

Activated Sludge-1 and Secondary Clarifier Rehabilitation

Project No. P1-140

Presented by:
Valerie Ratto,
Engineering
Supervisor

Operations
Committee
December 7, 2022

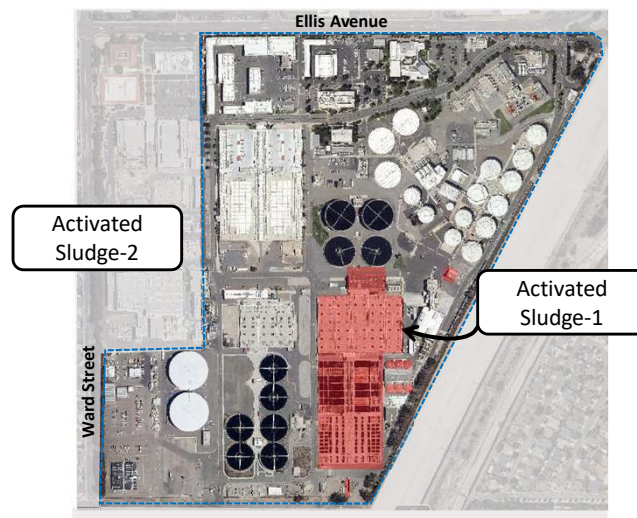
Consultant Design Award



OC SAN
ORANGE COUNTY SANITATION DISTRICT

1

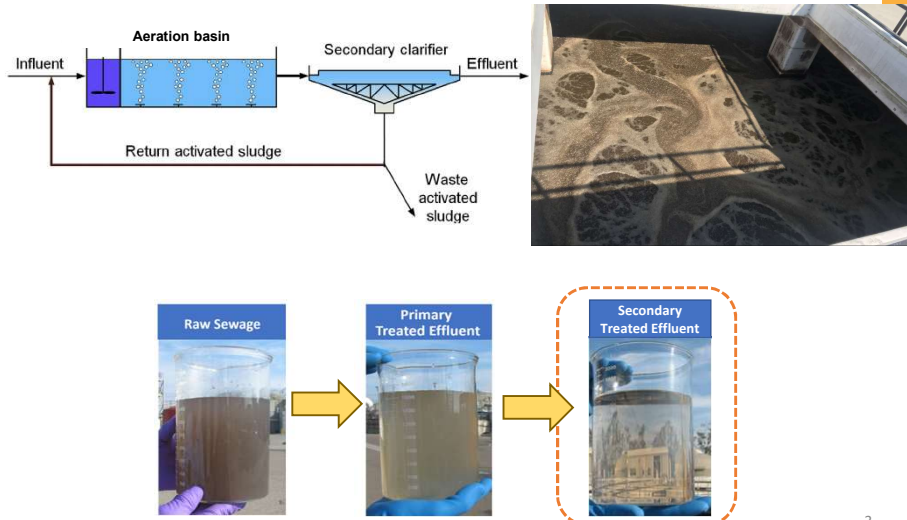
Project Location: Plant No. 1



2

2

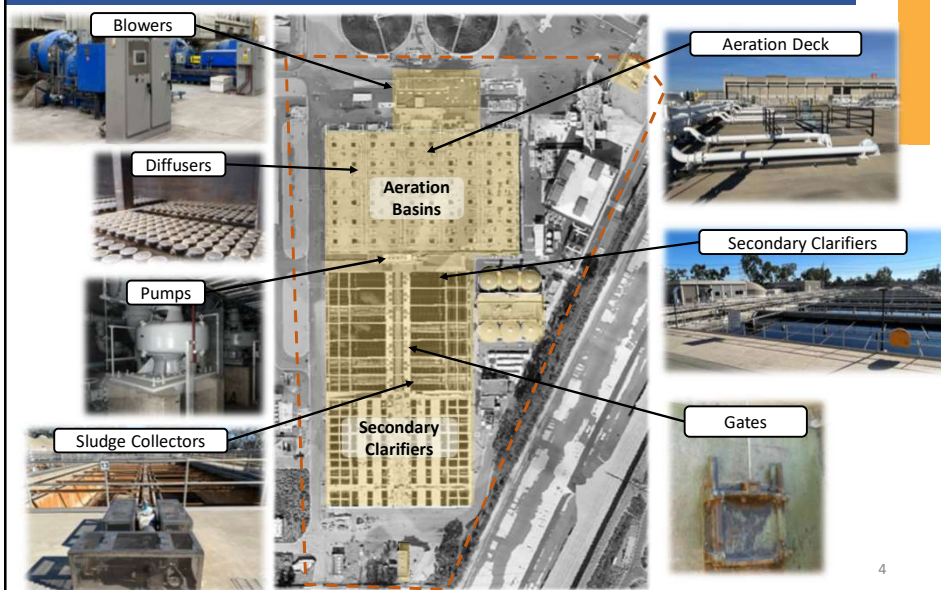
What is the Activated Sludge Process?



3

3

Activated Sludge-1: >\$600M Asset Value

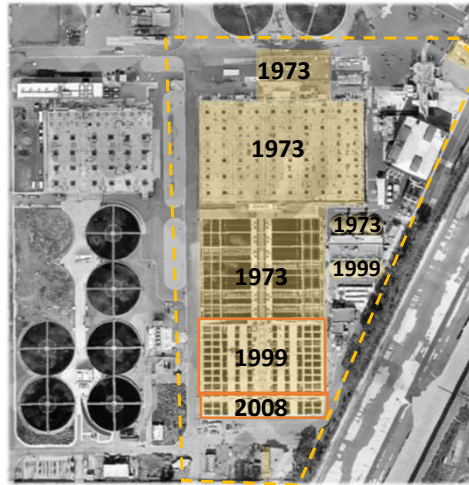


4

4

Reason for the Project

- Equipment passed useful life, obsolete, and difficult to maintain
- Auxiliary utilities are in poor condition



5

5

Equipment at the End of Life



Blowers

Parts difficult to obtain. Some parts are not readily available and can take 6 – 8 months to replace.



Return Activated Sludge Pumps



Waste Activated Sludge Pumps



Drain Pumps

6

6

Equipment at the End of Life



Blower Switchgear



*Return Activated Sludge
Pump Station Electrical*



Standby Power Turbine Generator



Transformers

Switchgear, motor control centers, and standby generators are at or near the end of useful life. For end-of-life equipment, only reconditioned parts are available and are difficult to procure.

7

7

Poor Condition



Corroded Piping



*Corroded Slide Gates –
Difficult to Open/Close*



*Worn/Damaged Diffusers – Impacts
Energy Consumption and Performance*

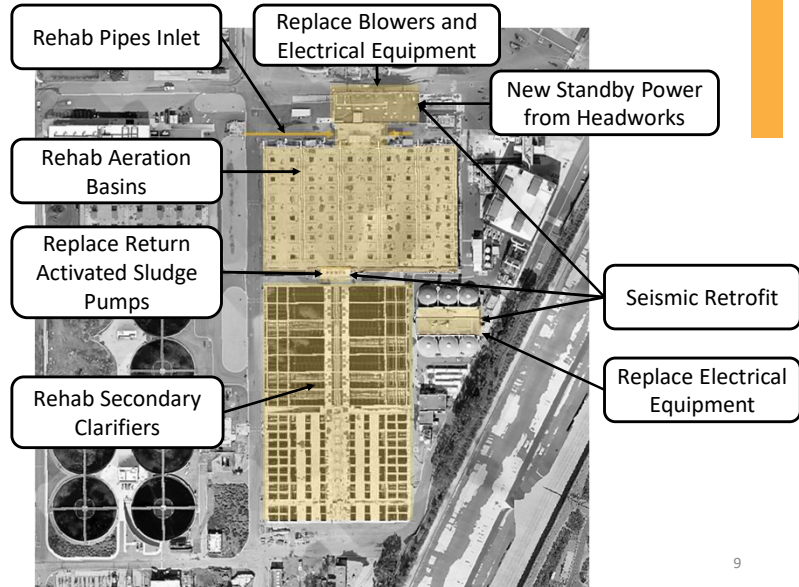


Worn Sludge Collectors

8

8

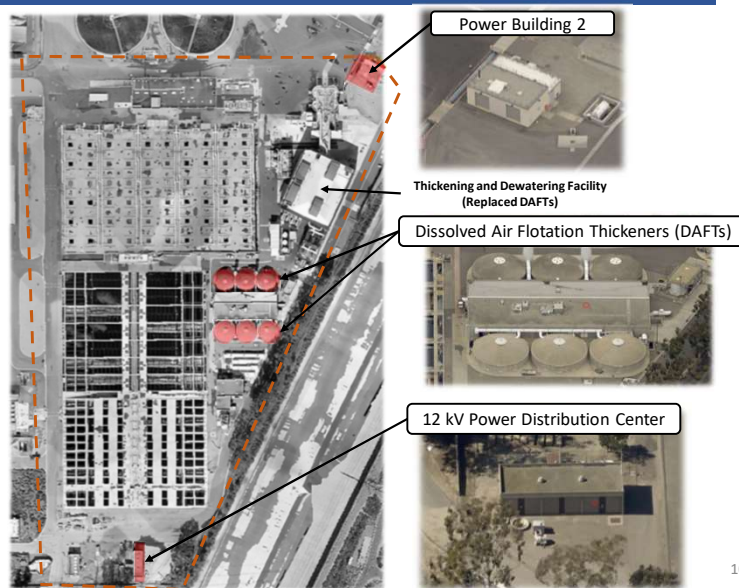
Proposed Solution



9

9

Demolition of Adjacent Facilities

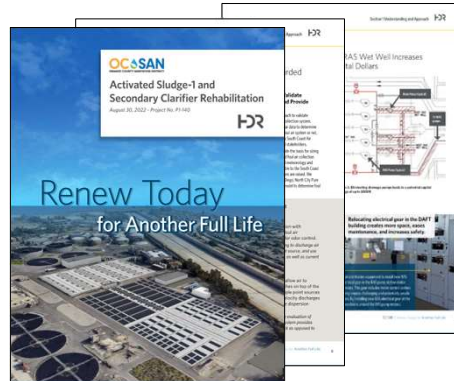


10

10

Selection Process

- Three proposals received
- Interviews conducted with three firms
- HDR Engineering, Inc. selected
 - Innovative approaches to complete project



11

11

Negotiations

	Original Proposal	Negotiated
Total Hours	82,810	82,145
Total Fee	\$18,023,825	\$18,462,443

- Increased condition assessment effort to match scope.
- Moved subcontractor hours to direct costs.
- Deputy project management hours adjusted to allocate less to workshops and meetings.
- Various minor adjustments to scope.

12

12

Recommendation

Recommend to the Board of Directors to:

- A. Approve a Professional Design Services Agreement with HDR Engineering, Inc., to provide engineering services for Activated Sludge-1 and Secondary Clarifier Rehabilitation, Project No. P1-140, for an amount not to exceed \$18,462,433; and
- B. Approve a contingency of \$1,846,244 (10%).

13

13

Questions



14