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# MWPAAC Briefing

## September 19, 2007

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Reclaimed Water Feasibility Study –  
Progress Briefing –  
Market Analysis Update

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# Agenda

1. Introductions – Steve Gilbert
  2. Purpose and Background – Steve
  3. Market Analysis – Allen de Steiguer
  4. Approach – Allen
  5. Summary of Examples – Allen
  6. Q&A
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# Briefing Topics and Schedule

- Met with E&P Chair – identified two topics
    - Marketing Update – today – Carollo Engineers
    - Economics – October 24 – Stratus Consulting
  - Schedule
    - Feasibility Study complete 2007.
    - Comprehensive Plan begins 2008 pending KC Exec approval.
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# Study Includes

- ❑ Sample illustration to provide more detail
  - ❑ Use of full social cost accounting (WateReuse Foundation Economic Framework)
  - ❑ ‘Who pays and who benefits’ found throughout study, in revenue sources, costs and benefits and in sample projects
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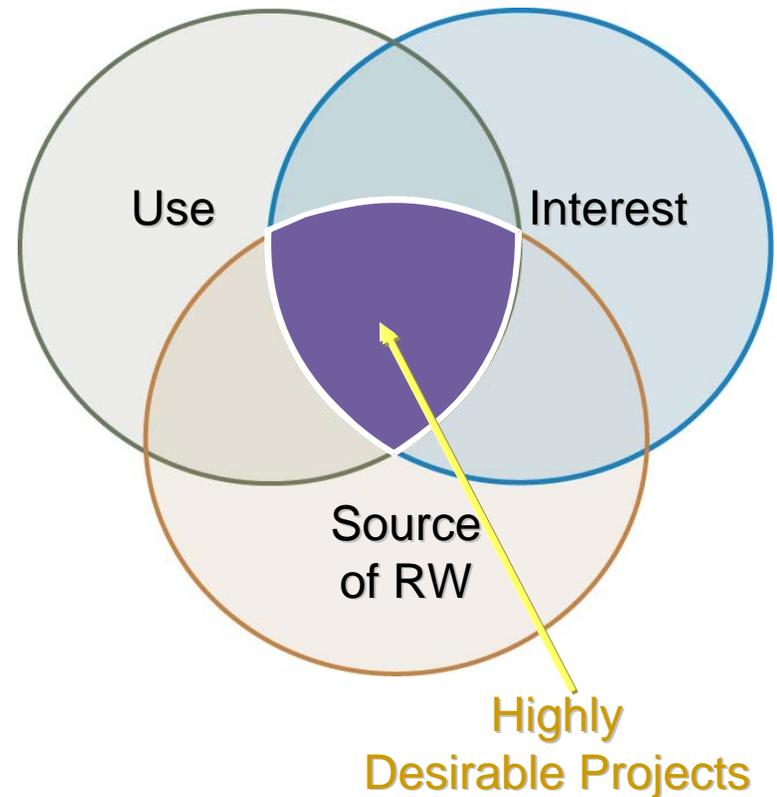
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# Purpose and Background – Market Update

- The assignment –Update a regional market analysis.
  - The approach:
    - Review and use previous work, 1994-2006.
    - Considered sources, interests, and potential uses.
    - Geographically-specific examples enhance detail.
    - Illustrate methodology for future investment evaluations.
    - Order of Magnitude Costs
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# Approach to Market Analysis

- On-the-ground demonstration of interest
- Results
  - Representative illustrations
  - Assess feasibility as examples
  - Illustrate methodology for future selection



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# Steps in the Approach – Review Market Assessments

- Review Previous Market Assessments
    - 1994 – EcoNorthwest
    - 2000-2006 – Project specific analyses and proposals
  - Meld previous studies with current knowledge and capabilities.
  - Outcome – make information more project-specific
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# Approach – Direct Contact

- Gauged interest through direct contact.
    - Agency contacts
      - Interviews
      - Follow up visits
      - Data collection
    - Focus Groups
      - Follow up to annual Water Quality Survey with public
      - Talk to user-specific interests such as ag and business
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# Focus Group Process

- Four Groups Selected at random from public near Brightwater and South Plant areas
    - Two groups from the general public
    - One from agricultural interests
    - One from business interests
  - 21- participants – a small sample of the larger regional population
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# Focus Group Questions

- Public--
    - Level of knowledge about RW
    - Questions about RW
  - Ag and Business
    - Familiarity with current plans
    - Factors affecting choice of RW
    - How should County plan for future
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# Public Focus Group Concerns

- How safe is it?
  - What will it cost?
  - How will County regulate and monitor?
  - Who takes the risk if something bad happens?
  - Clarity in communications needed.
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# Public Focus Group Results

## ■ Public

- Recognition and support of RW as support for future growth without water supply impacts
  - Reliable information about safety and uses needed, preferably from an independent agency.
  - Increased communication and education needed.
  - Environmental benefits and other 'intangibles' need to be considered as part of a cost-benefit analysis.
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# Ag and Business Concerns

- Is it safe?
  - How will customers see a product irrigated with RW?
  - Who pays?
  - Lead time needed for planning to use RW.
  - Who leads the way to market RW?
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# Ag and Business Results

- Irrigation of non-edible plants best way to introduce.
  - Those without water rights are interested in future reliability.
  - Those without water show greatest interest.
  - Expect the County to take the lead in marketing and credibility.
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# Agency Direct Contact Program

- Invited 30 component agencies to participate.
  - 21 Agencies participated.
  - One-to-one interviews.
  - Explored:
    - Drivers
    - Barriers
    - Benefits
    - Potential uses of interest
    - Other needs
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# Participants

- Alderwood WD
  - Auburn
  - Bellevue
  - Black Diamond
  - Bothell
  - Brier
  - Coal Creek UD
  - Covington Water
  - Cross Valley W&S
  - Issaquah
  - Kent NE
  - Lk.Sammamish W&S
  - Northshore UD
  - Olympic View W&S
  - Redmond
  - Renton
  - Sammamish W&S
  - SPU
  - Soos Creek W&S
  - Tukwila
  - Woodinville Water
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# Agency Results

- Half have interest in RW within 10 years
  - 80% see needs within 30 years
  - 40% see water supply benefits
  - 40% see environmental benefits
  - 40% see EDC concerns as significant issue.
  - 50% see cost as a significant issue or primary concern.
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# Types of Applications Identified

- Irrigation of golf courses, cemeteries, parks
  - Industrial
  - Instream flow mitigation/augmentation
  - Wetlands mitigation
  - Water supply augmentation
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# Connection between Market Analysis and Examples Illustrate applications.

- Identify applications from contact program.
  - Illustrate a range of applications.
  - Explore the range of benefits.
  - Use example projects to illustrate reclaimed water program decisions.
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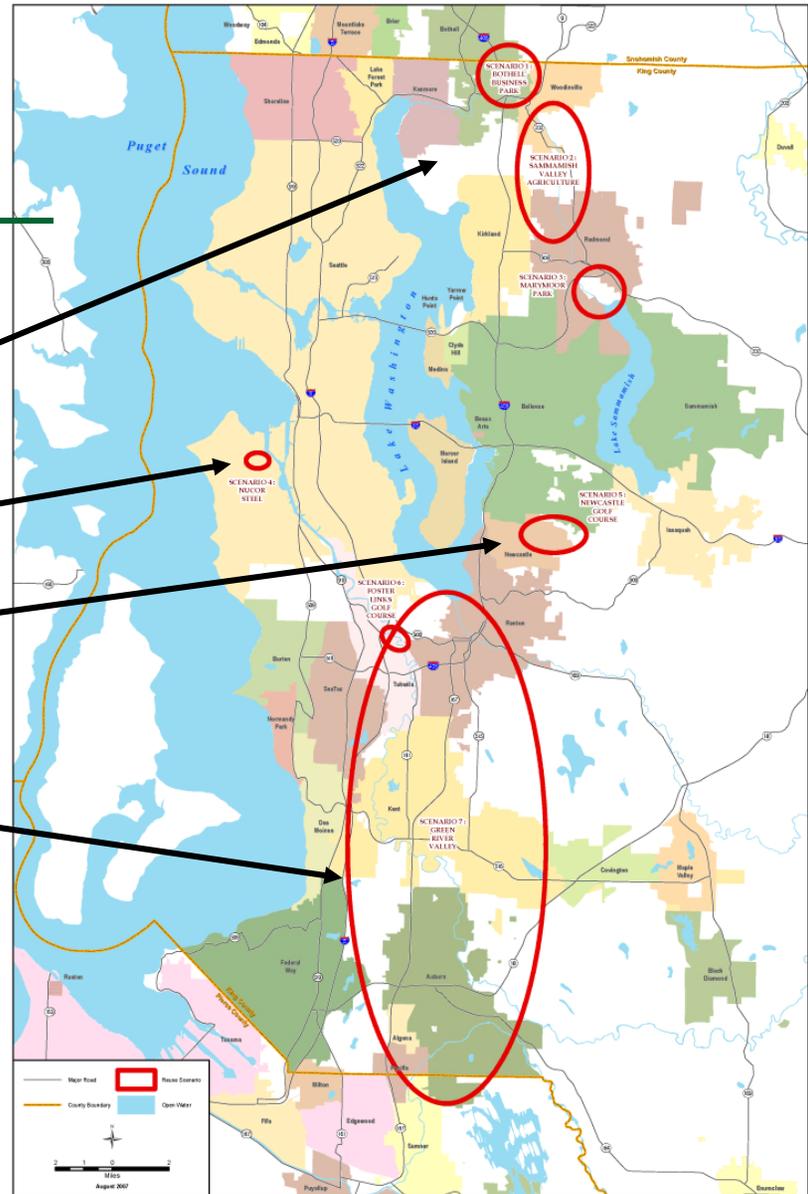
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# Examples of Applications Identified

- Focus Groups and Agency contact program identified five potential examples.
    - Agricultural irrigation
    - Recreational irrigation
    - Industrial cooling
    - Water supply
  - Planning and previous studies identified two additional examples
    - Recreational and industrial
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# Geographic Areas of Interest

North County  
Seattle  
Eastside  
South County



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# Approach – Assessment of Opportunities and Interest

- Assess capability to deliver
  - Evaluate and demonstrate costs and benefits
  - Potential benefit areas
  - Examples
    - Seven examples
    - Geographically diverse
    - Use-type diverse
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# Uses Identified for Examples

Example	Use	Average Seasonal Day Demand, mgd estimated
Coal Creek	Golf course, park	0.36
Tukwila	Golf course	0.30
South County	Water supply mitigation	8.10
Bothell	Landscape, industrial, wetland	1.20
Nucor	Industrial	0.08
Samm. Valley	Agricultural	2.80
Marymoor Pk	Recreational	0.10
	(Total)	12.94

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# Methodology for Cost Estimates

- Use determines treatment process.
  - GIS-based parcel size and location analysis.
  - County infrastructure analysis for water source.
  - Existing water use data by parcel where available.
  - Measured industrial flows obtained.
  - Hydraulic model to size distribution.
  - County cost models for O and M costs.
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# 1. Coal Creek Utility District

- ✓ Extend water supply
    - 1.3 mgd peak hour capacity.
    - Golf Course at Newcastle.
    - Two City parks nearby.
    - Metered use provided by CCUD.
    - Satellite plant
      - Untreated wastewater source
      - Conveyance to and from plant
      - Distribution system to users
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## 2. City of Tukwila -- Foster Links Golf Course

- ✓ Replaces Green River water use – potential environmental benefit.
  - Example of Extension of existing service line
  - Ex. South Plant RW plant - 0.3 mgd peak hour demand estimated.
  - 77 acre Golf course irrigation.
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## 3. South County Cities -- Green River Valley

- ✓ Future Water Supply needs estimated at 15 – 50 mgd from 2016 to 2030 average day.
  - Kent, Renton, Auburn, Covington.
  - Options--
    - Regional treatment at South Plant with conveyance.
    - Satellite treatment polishing S.P. effluent.
    - Satellite ‘scalping’ plant.
  - Example of regional system.
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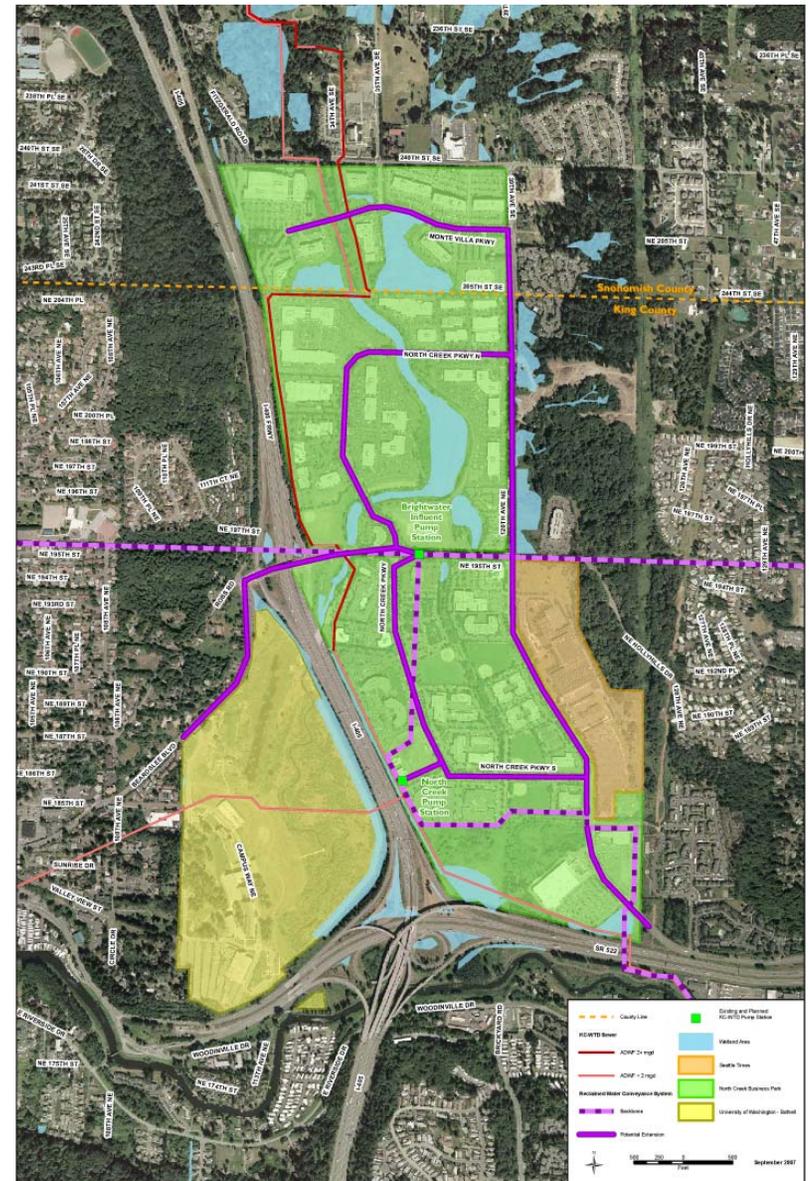
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## 4. City of Bothell -- Bothell Business Park

- ✓ Allow for growth in water supply
  - ✓ Investment in sustainability
  - Multiple Uses – 4.5 mgd peak hour demand estimated
    - Landscape and recreational field irrigation
    - Industrial cooling – Seattle Times
    - College campus
    - Wetland irrigation
    - Street cleaning and other City uses.
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# BBP - Details

- Actual water use data
- Industrial use measured by Seattle Times
- 22,500 feet of pipe
- Phased construction
- Booster pump station required depending on construction year.



# Cost Elements

Cost Element	Dia. inches	Length, ft or Capacity, mgd	Capital Cost, \$( <sup>1</sup> )
Pipe	4"-10"	22,500	\$7,500,000
Pump Station		2.5	\$2,700,000

(1)Source: Tabula 2, 2007 costs, plus 30% contingency, 30% allied costs.

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## 5. Nucor Steel – Industrial Reuse

- ✓ Supplement other nonpotable sources for cooling
  - Revisit SPU study, 2005.
  - Industrial cooling – 0.3 mgd average day year round.
  - South Plant effluent in ETS as source water.
  - On-site, end of pipe treatment plant.
  - SPU is water purveyor
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## 6. -- Sammamish Valley Agricultural

- ✓ Provide irrigation water where none.
  - ✓ Increased business opportunities.
  - ✓ Environmental enhancement.
  - ✓ Avoid future water rights issues.
  - Example of Agricultural and recreational use.
  - 12 properties currently draw from river –  
6.3 mgd peak hour demand.
  - Extension of planned system.
  - Most of the area in Woodinville Water
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## 7. King County/City of Redmond -- Marymoor Park

- ✓ Cost of water supply.
  - ✓ Expansion desired by operator.
  - Park irrigation – 1 mgd peak hour demand.
  - Extension of planned distribution system.
  - Potential expanded beneficiaries in parks users.
  - City of Redmond is current water purveyor
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# Status and What's Next

## ■ **Market Analysis**

- ✓ Checking details of examples with agencies to refine costs.
- ✓ Refining and finishing annual costs.
- ✓ Evaluating life cycle costs.

## ■ **Benefits Evaluation**

- Feeding information to Economic Framework model.

## ■ **Preparing Benefit-cost analyses**

- Funding mechanisms
  - B-c analyses models
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# Reclaimed Water Progress Briefing

- Discussion and Comment -- Tamie

## Next Steps – Steve

- Respond to your comments in writing
  - Oct 24 briefing on Economic portion
  - Dr. Bob Raucher/Jim Henderson
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