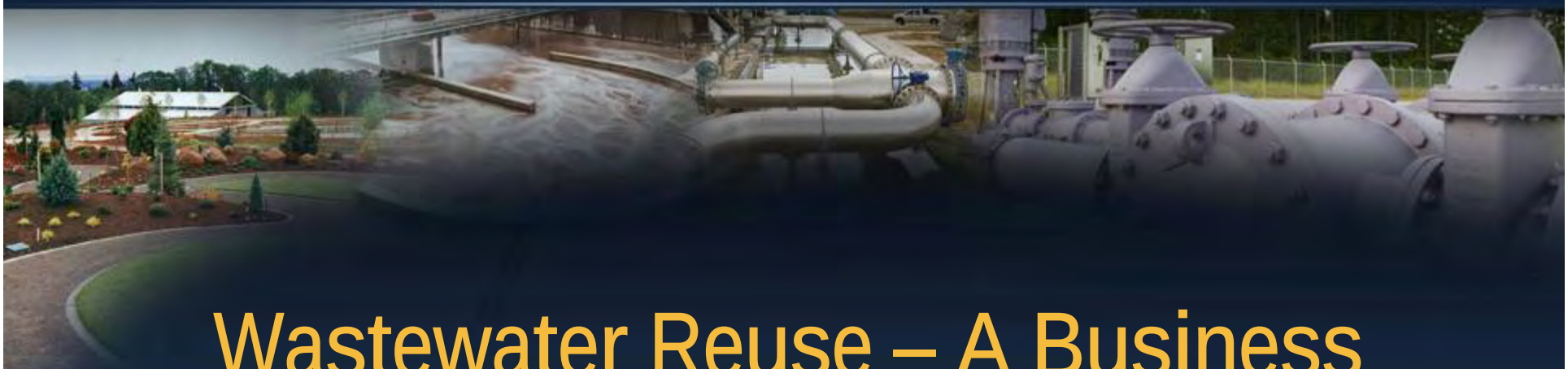
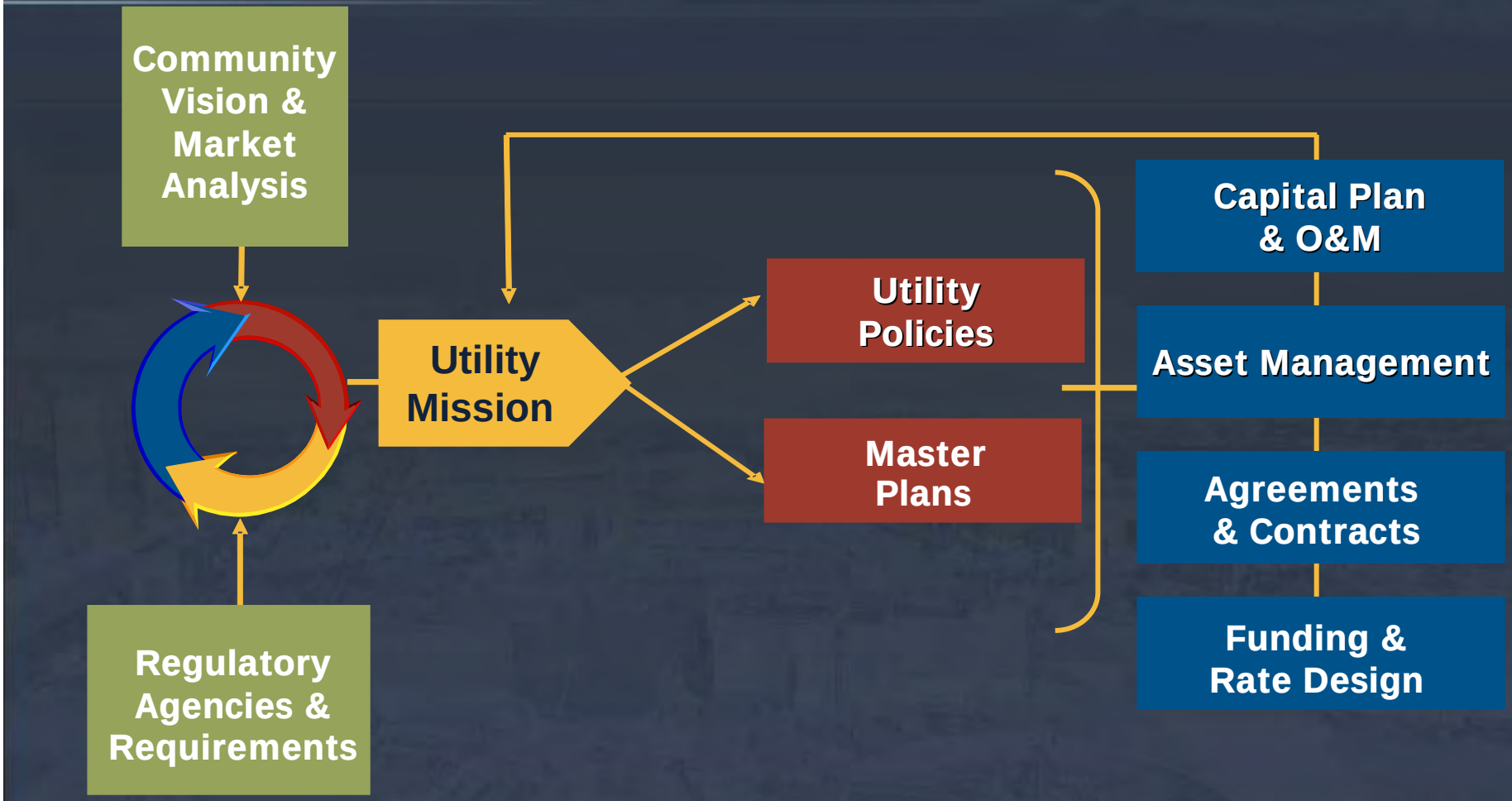


Wastewater Reuse – A Business Approach to Implement and Pay For It

Dina O'Reilly, Management/Financial Analyst
John Maxwell, PE, Vice President

Wastewater Reuse Business Planning Approach



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

Cost Follows Benefit

Benefit	Cost
❑ Water supply development	❑ Water, env.
❑ Aquifer recharge/wetlands	❑ Environmental, water
❑ WWTP capacity	❑ Development
❑ WW peaking/conveyance	❑ Existing & development
❑ WWTP/TMDL	❑ Existing, develop., env.
❑ Sustainability	❑ Env., all

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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

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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

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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

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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)

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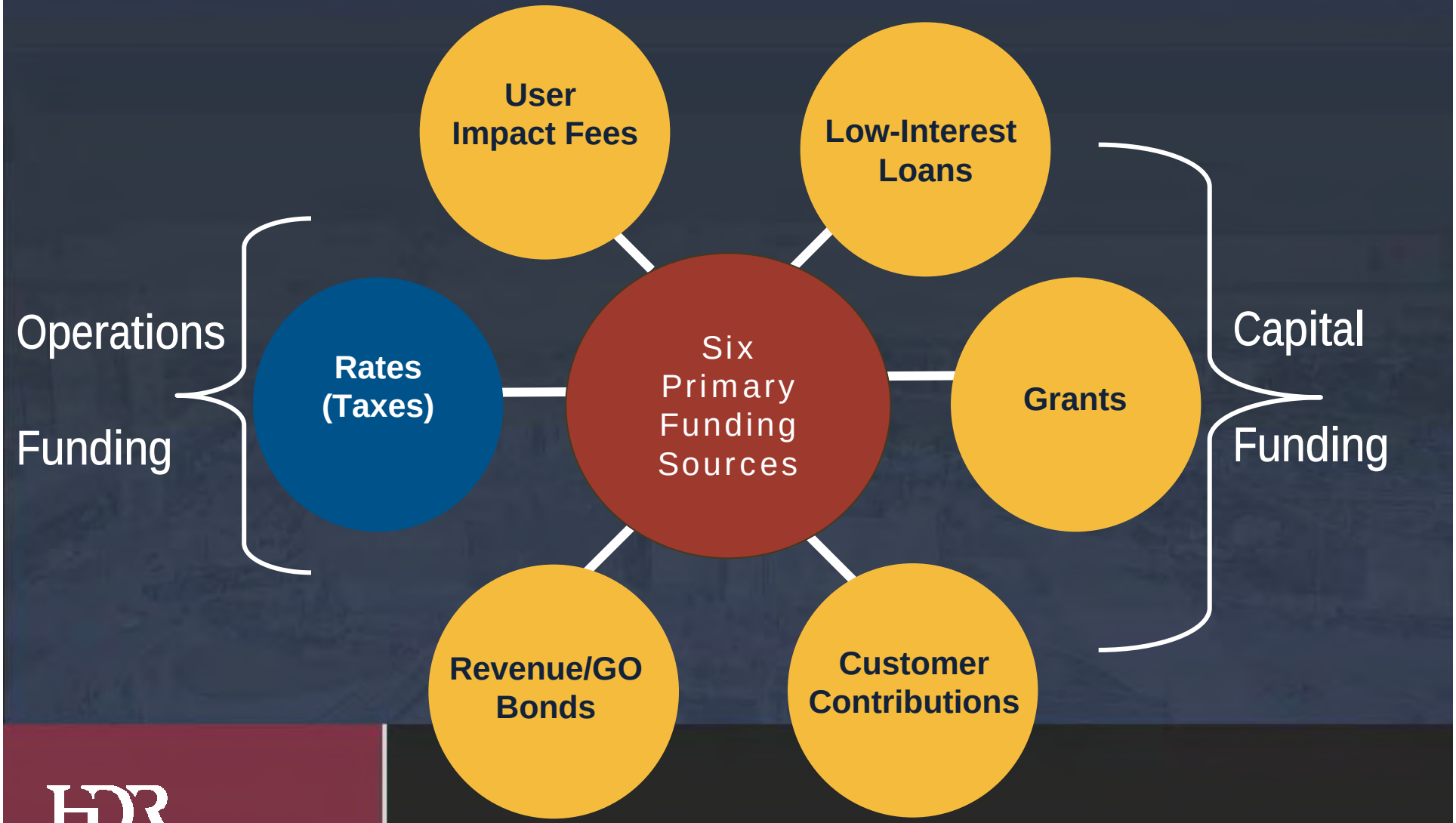
Water Reuse Rates and Charges Survey

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

Available Funding Sources



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

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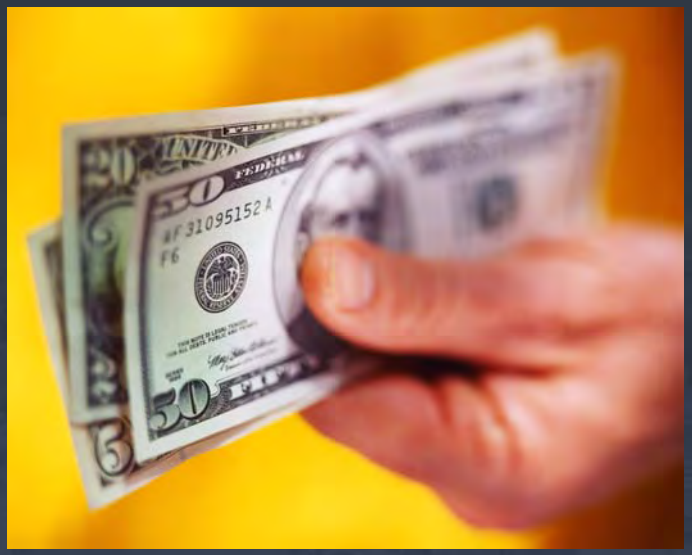
Sources of Funding – Loans & Grants in Idaho

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

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

Tim Wendland (Loan Program Mgr)

208.373.0439



- Idaho Water Pollution Control Revolving Fund
  - Idaho Clean Water State Revolving Fund
  - Idaho Wastewater Loan Fund
- Planning Grant Program for Wastewater Facilities

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Customer Contributions/Partnerships

- Main Beneficiary
  - Equitable donation
  - Donate land
  - Pay for or build portion of facilities
- Public/Private Partnerships
  - Contractual agreement for mutual benefit

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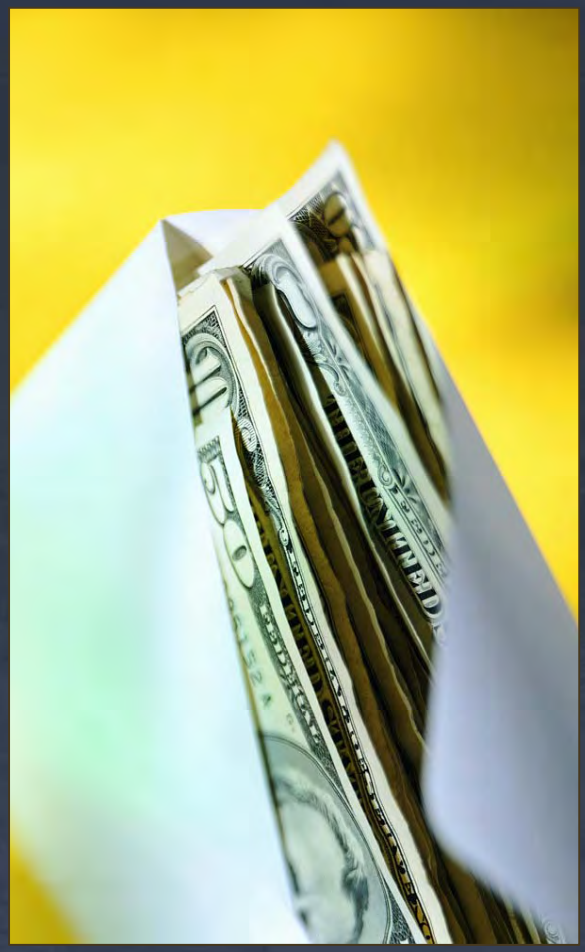
Customer Contributions/Partnerships

- 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

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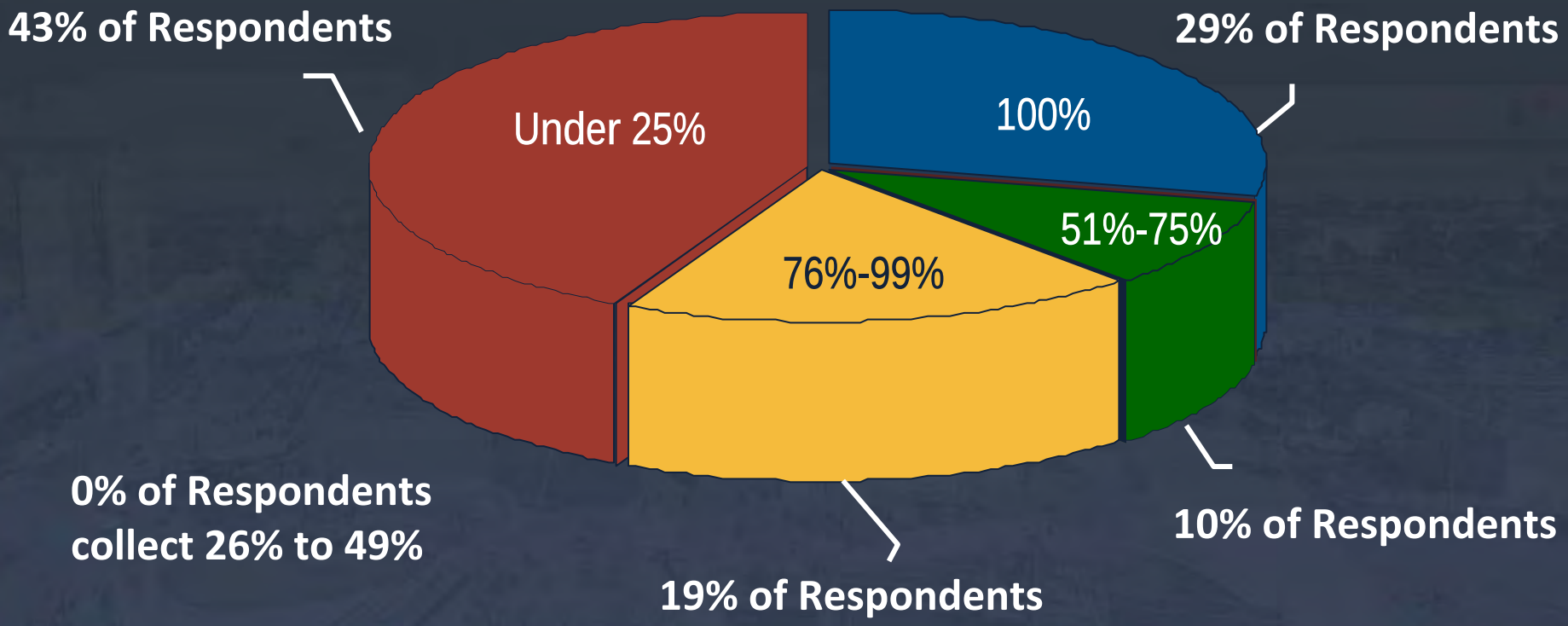
Cost Recovery

Percentage of annual operating costs recovered through reclaimed water rates



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

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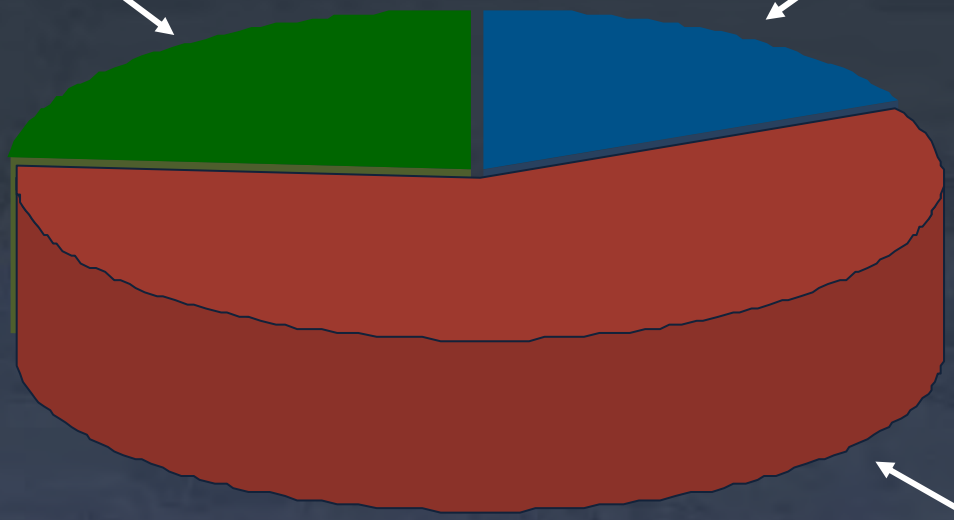
Reuse Subsidy Sources

Subsidy Revenue to Meet Operating Costs



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

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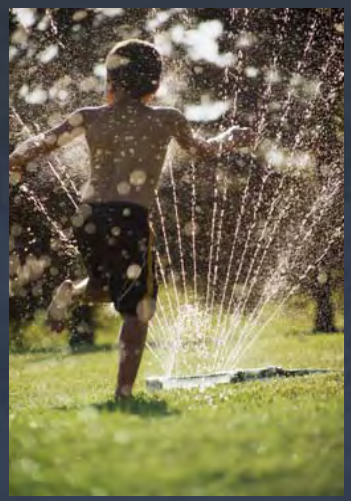
Example Subsidy Rates Based on Water Benefits

WATER RATE

Consumption Charge:



Existing rate = $1.60/CCF

$0.08/CCF

or 5% of rate

WATER 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.

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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

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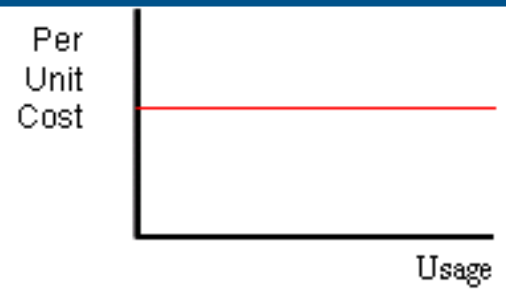
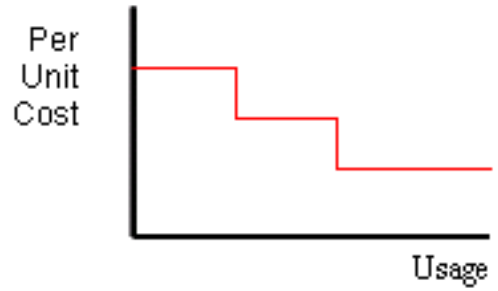
Rate Structures for Subsidy Rates



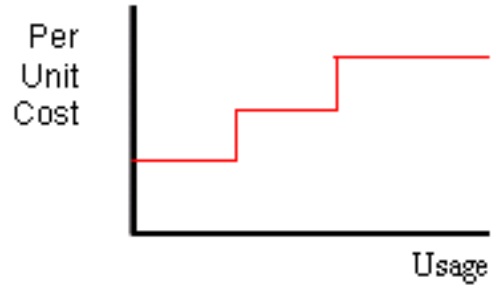
Uniform Rate Structure

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

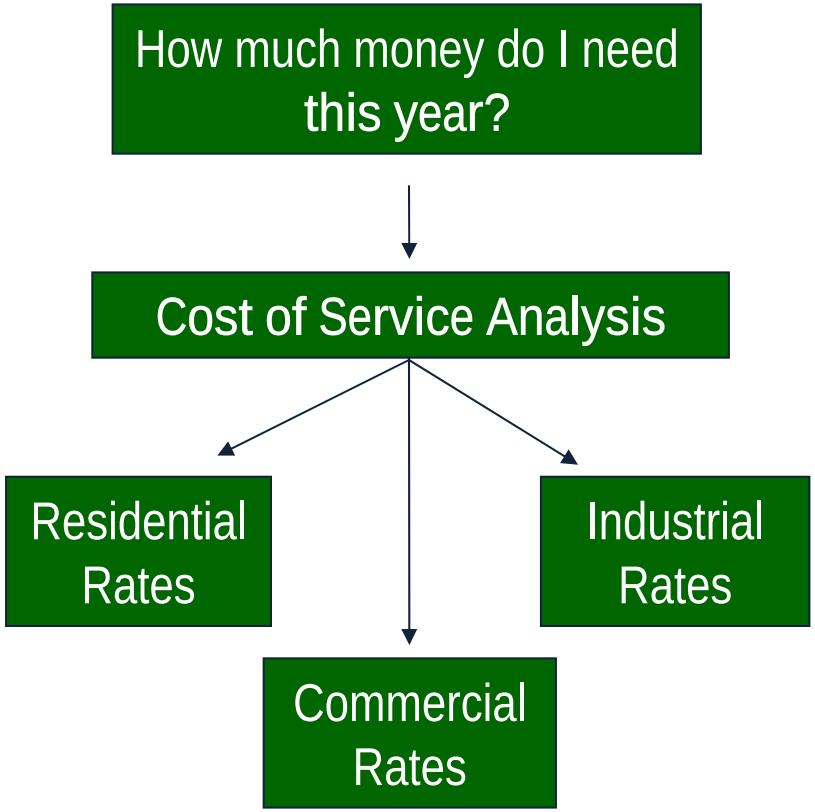


Inverted Block Rate Structure

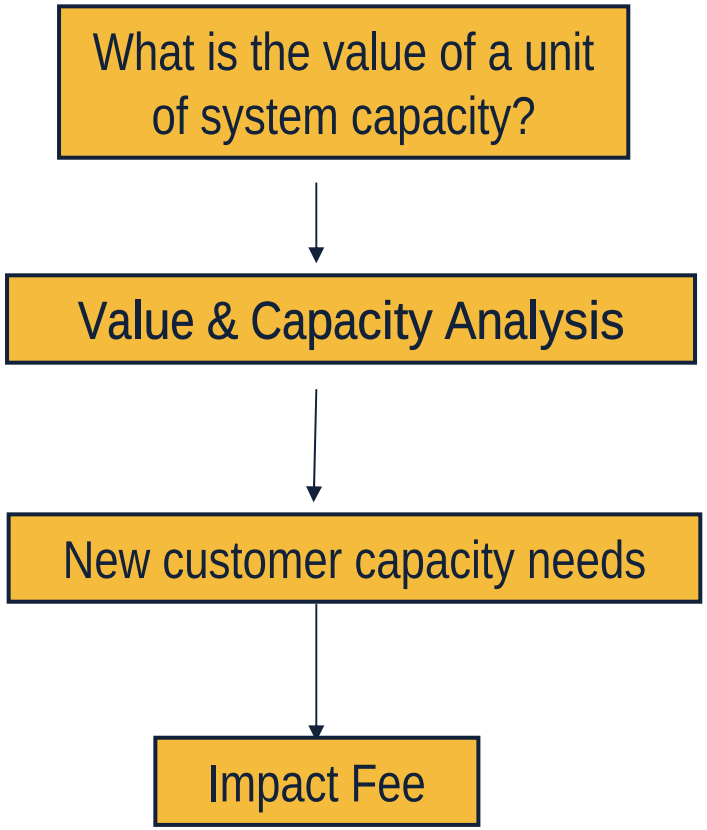
The cost per unit of consumption under an inverted block rate structure increases with additional units of consumption

Cost Recovery Through Subsidy Impact Fee vs. Rates

Rates in a Nutshell



Impact Fee in a Nutshell



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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
  - WW Impact fees must be spent within 20 years of receipt

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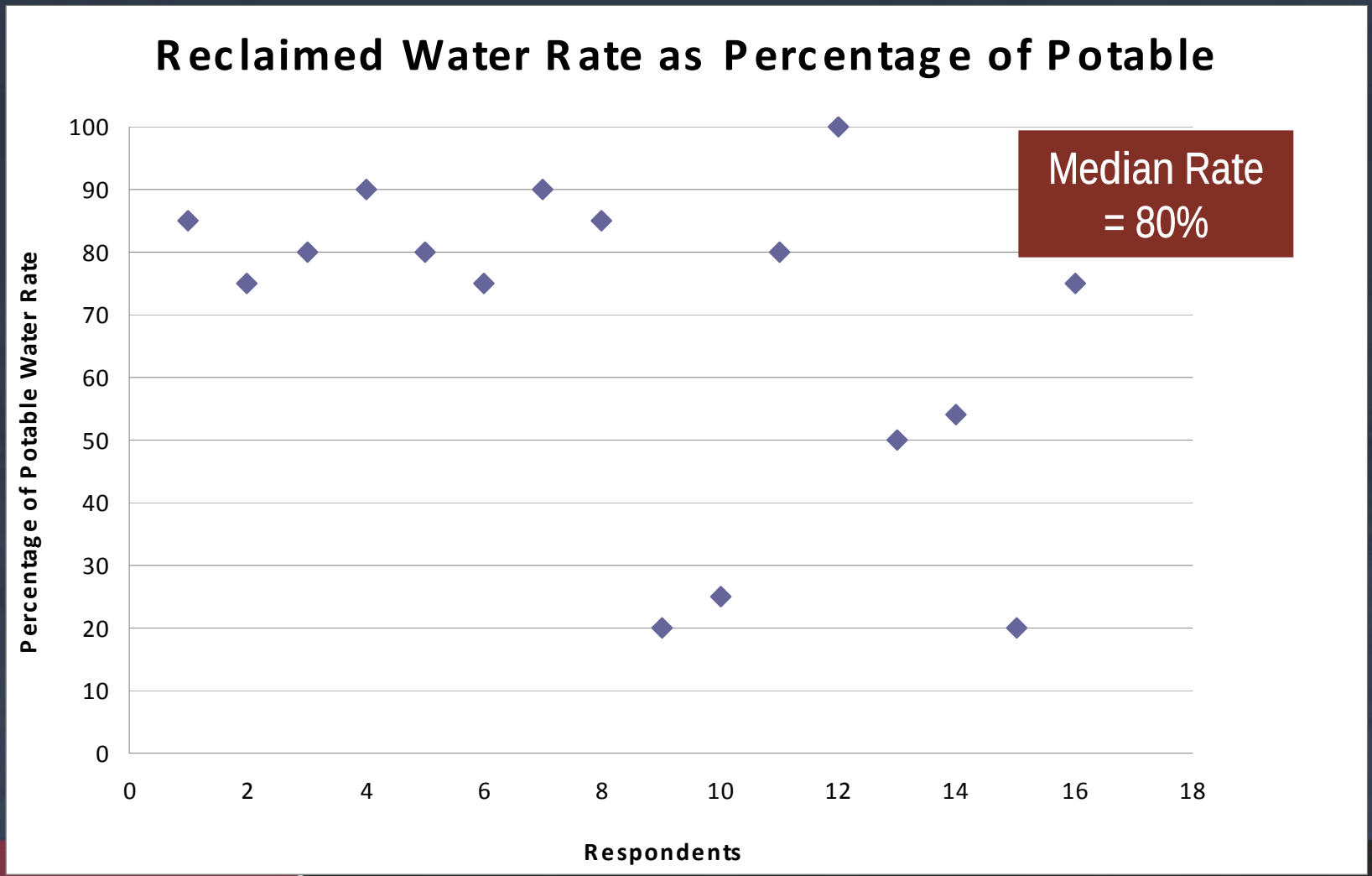
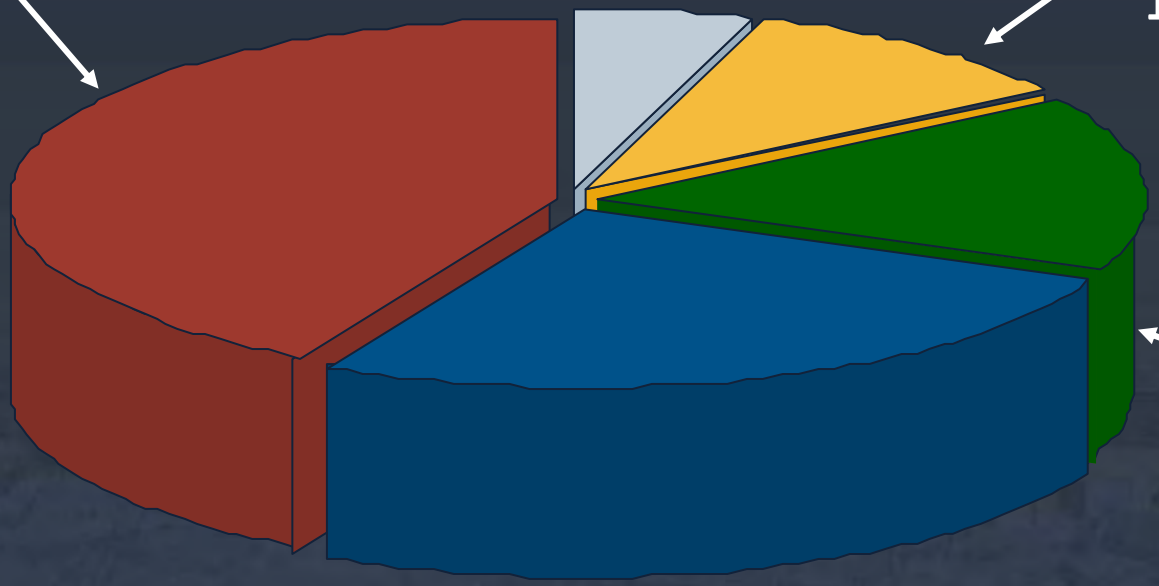
Reclaimed Water Rate



Reclaimed Water Rate Development



Other:

- Have not set rates/No charge
- Cost of service minus certain %
- Board of directors sets
- Contract or negotiation

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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

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Conclusion

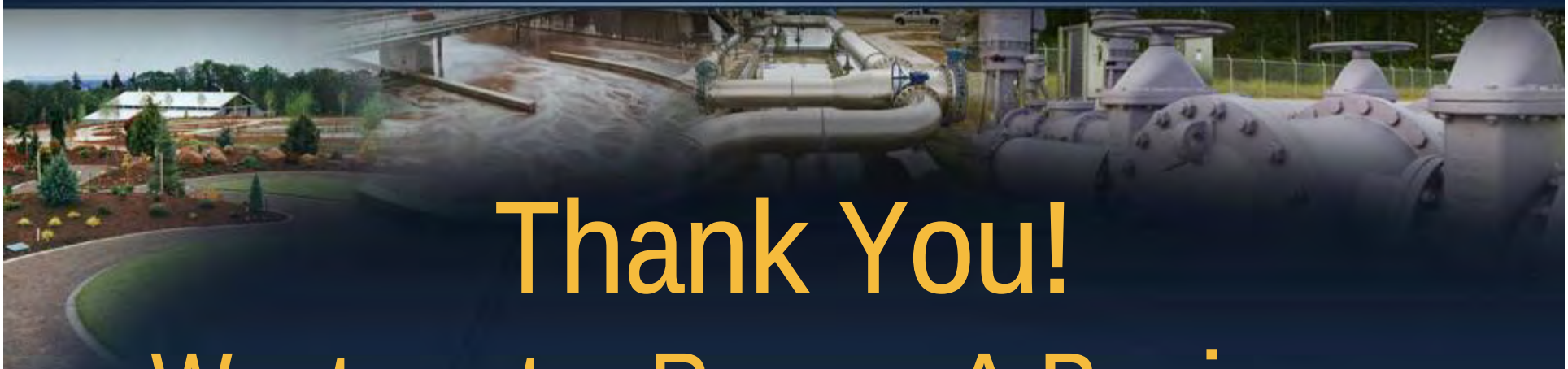
Funding Options

Beneficiaries/ Cost Recovery

Rate/Fee Design

Should be tailored to your policies, needs and requirements

Questions ?



Thank You!

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

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