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Pump Station Energy Consumption Calculation

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Pumpstation Energy Consumption Calculation			
Town of Paradise			 TRUSTED ENGINEERING ADVISORS
Paradise - Sewer Feasibility Alternative A - Regional Skyway			
Location		QTY. BY	ESTIMATE LEVEL
Town of Paradise - Collection System		L. Edwards	CONCEPT
Limits		QTY. CHCK	PRICED BY
Proposed Paradise Sewer Service Area		M. Massaro	L. Edwards
BEN EN PROJECT NO.		AGENCY	
19-216 TO1		Town of Paradise	12/12/2021

System	kWH/yr
Collection PS	254761
Trunk PS	241696
Regional PS	104517
Total	600975

Pump Station Name	Q gal/day	Q CFS	Q with Peaking Factor		Jensen Pump Series	kWH/yr
			gal/min			
PS-CONNIE	5035.55	0.0078	10.49		248	13065
PS-CENTER	2144.68	0.0033	4.47		248	13065
PS-CAPE COD	11090.90	0.0172	23.11		248	13065
PS-MEMORIAL	2093.14	0.0032	4.36		248	13065
PS-PINE GROVE	18678.59	0.0289	38.91		248	13065
PS-EWALD	900.70	0.0014	1.88		248	13065
PS-BUSCHMANN	12393.50	0.0215	25.82		248	13065
PS-E ELLIOTT	1650.20	0.0026	3.44		248	13065
PS-NUNNLEY	33172.43	0.0513	69.11		360	19597
PS-E NUNNLEY	417.33	0.0006	0.87		248	13065
PS-BLACK OLIVE	17547.14	0.0295	36.56		248	13065
PS-PHEASANT	2070.93	0.0032	4.31		248	13065
PS-WILDWOOD	3829.00	0.0059	7.98		248	13065
PS-STONERIDGE	19891.95	0.0308	41.44		248	13065
PS-BOWLES	1310.39	0.0020	2.73		248	13065
PS-E CLARK	10173.16	0.0157	21.19		248	13065
PS-EASY	3631.87	0.0056	7.57		248	13065
PS-WOODBROOK	8562.44	0.0132	17.84		248	13065
PS-CENTRAL PARK	15969.42	0.0247	33.27		248	13065
					Total	254761
Peaking Factor	3.00					

Pump Station Name	Q (Gal/Day) into PS	Q CFS into PS	Q with Peaking Factor		Jensen Pump Series	kWH/yr
			gal/min into PS	Factor		
S1-PS-1	6336.86	0.01	13.20	248	248	13065
E1-PS-2	8.00	0.00	0.02	248	248	13065
C1-PS-1	10694.72	0.02	22.28	248	248	13065
E1-PS-1	32386.02	0.05	67.47	360	360	19597
C1-PS-2	181583.41	0.28	378.30	696	696	45726
P1-PS-2	256581.50	0.40	534.54	696	696	45726
P1-PS-3	199412.42	0.31	415.44	696	696	45726
P1-PS-1	273317.12	0.42	569.41	696	696	45726
Total						241696

Peaking Factor 3

Pump Station Name	Q CFS into		Q with	Jensen	kWH/yr
	PS	Q gal/day	Peaking Factor	Pump Series	
Regional PS-1	1.18	488054.62	1016.78	896	52259
Regional PS-2	1.18	488054.62	1016.78	896	52259
				total	104517
Peaking Factor	3				

Flow Range	PS Series	Wet Well		kW	Time	Hour/year	kWH/yr	
		ID feet	Hp					
10 to 50 gpm	248	4		10	7.457	20%	1752.00	13064.66
100 to 180 gpm	360	5		15	11.1855	20%	1752.00	19597.00
180 to 300 gpm	472	6		25	18.6425	20%	1752.00	32661.66
350 to 750 gpm	696	8		35	26.0995	20%	1752.00	45726.32
400 to 1250 gpm	896	8		40	29.828	20%	1752.00	52258.66
615 to 1955 gpm	10120	10		45	33.5565	20%	1752.00	58790.99