Inland Empire Brine Line

- Constructed in 2001
- 26,000 ft of 24” PVC
- Gravity and Low Pressure
- Major flow contributors from EMWD:
  - Power plant
  - Two desalters
  - Industrial manufacturer
October 18, 2011 SSO at Temescal Canyon Road and Cabot Road

- Cause of Failure Unknown
- Pipe was oval in shape
- Initiate investigation (collect data)
Investigative Work

- Added 3 access points for CCTV
- Pothole to determine location of pipe
- Construct test pits
  - Determine soil composition and compaction
  - Measure pipe ovality
Expert Panel Review

- Determined likely cause of pipe failure
  - Poor installation / compaction
  - Lack of specified bedding material
  - Poor sidewall support
  - Rocks in pipe zone
  - Added roadway fill
- Evaluated repair/replacement
- Developed list of recommended actions
Condition Study

Risk Assessment Findings

- High Risk Areas
  - 12,800 LF (32%)

- Medium Risk Areas
  - 8,200 LF (20%)

- Low Risk Areas
  - 19,800 LF (48%)
Condition Study
Recommended Rehabilitation Approach

- Pressure Grouting
- Tight Fit Lining
- Pipe Bursting
- Open Cut Replacement
- Pressure Cured-In-Place Lining (CIPP)
  - Cost $11.5 $16.3 Million
Design

- Hired Dudek to implement Design
  - Pressure CIPP Lining
  - Preliminary Design Report
  - Plans and Specifications

- SRF Loan
  - Design, Construction, CM, Admin - $19 Million

- Advertise for Bids
  - Charles King Co / Spiniello $12,561,316
  - Weka, Inc. / Insituform $13,814,099
  - Spiniello / Norditube $14,890,120
Reach V Rehabilitation and Improvement Project Phase 1

Task 1: Remove defective liner/PVC pipe and replace with new PVC pipe.
Task 2: Complete CKC deficiencies and place liners 1-10 into service.
Task 3: Remove by-pass system, complete CKC deficiencies.
Task 4: Rehabilitate Brine Line with Cured-In-Place Pipe.
Notice to Proceed: Jan 5, 2015
- Contract Time: 400 days
- Liquidated Damages: $5,000/day

Contract Period End: Mar 11, 2016
Construction

- Notice of Default: Jun 2016
- Demand on Surety: July 2016
- Termination of Contractor: Aug 2, 2016
- Commission finding that the unfinished condition of the Project after termination for cause is an emergency that requires immediate action
Task 1 Remove defective liner/PVC pipe and replace with new PVC pipe.
Task 2 Complete CKC deficiencies and place liners 1-10 into service.
Task 3 Remove by-pass system, complete CKC deficiencies.
Task 4 Rehabilitate Brine Line with Cured-In-Place Pipe.
Task 1 and 2

- Remove 3,340’ of deficient PVC/CIPP
- Install 3,340’ of new PVC Pipe
- Correct deficiencies from previous contractor
- Maintain by-pass line (12,000 ft)
- Dewater, CCTV and pressure test liners 1 – 10 (7,500 ft)
Task 4

- **Project Description**
  - Clean, CCTV, Laser Profile – 12,800 ft
  - Repair upto 12, 800 ft of PVC pipe
  - 9 New MAS structures
  - 9 New Avs, and 9 New Blow-offs

- **Contract Flexibility**
  - CIPP Installation only on approval of the Owner

- **Cost Controls**
  - 48% of Lining is Additive Item
  - Only pay for work that needs to be done
  - Review work plan submitted by contractor
  - Pre-negotiated price from contractor to remove existing PVC and Replace with new PVC.
Recommendation

1. Award a contract on the Inland Empire Brine Line Reach V Rehabilitation and Improvement Project – Phase 1 to Weka Inc. for an amount not to exceed $12,950,113;

2. Execute Task Order No. VALI326-04 in an amount not to exceed $1,252,400 with Vali Cooper & Associates, Inc. to provide Construction Management Services for the Inland Empire Brine Line Reach V Rehabilitation and Improvement Project – Phase 1; and,

3. Execute Task Order No. DUDK326-06 in an amount not to exceed $134,900 with Dudek to provide Engineering Services during Construction for the Inland Empire Brine Line Reach V Rehabilitation and Improvement Project – Phase 1.
Questions?
Public Outreach

- Project Update Brochures
- Construction Hotline
  - 1 Call
- Construction E-mail address
  - 2 E-Mail
- Posting to We R Temescal Valley Facebook Page
- Project Website
Test Pit A
(Pre-Design Data)

<table>
<thead>
<tr>
<th>#</th>
<th>Station</th>
<th>Ovality</th>
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<tbody>
<tr>
<td>{Reach 1}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 (600 + 10)</td>
<td>3.7%</td>
<td></td>
</tr>
<tr>
<td>1 (573 + 30)</td>
<td>4.7%</td>
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<tr>
<td>2 (559 +14)</td>
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<tr>
<td>3 (558 + 30)</td>
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<td>4 (553 + 35)</td>
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<tr>
<td>6 (512 + 37)</td>
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<tr>
<td>{Reach 2}</td>
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<td></td>
</tr>
<tr>
<td>9 (419 + 25)</td>
<td>6.6%</td>
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</tr>
<tr>
<td>{Reach 3}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 (371 + 60)</td>
<td>3.7%</td>
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A. Test Pit 10 (Sta. 622) canceled, unable to locate pipe. Test Pit 11 (Sta. 536) canceled, hit unmarked utility.

Pipe Sampling
(During Replacement Contractor Removal of Deficient Pipe)

<table>
<thead>
<tr>
<th>#</th>
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<tbody>
<tr>
<td>0.0 ft – 10 ft</td>
<td></td>
</tr>
<tr>
<td>11-1</td>
<td>4% - 8%</td>
</tr>
<tr>
<td>11-2</td>
<td>N/A - 7%</td>
</tr>
<tr>
<td>12-1</td>
<td>3% - 7%</td>
</tr>
<tr>
<td>12-2</td>
<td>4% - 4%</td>
</tr>
<tr>
<td>13-1</td>
<td>6% - 9%</td>
</tr>
<tr>
<td>13-2</td>
<td>4% - 5%</td>
</tr>
<tr>
<td>14-1</td>
<td>7% - 11%</td>
</tr>
<tr>
<td>14-2</td>
<td>5% - 6%</td>
</tr>
<tr>
<td>16-1</td>
<td>2% - 8%</td>
</tr>
<tr>
<td>16-2</td>
<td>2% - 6%</td>
</tr>
</tbody>
</table>
Test Pit
(Pre-Design Data)

<table>
<thead>
<tr>
<th>Reach</th>
<th>Station</th>
<th>Ovality</th>
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</thead>
<tbody>
<tr>
<td>Reach 2</td>
<td>9 (419 + 25)</td>
<td>6.6%</td>
</tr>
<tr>
<td>Reach 3</td>
<td>8 (371 + 60)</td>
<td>3.7%</td>
</tr>
</tbody>
</table>

Reach V Rehabilitation and Improvement Project Phase 1

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14-1

North End 10.8%

South End 7.4%
16-2

South End 6.1%

North End 1.7%