

# Ocean Outfall Condition Assessment and Scoping Study, Project No. PS18-09

Valerie Ratto  
Engineering  
Supervisor

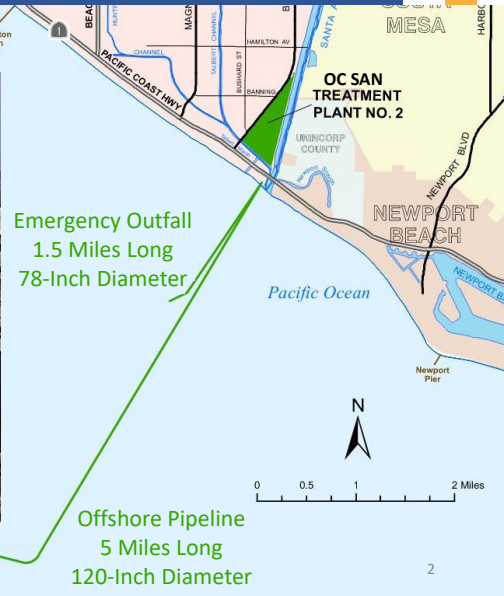
Operations  
Committee

February 1, 2023

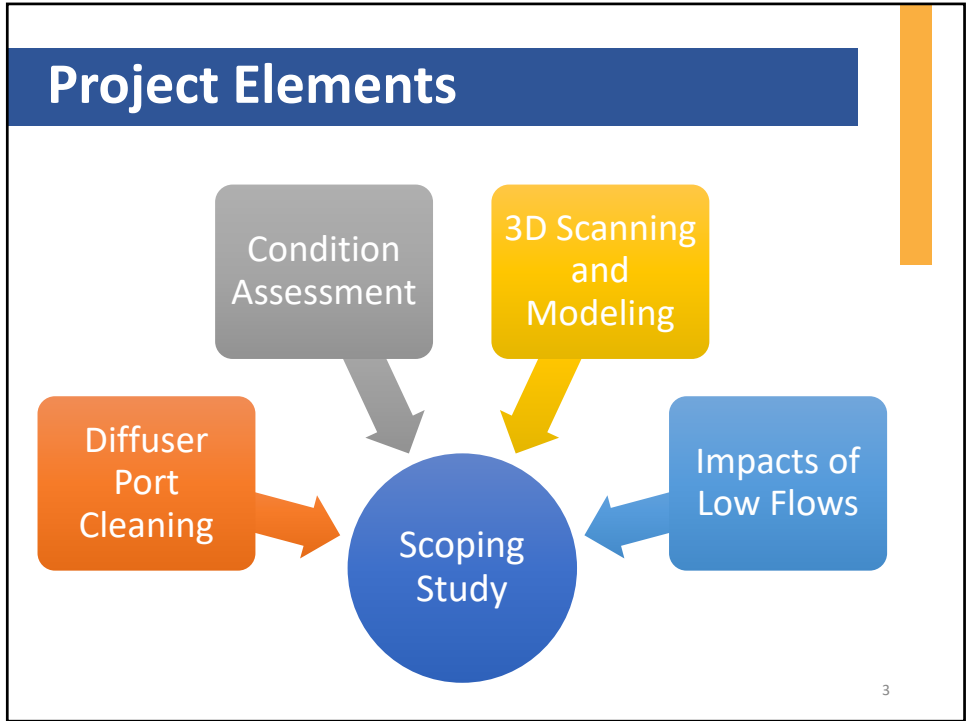


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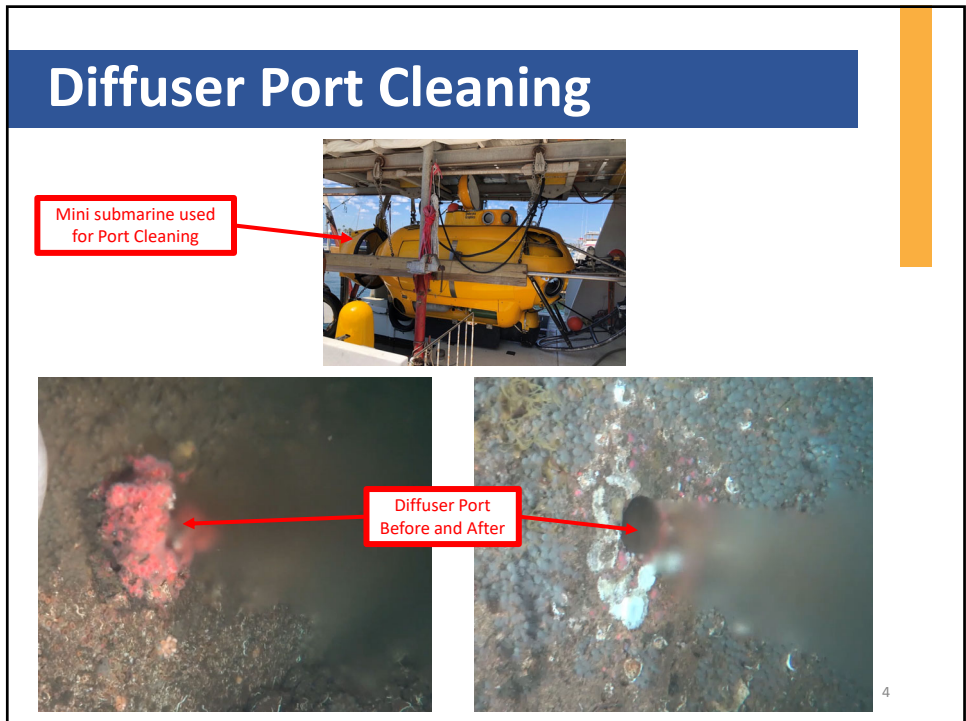
## Overview of Outfall



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## Barnacle Cleaning Clip



• Full Video: <https://web.microsoftstream.com/video/7a9d8402-8e45-4981-ab5f-66dbd423f68c>

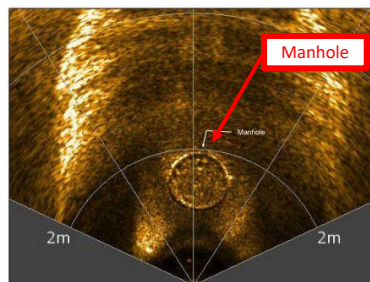
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## Interior Condition Assessment



ROV used for Inspection



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## Hands On Inspection (Divers)



Measuring Joint Thickness



Inspection Hatch Pre/Post Cleaning and Thickness Testing



New Concrete Core



Measuring Joint Thickness



Testing Concrete Soundness



Hand Clearing Port Obstructions

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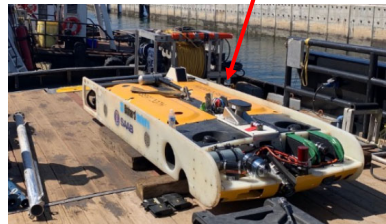
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## 3D Scanning and Modeling

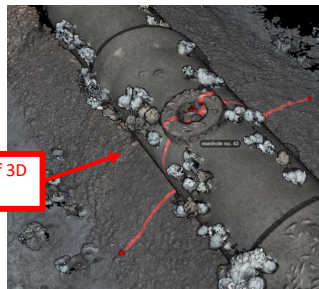
UCSD Research Vessel



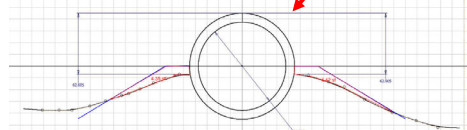
ROV used for Scanning



Example of 3D Model



Outfall Cross Section

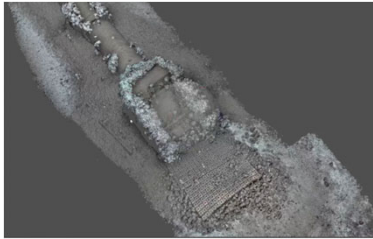

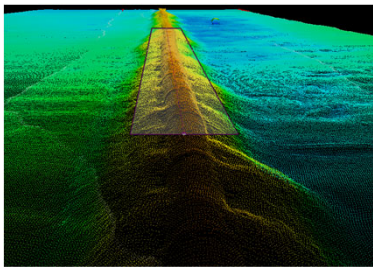


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## Future Rehabilitation Project

- **CIP Rehab project – 2027-2030 (Construction)**
  - Replace all metal hardware
    - Flap Gate
    - Manhole Covers
    - Inspection Port Covers
    - Fasteners
  - Ballast Addition
  - Sediment Removal

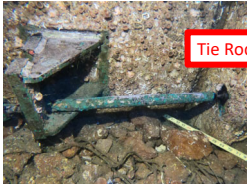




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## Immediate Required Repairs



Concrete Core Crack Repair

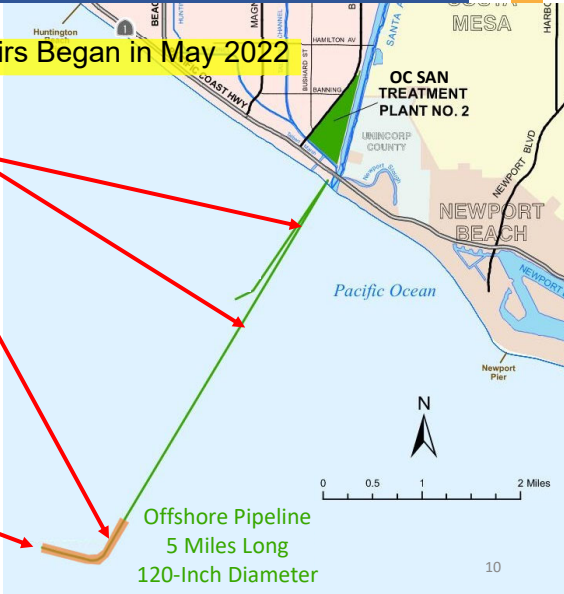


Tie Rod Repair



Flap Gate Crack Repair

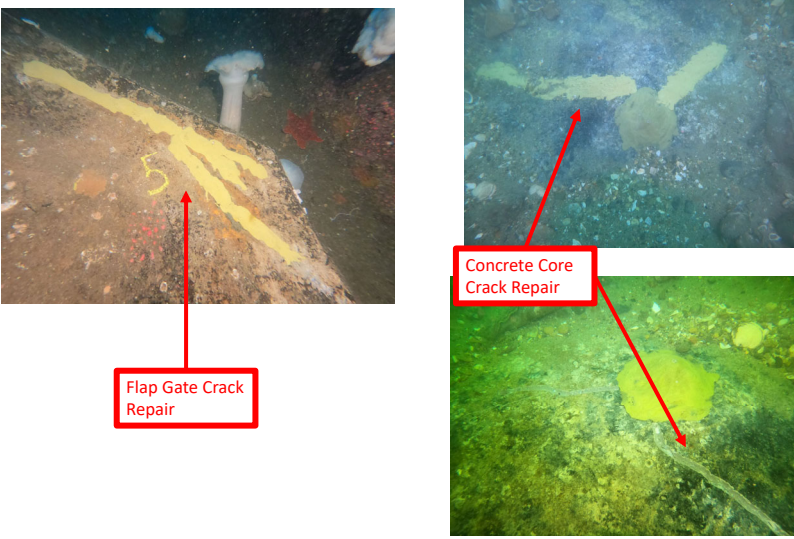
Repairs Began in May 2022



Offshore Pipeline  
5 Miles Long  
120-Inch Diameter

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## Crack Repair



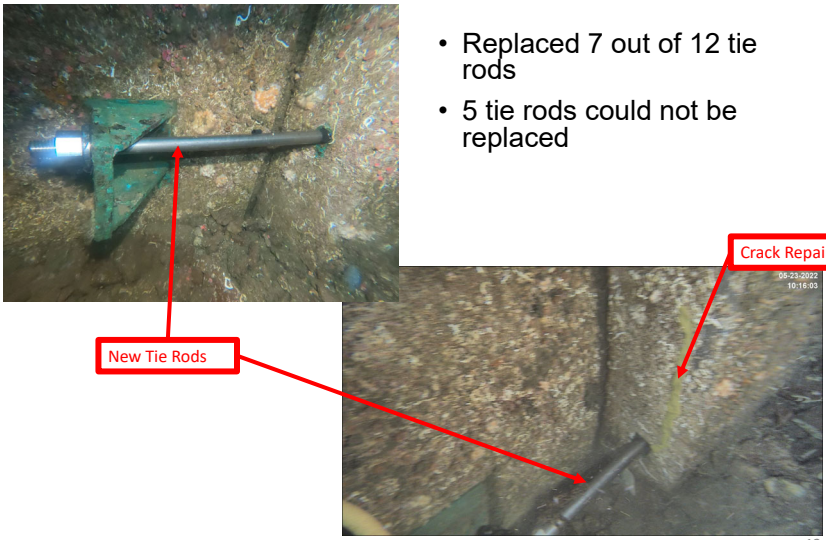
Flap Gate Crack Repair

Concrete Core Crack Repair

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## Tie Rod Replacement and Crack Repair



- Replaced 7 out of 12 tie rods
- 5 tie rods could not be replaced

New Tie Rods

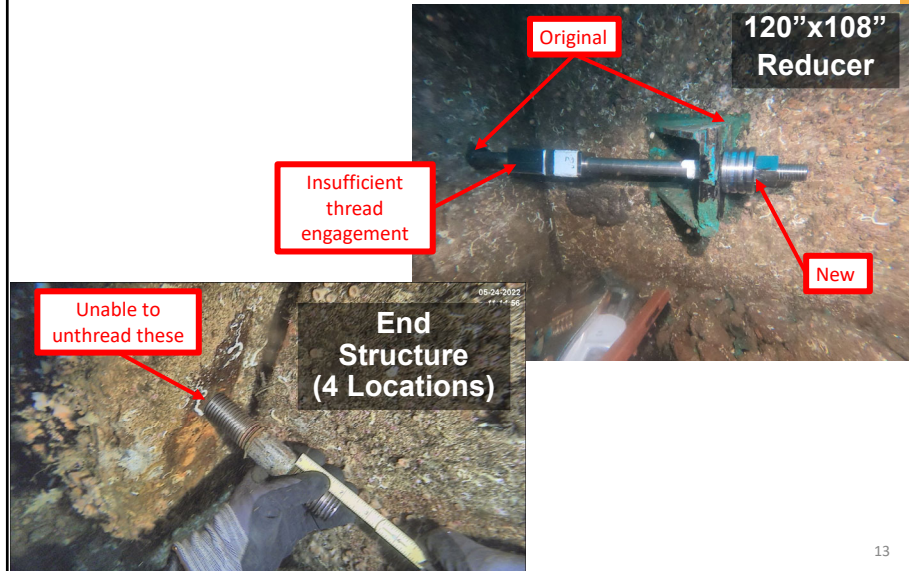
Crack Repair

06-23-2022 10:16:02

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## Stuck Tie Rod Repair Plan



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## Next Steps

- Once work is authorized:
  - Dry run and wet run
  - Dive team will mobilize and complete the repairs
    - 9 dive days are planned
    - Up to an additional 11 days are budgeted
    - 30 days of dive time reserved
    - Dry Season 2023



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## Budget for Remaining Repairs

Item	Change Value
Engineering Services	\$152,000
Dive Services*	\$957,000
Parts and Permits	\$14,000
<b>Total</b>	<b>\$1,123,000</b>

\*Dive Services consist of \$540,000 in planned work and \$420,000 in additional diving days if required to complete repairs

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## Contingency Status

	Contract	Contingency	Total
Original Design Contract	\$2,744,000	\$274,400 (10%)	\$3,018,400
Previous Increase		\$823,200 (30%)	\$823,200
<b>Contingency Increase Request</b>		<b>\$1,097,600 (40%)</b>	<b>\$1,097,600</b>
		<b>\$2,195,200 (80%)</b>	<b>\$4,939,200</b>

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## Recommendation

Recommend to the Board of Directors to:

Approve a contingency increase of \$1,097,600 (40%) to the Professional Services Agreement with Carollo Engineers, Inc. for Ocean Outfall Condition Assessment and Scoping Study, Project No. PS18-09, for a total contingency of \$2,195,200 (80%).

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## Questions



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