

Regional Water Supply Planning Process

Final Report:
Reclaimed Water
Technical Committee

December 4, 2007

Committee Members

Variety of interests and points of view represented.

- **Cities:** Auburn, Bothell, Kent, Redmond, Renton, Tukwila
- **County:** King County
- **Water Districts:** Covington Water, South King County Regional Water Association, Woodinville Water
- **Water & Sewer Utilities:** Alderwood, Cedar River, Lakehaven, Sammamish Plateau, Seattle Public Utilities
- **Dept. of Ecology**

Charter *from Planning Framework*

- Expected work product:
 - ❖ Thorough analysis of costs and benefits of using reclaimed water as alternative source
 - ❖ Set of recommended projects in KC WTD service area
 - ❖ Recommendations for actions to remove barriers and constraints
 - ❖ Plan for introduction to various governing bodies
 - ❖ Maps of supply and demand
 - ❖ Cost to produce and evaluation of revenue sources
- Phase 1: Analysis of production potential
- Phase 2: Analysis of demand
- Phase 3: Identify project opportunities and costs

Committee's Charter

“The purpose (of the committee) will be to provide planning-level technical information concerning the use of reclaimed water. *A specific objective of the committee is to identify a uniform framework that may be used by any agency* to evaluate the economic, environmental, and social benefits and costs of potential projects. The committee will also identify policy issues and recommendations to be addressed by appropriate governing and policy-making bodies.”

Committee chose to focus on the *WateReuse Foundation's Economic Analysis Framework*.

Study Commissioned by *WateReuse Foundation*

- Develop an economic framework that includes and describes all the relevant benefits and costs of reuse
- Focus on *economic* versus *financial* perspectives
 - ❖ Financial: revenues and costs (cash flows, cost effectiveness)
 - ❖ Economics: benefits (financial, environmental, social values) and costs

Why an **Economic** Perspective?

- For many reuse projects, the benefits (i.e., value) to society may outweigh the costs
 - ❖ Broad range of benefits (some obscure)
 - ❖ Large and diverse set of beneficiaries
- Where benefits shown to outweigh costs:
 - ❖ Identify benefits and beneficiaries who might not be ratepayers (outside of service area)
 - ❖ External beneficiaries become a valid basis for seeking cost sharing and subsidies

Overview of the Framework

- Define the baseline (work with stakeholders)
- Define relevant agency options
- Identify full range of benefits and costs
- Screen benefits and costs
- Quantify benefits and costs (to extent feasible)
- Value benefits and costs (to extent feasible)
- Qualitatively describe nonquantifiable benefits and costs
- Summarize and compare benefits and costs

Overview (continued)

- List and assess all omissions, biases, and uncertainties
- Conduct sensitivity analyses
- Compare results to stakeholder perceptions
- Use as communication tool throughout
 - ❖ Document key inputs and assumptions
 - ❖ Promote transparency
 - ❖ Embrace stakeholder input

Learning the Framework

- Aug. 25th workshop with author:
Dr. Bob Raucher, Stratus Consulting,
Boulder, Colorado
 - ❖ 80 people attended
- Oct. 27th meeting with Raucher to evaluate
the framework using local test cases:
Covington WD and SPU's Jackson Park

Draft Cost Model

- Model by Carollo Engineers estimates cost to produce water at fenceline of facilities
- Includes assumptions for 3 major components of KC Wastewater system:
 - ❖ Regional Treatment Plants
 - ❖ Major conveyance lines (such as ETS)
 - ❖ Satellite plants near pump stations and collection system trunks
- Model offered to all committee members

Purpose of the Cost Model

- Calculate planning level costs of producing reclaimed water
- Provide opportunities for other agencies to see cost factors and test options
- Adjust assumptions to refine costs for site-specific projects
- Provide tool for comparison of RW opportunities

Outcome: New Tools

- Economic analysis framework available through WateReuse Foundation
- Cost model developed by Carollo for estimating cost of producing reclaimed water

The Final Report:

A Summary of Activities

- Compilation of the committee's activities:
 - ❖ What committee members heard and said
 - ❖ Includes only information that was discussed or presented at meetings
 - ❖ Based on approved meeting summaries
- Should not represent position of any single agency

Table of Contents

- **Overview: Regional Water Supply Planning Process**

- ❖ Coordinating Committee's Clarifying Statement

- **Abstract**

- **Committee Charter**

- ❖ Differences of Opinion and Perspective

“From the earliest committee meetings, it was apparent that there was no consensus on the need for reclaimed water in central Puget Sound, the drivers for its use or the magnitude of its benefits. However committee members did find common ground in their desire to:

- (1) learn more about reclaimed water and
- (2) find an evaluation tool that could be useful in analyzing projects.

Contents, continued

- **Developing a Knowledge Base on Reclaimed Water**

- ❖ List of Issues to Consider (benefits, barriers)

*Summaries of Presentations Made to the Committee
by Guest Speakers:*

- ❖ State Policies for Reclaimed Water (DOE)
- ❖ Cost of Production Model
- ❖ The Brightwater Backbone
- ❖ Report of Tributary Stream Flow Committee
- ❖ Reclaimed Water Uses Throughout Washington (DOE)
- ❖ Experiences of LOTT with Reclaimed Water
- ❖ Woodinville Water District's Use of MBR

Contents, continued

- **Evaluating the Full Range of Benefits and Costs of Reclaimed Water Projects**
 - ❖ A Benefit-Cost Analysis Primer (Bruce Flory, SPU)
 - ❖ Options for Applying Benefit-Cost Analysis to Reclaimed Water
 - ❖ The WateReuse Economic Framework (Intro and Overview)
 - ❖ Framework Workshop #1 (Introduction to concepts)
 - ❖ Framework Workshop #2 (Local test cases)

Contents, continued

■ Conclusion

- ❖ Committee met 10 times and developed its own charter.
- ❖ Learned about an analysis framework by inviting the authors to present it in person and to discuss its use in context of local test cases.
- ❖ Also devoted time to identifying issues to consider for reclaimed water in this region, accumulating some data about potential users, and learning about water reuse in the region through guest speakers.
- ❖ Consistent with guidance from Coordinating Committee, this committee made no recommendations on the Framework; each agency is free to make its own decision about use of the tool.

Contents, continued

- APPENDIX A – Original Charter of the Reclaimed Water Technical Committee
- APPENDIX B – Maps of Reclaimed Water Sources and Potential Users of Nonpotable Water
- APPENDIX C – Copies of Guest Speaker Presentations
- APPENDIX D – Background Materials on Test Cases for Workshop Participants
- APPENDIX E – Slides from Raucher Benefit-Cost Workshops

Next Steps

- Reclaimed Water Feasibility Study complete by end of 2007 (for King County Council)

Contains:

- ❖ Description of current King County's current RW system
- ❖ Assessment of new technologies
- ❖ Description of WaterReuse economic framework
- ❖ Regional market analysis
- ❖ Review of potential revenue sources
- ❖ Regional and environmental benefits
- ❖ Business plan

Next Steps, continued

- County Comprehensive Planning for reclaimed water will begin January 1, 2008
- A deliberative process that will enable all customers, stakeholders, and interested parties to have a say in the decision-making process.

Will include:

- ❖ Policy, economic and technical analyses
- ❖ Environmental review
- ❖ Public involvement processes
- ❖ Identification of alternatives for production and delivery, including no-action alternative