

**Discovery Bay Master Plan Update 2019  
Improvement Recommendations and Costs Table**

Item	Plant	Description	Rept. Sect.	Reason for Improvement	Trigger for Implementation	Possible Timing (a)			Budgetary Cost, \$1000s (b)		
						Begin Design	Begin Const.	Begin Operation	Essential	Non-Essential	Unlikely
1	1&2	Anoxic Basins and Related Improvements for Denitrification	11, 20	Compliance with New Discharge Requirements	Permit Compliance Deadline of December 31, 2023	2019	2021	2023	7,844 (c)		
2	1&2	Supplemental Aeration in Oxidation Ditches	11	Existing Rotors Inadequate for Future Max Oxygen Demand	Before Actual Oxygen Demands Exceed Reliable Rotor Capacity	2019	2021	2023	800 (d)		
3	2	UV Disinfection Testing and Improvement	14	Improve Performance	Desired Now	2019	2021	2023	200		
4	NA	Repair Effluent Diffuser in Old River	15	Restore Diffuser Capacity	Desired Now	2019	2021	2023	500		
5	1	Emergency Storage Drain to Pump Sta. W	16	Avoid Inconvenient and Inefficient Use of Temporary Pump System to Drain Emergency Storage Basin	When Possible	2019	2021	2023		75	
6	2	Solids Handling Improvements	18	Replace Dredge, Conduits	When Desired	TBD	TBD	TBD		180	
7	1&2	SCADA Networking Improvements	19	SCADA Performance Problems	Desired Now	2019	2021	2023	170		
8	1	Influent Pump Station Grating	20	Safety Concern	Desired Now	2019	2021	2023	15		
9	1	Oxidation Ditch Structural Rehab and Guardrail Repair	20	Needed for Plant 1 Reliability	Permit Compliance Deadline of December 31, 2023	2019	2021	2023	831		
10	1	Clarifiers Structural Rehab	20	Needed for Plant 1 Reliability	Permit Compliance Deadline of December 31, 2023	2019	2021	2023	83		
11	1	Clarifiers Mechanical Replacement and Upgrade	20	Needed for Plant 1 Reliability	Permit Compliance Deadline of December 31, 2023	2019	2021	2023	897		
12	1	MCC-C Replacement	20	Needed for Plant 1 Reliability	Permit Compliance Deadline of December 31, 2023	2019	2021	2023	416		
13	1	MCC-C Standby Power	20	Needed for Plant 1 Reliability	Permit Compliance Deadline of December 31, 2023	2019	2021	2023	249		
14	1	Headworks Grating	20	Safety Concern	Desired Now	2019	2021	2023	42		
15	1	Clarifier 1 and 2 RAS Pumps and Check Valves Replacement	20	Replace Deteriorated Equipment	When Possible	TBD	TBD	TBD		299	
16	1	WAS Pumps and Check Valves Replacement	20	Replace Deteriorated Equipment	When Possible	TBD	TBD	TBD		107	
17	1	Storm Drainage Improvements	20	Prevent Flooding	Desired Now	2019	2021	2023	38		
18	1	Transfer Station Instrumentation and Controls	20	Existing Controls Failed	Desired Now	2019	2021	2023	38		
19	1	Demolish Existing Abandoned Facilities	20	Provide Clean and Safe Site	When Possible	TBD	TBD	TBD	167		
20	1	Extend Pump Sta. F Forcemain to Pump Sta. W Manhole	20	Allow Bypass of Influent Pump Sta	Desired Now	2019	2021	2023	38		
21	1	Coat Electrical Cabinets at Influent Pump Sta.	20	White Paint to Prevent Overheat	Desired Now	2019	2021	2023	8		
22	1	Pump Sta. W Isolation Valve	20	Replace Existing Ruined Valve	Desired Now	2019	2021	2023	30		
23	1	Oxidation Ditch Rotor Frame Elect. and Struct. Rehab.	20	Needed for Plant 1 Reliability	Permit Compliance Deadline of December 31, 2023	2019	2021	2023	600		
24	2	Decant Pump Station Improvements	21	Allow Discharge to Lagoons	Desired Now	2019	2021	2023	84		
25	1&2	Clarifier Launder Covers	21	Eliminate Tedious Maintenance	When Possible	TBD	TBD	TBD	338		
26	2	Extend Reclaimed Water Pipeline to Golf Course	21	Allow Reuse on Golf Course	When Desired	TBD	TBD	TBD		1,370	
27	2	Water Filling Station for Reclaimed Water	21	Allow Easier Construction Reuse	When Desired	TBD	TBD	TBD		198	
28	NA	Collection System Pump Stations	4	Restore Wet Well Integrity	When Possible	TBD	TBD	TBD	180		
29	2	Reverse Osmosis Facilities	21	Reduce Effluent Salinity, Last Resort	If Required by Regulation -- Very Unlikely	TBD	TBD	TBD			20,000
<b>Total by Category, Excluding Effluent Diffuser in Old River (e)</b>									<b>13,068 (e)</b>	<b>2,229</b>	<b>20,000</b>
<b>Total Essential and Non-Essential, Excluding Effluent Diffuser in Old River (e)</b>									<b>15,297</b>		

(a) Approximate timing recommendations, where applicable. TBD = To Be Determined.

(b) Total capital cost, including construction, contingencies, engineering, administration and environmental documentation, as applicable. Mid-2019 cost level. ENR 20-Cities CCI = 11,300.

(c) Validation of process design required after routine and intensive influent monitoring data is available from relocated influent sampler.

(d) Actual cost of supplemental aeration must be verified after special field studies to confirm existing rotor capacity and investigation of supplemental aeration alternatives.

(e) Costs for repair of Old River outfall diffuser are excluded from total due to different funding than other essential Master Plan projects.

