SPECIAL BOARD MEETING

Final Approved Minutes

September 3, 2025, 9:00 a.m.

1887 Howard Street, Anderson (Council Chambers)

1. **Called To Order** at 9:01 am by James Rickert

   Directors Present: Garrett Wallis, James Rickert, Ronnean Lund, Ivar Amen

   Directors Absent: Audie Butcher

   Staff Present: Dan Ruiz and Shawna Bell

2. **Flag Salute –** led by Garrett Wallis

3. **Public Participation**

   Time is set aside for members of the public who wish to address the Board regarding matters within the District's jurisdiction. Individuals are requested to limit comments to a maximum of three minutes.

   James Rickert - no public comments

4. **Old Business**

   a. Presentation from Danny Kerns, PE Provost & Pritchard on 2nd Main Canal Lining Repair - lining repair project, covering approximately 400 feet of canal located upslope from a residential area impacted by groundwater intrusion in spring/summer 2023.

   Initial Work & Site Conditions: Vegetation removal and dewatering were conducted. Saturated and unsuitable subgrade materials were encountered, requiring stabilization.

   Implemented Measures:

   - Subgrade Stabilization: Installed geogrid beneath six inches of compacted base rock to create a stable foundation.
   - French Drain System: Constructed a one-foot deep and wide trench lined with geotextile fabric and filled with drain rock. Designed to collect groundwater and direct it to pressure relief valves.
   - Pressure Relief Valves: Nine Waterman-brand valves installed via vertical perforated PVC pipes embedded in the French drain. Valves relieve groundwater pressure beneath the liner and are located on the water side of the canal.

   Post-Installation Observations: A significant heave (~60 feet long) was observed in the canal bottom after the irrigation season, with cracking along most of the reach. The heave is attributed to vertical groundwater pressure (buoyancy) beneath the liner.

Engineering Evaluation & Recommendations: A buoyancy analysis was conducted comparing upward water pressure with the downward force of the liner and concrete. Conservative assumptions were used, including average valve elevation and valve activation pressure (0.29 PSI). Uplift pressures ranged from 10 to 40 PSI.

Recommended Solution: Add concrete ballast to increase downward force and achieve a safety factor of 1.3 to 1.5. This avoids destructive modifications to the intact liner.

Additional Discussion Points:

- Liner Integrity: The liner includes an 840-mil HDPE geomembrane with geotextile on both sides. Despite visible cracks, only minimal seepage was observed, suggesting the liner remains intact.
- Seam Concerns: Seams are considered the most vulnerable points. Observed leakage is minimal and not indicative of major failure.
- Elasticity & Manufacturer Specs: Questions were raised about the membrane's elasticity and long-term integrity. The engineering team believes the liner is still performing effectively.
- Future Inspections: Further evaluation will be conducted after the irrigation season to reassess liner condition and validate the ballast solution.

Alternative Considerations & Design Details:

- Hydro Boring Option: Explored the idea of installing horizontally drilled perforated pipes to relieve groundwater pressure. Ultimately not pursued due to limited effectiveness at the canal bottom.
- Concrete Fill Design: Plans include varying depths of concrete fill, maintaining a minimum of 3 inches. Fill will be shaped to avoid creating backwater or hydraulic issues. Cross-sections were developed to show fill quantities at valve locations.
- Bonding Measures: Contractors will trench 1.5–2 inches at upstream/downstream edges to key new concrete into existing lining. Existing concrete will be pressure-washed to remove debris and promote bonding.
- A longer fiber mix will be used to reduce shrinkage cracking. Fiber cost details are to be provided by the concrete supplier.

5. Closed Session – moved into closed session at 9:47 am

a. Conference with Legal Counsel – Anticipated Litigation (Government Code § 54956.9(d)(4) One Case – closed session adjourned 10:35 am - no action

6. New Business

a. Review and Discuss Approving Engineering Services for the Replacement of Damaged Lining at the North Hill St. Canal Reach (Danny Kerns to Present)

Summary:

- A winter storm caused overtopping and damage to the North Hill Street canal liner, compromising about half of the reach.
- Temporary slurry repairs were made for the current irrigation season.
- A full replacement is proposed, with design considerations to prevent future overtopping and flooding.

- A hydrologic/hydraulic study is recommended to evaluate stormwater inflow, basin storage capacity, and canal bank elevation requirements. The study will inform design options, including potential emergency spillway integration.
- Estimated cost for Engineering work is $60,000. Board expressed interest in proceeding with the hydrologic evaluation as the first phase, pending cost proposal. Final proposal to be reviewed at the next board meeting on September 11.

b. Review and Discuss Draft Main Canal & Churn Creek Flow Measurement Program (Danny Kerns to Present)

Summary:

A two-phase study was conducted to assess water loss along the main canal and Churn Creek bottom.

- Phase 1: Desktop analysis using soil data, hydraulic conductivity, evapotranspiration (ET), groundwater-dependent ecosystems, and SAGBI index. Eight high-risk reaches were identified.
    - Seasonal groundwater surveys showed the canal may gain water in winter and lose it in summer, informing future water-saving strategies.
    - ET data and field observations confirmed areas of seepage, especially near Panorama Point and Clear Creek.
- Phase 2: Flow measurements using acoustic Doppler equipment will quantify actual water loss. Measurements planned for fall, spring, and possibly summer to capture seasonal variation.
    - Coordination with operations is needed to ensure consistent conditions across seasons and valid comparisons.

Goal: Support targeted maintenance and water efficiency improvements using data-driven insights.

7. Meeting adjourned at 11:15 am.

Board President, James Rickert