

# Appendix D

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## Energy Calculations

**Construction Worker Gasoline Demand**

Phase	Trips	Vehicle CO <sub>2</sub> (MT)	Kg/CO <sub>2</sub> /Gallon	Gallons
Site Preparation	180	0.80	8.78	91.12
Grading	300	1.33	8.78	151.82
Building Construction	45,140	200.61	8.78	22,848.82
Paving	320	1.42	8.78	161.98
Architectural Coating	1,500	6.67	8.78	759.27
<b>Total</b>				24,013.01

**Construction Vendor Diesel Demand**

Phase	Trips	Vehicle CO <sub>2</sub> (MT)	Kg/CO <sub>2</sub> /Gallon	Gallons
Site Preparation	0	0.00	10.21	0.00
Grading	0	0.00	10.21	0.00
Building Construction	17,760	216.65	10.21	21,219.22
Paving	0	0.00	10.21	0.00
Architectural Coating	0	0.00	10.21	0.00
<b>Total</b>				21,219.22

**Construction Haul Diesel Demand**

Phase	Trips	Vehicle CO <sub>2</sub> (MT)	Kg/CO <sub>2</sub> /Gallon	Gallons
Site Preparation	0	0.00	10.21	0.00
Grading	0	0.00	10.21	0.00
Building Construction	0	0.00	10.21	0.00
Paving	0	0.00	10.21	0.00
Architectural Coating	0	0.00	10.21	0.00
<b>Total</b>				0.00

**Construction Equipment Diesel Demand**

Phase	Pieces of Equipment	Equipment CO <sub>2</sub> (MT)	Kg/CO <sub>2</sub> /Gallon	Gallons
Site Preparation	7	16.72	10.21	1,637.39
Grading	8	40.87	10.21	4,003.06
Building Construction	9	214.26	10.21	20,985.72
Paving	6	20.02	10.21	1,961.17
Architectural Coating	1	3.83	10.21	375.11
<b>Total</b>				28,962.45

**Construction Equipment Usage**

Phase	Hours of Equipment Use
Site Preparation	560
Grading	960
Building Construction	12,580
Paving	960
Architectural Coating	180
<b>Total</b>	15,240

**Mobile Source Gasoline Demand**

Project Phase	Vehicle MT CO <sub>2</sub>	Kg/CO <sub>2</sub> /Gallon	Gallons
Project	2,130.06	8.78	242,604.20
<b>Net Total</b>			<b>242,604.20</b>

**Mobile Source Diesel Demand**

Project Phase	MT CO <sub>2</sub>	Kg/CO <sub>2</sub> /Gallon	Gallons
Project	1410.42	10.21	138,140.56
<b>Total</b>			<b>138,140.56</b>

**Electricity Intensity Factors - Water/Wastewater**

Process	Units	Value
Supply	kwh/MG	9,727
Treat	kwh/MG	111
Distribute	kwh/MG	1,272
Wastewater Treatment	kwh/MG	1,911
<b>Total</b>	<b>kwh/MG</b>	<b>13,021</b>

\* Electricity intensity factors from CalEEMod Appendix D for Riverside - South Coast County

**Electricity Demand - Water/Wastewater**

	Units	Potable Water - Indoor	Potable Water - Outdoor	Total
Electricity Intensity Factor				
Supply	kwh/MG	9,727	9,727	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
<b>Total</b>	<b>kwh/MG</b>	<b>13,021</b>	<b>11,110</b>	N/A
Project Water Consumption	MG/yr	73	1	74
<b>Electricity Usage</b>	<b>kwh/yr</b>	<b>946,046</b>	<b>12,103</b>	<b>958,149</b>

**Electric Forklift Electricity Usage**

Electric forklifts	MT CO2/yr	689.66
SCE CO2 Intensity	lb/MWhr	474.14
Electric forklift electricity usage	kwh/yr	3,206,727.06

**Project Total Electricity Usage**

Building electricity usage	kwh/yr	3,055,740
Water/Wastewater electricity usage	kwh/yr	958,149
Electric forklift electricity usage	kwh/yr	3,206,727
<b>Total Project Electricity Usage</b>	<b>kwh/yr</b>	<b>7,220,616</b>