

APPENDIX E

Energy

Palm Villas Saratoga Project
Project Construction Energy Demand

Construction Worker Gasoline Demand

Phase	Trips	Vehicle CO ₂ (MT)	Kg CO ₂ /Gallon	Gallons
Site Preparation	55	0.19	8.78	21.32
Grading	572	1.95	8.78	221.69
Paving	414	1.41	8.78	160.46
Building Construction	11,528	38.55	8.78	4,390.83
Architectural Coating	2,358	7.89	8.78	898.13
Total				5,692.43

Construction Vendor Diesel Demand

Phase	Trips	Vehicle CO ₂ (MT)	Kg CO ₂ /Gallon	Gallons
Site Preparation	0	0.00	10.21	0.00
Grading	0	0.00	10.21	0.00
Paving	0	0.00	10.21	0.00
Building Construction	2,620	34.13	10.21	3,342.83
Architectural Coating	0	0.00	10.21	0.00
Total				3,342.83

Construction Haul Diesel Demand

Phase	Trips	Vehicle CO ₂ (MT)	Kg CO ₂ /Gallon	Gallons
Site Preparation	0	0.00	10.21	0.00
Grading	768	42.12	10.21	4,125.55
Paving	0	0.00	10.21	0.00
Building Construction	0	0.00	10.21	0.00
Architectural Coating	0	0.00	10.21	0.00
Total				4,125.55

Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO ₂ (MT)	Kg CO ₂ /Gallon	Gallons
Site Preparation	2	4.75	10.21	464.80
Grading	5	26.29	10.21	2,575.17
Paving	7	10.88	10.21	1,065.67
Building Construction	5	132.15	10.21	12,943.51
Architectural Coating	1	33.51	10.21	3,281.95
Total				20,331.10

Construction Equipment Usage

Phase	Hours of Use
Site Preparation	176
Grading	1,100
Paving	1,035
Building Construction	8,384
Architectural Coating	1,572
Total	12,267

Palm Villas Saratoga Project
Project Operational Energy Demand

Mobile Source Gasoline Demand

Project Facility	Vehicle MT CO₂	Kg CO2/Gallon	Gallons
Congregate Care (Assisted Living)	317.80	8.78	36,196.05
Total	317.80		36,196.05

Mobile Source Diesel Demand

Project Facility	Vehicle MT CO₂	Kg CO2/Gallon	Gallons
Congregate Care (Assisted Living)	66.30	10.21	6,493.77
Total	66.30		6,493.77

Electricity Demand

Project Facility	kWh/Year
<i>Building and Lighting Electricity Demand</i>	
Congregate Care (Assisted Living)	169,262.00
Enclosed Parking with Elevator	81,635.70
Parking Lot	6,062.35
Total	256,960.05
<i>Water/Wastewater Electricity Demand</i>	
Congregate Care (Assisted Living)	20,348.83
Total	20,348.83

Natural Gas Demand

Project Facility	kBTu/Year
<i>Building Natural Gas Demand</i>	
Congregate Care (Assisted Living)	354,217
Total	354,217.00
<i>Emergency Generator Testing</i>	
Congregate Care (Assisted Living)	48,195.00
Total	48,195.00

**Palm Villas Saratoga Project
Operational Electricity**

Total Electricity	kWh/yr
Congregate Care (Assisted Living)	169,262.00
Enclosed Parking with Elevator	81,635.70
Other Asphalt Surfaces	0.00
Parking Lot	6,062.35
Building Total	256,960.05
Water/Wastewater	20,349
Total	277,308.88

Electricity Intensity Factors - Water/Wastewater

Process	Units	
Supply	kwh/MG	2,117
Treat	kwh/MG	111
Distribute	kwh/MG	1,272
Wastewater Treatment	kwh/MG	1,911
Total	kwh/MG	5,411

* Electricity intensity factors from CalEEMod Appendix D for BAAQMD.

Electricity Demand - Water/Wastewater

	Units	Potable Water - Indoor	Potable Water - Outdoor	Total
Electricity Intensity Factor				
Supply	kwh/MG	2,117	2,117	N/A
Treat	kwh/MG	111	111	N/A
Distribute	kwh/MG	1,272	1,272	N/A
Wastewater Treatment	kwh/MG	1,911	-	N/A
Total	kwh/MG	5,411	3,500	N/A
Water Consumption	MG/yr	2.7	1.7	4.4
Electricity Usage	kwh/yr	14,455	5,894	20,349

Palm Villas Saratoga Project
Project Operational NG Generator Testing

Natural Gas Generator Parameters	Series	Power Rating (kW)	Power Rating (HP)	Fuel Consumption (ft3/hr)	Hours/Yr	Annual NG Consumption (ft3/yr)	Annual NG Consumption (kBtu/yr)
Natural Gas Generator 1	RG045	45	60	545	50	27250	27795
Natural Gas Generator 2	RG030	30	40	400	50	20000	20400