

CHAPTER 11.0- CAPITAL IMPROVEMENT PLAN

This chapter summarizes the costs for the recommended improvements. For a more detailed description of the recommended improvements, refer to Chapter 9 Summary of Recommended Improvements.

11.1 BASIS FOR ESTIMATE OF PROBABLE COST

Costs presented in this report are based on 2012 regional cost data. They are also conceptual level costs which can be highly variable due to material shortages, bidding climate, and unforeseen economic climate such as inflation rate, etc. In a conceptual level report such as this, costs can normally vary by -25%/+40% or more depending on the economic climate and conditions.

11.1.1 Construction Costs

As indicated, costs estimated are reflective of construction costs in the Northwest and include a 15% allowance for mobilization/demobilization, overhead and profit.

11.1.2 Contingencies

Cost contingencies have been assumed at 30% of construction costs.

11.1.3 Engineering, Legal and Administrative Costs

Engineering, legal and administrative costs have been assumed at 18% of construction costs.

11.2 SUMMARY OF COSTS

Table 11.1 and Figure 11.1 present a summary of future costs in order of priority. The need for each improvement varies for reasons including compliance with the City's discharge permit, including new regulations; achieving capacity necessary to accommodate growth; and replacing worn/old equipment. Priority 1 improvements are expected to be required from 2012 to 2017, Priority 2 from 2018 to 2022, Priority 3 from 2023 to 2032, and Future Improvements are projected requirements beyond 2032.

However, the City should recognize that flexibility in the completion of many of these improvements may be warranted. For example, the City should consider accelerating projects if growth occurs faster than anticipated. Similarly, changes in flows and future industrial loads may allow for some improvements to be postponed.

Costs for relocating the discharge from the canal (as discussed in Chapter 7) would be in addition to the Priority 1 improvements shown in Table 11.1. An estimated cost of \$15 million should be used for planning purposes, until alternate disposal options and requirements have been investigated sufficiently to develop a more specific cost estimate.

TABLE 11.1 - CITY OF JEROME CAPITAL IMPROVEMENT PLAN

ID#	Item	Primary Purpose ¹	Total Estimated Cost (2012)	Comment
Priority 1 Improvements²				
1.1	Membranes - Basins 5&6, Blower	C, R	\$ 1,700,000	Results in a membrane capacity of 4.2 MGD Max Month
1.1A	Headworks	C, U, R	\$ 870,000	Contingency budget to protect the membranes (in-house solution pending)
1.2	Additional Dewatering	C, R	\$ 1,900,000	Needed to provide reliability and redundancy to dewatering process
1.3	Aeration Basin, Blower Bldg, & Pump Station	C, R	\$ 5,200,000	Additional 0.55 MG tank for plant capacity of 16,100 lb/day BOD
1.3A	Yard Piping & Sitework	C, U	\$ 580,000	Necessary for Aeration Basin implementation
1.4	Biotower Ventilation	C, U	\$ 150,000	Needed for adequate biotower performance
Total Priority 1 Improvements ³			\$ 10,400,000	
Priority 2 Improvements²				
2.1	Misc. Upgrades to Existing Plant ⁴	R, U	\$ 3,300,000	See Note 4
2.2	Replace Membranes - Basins 3&4	C, R, U	\$ 1,600,000	Replaces damaged membranes and adds 4 units w/increased surface area for a membrane capacity of 4.8 MGD Max Month
Total Priority 2 Improvements ³			\$ 4,900,000	
Priority 3 Improvements²				
3.1	Digesters and Controls	L, R	\$ 10,400,000	Provides treatment for "hot" intermediate clarifier sludge and allows for Class B biosolids
3.1A	Pump Stations	U, L	\$ 1,900,000	Necessary for digester implementation
3.1B	Thickening	L, U	\$ 1,400,000	Expand the dewatering building and add thickening unit
3.2	Intermediate Clarifiers	C, I	\$ 2,800,000	Two 80 foot diameter units increase plant BOD capacity to 30,000 lb/day
Total Priority 3 Improvements ³			\$ 16,500,000	
Priority 4 Improvements²				
4.1	New/Expanded Headworks Facility	R, I, S	\$ 3,300,000	Increases Headworks capacity to allow peak flows over 10 MGD
4.2	Aeration Basins	I, S	\$ 4,600,000	Two 0.55 MG tanks for plant capacity of 41,500 lb/day BOD
4.2A	Additional Blowers	I, S	\$ 450,000	Necessary for Aeration Basin implementation
4.3	MBR Building and UV	I, S	\$ 6,100,000	Provides for increased membrane capacity to 8.0 MGD
4.3A	Yard Piping & Sitework	S	\$ 375,000	Necessary for MBR addition
4.3B	Pump Stations	S	\$ 425,000	Necessary for MBR addition
4.4	Additional Digesters	I, L	\$ 6,000,000	Increases digester capacity by adding 3rd digester and holding tank
4.4A	Additional Dewatering	I, R	\$ 450,000	Increase in dewatering capacity
4.5	New Admin/Lab Building	L	\$ 650,000	
4.6	Maintenance Shop	L	\$ 750,000	
4.7	Membranes - Basins 11&12	I, S	\$ 1,600,000	Provides for increased membrane capacity to 9.6 MGD
Total Priority 4 Improvements ³			\$ 24,700,000	

1. C = EPA/DEQ compliance, R = Redundancy, U = Necessary upgrade, L = Increased level of service/flexibility (example Class B biosolids), S = Second process train, I = Plant capacity increase above current permitted load
2. Priority improvements can be broken out into projects by number (for example: 1 and 1A should be done at the same time but 1 and 2 can be separate projects)
3. Does not include Collection System Improvements of \$1.5 million or relocation of discharge; estimated cost of \$15 to \$20 million
4. Plant improvements needed to address deficiencies at existing facilities include headworks HVAC, corrosion repairs, hardware replacement, and new grit pump; MBR building HVAC, basin covers, exhaust fans, and corrosion repair; and existing aeration basin structural repairs, debris fence, WAS flow meter, ML flow meter, and redundant blower

11.3 OTHER ANNUAL COSTS

In addition to the capital improvement costs presented in the previous section, Keller Associates recommends the following be accounted for in setting annual budgets:

- Additional staffing needs (refer to Chapter 10): additional two full time equivalent employees in FY 2013 (pretreatment coordinator and lab technician), one more employee in FY 2014 (collection system), and two additional employees in FY 2015 (another plant operator and a lead wastewater superintendent/engineer).
- Additional collection system replacement / rehabilitation needs (refer to *Wastewater Collection System Master Plan*). Keller Associates recommends that this budget initially begin with \$200,000 per year and be increased over time as required.
- Replacement of short-lived assets (pumps, equipment, membranes, etc.): equates to an average of approximately \$660,000/year.