

Kennedy/Jenks Consultants

Engineers & Scientists

FINDING LOST WATER

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Why Even Bother?

- Water Management & Conservation Plan
- Demands going up
- Green light water
- Water Rights
- Conservation



Location Map



Banks, OR

- Water Master Plan & WMCP
- Plenty of Water Rights
 - 2 wells & 2 springs
- Access to the water was limited
- Access to new WR is limited
- 27% Unaccounted for water
- Demand = Source in summer



Ground Water



Spring Water

Multi Pronged Plan

- Activate second Well
- Search for new sources
- Replacement of the transmission pipe
- Leak Detection

Leak Detection 2009

- 25 miles tested for \$3,700
- 4 Days
- 17 leaks
- Losing 40,000 gpd (27 gpm) (14.5 MG/yr)
 - 25% main line
 - 25% fire hydrants
 - 40% service lines
 - 10% valves & meters

Cheap water

- Leaks accounted for 15% of ADD
- Addressed approximately half the leaks
- Repairs in 9 locations by staff

Let's Do It Again

- Leak detection will be on a 3-5 year schedule
- Leak detection in 2014
- Losing 36,000 to 64,000 gpd
 - 16 leaks
 - One major leak
 - Staff will address most leaks
 - One line replacement

Lafayette, OR

- Limited Source
 - Multiple wells
 - Multiple springs
 - ASR
 - Shared source with Dayton
- Not able to use up to WR at the Bluebird Spring
- Bluebird Well is the source for the ASR
- Demand close to supply in summer



Spring Water



Ground Water

Multi Pronged Plan

- Install SCADA to improve control
- Transmission Main Improvement for capacity
- Leak Detection

Leak Detection 2014

- Leak detection survey this year
- Cost \$5,000, 4 days, entire public system
- Estimated loss 1.5 MG/mo (50,000 gpd) (35 gpm)
- Loss equals 14% of demand
- Already fixed large leaks
- Small leaks scheduled for the summer
- Already noticeable effects

Let's do it Again

- City is looking to purchase leaking detection equipment

Scappoose

- Limited Source
 - 3 Surface water impoundments
 - 3 Wells
- Declining well capacity
- Access to surface water in the summer



Ground Water



Surface Water

WMCP

- Completed the WMCP in 2013
- 14 to 26% unaccounted for water
- Conservation & Management steps
 - Yearly water audit
 - Leak detection
 - Leak repair

Water Audit

- Random testing of meters
- Meters up to 9% off
- Meter replacement plan
- Master meter reading
- Tracking down unaccounted for water
 - Backwash water
 - Water for chemical systems
 - Water for testing
 - Fire hydrant testing
 - Misc unmetered uses

Lessons Learned

- Leak detection is cheap compared to CIP projects
- Scheduled leak detection finds patterns
- Immediate results from leak detection
- Water audits help
- Meter replacement program
- Master meter calibration & installation
- Meter all water
- Helps with WR, green light water and WMCP