

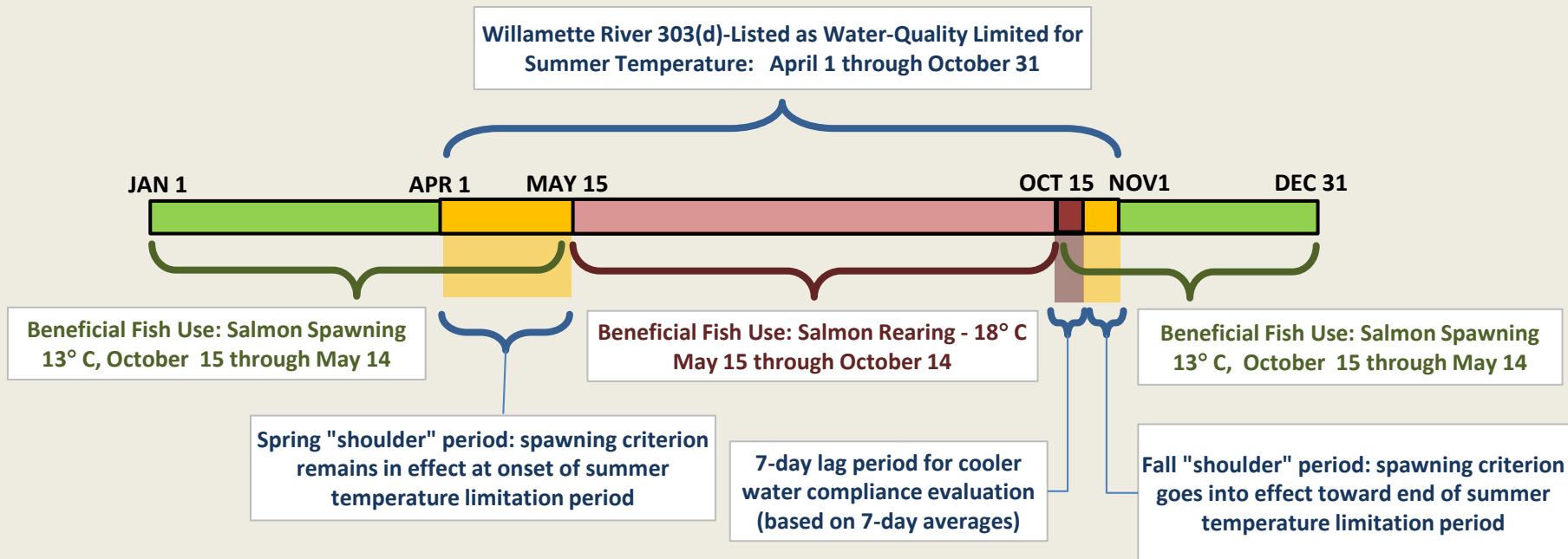


CHALLENGES WITH PLANNING FOR TEMPERATURE COMPLIANCE

MWMC
Case
Study

2006 WILLAMETTE TMDL

Risk Driven by Cold-Water Shoulder Periods



Compliance Period at Risk	Thermal Load Mitigation Need	Equivalent Effluent Diversion Need
Late October (Oct. 21 -31)	93 MKcal/day (million kilocalories per day)	3.1 MGD (million gallons per day)

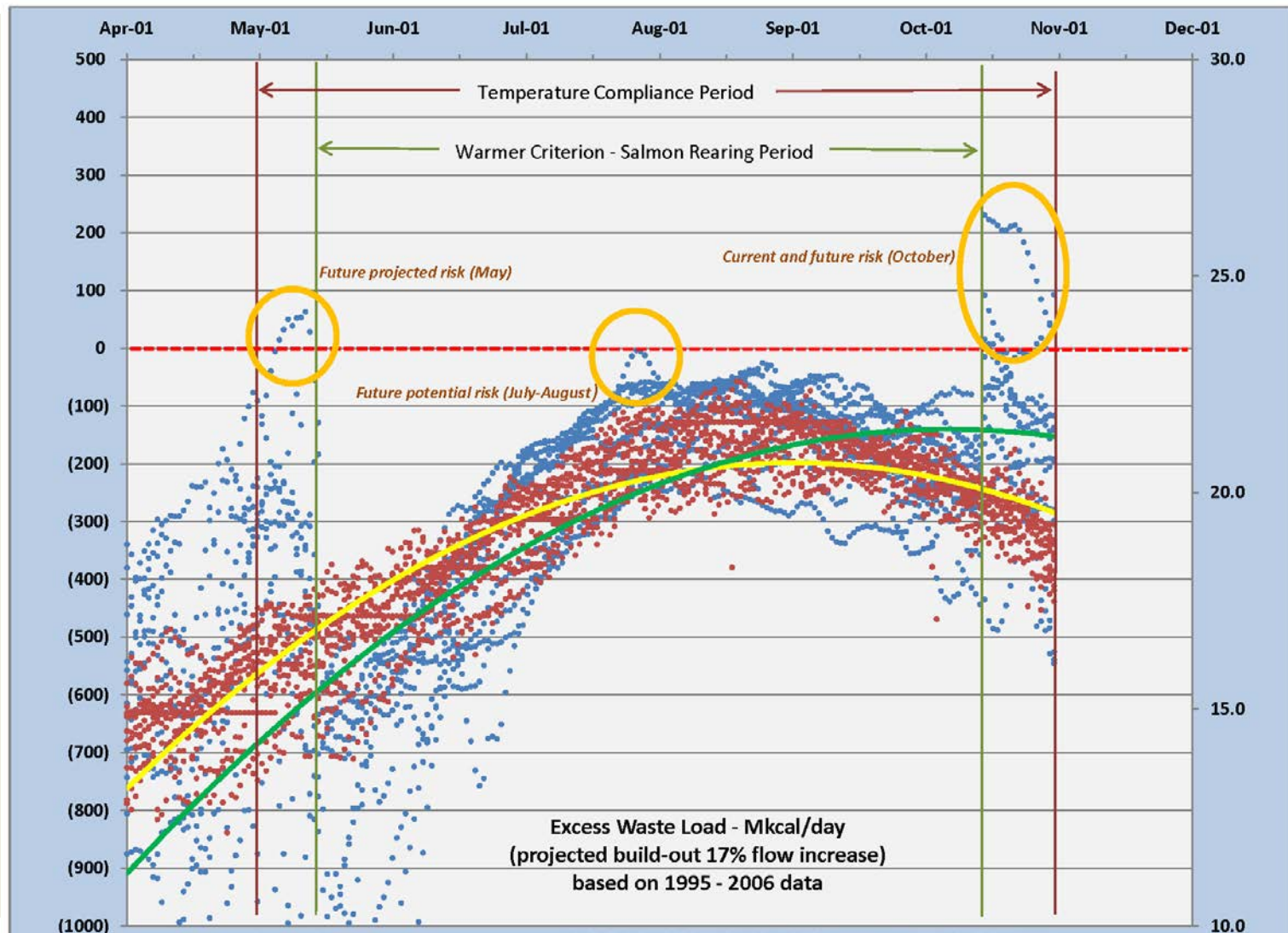
2006 WILLAMETTE TMDL

October Need / Shoulder - Peak Summer Risk

1-in-20 year rare event triggers mitigation need in late October.

Hypothetical 17% increase in effluent flow...

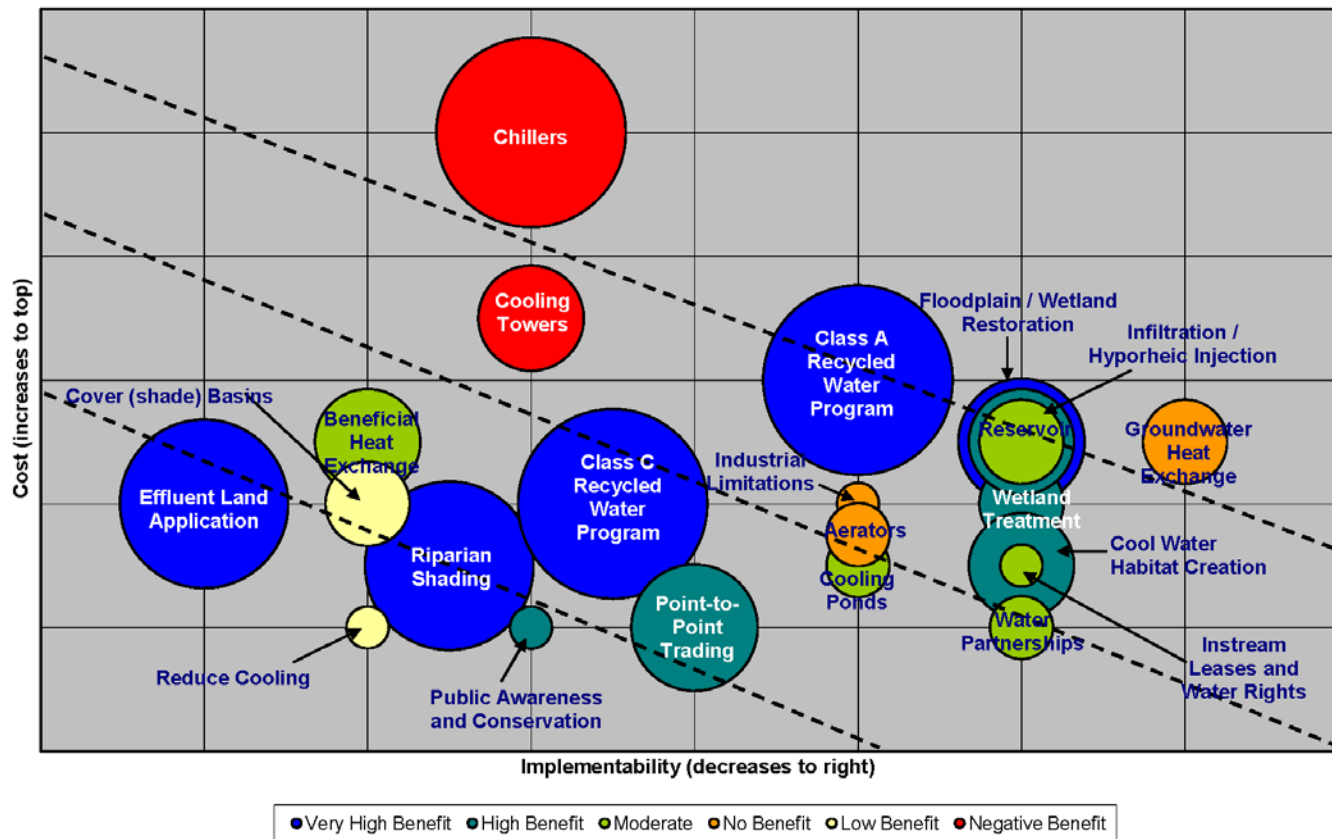
...still only rare, outlier events would trigger a mitigation need.



2008 STRATEGY SCREENING

Many Options – Pros/Cons – Many Unknowns

Figure 1: TMDL Implementation Options Comparison (size denotes effectiveness)



most promising strategies:

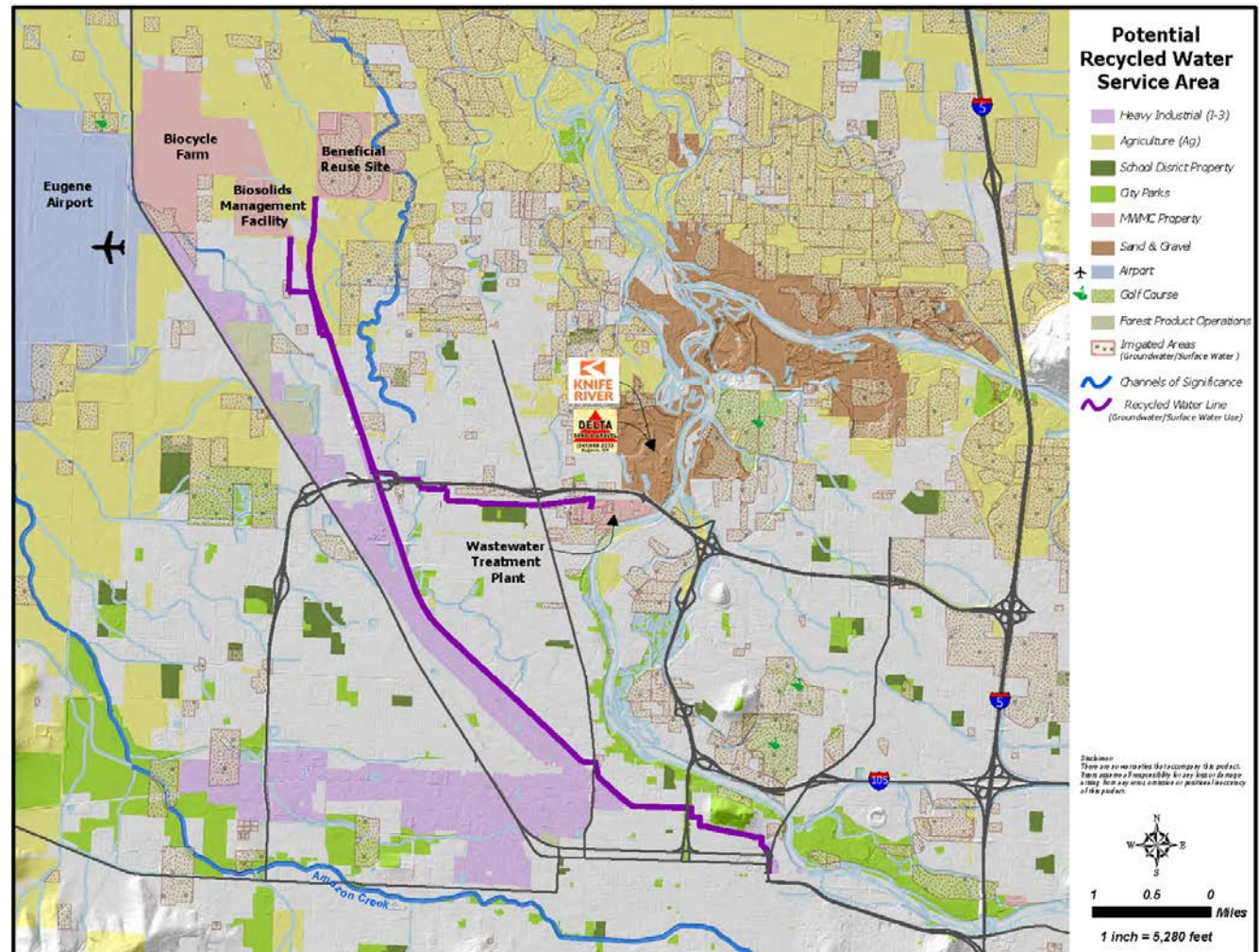
Poplar Irrigation – Riparian Shading – Recycled Water Uses– Wetland or Pit Discharge

2009 SETTLEMENT AGREEMENT

Recycled Water Project Implementation

“MWMC intends to reduce its thermal load through a water reuse plan. Construction and the system start-up process are expected to be completed by the end of calendar year 2017.”

“DEQ will commence the process to review and revise the Willamette TMDL no later than December 31, 2012.”



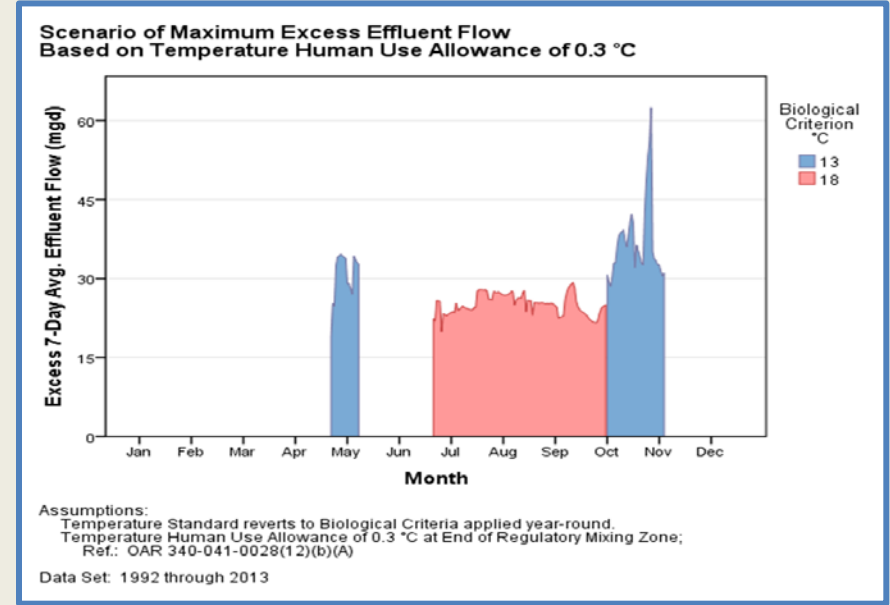
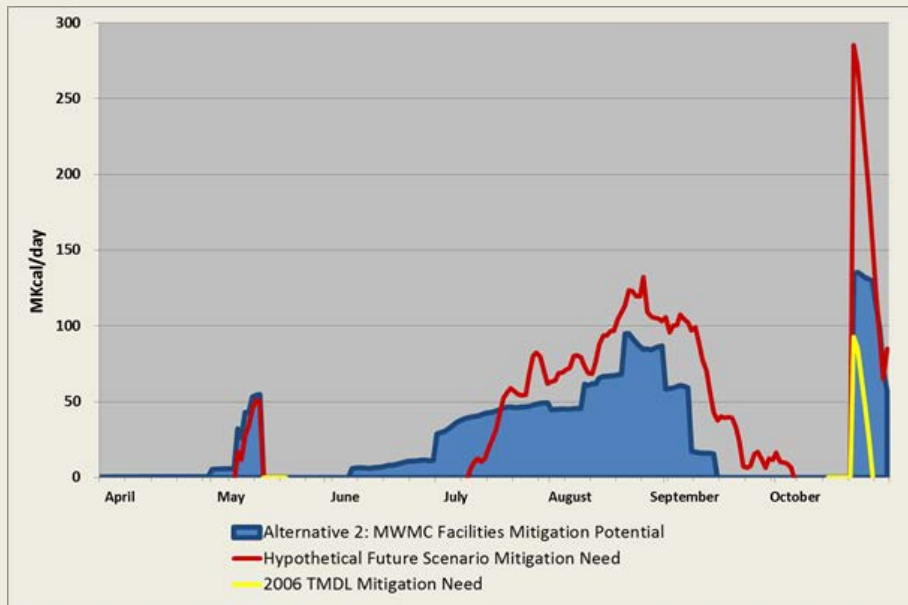
2013 NCC INVALIDATION

Basis of TMDL WLAs in Question

Proposed recycled water project relied on storage and irrigation managed to meet 2006 TMDL under exacerbated environmental conditions.

NCC invalidation supplanted by numeric criteria greatly increases compliance risk with 10- to 20-fold increase in mitigation need.

\$5-12M capital program cost becomes \$50-240M?



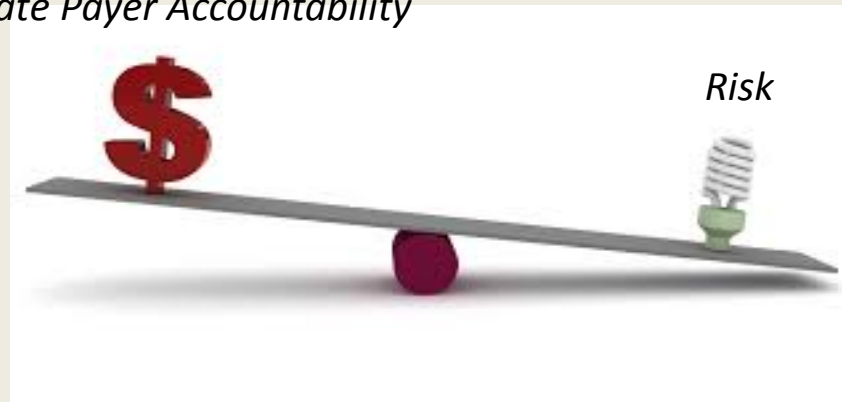
2012 - 2017:

Multi-Strategy Approach/Financial Implications

Strategies

- Recycled Water Program
- Water Quality Trading
- Effluent Diversion
- Heat reduction

Rate Payer Accountability



Financial/Policy

- Budget
 - Sold \$98 million in bonds
 - Capital Reserves
 - Rate Increases
- Capital Planning
 - Projects pushed out
- Staffing
 - Difficult to plan

RECYCLED WATER PROGRAM

❑ Inside the Fence line

❑ Tertiary Filtration

- ❑ Investment \$11 million (10 MGD)
- ❑ 2 remaining phases (20 MGD)

❑ Biosolids Facility

- ❑ 400 acres of Poplar
- ❑ Investments in irrigation
- ❑ Optimization planned

❑ Outside the Fence line

- ❑ Industrial Aggregate
- ❑ Public Green Space Irrigation
- ❑ Fire Training

❑ Ongoing Planning

- ❑ Phase 3 work



WATER QUALITY TRADING

- ❑ **Actively investigating trading possibilities**
 - ❑ Pilot work with the Freshwater Trust
 - ❑ Mill Race & Cedar Creek (4 acres)
 - ❑ \$650,000 20-year project
 - ❑ SRF Funds
 - ❑ Voluntary Incentives Program – EWEB
 - ❑ Entered into MOU 1/2015
 - ❑ Partnering in program development and funding
 - ❑ Ongoing involvement with State



2006-2015: NO CLEAR PATH

Unknown Mitigation Need and Permit Strategy

Ongoing Administratively Extended Permit – Precludes:

- Water quality trading
- Expansion of recycled water use
- Change in discharge practices

Unknown Compliance target

- Seasonal or year round?
- Amount of thermal offset need?
- Cost to the community?

Lack of Regulatory Certainty

- Water quality trading rules and baseline
- Implementation timeline, variances, compliance schedules
- Settlement agreement and shift in recycled water role