



SANTA ANA WATERSHED  
PROJECT AUTHORITY

# Reach IV-B Condition Assessment Status Update

PA 24 Committee  
Agenda Item No. 6.A  
Daniel Vasquez  
Manager of Operations  
September 3, 2024

# Recommendation

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- Receive and file.

# Background

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- In February of 2024, SAWPA Staff presented the Condition Assessment Draft Report to the PA 24 Committee for Reach IV-B.
- Draft report was provided to Member Agency staff for review
- The Near, Mid, and Long Term Recommendations have been refined.



## Reach IV-B Pipeline and Man-Entry Inspection Locations

Condition Rating	Description	Representative Photograph
Level 1	<p><b>Little or no corrosion</b></p> <ul style="list-style-type: none"> <li>▪ Wall thickness loss, general .....none</li> <li>▪ Wall thickness loss, pitting.....none to minimal</li> <li>▪ Extent (area) of corrosion.....may be widespread but superficial</li> </ul>	
Level 2	<p><b>Minor corrosion</b></p> <ul style="list-style-type: none"> <li>▪ Wall thickness loss, general .....up to 20%</li> <li>▪ Wall thickness loss, pitting.....up to 20%</li> <li>▪ Extent (area) of corrosion.....localized</li> </ul>	
Level 3	<p><b>Moderate corrosion</b></p> <ul style="list-style-type: none"> <li>▪ Wall thickness loss, general .....20% to 40%</li> <li>▪ Wall thickness loss, pitting.....20% to 60%</li> <li>▪ Extent (area) of corrosion.....up to half of surface</li> </ul>	
Level 4	<p><b>Severe corrosion</b></p> <ul style="list-style-type: none"> <li>▪ Wall thickness loss, general .....40% to 60%</li> <li>▪ Wall thickness loss, pitting.....60% to 100% (pinholes)</li> <li>▪ Extent (area) of corrosion.....most of surface</li> </ul>	
Level 5	<p><b>Failure or imminent failure</b></p> <ul style="list-style-type: none"> <li>▪ Wall thickness loss, general .....greater than 60%</li> <li>▪ Wall thickness loss, pitting.....100% (holes)</li> <li>▪ Extent (area) of corrosion.....most or all of surface</li> </ul>	

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# Metal Condition Index Rating System

# Testing Methods Used

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- Visual Assessments
- Ultrasonic Thickness Testing
- Dry Film Thickness Testing
- Broadband Electromagnetic Testing
- CCTV Inspections



Missing Lining



Corrosion Discoloration at Crown and Joint



Deposits



Deposits and Missing Liner



Missing Liner and Damaged Metallic Pipe Wall



Coating Failure at Joint

## Example Corrosion and Joint Lining Failures Found

# Condition Assessment Conclusions

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- Overall condition levels at level 2 and 3 throughout the piping and at the manned-entry locations with some isolated areas of moderate degradation.
- Minor to moderate corrosion in pipe throughout inspected areas.
- Minor corrosion at most joints inspected.
- Moderate failure of coated lining in pipe throughout a majority of inspected pipeline.
- Minor loss of coated lining at manned-entry inspection locations.



# Summary of Recommendations

Period	Summary of Recommendations	Cost
Near-Term (3-5 Years)	<ol style="list-style-type: none"> <li>1. Bypass as necessary to complete the work.</li> <li>2. Perform joint repairs at MAS 4B-0480.</li> <li>3. Perform man-entry visual inspections and physical testing at MAS 4B-0320.</li> <li>4. Install two new MAS.</li> </ol>	<b>\$1,750,000</b>
Mid-Term (7-10 Years)	<ol style="list-style-type: none"> <li>1. Bypass as necessary to complete the work.</li> <li>2. Heavy cleaning of the entire Reach IV-B.</li> <li>3. CCTV and sonar inspection of the entire Reach IV-B.</li> <li>4. Repeat man-entry visual inspections and physical testing at four locations.</li> <li>5. Evaluate spot repairs versus long-term lining alternatives.</li> <li>6. If spot repairs are selected as the preferred direction, complete joint repairs and lining spot repairs.</li> </ol>	<b>\$3,200,000</b>
Long-Term (10+ Years)	<ol style="list-style-type: none"> <li>1. Rehabilitate the entire Reach IV-B pipeline (estimate assumes CIPP).</li> </ol>	<b>\$8,790,000</b>

# Next Steps

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- Update the Brine Line CIP with the near, mid, and long term recommendations.

# Questions?

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# Inland Empire Brine Line 10 – Year Capital Improvement Plan

David Ruhl, Executive Manager of Engineering and Operations

September 3, 2024

Agenda Item No. 6.B

# Capital Improvement Plan

- Assure the long-term future viability and sustainability of the Brine Line
- \$78 million over 10 years (year 2035)
- Includes recommended improvement projects from the draft Master Plan
- Organized into a 40 – year plan that corresponds to build-out of the Brine Line system (year 2065)
- Prioritized based on criticality and need



Reach IV-A and IV-B Rehabilitation Project

# Capital Improvement Plan

## CIP addresses

- Known system improvements
  - Reach V New MAS
  - Reach IV-B New MAS
  - Reach IV-E mainline valve
- Known O&M challenges
  - Reach V Relocation of Air – Vacs
  - Prado Access Road Improvements
  - Protection from stormwater/erosion
- On-going investigations to monitor system improvement and future needs
  - Reach IV-B DIP Corrosion
  - Reach IV-D Corrosion
  - Condition assessments (inspection , design, repair/rehabilitation)
- System improvements identified in the Master Plan
  - MAS smart cover installation
  - SCADA system
  - Investigate off-line storage system



Reach V – Relocation and Improvement

## Inland Empire Brine Line 10 - Year Capital Improvement Plan (CIP)

Year		1	2	3	4	5	6	7	8	9	10	11-40
ID#	Project	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	FY 2035 - 65
1	Reach IV - B DIP Section New MAS Structures	\$334,750										
2	Reach IV-E Siphon Mainline Valve			\$420,700	\$433,321							
3	Reach IV Condition Assessment/Rehabilitation										\$1,142,329	\$8,250,000
4	Reach IV - B DIP Rehabilitation					\$4,266,129						\$8,790,000
5	Reach IV-D Corrosion Rehabilitation	\$96,820								\$1,172,991	\$18,371,538	\$27,807,650
6	Reach V MAS Condition Assessment						\$686,580			\$2,609,546	\$2,687,833	\$2,000,000
7	Reach IV-B Condition Assessment / Repairs		\$450,883	\$464,409					\$1,076,755			\$33,970,000
8	Reach IV - E Condition Assessment / Repairs			\$491,727								\$750,000
9	Reach V - Temescal Canyon Rd Widening	\$103,000										
10	Prado Access Road Improvements.	\$103,000	\$106,090		\$2,813,772							
11	Alcoa Dike Protection (Raise 2 MAS)	\$77,250										
12	Prado (below 566' Elevation) MAS Protection	\$206,000	\$212,180									
13	Reach V Air Vac Modifications						\$537,324					
14	Reach IV - D Condition Assessment / Repairs						\$746,283		\$791,731		\$839,948	
15	Reach V Indian Truck Trail Protection								\$728,393			
16	Reach V Baker St Protection										\$53,757	\$1,000,000
17	Reach IV-A Upper Pine Ave Siphon	\$154,500										
18	Capacity Management						\$388,067					\$27,000,000
19	Reach IV-D Mission Tunnel		\$185,658									
20	Hydraulic "Choke Points" Analysis						\$119,405					\$100,000
21	OC San Future CIP	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$12,400,000
22	Smart MAS Cover Installation						\$102,688	\$105,769				
23	Future Study on Green Hydrogen		\$210,058									
24	Future Studies on Brine Minimization						\$104,679	\$107,819	\$111,054			
25	SCADA System	\$585,349	\$602,909	\$44,583	\$305,163	\$314,317	\$275,030	\$283,281	\$291,779	\$300,532		
26	Off-line Storage System				\$225,102			\$13,415,218		\$14,232,205		\$87,262,400
27	IV-A Lower (Prado) Relocation											\$55,114,000
28	Reach IV-D Parellel Line D1											\$4,825,000
29	Reach IV-D Parellel Line D2											\$19,520,000
<b>Fiscal Year Total</b>		\$2,060,669	\$2,167,778	\$1,821,419	\$4,177,357	\$4,980,446	\$3,360,056	\$14,312,087	\$3,399,712	\$18,715,275	\$23,495,405	\$288,789,050
<b>Cumulative Total</b>		\$2,060,669	\$4,228,447	\$6,049,866	\$10,227,223	\$15,207,669	\$18,567,725	\$32,879,812	\$36,279,524	\$54,994,798	\$78,490,203	\$367,279,253

Note: CIP projects adjusted for inflation at 3% per year.

The shaded projects are improvement projects identified in the Draft Master Plan for consideration

# Next Steps

- Member Agency staff review (September workshop)
- Fiscal Year 2026 and 2027 budget process
  - Review Reserve contributions
  - Evaluate and refine projects planned for next budget cycle



Reach IV-A CCTV Inspection



# Recommendation

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- Receive and file

**Questions?**