NORTHERN WATER
RATE STUDY

Allottee Meeting
April 9, 2014
Presentation Topics

- Introduction and Overview
- Northern Water Financial Structure (Review)
- Rate Study Methods
- Results
- Comments, Questions and Discussion
Summary of January 10 Allottee Meeting

- Attendees – 47 total
  - 22 Municipal Attendees
  - 22 Irrigation Attendees

- Topics
  - Northern Water Financial Structure
  - Rate Study Methods
  - Financial Plan

- Comments
  - One comment card
  - Several verbal comments
Purpose of Today’s Presentation

- Present preliminary results:
  - Financial plan
  - Cost of service
  - Rate design (assessments)
  - Benchmarking comparisons
- Answer questions and receive comments regarding today’s presentation
- Prepare allottees to provide formal comments at the rate-setting hearing scheduled for May 1st (1:00 PM) at Northern Water
Goals and Objectives of Rate Study

Goals

- What adjustments are needed in Northern Water’s revenue structure (primarily assessment rates) to ensure the future financial health of the organization and continue meeting C-BT O&M commitments?

Objectives

- How much revenue is needed?
- What is an equitable allocation of costs between different classes of C-BT water users?
- How should rates be adjusted to meet future financial needs?
- How do rates compare with other organizations?
NORTHERN WATER
FINANCIAL STRUCTURE
Presentation Topics

- Introduction and Overview
- Northern Water Financial Structure
  - Revenue
  - Expenses
  - Recent Financial Performance
- Rate Study Methods
- Results
- Comments, Questions and Discussion
Budget Categories

Revenue

- Property and SO Taxes: 53%
- Assessments: 21%
- Charges for Services: 16%
- Other Op: 8%
- Other Non-Op: 2%

Expenses

- Programs - General: 35%
- Programs - O&M: 18%
- Capital Projects: 10%
- Capital Outlay: 3%
- Debt Service: 5%
- O&M: 29%
Revenue - Assessments

- Only User Charge Revenue Source
- Includes
  - Class B, C, D Assessments
  - Carryover
  - Other Special Charges
- More Predictable Than Other Sources
- Low Percentage of Overall Revenue
  - Small % assessment change = much smaller % total revenue change
  - Only open-rate contracts (2/3 of contracts) subject to rate changes
By contract
- 67% Open Rate Units
- 33% Fixed Rate Units

Of total revenue
- Assessments = 21%
- But, Variable (Open) Assessments = 14%
Assessment Rates

- **Current Rates**
  - Irrigation - $10.00 per AFU
  - Other Uses - $28.00 per AFU
  - Unit 2 and Tax Exempt Surcharge - $0.50 per AFU
  - Winter Service Charge - $200 + $1.50 per ac-ft delivered

![Graph showing assessment rates from 1955 to 2010](image-url)
## Recent Financial Performance

<table>
<thead>
<tr>
<th>Pre-Recession</th>
<th>Post-Recession</th>
</tr>
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<tbody>
<tr>
<td>- Property tax revenue aligned with expenses</td>
<td>- Flat property tax revenue, increasing expenses</td>
</tr>
<tr>
<td>- 8% annual increase in tax revenue</td>
<td>- 1% annual increase in tax revenue</td>
</tr>
<tr>
<td>- Enhanced reserves</td>
<td>- Large capital expenditures</td>
</tr>
<tr>
<td>- Property tax revenue</td>
<td>- Small increases in assessments (based on willingness to pay rather than revenue requirement)</td>
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<tr>
<td>- Large inclusions</td>
<td></td>
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<tr>
<td>- Building sale</td>
<td></td>
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<tr>
<td>- Small increases in assessments (small revenue requirement)</td>
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</tbody>
</table>
RATE STUDY METHODS
Presentation Topics

- Introduction and Overview
- Northern Water Financial Structure
- Rate Study Methods
  - Financial Planning
  - Cost of Service
  - Irrigator Ability-to-Pay
  - Assessment Design
- Results
- Comments, Questions and Discussion
Drivers for Increasing Costs/Rates

- Inflation
- Long term stability
- Increasing levels of service
  - Environmental Programs
  - Water Quality Regulations
  - IT/Data Needs
- Reinvestment in repairs and replacements
  - Aging (60 year old) project and facilities
- Capital reserves requirements
- Fixed versus variable costs
- Water scarcity
A Comprehensive Rate Study Includes Three Basic Building Blocks

**Rate Design**
- Develop understanding of community needs
- Evaluate different rate structures against predefined criteria
- Identify implementation constraints
- Adopt new rate structures that meet community needs

**Cost-of-Service**
- Allocate revenue requirements to customers
- Calculate cost-of-service specific to customer class
- Determine revenue requirements for extraterritorial customers
- Allocate costs to utility functions
- Determine used and useful rate base

**Financial Plan**
- Refine/Define financial policies
- Identify capital and operating costs
- Identify funding sources and uses
- Project cash balances
- Identify Revenue Requirements
- Refine assumptions on system growth
- Run scenarios
- Conduct sensitivity analysis
The Rate Study Has Multiple Objectives

Financial Cost Recovery
- Refine/Define financial policies
- Identify capital and operating costs
- Identify funding sources and uses
- Project cash balances

Fairness and Equity
- Determine revenue requirements for extraterritorial customers
- Allocate costs to utility functions
- Determine used and useful rate base

Simplicity and Transparency
- Develop understandings
- Evaluate different scenarios
- Identify incremental change needed to meet community needs

Rate Design
- Identify Revenue Requirements
- Refine assumptions on system growth
- Run scenarios
- Conduct sensitivity analysis
Current Rate Study Objectives

- **Cost Recovery**
  - Northern Water will recover sufficient revenue in order to pay its costs and maintain balanced cash flows.

- **Revenue Stability**
  - Northern Water requires a stable revenue stream in the face of variable external factors, such regional environmental and economic conditions.

- **Cost-of-Service Equity**
  - Rates shall be developed such that C-BT water assessments approximate the cost borne by Northern Water in providing that service, to the extent feasible and consistent with legal requirements.
Current Rate Study Objectives, cont’d

- **Predictability**
  - The rate structure must be understandable and price levels should reasonably predictable. Rate restructuring impacts should be minimized, in both the short-term and long-term.

- **Operational Efficiency**
  - The rate study assumes Northern Water will continue to operate and maintain C-BT project facilities consistently, reliably, and efficiently.

- **Administrative Ease**
  - Northern Water desires to minimize the administrative burdens associated with implementing and sustaining the use of a rate structure.
Current Rate Study Methodology

- Open rate customers are the focus of this study
- Revenue requirements established using a risk-based economic and financial forecast
- Assessments established to meet revenue requirements and overall objectives of Northern Water
- Assessments between customer classes examined using a variety of methods:
  - Uniform Cost Allocation
  - Cost of Service
  - Ability to Pay (Irrigation)
2015 Status Quo Forecast

Revenue ($28.3 M)
- Property and SO Taxes $14.9 (53%)
- Charges for Services $4.5 (16%)
- Assessments $6.3 (22%)
- Other Op $2.1 (7%)
- Other Non-Op $0.6 (2%

Expenses ($33.5 M)
- O&M 30%
- Programs - O&M 16%
- Programs - General 32%
- Capital Projects 14%
- Debt Service 5%
- Capital Outlay 3%
Scenarios

- Risk-Based Analysis
  - Economic Conditions (uncontrollable variables)
  - Reserve Targets (controllable variables)
  - User Charge Revenue Requirements (controllable)
Risk-Based Scenarios

Rate Study Scenarios

- **Status Quo**
  - Maintain average historical rate of increase to Assessments (3%)

- **Basic Cost Recovery** (Break-Even)
  - Cost Recovery
  - Maintain existing target reserves during Average Regional Economy

- **Moderate Reserve Recovery**
  - Cost Recovery
  - Target 100% O&M and 50% Programs Reserve with Average Regional Economy

- **Aggressive Reserve Recovery**
  - Cost Recovery
  - Target 100% O&M and 100% Programs Reserve with Average Regional Economy
Status Quo
Moderate Reserve Recovery
Reserve Levels

- Historical:
  - Reserves
  - Reserves (Projected - Low)
  - Reserves (Projected - Mid)
  - Reserves (Projected - High)

- Projection:
  - Target Reserve - 100% O&M, 100% Programs
  - Target Reserve - 100% O&M, 50% Programs
  - Target Reserve - Existing

Years: 2000 to 2023
Financial Plan Summary

- Northern Water reserves have been used to finance recent large capital projects, thus declined significantly.
- Forecasted annual revenue drops below annual expenses beginning in 2015.
- As a result, action is required to balance revenues and expenses (balanced budget) and stabilize / rebuild cash reserves.
COST OF SERVICE
Cost-of-Service

- Cost of service establishes the proportionate share of net system costs to serve Northern Water’s three customer classes:
  - Municipal
  - Industrial
  - Irrigation

- Uniform Allocation method applies a uniform allocation of costs to each class

- Split Allocation method allocates operating expenses between M&I and Irrigation classes
Ability-to-Pay

- Used by the Bureau of Reclamation to determine irrigation repayment obligations
- Uses long-term average price, yield, and cost estimates to minimize variability over time.
  - Calculated as $14.17 in 1997; $22.00 in 2014
- Originally intended to promote irrigated agriculture and rural community development ... like the C-BT Project
- Also intended to apply to farm owner-operators who depend on the farm enterprise
- Range of results depending on underlying assumptions
ASSESSMENT DESIGN
Assessment Design Options

- **Option 1: Existing Structure – Based on ability-to-pay for all Irrigation**
  - Smooth Increase
  - Step Increase

- **Option 2: Base Approach – Fixed-rate unit cost recovery by M&I units only**
  - Smooth Increase
  - Step Increase

- **Option 3: Open Rate Approach – Fixed-rate unit cost recovery by all open-rate units**
  - Smooth Increase
  - Step Increase
Assessment Design Assumptions

- All options recover the same amount of revenue over 10 years ($111 Million)
- All options assume Average Regional Economic Conditions, and Moderate Reserve Recovery
- All options assume a 9% increase in 2015
- All options reach Moderate Reserve Recovery target by 2023
- Step increase balances the budget by 2016
- Smooth increase balances the budget by 2018
Near-Term Assessment Objectives

- Near-term: Next 5 Years
  - Balance budget
- Primary Objective: compare ability-to-pay vs. cost of service assessments
  - Set the course for the long-term (10 years)
Presentation Topics

- Introduction and Overview
- Northern Water Financial Structure
- Rate Study Methods

- Results
  - Assessment Options
  - Benchmarking Results
  - Survey of Regional Irrigation Assessments

- Comments, Questions and Discussion
Existing Structure (Option 1)

Option 1 - Existing Structure (Irrigation at Ability-to-Pay)
Cost of Service (Option 2 and 3)
Comparison of Existing Structure and Cost of Service Assessments

Near-Term Forecast

- Municipal - Smooth
- Irrigation - Smooth
- Municipal - Step
- Irrigation - Step
- Existing Structure

2014 2015 2016 2017 2018
What happens after 5 years?

- Depending on the assessment design approach, irrigation assessments increase at varying rates.

- Assessment design alternatives may include:
  - Option 2 – Base Approach: Recovers fixed-rate unit costs from M&I only
  - Option 3 – Open Rate Approach: Recovers fixed-rate unit costs from all open-rate classes (M&I and Irrigation)
What is the Basis for Assessments over the Long-Term?
Option 1 - Existing Structure

Long-Term Forecast

- Municipal - Smooth
- Irrigation - Smooth
- Municipal - Step
- Irrigation - Step

$0 $20 $40 $60 $80 $100 $120
Option 2 - Base Approach

Long-Term Forecast

- Municipal - Smooth
- Irrigation - Smooth
- Municipal - Step
- Irrigation - Step


$0 $20 $40 $60 $80 $100 $120
Option 3 - Open Rate Approach

Long-Term Forecast

- Municipal - Smooth
- Irrigation - Smooth
- Municipal - Step
- Irrigation - Step

Future Assessments
Balancing Near-Term Decisions with Long-Term Objectives

- Near-Term Decisions (5-Year Forecast)
  - Maintain ability-to-pay assessments for irrigation, or move towards cost of service
  - Smooth annual increases or step increase
    - Step increase results in lower assessments over the long-term
  - No significant difference between Option 2 and Option 3 in the near-term

- Long-Term Objectives (10-Year Forecast)
  - Base cost of service, or open-rate cost of service approach
  - Maintain appropriate reserves
OTHER FEES AND CHARGES
Other Fees and Charges

- Carryover Charges
- Additional Fees
  - Unit 2 Charge
  - Winter Water Service Charge & Admin.
  - Tax Exempt Charge

<table>
<thead>
<tr>
<th>Other Fee or Charge</th>
<th>Annual Revenue</th>
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<tbody>
<tr>
<td>Carryover</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Unit 2</td>
<td>$15,500</td>
</tr>
<tr>
<td>Winter Water Service</td>
<td>$11,800</td>
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<tr>
<td>Tax Exempt</td>
<td>$3,400</td>
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Carryover Charges

- Currently ~ $1 million/year revenue
- Carryover charge is not based on cost of service
- Carryover charge sends a market price signal to allottees
  - Lower charges – many subscribers
  - Higher charges – fewer subscribers
- Currently carryover is priced (on a per ac-ft basis) equal to the annual assessments – and is highly utilized.
- Options for alternative pricing:
  - Avoided Cost: $60-$140 per acre-foot
  - Unit Cost: $66-$72 per C-BT unit
  - Unit Cost: $47-$52 per C-BT unit (with prior-year assessment credit)
- Observation – currently carryover charge is relatively low compared to these pricing methods
Unit 2 Charge

- Currently $15,500/year revenue
- Entities that take delivery d/s of Boulder Reservoir
  - Unit 2 contracts (fixed-rate) - $2.00 per AFU
  - Unit 4 contracts (open-rate) - +$0.50 per AFU
- What it covers
  - Originally to pay portion of Boulder Res (1953) but it is not limited to Boulder Res
- Unit 2 cost of service is higher than for other areas
- Recommend a gradual phased-in increase to the Unit 4 charge (Approximately $1.50 per year increase)

<table>
<thead>
<tr>
<th>Unit 2</th>
<th>AFUs</th>
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<tbody>
<tr>
<td>Fixed Rate</td>
<td>13,500</td>
</tr>
<tr>
<td>Open Rate</td>
<td>17,413</td>
</tr>
<tr>
<td>Total</td>
<td>30,913</td>
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Winter Service Charge

- Currently $11,800/year revenue
- Began with 1962 Municipal Operating Agreements
  - Based on Actual Costs
  - $200 Administrative Fee
  - $1.50 per ac-ft delivered
  - Specified in Operating Agreements, but Board reserves right to modify annually
- Currently it is difficult to isolate the cost of service for winter water deliveries
- Recommend no change at this time
Tax Exempt Charge

- Currently $3,400/year Revenue
- Established in 1950s while negotiating Class C contracts
  - $0.50 per AFU
  - 6,884 Units (all but 13 are Class C Irrigation)
  - Primarily Boulder County (41%), CSU (23%)
- Recommend to eliminate this charge – antiquated charge and insignificant source of revenue
BENCHMARKING RESULTS
Benchmark Survey of Water Providers (2011-2012)

1. Northern Colorado Water Conservancy District
2. Central Arizona Water Conservancy District
3. Southern Nevada Water Authority
4. Central Utah Water Conservancy District
5. Tarrant Regional Water District (Texas)
6. Denver Water (Raw Water Only)
7. Oakdale Irrigation District (California)
8. Central Nebraska Public Power and Irrigation District
Benchmark – Employees per Thousand Acre-Feet Delivered

- Median - 0.47
- Mean - 0.66
- Survey of Western Water Providers
- Northern Water C-BT - 0.47

Employees (FTEs) per Thousand Acre-Feet Delivered
Benchmark – Total Expenses per Acre-Foot Delivered

Survey of Western Water Providers

- Median - $189
- Mean - $296

Northern Water
C-BT - $127

Total Expenses Per Acre-Foot Delivered Benchmark
Benchmark – Current Ratio

Survey of Western Water Providers

Median - 4.21
Mean - 4.95
Northern Water C-BT - 8.20
Benchmark – Current Assets as a Percent of Annual Revenue

- Median: 150%
- Mean: 172%
- Northern Water C-BT: 130%

Survey of Western Water Providers
SURVEY OF REGIONAL IRRIGATION ASSESSMENTS
Regional Irrigation Assessments

- Data for about 50 companies/districts
- River diversion yields (“at river”) as measure ($/ac-ft)
- 2013 and/or 2014 data (many provided both)
- Significant impacts on rates, especially District 5 due to flood

**Unit Assessment ($/af yield at river)**
- **Max** = $131
- **Median** = $11.75
- **Average** = $18.57
- **C-BT Units** = $14.29
- **Range (min to max)**
- **Range (20%, median, 80%)**
COMMENTS, QUESTIONS AND DISCUSSION
Presentation Topics

- Introduction and Overview
- Northern Water Financial Structure
- Rate Study Methods
- Results
- Comments, Questions and Discussion
Northern Water Commitments

- Northern Water remains committed
  - High Level of C-BT reliability
  - Service to Northern Colorado water community

- Operate Efficiently
  - Continue implementing internal cost control measures
  - Continue seeking external funding sources (e.g. grants) or regional projects

- Forward guidance of future assessment changes
Please Comment

- Comments are Welcome and Encouraged
- Fill out a comment card
- Provide written comments prior to May 1
  - Email: RateStudy@northernwater.org
  - Mailing Address: 220 Water Avenue Berthoud, CO 80513
- Formal verbal or written comments at May 1 Water Rate Hearing (1:00 PM) at Northern Water
- Draft report will be posted to Northern Water’s website prior to the May 1st Water Rate Hearing
- For additional information contact:
  Jerry Gibbens: 970-622-2299, or RateStudy@northernwater.org