



# R2E2 Update

Stakeholder Committee  
September 17, 2013





# Agenda

- **R2E2 Updates Since Last Meeting**
  - Basis of Design Report (BODR)
  - Facilities 30% design
  - Project scope reductions and increases
  - Cost estimate
- **Value Engineering**
  - Recommendations incorporated



# Agenda

- **Industrial Discharger Pretreatment:**
  - Fox River Fiber—Impact, timing, R2E2 facility sizing and cost implications
- **Schedule—What's next?**
  - Electrical sitework
  - Major equipment prepurchase
  - Final design
  - Construction
- **Open Discussion**



# BODR

- The team completed and reviewed the BODR with NEW Water staff.
- After workshops with staff in each unit process, NEW Water provided comment to finalize the basis of design.
- The team continued to propose ideas to improve the design and lower construction costs in finalizing the basis of design.



# Cost Reduction Ideas

*In addition to those introduced at the last update . . .*

- Reduced the height of non-process and process areas of third floor, and continue to optimize building layout.
- Rotated the digesters as recommended by the Value Engineer, and replaced the stairway to digester roofs with a walkway from new Solids Facility roof.
- Conducting sludge analysis to determine extent of probable siloxanes to decide on whether to install biogas conditioning now or after determining potential costs/benefits after first year of operation.



# Project Scope Reductions/Increases

As usual, changes are accompanied by increases and decreases in construction costs.

- Reduced floor heights = decrease.
- Rotating digesters and eliminating stair tower = decrease.
- Resizing FBI train from 49 to 51 tons per day accounts for reduction from large user pretreatment and increase to operate 24/5 at design average rates = increase in capital for larger dryer and FBI train; annual operating labor = significant decrease.



# Cost Estimate

Team updated the cost estimate in BODR.

- Facility Plan = \$147,000,000 in 2011 dollars
- BODR (includes increased FBI and dryer sizing)
  - = \$132,000,000 in 2013 dollars
  - = **\$124,000,000 in 2011 dollars**
  - = \$144,000,000 in 2016 dollars (midpoint of construction)

Recognize that BODR estimate is a level 4 cost estimate.



# Value Engineering

- Design team is implementing recommendations accepted by NEW Water in the design.
- The new substation is being designed and packaged in a separate construction package that will be bid and awarded about 6 months before main construction contract for all process facilities.





# Value Engineering

The early substation package will allow:

- Utility service relocations
- Power restoration to the operation, avoiding interruption during subsequent construction
- Clearing the location for new facilities so that main contract can start excavation on day one



# Industrial Discharger Pretreatment

- The major industrial contributor, Fox River Fiber, notified NEW Water that it will begin pretreating before R2E2 is commissioned.
- The design team has determined this will reduce sludge loads by ~ 8%.



# Updated Design Schedule

Issue prepurchase bids to qualified vendors:

- Incinerator & dryer package: Sept. 2013; award Nov. 2013
- Centrifuges package: Oct. 2013; award Nov. 2013
- Co-generators package: Sept. 2013; award Nov. 2013  
(tentative, depending on pretreatment and conditioning requirements for biogas)
- Primary Switchgear: Dec. 2013; award Jan. 2014



# Schedule

- Analysis of nutrient (Phosphorus) treatment options technical memo – Sep. 13
- 30% design review workshop, including estimate update Aug.–Sept. 2013
- Process Hazard Analysis: Nov. 2013
- 60% design review workshop including estimate update: Sep.–Nov. 2013



# Open Discussion



# Next Stakeholder Meeting

- Early 2014



# R2E2 Update

Thank you for coming!