Wastewater Reuse – A Business Approach to Implement and Pay For It

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Wastewater Reuse Business Planning Approach

- Community Vision & Market Analysis
- Regulatory Agencies & Requirements
- Utility Mission
- Utility Policies
- Master Plans
- Capital Plan & O&M
- Asset Management
- Agreements & Contracts
- Funding & Rate Design
3 Keys to Success

- Define goals and establish who benefits
- Emphasize practicality
- Incorporate flexibility and timing
Define Goals & Establish Who Benefits

- Utility specific
- Regional
- Broad public benefit
- Triple bottom line
  - Social
  - Environmental
  - Financial

Venn diagram:
- Supply Proximity
- Market Demand
- Environmental & Social Benefits

HDR
Cost Follows Benefit

**Benefit**
- Water supply development
- Aquifer recharge/wetlands
- WWTP capacity
- WWV peaking/conveyance
- WWTP/TMDL
- Sustainability

**Cost**
- Water, env.
- Environmental, water
- Development
- Existing & development
- Existing, develop., env.
- Env., all
Market Analysis

- Summarize potential customer sites and demands
- Assess how reclaimed water could defer additional supply need
- Assess how reclaimed water can defer future WWTP upgrade needs
- Public’s viewpoint on reclaimed water
Flexibility and Timing

- Short and long-range vision
  - Establish expectations
  - Define appropriate priorities
  - How will reclaimed water be used in the future

- Phasing Capital Projects
  - Cost-benefit
  - Closest first
  - Reduced rate impacts

- Public visibility
Reclaimed Water Policies

- Provide foundation for reclaimed water program
  - Provide direction to utility
  - Coordinate with regional water supply planning
  - Provide vision for reclaimed water program
- Identify revenue sources
- Establish requirements for use of reclaimed water
- Determine if developers should be required to install reclaimed water mains
- Phasing of “purple pipe” installation
- Establish rate structure for reclaimed water
Other Key Considerations

- Capital Improvement Plan adoption
- Coordination with other utility improvement projects
- Need for reclaimed water ordinance
- Payment for improvements on private property
- Customer contracts
Developing Reclaimed Water Systems

Infrastructure is costly – How do you pay for it?

Plant + Transmission = Cost of Service
Overview of a Comprehensive Rate Study

Revenue Requirement Analysis
- Compares the sources of funds (revenues) to the expenses of the utility to determine the overall rate adjustments

Cost of Service Analysis
- Allocates the revenue requirements to the various customer classes of service in a “fair and equitable” manner

Rate Design Analysis
- Considers both the level and structure of the rate design to collect the target level of revenue
Rate Funding: Rate Design and Financial Policies

- Rates should be:
  - Easy to understand
  - Easy for the utility to administer
  - Encourage conservation/efficient use of resource
  - Economic development
  - Those who benefit should pay
  - Equitable & non-discriminating (cost-based)
Water Reuse Rates and Charges Survey

- Funding sources
- Cost recovery
- Subsidy categories
- Impact fees
- Rate design
Available Funding Sources

Six Primary Funding Sources

- User Impact Fees
- Low-Interest Loans
- Grants
- Revenue/GO Bonds
- Customer Contributions

Available Funding Sources

Operations Funding

Rates (Taxes)

Capital Funding

Revenue/GO Bonds

Customer Contributions
Sources of Funding – Loans & Grants

- Low-Interest Loans, Grants
  - Competitive process
  - Meet specific criteria
  - Limited funds
  - Be conservative in assumptions regarding availability of grants and low-interest loans
Sources of Funding – Loans & Grants in Idaho

- Low-Interest Loans, Grants (Idaho Department of Environmental Quality)

http://www.deq.state.id.us/

Tim Wendland (Loan Program Mgr)
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- Idaho Water Pollution Control Revolving Fund
  - Idaho Clean Water State Revolving Fund
  - Idaho Wastewater Loan Fund

- Planning Grant Program for Wastewater Facilities
Customer Contributions/Partnerships

- **Main Beneficiary**
  - Equitable donation
  - Donate land
  - Pay for or build portion of facilities

- **Public/Private Partnerships**
  - Contractual agreement for mutual benefit
Customer Contributions/Partnerships

- **Other Sources for Specific Beneficiaries**
  - Recovery charge/Latecomers agreement
  - ULIDs/LIDs – Utility Local Improvement District
  - SAD – Special Assessment District
Sources of Funding - Bonds

- **Revenue / GO Bonds**
  - Larger pool of funding available
  - Need to meet bond covenants and debt service coverage requirements (net income/debt service payments)
  - Impact to rates/taxes is through debt service payments (i.e. $1 million bond at 5% interest = $80,000 payment)
Sources of Funding – Short-Term Financing

- **Short-term/Interim financing**
  - **Good stop-gap tool**
    - Finance project that ultimately receives state or federal grants, loans, or long-term financing
  - **Examples**
    - Interfund loan
    - Line of credit
    - Bank loan
Cost Recovery

Percentage of annual operating costs recovered through reclaimed water rates

- 43% of Respondents
- 29% of Respondents
- 100% of Respondents
- 51%-75% of Respondents
- 76%-99% of Respondents
- 0% of Respondents collect 26% to 49%
- 19% of Respondents
- 10% of Respondents
Cost Recovery/Subsidy Policies

Options to consider when setting reclaimed water policies

- Pass full cost of service to reclaimed water customers
  - Recovers full cost of service (constructing/operating)
  - Doesn’t encourage use

- Set rate equal to potable water or wastewater rate
  - Easy to administer and understand
  - Doesn’t provide incentive for use

- Set at some percentage of potable water or wastewater rate
  - Encourages use
  - Doesn’t recover costs
Reuse Subsidy Sources

Subsidy Revenue to Meet Operating Costs

- Support by potable water customers: 24%
- Municipal or regional funding/subsidy: 18%
- Support by wastewater customers: 58%
Categories of Benefit for Subsidy

Who benefits from your reclaimed water system?

WATER CUSTOMERS
- RATES
- IMPACT FEE

WASTEWATER CUSTOMERS
- RATES
- IMPACT FEE
Categories of Benefit for Subsidy

How to know who benefits from your reclaimed water system?

**Water Customers**

- Existing customers: defer, reduce or eliminate need to develop new sources of supply
- New customers: defer water supply development or if new supply needed for them

**Wastewater Customers**

- Existing customers: if no or fewer upgrades needed to system
- Defer, reduce, or eliminate development of new treatment facilities
Example Subsidy Rates Based on Water Benefits

**WATER RATE**

**Consumption Charge:**

Existing rate = $1.60/CCF

$0.08/CCF or 5% of rate

**Monthly/Meter Charge:**

Existing rate = $6.25 (3/4” meter)

$2.37/month or 38% of rate

These examples are from the City of Olympia case study.
Example Subsidy Rates Based on Wastewater Benefits

WASTEWATER RATE

Monthly/ERU Charge:

Existing rate = $37.00

Subsidy rate = $0.90 or 2.4% of rate

This example is from the City of Olympia case study. Olympia has a flat sewer rate for residential; no commodity flow charge.
Rate Structures for Subsidy Rates

**Uniform Rate Structure**
The cost per unit of consumption under a uniform rate structure does not increase or decrease with additional units of consumption.

**Declining Block Rate Structure**
The cost per unit of consumption under a declining block rate structure decreases with additional units of consumption.

**Inverted Block Rate Structure**
The cost per unit of consumption under an inverted block rate structure increases with additional units of consumption.
Cost Recovery Through Subsidy Impact Fee vs. Rates

Rates in a Nutshell

- How much money do I need this year?
- Cost of Service Analysis
  - Residential Rates
  - Industrial Rates
  - Commercial Rates

Impact Fee in a Nutshell

- What is the value of a unit of system capacity?
  - Value & Capacity Analysis
    - New customer capacity needs
    - Impact Fee
Impact Fees Idaho Statutes

- **Idaho Code Title 67-8201 to 67-8216**
  - Must be from an adopted capital improvement or comprehensive plan
  - Must be proportionate to the benefit/impact of the development
    - Establish levels of service
  - Provide credits for developer contributions, user fees, debt service payments, etc.
  - Account for funds separately
  - Provide appeal process
  - WWV Impact fees must be spent within 20 years of receipt
Reclaimed Water Rate as Percentage of Potable Water

- Median Rate = 80%
Reclaimed Water Rate Development

- Promote use: 42%
- Market analysis: 5%
- Cost of service estimate: 11%
- Percent of potable water rate: 16%
- Other: 26%
  - Have not set rates/No charge
  - Cost of service minus certain %
  - Board of directors sets
  - Contract or negotiation
Reclaimed Water Rate Examples

Impact Fees*
- Low end = $50
- High end = $5,417

* Washington State examples

Reclaimed Water Rates
- Low end = 0% of potable rate
- High end = 100% of potable rate
- Average between 70-90%

No true average
Each utility needs to determine what will work best for them
Conclusion

- Funding Options
- Beneficiaries/Cost Recovery
- Rate/Fee Design

Should be tailored to your policies, needs and requirements
Questions ?
Thank You!
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