

# Chapter 8 - Juan Diaz WWTP Construction and Operations and Maintenance Costs

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## 8.1 Projected Construction Cost

The proposed treatment process for the Juan Diaz WWTP is the step-feed modification of the air activated sludge process. Provisions for alum addition will be made to ensure compliance with effluent phosphorus limits. This will allow for the required nutrient removal. The construction cost estimate for the Juan Diaz WWTP is \$150,000,000 as outlined in Table 8-1.

**Table 8-1**  
**Juan Diaz Wastewater Treatment Plant**  
**Construction Cost Estimate**

1	Site Work	\$4,500,000
2	Paving	\$1,150,000
3	Headworks and Administration	\$8,870,000
4	Aeration Basin	\$25,780,000
5	Blower Building	\$4,960,000
6	Secondary Clarifiers	\$23,910,000
7	RAS/WAS Pump Station	\$5,410,000
8	Chlorine Facility	\$2,040,000
9	Aeration Basin Distribution Box	\$810,000
10	Clarifier Distribution Box	\$2,860,000
11	Yard piping	\$9,440,000
12	Anaerobic Digesters	\$18,610,000
13	Solids Handling Building	\$5,530,000
14	Electrical & Standby Generator	\$4,330,000
15	Maintenance Building	\$800,000
16	Sludge Landfill	\$6,000,000
	<b>SUBTOTAL</b>	<b>\$125,000,000</b>
	20% Contractor Overhead & Profit	\$25,000,000
	<b>CONSTRUCTION COST</b>	<b>\$150,000,000</b>

## 8.2 Organization and Staffing

The Operations of the Juan Diaz WWTP will be organized in three different groups.

- *Maintenance Group* – Responsible for both repair and preventive maintenance programs.
- *Production Group* – Responsible for the efficient operation of the treatment plant, sludge hauling, and the operation of the sludge landfill.

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- *General Services* – Responsible for the administration and logistics of the operation.

A total staff of about 100 persons for round-the-clock operations, maintenance and administration work at the Juan Diaz WWTP and solid waste disposal operation is expected. For the first year or two, this total may be approximately 30 to 50 percent larger because of training and start-up procedures, including equipment manufacturer's technicians troubleshooting in the field.

A total staff of 81 personnel are identified for operating the Juan Diaz primary treatment plant.

**Table 8-2**  
**Juan Diaz WWTP O&M Staffing**

Activity	Phase I Primary Treatment
<b><u>Administration</u></b>	
Plant Director	1
Plant Assistant Director	1
Plant Administrator	1
Secretarial Pool	3
Drivers	2
Messengers	2
Housekeeping	Subcontract
Gardening	Subcontract
Restaurant	Subcontract
 <b><u>Operations</u></b>	
Process Supervisor	1
Heads of Shifts	5
Wastewater Treatment Operators	5
Assistants in Wastewater Treatment	15
Sludge Treatment Operators	5
Assistants in Sludge Treatment	15
Laboratory Technician	2
Laboratory Operators	2
Head of Maintenance	1
Head Mechanic	1
Mechanics	4
Assistants to Mechanics	4
Head Electrician	1
Electricians	4
Assistants to Electricians	4
Instrumentation Specialists	2
<b>Total</b>	<b>81</b>

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Personnel for sludge transport to final disposal site, and personnel to operate final disposal site are not included in the above estimate.

### 8.3 Projected Operating Cost

The annual operating costs for the proposed 102 mgd wastewater treatment plant with interim landfill operations are summarized below.

**Table 8-3**  
**Annual Operational and Maintenance Cost**

<b>Cost Item</b>	<b>Annual Cost</b>
Manpower	\$1,000,000
Power	4,300,000
Chemical	750,000
Waste Transport & Disposal	2,000,000
Maintenance	500,000
<b>Total</b>	<b>\$US 8,550,000</b>