CALL TO ORDER

- Rate Design 101 and System Development Fee Calculations
  1. Water Rates
  2. System Development Fees

ADJOURNMENT

This work session is open to Commissioners, Management, other District staff, Consultants and the public. It is not the opportunity to give public testimony, but if the Board members request input from individuals in the audience, those people may speak.

The principal purpose of the work session is to allow employees of the District and the Board to communicate with each other and/or the Consultants, answer Board questions, and get the Board’s opinions and input regarding the subject topic(s).
Rate Setting Fundamentals

August 21, 2018

Presented by:
Gordon Wilson
Senior Project Manager
Purpose of Presentation and Discussion

- Present background information to the Board on upcoming rate study
- Receive early feedback from the Board about rate design choices, so we know what to focus on
- Also, present background on system development fees (SDFs), in preparation for calculating updated SDF
Rates
Rate Study Road Map

Three-step process:
1. How much money is needed? (Revenue requirement)
2. Who should pay? (Cost of service allocation)
3. How is the bill calculated? (Rate design)
Step 1: Revenue Requirement Forecast

Diagram:
- Rev. Requirement
  - Capital Plan
  - Capital Funding
  - Financial Policies
  - Revenue Requirement
  - Economic Assumptions
  - O&M Costs
  - Debt Service Costs
How Much Rate Revenue is Needed?

- O&M Costs
- Rate-Funded Capital Costs
- Existing & New Debt Service
- Required Reserves

Annual Rate Revenue Requirement

Minus

Non-Rate Revenues
Forecast Depends On:

- Assumptions
- Financial policies
- Year-by-year modeling of:
  - Capital funding strategy - How do we pay for the CIP?
  - Annual forecast - like a multi-year version of the budget:
    - Beginning balance, revenues, expenditures, ending balance
## Existing Skagit PUD Financial Policies

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Target</th>
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</thead>
<tbody>
<tr>
<td><strong>Operating Reserve (Revenue Fund Ending Balance)</strong></td>
<td>Provide liquidity cushion to accommodate cyclical cash flow fluctuations</td>
</tr>
<tr>
<td></td>
<td>• 2.5 months of O&amp;M Expenses + Depreciation Expense</td>
</tr>
<tr>
<td><strong>Total Liquidity</strong></td>
<td>Ensure enough cash to meet unforeseen operating or capital needs</td>
</tr>
<tr>
<td></td>
<td>• 180 days of O&amp;M expenses</td>
</tr>
<tr>
<td><strong>Capital Replacement Funding</strong></td>
<td>Promote ongoing system integrity through reinvestment in the system</td>
</tr>
</tbody>
</table>
| | • Current minimum: $3,500,000  
| | • Suggested minimum: 100% of depreciation (~$5 million) |
| **Debt Service Coverage** | Indicates ability to pay debt service after paying operating costs |
| | • 2.00 for all revenue bond debt |
## Two Key Cost Areas

<table>
<thead>
<tr>
<th>Operations &amp; Maintenance</th>
<th>Capital Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Regular, ongoing activities</td>
<td>- Large, discrete projects</td>
</tr>
<tr>
<td>- Highly time/schedule sensitive</td>
<td>- Limited time/schedule sensitivity</td>
</tr>
<tr>
<td>- More predictable spending patterns</td>
<td>- Less predictable spending patterns</td>
</tr>
<tr>
<td>- More predictable funding sources</td>
<td>- Less predictable funding sources</td>
</tr>
</tbody>
</table>

- Large, discrete projects
- Limited time/schedule sensitivity
- Less predictable spending patterns
- Less predictable funding sources
Operating Cost Considerations

- Review historical/budgeted costs
  - Is the current budget representative of future expenditures?

- Review cost inflation/escalation rates

- Anticipate non-inflationary expense changes
  - Additional/enhanced needs (staffing, regulatory requirements)
  - Changes in workforce strategy
  - Increasing costs (purchases, materials, supplies, electricity)
  - Indirect costs (overhead allocation up to date?)
  - Taxes (state excise, city utility)
    - Periodically review state excise tax calculations
Capital Cost Considerations

- Based on comprehensive plan or internally developed CIP
- Capital program should identify for each project:
  - Timing
  - Cost
  - Funding (e.g. rates, debt, grants/contributions, other)
  - Relative priority or flexibility to modify schedule (if possible)
Capital Funding Tradeoffs

Cash (pay-as-you-go)
- Higher near-term impact on rates, lower long-term
- Earn interest instead of paying interest
- Existing ratepayers pay 100% of initial costs
- Puts a premium on advance planning

Debt Financing
- Lower near-term impact on rates, higher long-term
- Timing – you can build it when you need it
- Spreads costs between existing and future ratepayers
- Be careful about using up debt capacity

Typical Approach
- Cash-financing for routine, foreseeable capital projects
- Partial debt financing for either new capacity or large, one-time, unforeseen projects
- To conserve debt capacity, borrowing is a last resort
Annual Financial Forecast

- After determining the capital funding strategy, we use the forecast model to test the sufficiency of existing rates.
- If existing rates would be insufficient, then we determine a pattern of rate increases that covers required costs over the forecast horizon.
  - Insufficiency can mean a lack of cash or a lack of debt service coverage.
  - We generally aim for a smooth pattern of rate increases.
- For Skagit PUD, we have updated the revenue requirement forecast as part of the budget process in each of the past two years, so there might not be big surprises.
Crafting Your Financial Plan and Rate Strategy

- Revenue deficiency of $1.4 million in 2018 increasing to $11.4 million by 2026
  - Routine capital funding increasing $2.1 million in 2020
  - New borrowing will add $1.9 million to $6.8 million per year in additional debt service
Cost of Service Allocation

Allocate Costs by Function

- Customer
- Meters & Services
- Base Demand
- Peak Demand
- Fire Protection

Allocate Costs by Customer Class

- Single Family
- Multi-family
- Commercial/Other

Category choices:
- Industrial
- Wholesale/Contract
- Parks, Irrigation, Agricultural
Overview of Cost of Service

- Provides a defensible basis for assigning equitable cost shares for system customers
  - Based on relative demand placed on the system
- Establishes appropriate grouping of customer classes
- Determines unit costs of service as the foundation for developing the rate structure
Are You Charging Your Customers Equitably?

1. Identify Utility Service Functions
2. Define Customer Classes
3. Allocate Assets & Expenses to Functions
4. Allocate Costs to Customer Classes

Class Cost Shares
Example Utility Service Functions

Water System Functions

- Customer
- Meters & services
- Base demand
- Peak demand
- Fire protection
What Makes a Customer Class Distinct?

- Usage levels
- Usage patterns
- Seasonality of use
- Raw water versus treated water
- Individual versus master metered
- Special service requirements
- Social policies (low-income, economic development)
Sample Water Customer Classes

**Single Family Residential (SFR)**
- Typically largest customer group
- Relatively low usage per unit
- High peak demand
- Lowest fire flow requirement

**Multi-family Residential (MFR)**
- Lower usage per dwelling unit than SFR
- Usually master metered
- Relatively constant use throughout the year
- Fire flow requirement between SFR & commercial

**Commercial/Industrial**
- Diversity in use per account
- Relatively constant usage throughout the year
- Highest fire flow requirement

**Parks, Irrigation, & Agriculture**
- Often smallest customer classes in terms of accounts
- Majority of use in peak season
- No fire flow requirement
- Economic sensitivity, sometimes blended with commercial
Sample Customer Class Water Demand Profiles

Sample Usage by Month and Customer Class

- SF
- MF
- COMM
- IRR
Determining Your Customer Class Cost Shares

- Cost-of-service analysis identifies how costs should be equitably distributed among customer classes
- Cost allocations are based on
  - Industry-standard methodologies
  - Unique usage characteristics (use and demands)
  - Unique facility requirements (planning and design criteria)
- Cost-of-Service Allocation (COSA) cost shares are compared with existing cost shares; needed shifts are identified

<table>
<thead>
<tr>
<th>Class</th>
<th>Existing 2017 Revenue</th>
<th>COSA 2017 Revenue</th>
<th>$ Difference</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>$ 5,635,687</td>
<td>$ 5,818,285</td>
<td>$ 182,598</td>
<td>3.24%</td>
</tr>
<tr>
<td>Multifamily</td>
<td>1,359,847</td>
<td>1,009,157</td>
<td>(350,690)</td>
<td>-25.79%</td>
</tr>
<tr>
<td>Commercial</td>
<td>2,548,590</td>
<td>2,716,682</td>
<td>168,092</td>
<td>6.60%</td>
</tr>
<tr>
<td>Total</td>
<td>$ 9,544,124</td>
<td>$ 9,544,124</td>
<td>$ 0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>
Judgment Call Questions

- Grouping into rate classes – separate or blended treatment of:
  - Irrigation customers (including parks)
  - Agriculture customers
  - Industrial customers

- Skagit PUD’s current rate classes include all three of these groups as part of Commercial
Rate Design

Develop Rates

Rate design choices:
- Low-income discount
- Surcharge
- Class-specific usage rates
- Usage allowance
- Block rates
- Seasonal rates

Fixed Charge

Usage Charge

Special Features?
Rate Design - How the Bill is Calculated

- Creating a rate structure that recovers the target level of revenue
- The bill is your primary communication with customers
- Composed of some combination of fixed and/or variable charges
- Considers policy goals and characteristics of your particular customer base
- Numerous judgment call decisions
Do Rate Structures Align with Your Objectives?

<table>
<thead>
<tr>
<th>Example Rate Structure Goals</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Sustainability</strong></td>
<td>• Sufficient and predictable revenue to recover costs</td>
</tr>
<tr>
<td></td>
<td>• Stable and predictable impacts to customers</td>
</tr>
<tr>
<td></td>
<td>• Adaptable to changing demands</td>
</tr>
<tr>
<td><strong>Conservation and Efficiency</strong></td>
<td>• Promote conservation and efficiency of use</td>
</tr>
<tr>
<td></td>
<td>• Protect natural resources</td>
</tr>
<tr>
<td><strong>Transparency and Simplicity</strong></td>
<td>• Easy to understand, explain and administer</td>
</tr>
<tr>
<td></td>
<td>• Compatible with billing system / meter reading</td>
</tr>
<tr>
<td><strong>Fairness and Equity</strong></td>
<td>• Correlation of rates with costs</td>
</tr>
<tr>
<td></td>
<td>• Reflect customer usage patterns and service requirements</td>
</tr>
<tr>
<td><strong>Affordability</strong></td>
<td>• Provide affordable water to “lifeline” users</td>
</tr>
<tr>
<td></td>
<td>• Support economic development / preservation</td>
</tr>
</tbody>
</table>
Example Water Fixed and Volume Rate Recovery

**Fixed Charges**  
$ per meter equivalent

- Addresses revenue stability
- Typically recovers costs for:
  - Customer/account servicing
  - Meters & services repair / maintenance
  - Fire protection services
  - Portion of peak demand

**Volume Charges**  
$ per unit of water use

- Scalable, addresses conservation
- Typically recovers costs for:
  - Base use (average annual usage)
  - Portion of peak demand

Typical guideline for cost recovery = 40%-50% fixed charges / 50%-60% volume charges

Higher % from fixed charge for small systems or systems with high seasonal occupancy
# Example Volumetric Rate Structures

## Uniform Volume Rates
- Volume charge per unit of water the same for all customers
- Consistent usage patterns of customer base
- Basic introduction to conservation rates
- Stability / simplicity vs. equity / conservation

## Class Specific Volume Rates
- Volume charge per unit of water varies by customer class
- Diverse usage patterns; service requirements
- Potential inequities for low water users; inadequate pricing signal for high water users

## Increasing “Tiered” Block Rates
- Volume charge increases at established water use thresholds
- Most appropriate for single family residential class
- Strong year around pricing signal
- Conservation / equity / affordability vs. stability / simplicity

## Seasonal Rates
- Volume charge varies by season
- Significant seasonal cost variation
- Most appropriate for non-single family residential customers
- Conservation / equity vs. stability / simplicity
<table>
<thead>
<tr>
<th>Description</th>
<th>2018 Existing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Month</td>
<td>Per ccf*</td>
</tr>
<tr>
<td><strong>Meter Size (all classes):</strong></td>
<td></td>
</tr>
<tr>
<td>5/8&quot;</td>
<td>$ 26.85</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>26.85</td>
</tr>
<tr>
<td>1&quot;</td>
<td>44.75</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>89.20</td>
</tr>
<tr>
<td>2&quot;</td>
<td>142.50</td>
</tr>
<tr>
<td>3&quot;</td>
<td>267.15</td>
</tr>
<tr>
<td>4&quot;</td>
<td>444.85</td>
</tr>
<tr>
<td>6&quot;</td>
<td>889.70</td>
</tr>
<tr>
<td>8&quot;</td>
<td>1,423.30</td>
</tr>
<tr>
<td><strong>Capital Improvement Surcharge:</strong></td>
<td></td>
</tr>
<tr>
<td>$</td>
<td>2.00</td>
</tr>
<tr>
<td><strong>Single Family &amp; Duplex w/ Individual Meters</strong></td>
<td></td>
</tr>
<tr>
<td>Block 1 (0-3 ccf)</td>
<td>$ 2.96</td>
</tr>
<tr>
<td>Block 2 (4-100 ccf)</td>
<td>4.66</td>
</tr>
<tr>
<td>Block 3 (101+ ccf)</td>
<td>2.72</td>
</tr>
<tr>
<td><strong>All Others</strong></td>
<td></td>
</tr>
<tr>
<td>Block 1 (0-3 ccf)</td>
<td>$ 4.66</td>
</tr>
<tr>
<td>Block 2 (4-100 ccf)</td>
<td>4.66</td>
</tr>
<tr>
<td>Block 3 (101+ ccf)</td>
<td>2.72</td>
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*1 ccf = 100 cubic feet
Judgment Call Questions

- Percentage of revenue from fixed charge vs. volume charge?
- Low-income discount rates?
  - Low-income senior? Low-income senior or low-income disabled?
  - What percentage of the regular rates? 50%? 75%? 80%?
- Why is capital improvement surcharge a flat dollar amount per account? Why not scalable?
- Why is Block 3 (over 100 ccf/month) a lower volume rate than Block 2?
- What was the rationale for having Block 1 (0-3 ccf/month) volume rate less for single family and duplexes than for others? On what was the rate difference based? ($2.96/ccf vs. $4.66/ccf, or 64%)
Judgment Call Questions

- Relative priority for:
  - Revenue stability?
  - Encouraging conservation?
  - “Lifeline” rates for disadvantaged populations?
  - Simple rate structure, easy to explain?
  - Equitable rate structure, matches rate burden closely to costs?

- Any interest in:
  - Conservation rates? (I.e. inclining block rates for SF, seasonal rates for other classes)
  - Usage allowance?

- Any particular concerns or questions for us to know about?
System Development Fees
System Development Fees (SDFs)

- Revised Code of Washington RCW 54.24.080 grants authority to PUDs
  - Part of general authority to collect rates and charges that are fair and nondiscriminatory
  - We suggest following guidelines in RCW 57, which contains an explicit framework for general facilities charges – legality is well tested
- SDFs are charged to new development upon connection to the system
- Represents a proportionate share of District-funded capital investment (excluding grants and developer contributed capital)
- Charge based on the capacity that can be served by the existing and planned capital investment
- Calculation results in a maximum allowable charge; District can legally charge less than the calculated amount.
Basic Methodology for Connection Charges

Charge = \frac{\text{System Cost}}{\text{Applicable Customer Base}}
Typical Methodology for Connection Charges

**Existing Cost**
- ✓ Existing assets (original cost)
- ✓ Less: Meter & Services
- ✓ Less: Contributions (developer/grants)
- ✓ Plus: Construction work in progress
- ✓ Plus: Interest (max. 10 years)

**Future Cost**
- ✓ Future capital
- ✓ Less: Developer donations
- ✓ Less: Repair & replacement

- Total cost basis is divided by number of total meter equivalents, both current and projected. There is more than one way to perform that calculation.

- Current SDF for Skagit PUD was established in 2010 by HDR. We will be reviewing the prior methodology and evaluating how well it fits the PUD’s current conditions.
Assumes smallest meter size

Reminder: comparing SDFs from one utility to another can be an “apples to oranges” exercise, due to differences in system age, infrastructure, and projected CIP needs
Questions?