



Engineering Department

Presented by:
Mike Dorman
Director of Engineering

Administration Committee
November 8, 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

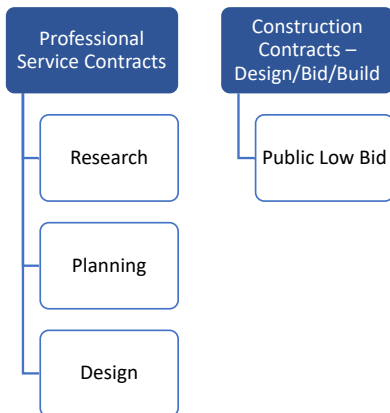
Erosion Control

Cable Replacement

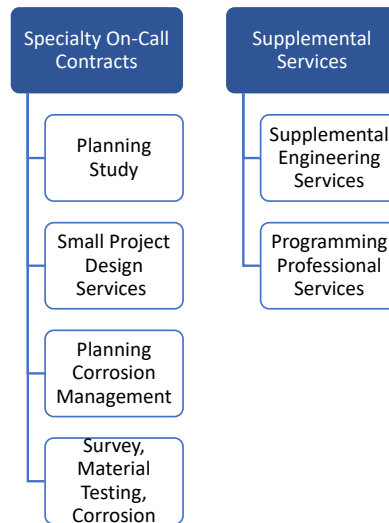
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Contract Types

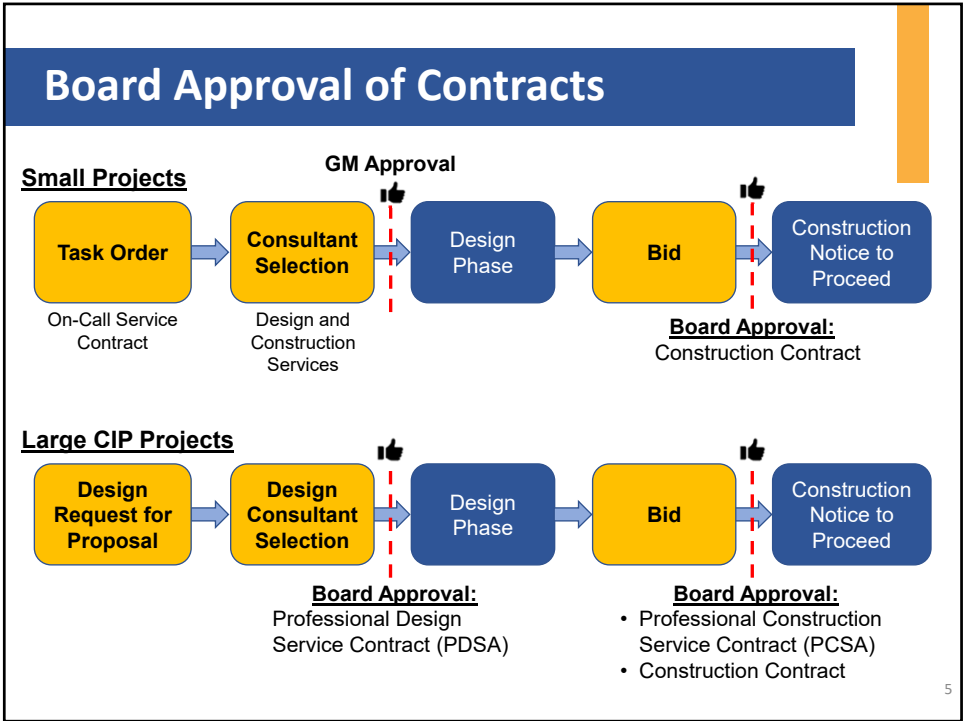
Individual Contracts



Multi-year Contracts



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Studies & Master Planning Efforts

Collections Capacity Evaluation Study

Facilities Master Plan

Biosolids Master Plan

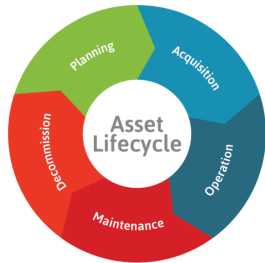
Seismic Evaluation Study

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



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



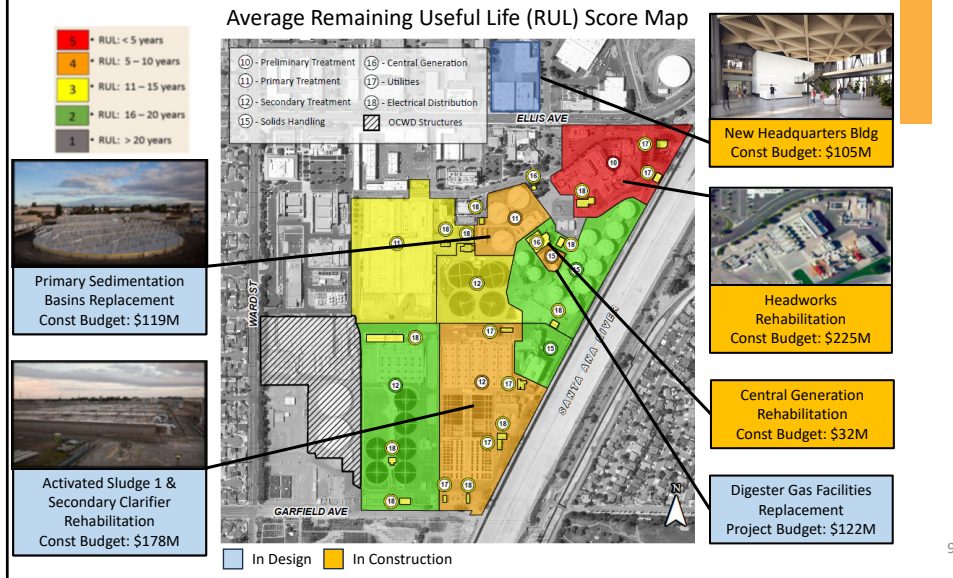
Asset Type	PEPS	Aeration Basins	Secondary Clarifiers A-L	SEJIB	East RAS/ WAS PS	West RAS/ WAS PS	Oxygen Facility	DAFT's A-D	DAFT's Polymer Sys.	DAFT's Odor Control	WSSPS
Civil											
Effluent Piping	2	-	3	3	4	4	-	-	-	-	4
Structural											
Building	2	-	-	-	2	2	-	1	-	-	-
Structure	2	4	3	3	-	-	-	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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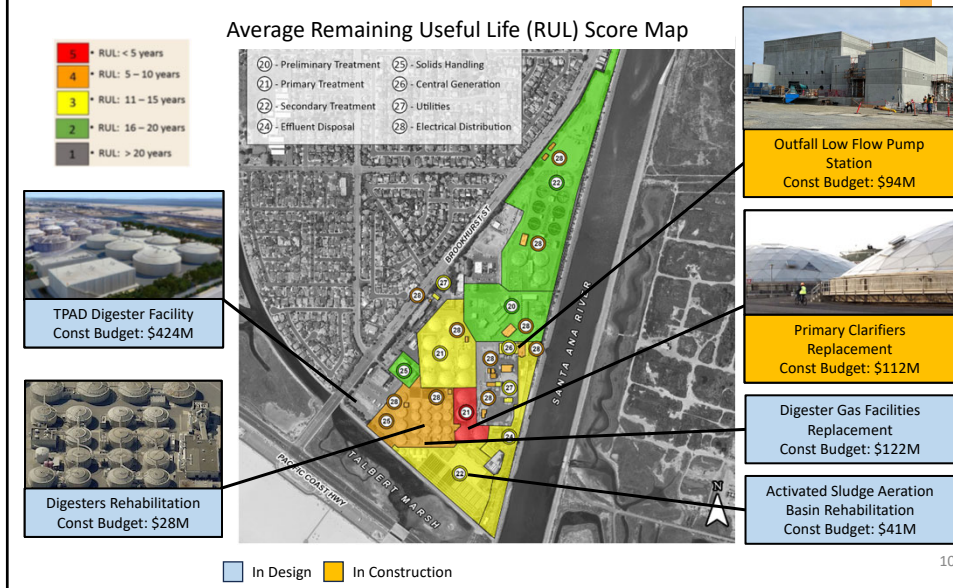
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Plant No. 1 Condition and Projects



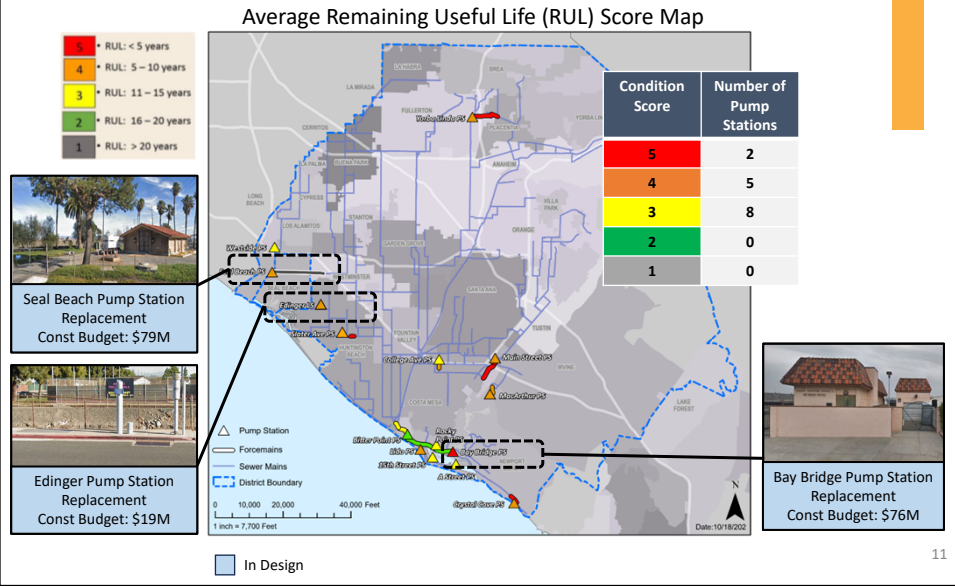
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Plant No. 2 Condition and Projects



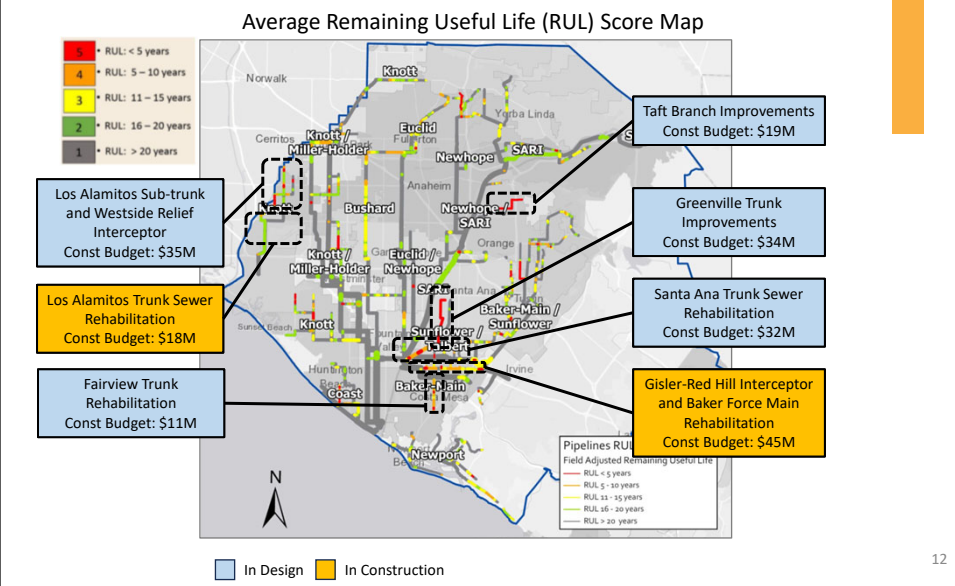
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Pump Station Condition and Projects

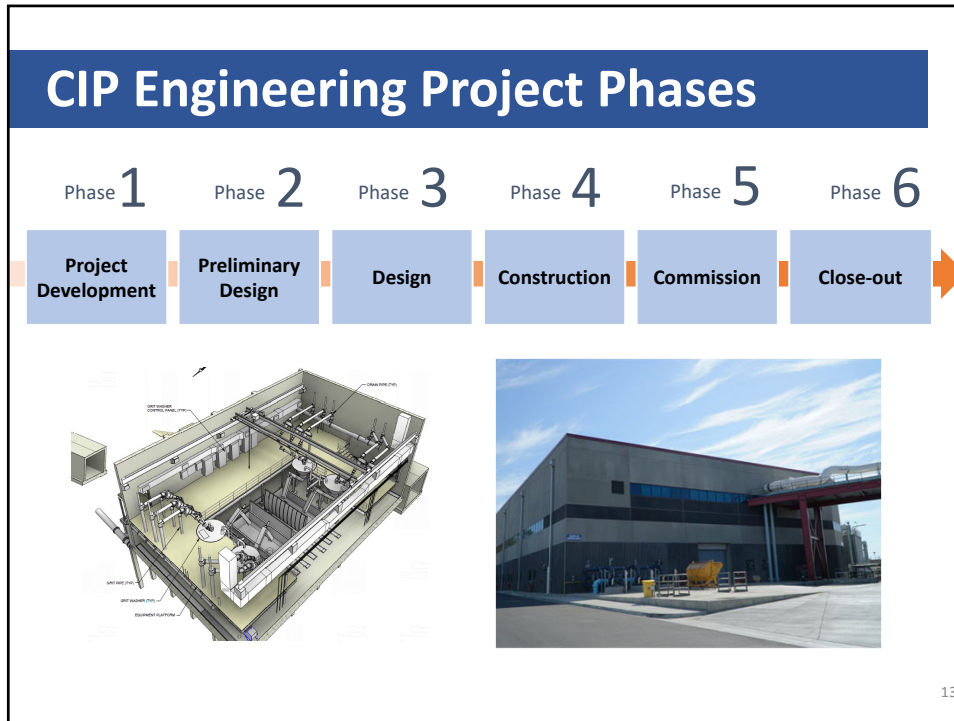


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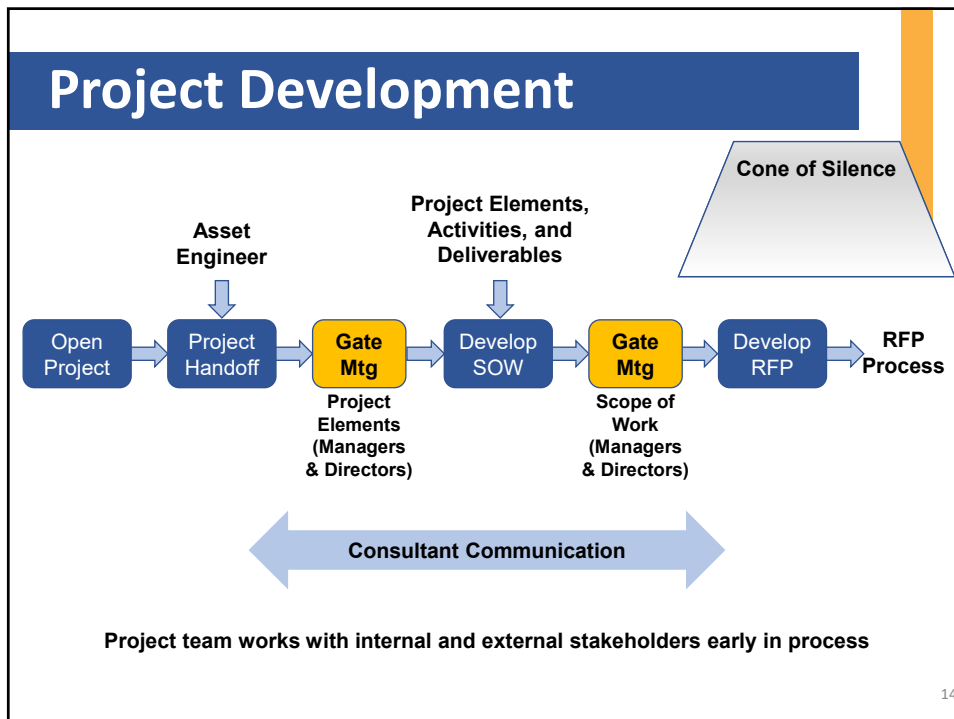
Gravity Sewer Condition and Projects



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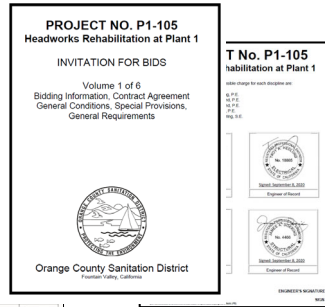
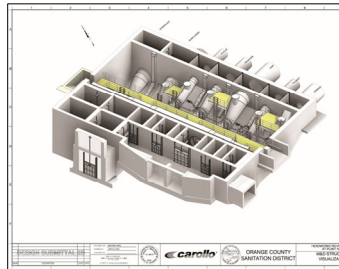
Preliminary Design & Design

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

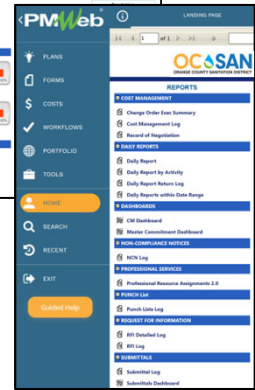


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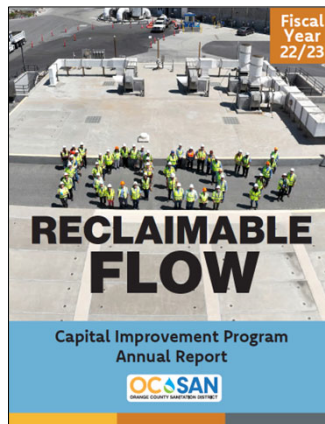
Engineering Tools and Software

- 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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