (UBUS)	0.00054		
Motorcycle (MCY)	0.02876		
School Bus (SBUS)	0.000776		
Motorhome (MH)	0.003457		

Fleet Mix

Vehicle Type	Percent	Fuel Type	Annual VMT:		Fuel Consumption
			VMT	Vehicle Trips: VMT	(Gallons)
Passenger Vehicles	51.66%	Gasoline	17419439	17419438.85	1377030.74
Light-Medium Duty Trucks	39.56%	Gasoline	13337562	13337562.34	1465666.19
Heavy Trucks/Other	5.90%	Diesel	1990531	1990530.98	523823.94
Motorcycle	2.88%	Gasoline	969708	969707.82	44077.63

Total Gasoline Consumption (gallons)	2886774.56
Total Diesel Consumption (gallons)	523823.94

Sources:

[1] Fehr & Peers. 2023. One San Pedro Specific Plan Project Transportation Assessment. May 2023.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2022. National Transportation Statistics. Available at: <https://www.bts.gov/topics/national-transportation-statistics>.