
APPENDIX P
ENERGY CALCULATIONS

Table P-2
DIESEL FUEL CONSUMED DURING CONSTRUCTION, PHASE II

Sub-phase	Equipment Type	HP	Number	Hours/Day	Daily Factor	Load Factor	No. of Days	Gallons	Total Gallons
Demolition	Concrete/Industrial Saws	81	1	8	0.6	0.73	82	1163.68	
Demolition	Excavators	158	3	8	0.6	0.38	82	3544.76	
Demolition	Rubber Tired Dozers	247	1	8	0.6	0.4	82	1944.38	
Demolition	Tractors/Loaders/Backhoes	97	3	8	0.6	0.37	82	2118.95	8,772
Grading	Excavators	158	1	8	0.6	0.38	6	86.46	
Grading	Graders	187	1	6	0.6	0.41	6	82.80	
Grading	Rubber Tired Dozers	247	1	6	0.6	0.4	6	106.70	
Grading	Tractors/Loaders/Backhoes	97	1	7	0.6	0.37	6	45.22	321
Building Construction	Cranes	231	1	6	0.6	0.29	280	3376.30	
Building Construction	Forklifts	89	1	6	0.6	0.2	280	897.12	
Building Construction	Generator Sets	84	1	8	0.6	0.74	280	4177.15	
Building Construction	Tractors/Loaders/Backhoes	97	1	6	0.6	0.37	280	1808.86	
Building Construction	Welders	46	3	8	0.6	0.45	280	4173.12	14,433
Paving	Cement and Mortar Mixers	9	1	6	0.6	0.56	14	12.70	
Paving	Pavers	130	1	6	0.6	0.42	14	137.59	
Paving	Paving Equipment	132	1	8	0.6	0.36	14	159.67	
Paving	Rollers	80	1	7	0.6	0.38	14	89.38	
Paving	Tractors/Loaders/Backhoes	97	1	8	0.6	0.37	14	120.59	520
Architectural Coating	Air Compressors	78	1	6	0.6	0.48	11	74.13	74
								Total	24,120

**Table P-3
ELECTRICITY REQUIRED TO PROVIDE WATER FOR DUST CONTROL, PHASES I AND II**

Construction Sub-Phase	No. of Days	Daily Acreage	Gallons/ acre-day	Gallons	kW-hr per Gallon	kW-hr
Phase I						
Demolition	88	0	3020			
Grading	7	1.79	3020	37,841	0.00973	368
Building Construction	268	0	3020			
Paving	15	1.79	3020	81,087	0.00973	789
Architectural Coating	16	0	3020			
Total for Phase I						1,157
Phase II						
Demolition	82	0	3020			
Grading	6	3.54	3020	64,145	0.00973	624
Building Construction	280	0	3020			
Paving	14	3.54	3020	149,671	0.00973	1,456
Architectural Coating	11	0	3020			
Total for Phase II						2,080
Total for Construction						3,238

Table P-4
CONSTRUCTION ON-ROAD VEHICLE FUEL USE

Construction Subphase	Days	Workers			Vendors			Hauling (Materials and Waste)		
		No. Trips per Day	Miles/Trip	VMT	No. Trips per Day	Miles/Trip	VMT	Total Trips	Miles/Trip	VMT
Phase I										
Demolition	88	15	14.7	19,404	0	6.9	0	112	20	2,240
Grading	7	15	14.7	1,544	0	6.9	0	0	20	0
Building Construction	268	64	14.7	252,134	10	6.9	18,492	0	20	0
Painting	15	15	14.7	3,308	0	6.9	0	0	20	0
Architectural Coating	16	13	14.7	3,058	0	6.9	0	0	20	0
Total Vehicle Miles Traveled per Phase				279,447			18,492			2,240
Grand Total										300,179
Phase II										
Demolition	82	15	14.7	18,081	0	6.9	0	345	20	6,900
Grading	6	15	14.7	1,323	0	6.9	0	0	20	0
Building Construction	280	69	14.7	284,004	10	6.9	19,320	0	20	0
Painting	14	15	14.7	3,087	0	6.9	0	0	20	0
Architectural Coating	11	13	14.7	2,102	0	6.9	0	0	20	0
Total Vehicle Miles Traveled per Phase				308,597			19,320			6,900
Grand Total										334,817
Fuel Calculation										
			Gasoline or Diesel	Miles per Gallon	Gallons Gasoline	Gallons Diesel				
Workers	308,597		Gasoline	24.8	12,443					
Vendors	19,320		Diesel	20.1		961				
Haulers	6,900		Diesel	20.1		343				
Totals					12,443	1,304				

Table P-5
OPERATIONAL WATER USE

OPERATIONAL WATER USE

Existing Conditions

	Gallons per Year	Electricity Required kWhr/gallon	Electricity Use kWhr/year	kWhr/Unit
Indoor Water Use	6,515,400	0.0111	72,321	
Outdoor Water Use	4,107,540	0.009727	39,954	
Totals	10,622,940		112,275	1,123

Project Buildout

	Gallons per Year	Electricity Required kWhr/gallon	Electricity Use kWhr/year	kWhr/Unit
Indoor Water Use	12,053,500	0.0111	133,794	
Outdoor Water Use	7,598,940	0.009727	73,915	
Totals	19,652,440		207,709	1,123

Table P-6
MOBILE SOURCES FUEL USE

MOBILE SOURCES FUEL USE

Assumed Fuel Use Breakdown

	Gasoline Fraction	Diesel Fraction	Annual VMT	Gasoline VMT	Diesel VMT	Gasoline Gallons	Diesel Gallons
Existing Conditions	0.9182	0.0879	2,254,344	2,069,939	198,157	83,465	9,859
Project	0.9148	0.0852	2,573,579	2,354,310	219,269	94,932	10,909

Fuel Intensity

	Existing	Project	% Decrease
Gasoline Gallons per Unit	834.7	513.1	39%
Diesel Gallons per Unit	98.6	59.0	40%