



Engineering Department

Presented by:
Mike Dorman
 Director of Engineering

Operations Committee
 November 1, 2023





Information Item





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Engineering Department

<p style="text-align: center;">Planning</p> <div style="text-align: center;">  <p>Justin Fenton</p> <ul style="list-style-type: none"> Asset Management CIP Planning CEQA </div>	<p style="text-align: center;">Project Management Office</p> <div style="text-align: center;">  <p>Eros Yong</p> <ul style="list-style-type: none"> CIP Project Management Small Project Group </div>
<p style="text-align: center;">Design</p> <div style="text-align: center;">  <p>Martin Dix</p> <ul style="list-style-type: none"> Design Control System Commissioning </div>	<p style="text-align: center;">Construction Management</p> <div style="text-align: center;">  <p>Raul Cuellar</p> <ul style="list-style-type: none"> Construction Management Inspection </div>

124 Total Staff

140+ Active Projects

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Project Creation

Capital Improvement Program (CIP)

- Defined in the Asset Management Plan and Budget Book
- Validated annually with Budget Book

Clearinghouse Process (operational or CIP funded)

- Bi-weekly meeting with managers and stakeholders
- Recommend repair, rehabilitation, replacement or improvement projects (~\$100K - \$7M)



Valve Replacement

Erosion Control

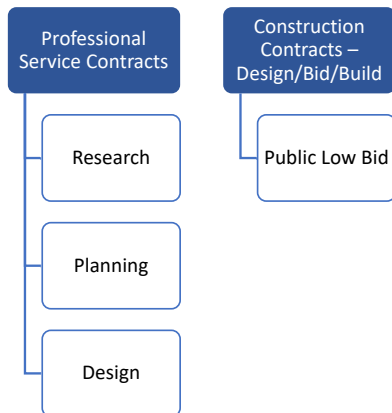
Cable Replacement

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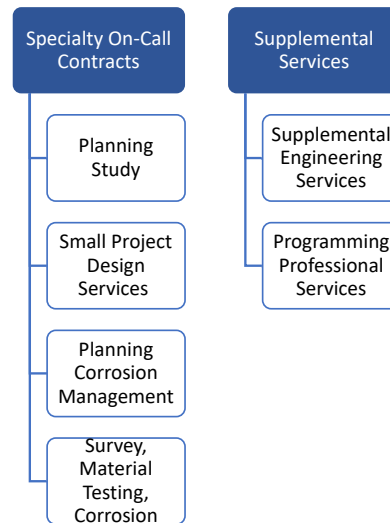
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Contract Types

Individual Contracts

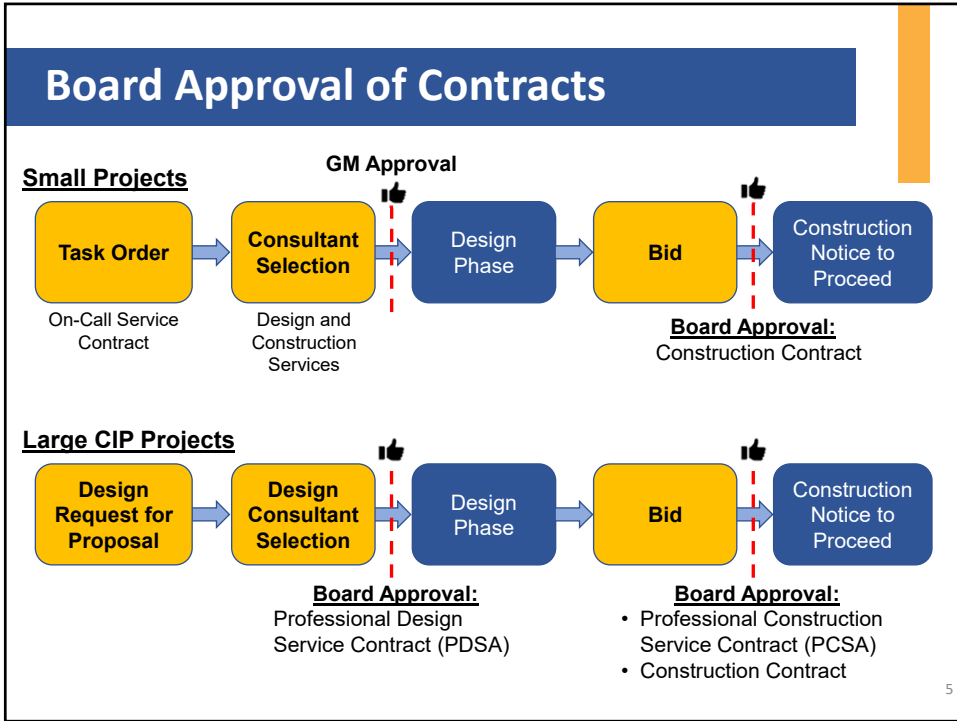


Multi-year Contracts



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Studies & Master Planning Efforts

Collections Capacity Evaluation Study

Facilities Master Plan

Biosolids Master Plan

Seismic Evaluation Study

Climate Resiliency Study

New 2022-2023 Studies: (1) Energy and Digester Gas Master Plan and (2) Urban Runoff Optimization Study

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Asset Management Plan

Asset Lifecycle

Asset Management Plan 2023

1. What do we own?
2. What condition is it in?
3. What is our plan to operate, maintain, rehabilitate and replace our assets?

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Know What We Own and Its Condition

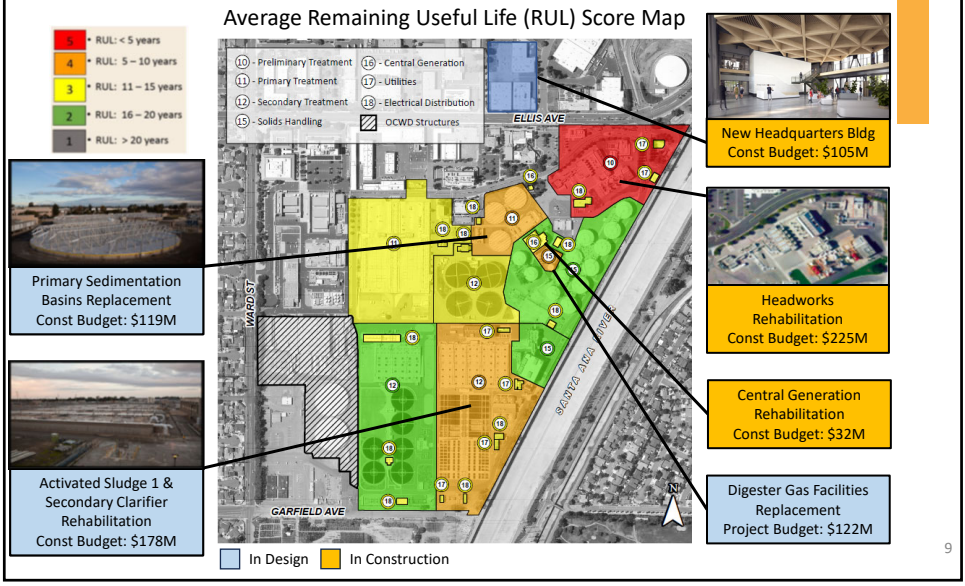
Asset Type	PEPS	Aeration Basins	Secondary Clarifiers A-L	SEJIB	East RAS/ WAS PS	West RAS/ WAS PS	Oxygen Facility	DAFT's A-D	DAFT's Polymer Sys.	DAFT's Odor Control	WSSPS
Civil											
Effluent Piping	2	-	3	3	4	4	-	-	-	-	4
Structural											
Building	2	-	-	-	2	2	-	1	-	-	-
Structure	2	4	3	3	-	-	-	1	1	1	-
Mechanical											
Pump	2	-	-	-	3	3	-	2	2	-	3
Aerator	-	4	-	-	-	-	-	-	-	-	-
Piping and Valve	3	3	3	3	3	3	3	2	2	3	3
Clarifier/DAFT Moving Mechanism	-	-	5	-	-	-	-	2	-	-	-
Channel Air Blower	-	-	-	-	-	4	-	-	-	-	-
Control Gate	-	3	5	3	-	-	-	-	-	2	-
LOX Facility	-	-	-	-	-	-	3	-	-	-	-
HVAC & Ventilation	2	-	-	-	3	3	-	-	-	-	-
Crane	3	-	-	-	-	-	-	-	-	-	-
Electrical											
MCC & VFD	4	3	3	-	4	4	-	3	3	3	3
Instrumentation											
PLC & Flow Meter	3	3	3	-	3	3	3	3	3	-	3

RUL Legend:

	RUL <5 years		RUL 5-10 years		RUL 11-15 years		RUL 16-20 years		RUL >20 years
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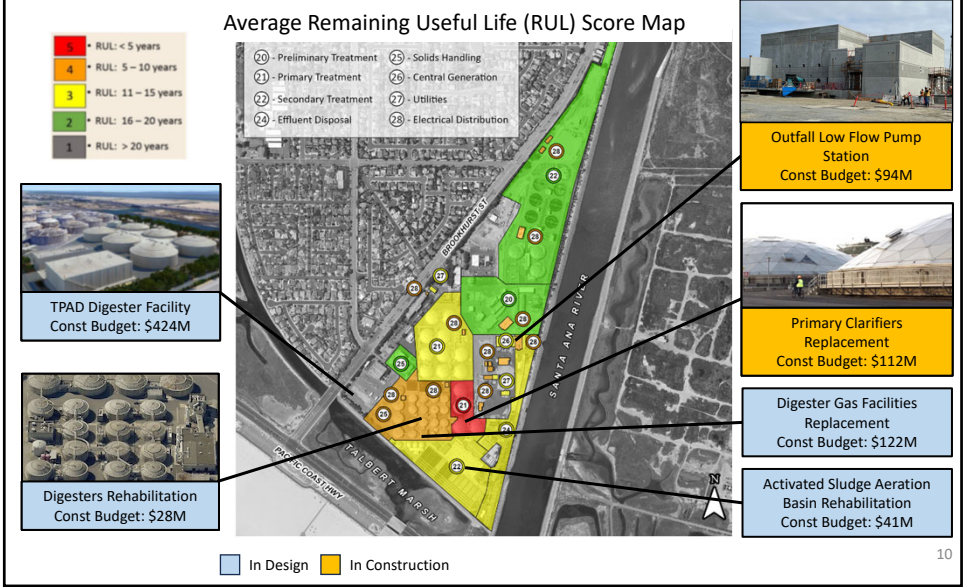
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Plant No. 1 Condition and Projects



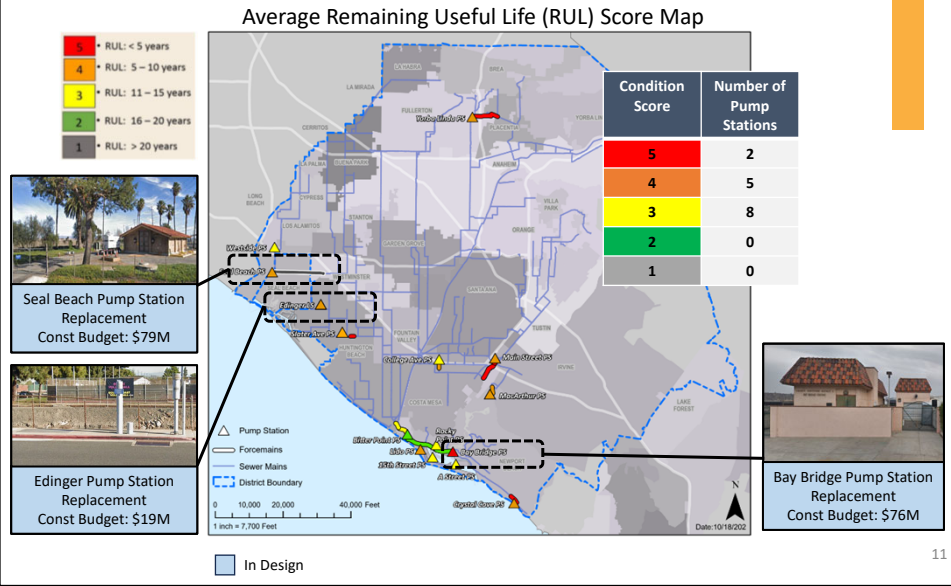
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Plant No. 2 Condition and Projects



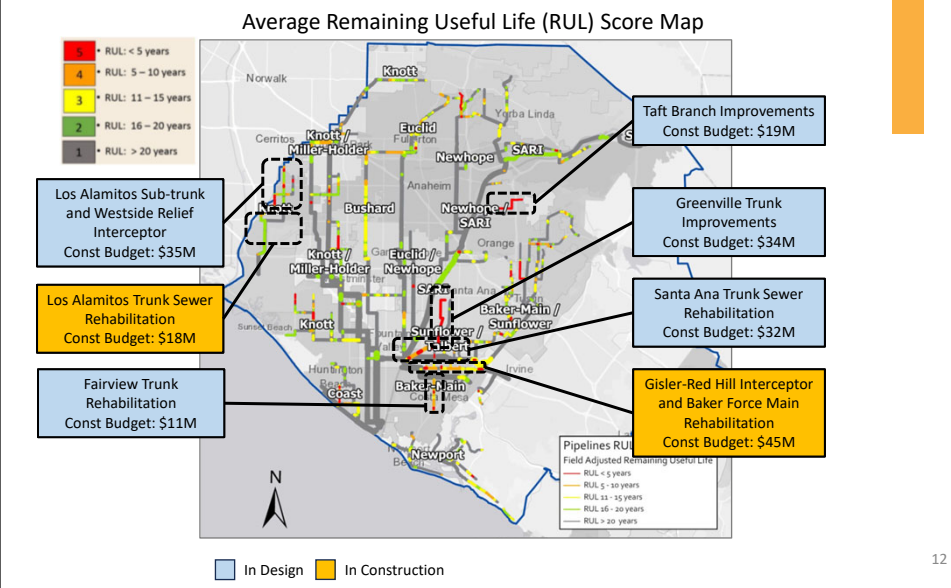
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Pump Station Condition and Projects

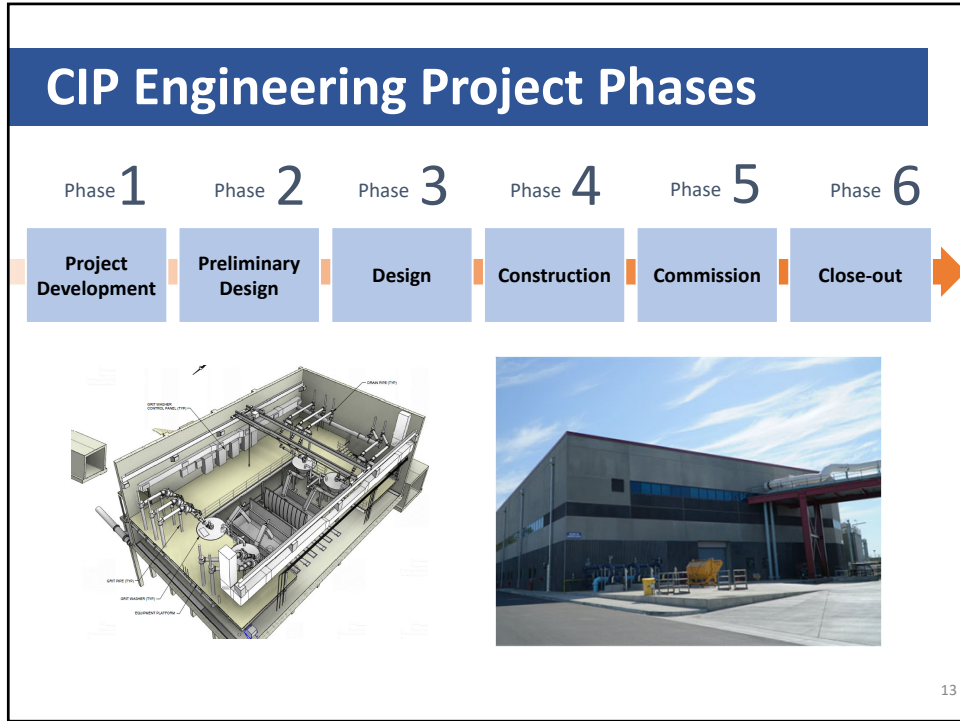


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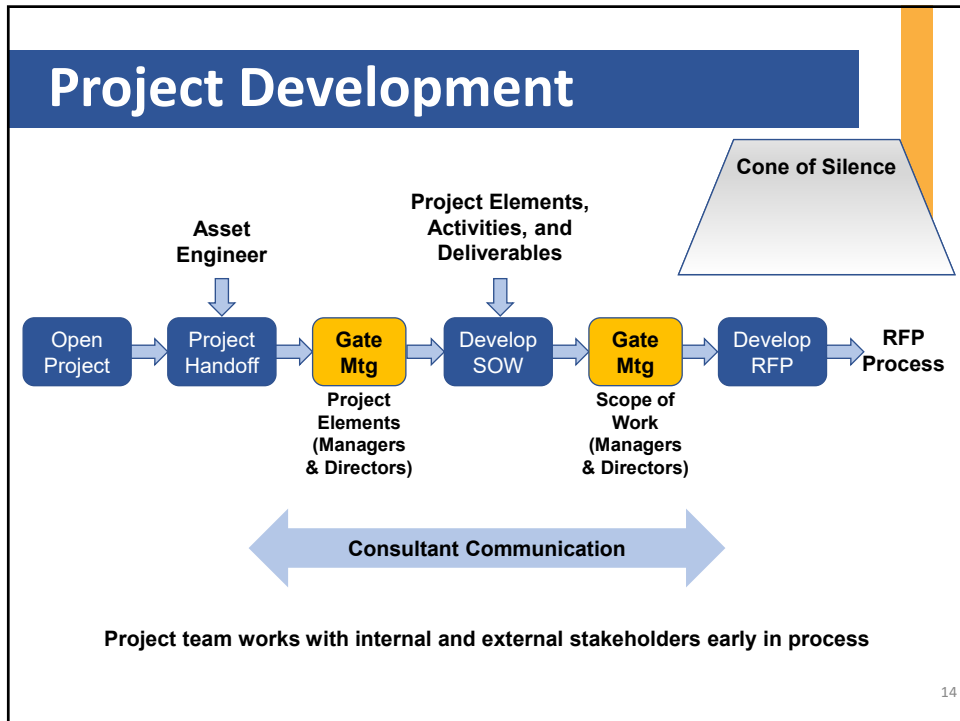
Gravity Sewer Condition and Projects



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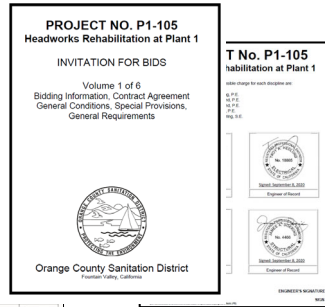
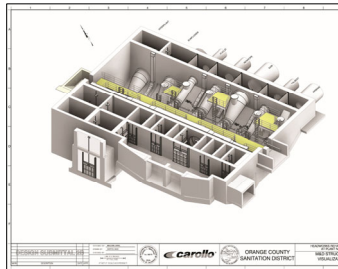
Preliminary Design & Design

Preliminary Design

- Evaluate project alternatives
- Determine appropriate technology and configuration
- Develop implementation plan
- Develop construction cost estimate

Design

- Develop design documents that meets the project scope, schedule, and budget requirements



1,935 Drawings and 294 Specifications (4,100 pages of specs and 2,500 pages of appendices)

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Construction & Commission

Construction

- Ensure projects are safely constructed
- Quality assurance in compliance with contract documents

Commission

- Test and check all equipment and systems
- Test control systems
- Train and coordinate startup with Operations & Maintenance

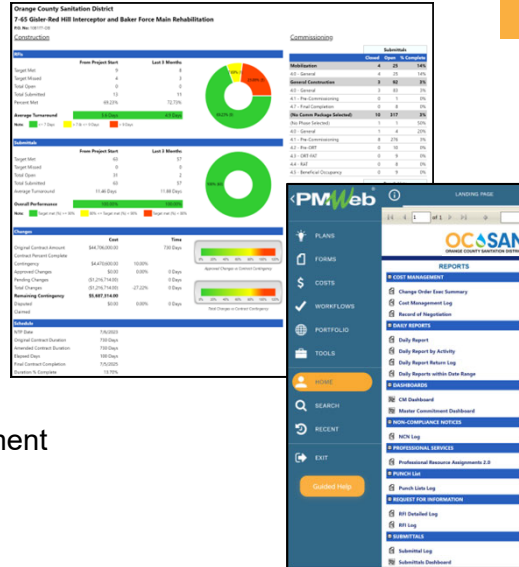


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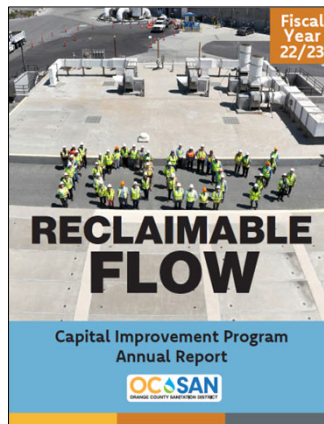
Engineering Tools and Software

- Primavera P6 for Scheduling
- Power BI
 - Project milestones
 - Schedule variances
 - Project budgets
 - Cashflow
 - Staffing workload and assignments
- PMWeb
 - Contracts
 - Construction Management



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Questions?



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