Allocation of Demand Management Costs

Finance & Insurance Committee
Item 6a
May 13, 2019
Allocation of Demand Management Costs

In April 2018, the Board approved board letter 8-2, which directed staff to undertake a Demand Management Cost Allocation Study.

Proposed process:

- **May 2019**: Overview of Demand Management Cost Functionalization
- **July 2019**: Demand Management Cost Functionalization for Metropolitan
- **Fall 2019**: Incorporating Demand Management Cost Functionalization recommendations into the Cost of Service process
- **December 2019**: Budget process
- **February 2020**: proposed water rates and charges for calendar years 2021 and 2022
Peter Mayer, P.E.
Principal
Water Demand Management, LLC

- Professional engineer and urban water expert
- 25 years experience
- Urban water management
- Water planning
- Rate analysis
- Demand analysis and forecasting
- Water loss control
- Author of reports evaluating the benefits of demand management programs

Over his career, Peter has worked with hundreds of water utilities and organizations across the US and Canada.
Functional Assignment of Metropolitan’s Demand Management Costs

Finance and Insurance Committee – Item 6a

May 13, 2019

Peter Mayer, P.E.
Water DM
Project Goals

- Review approaches and update Metropolitan’s functional assignment method for its demand management program costs.
- Establish conformance of the approach with industry best-practices.
- Develop a clear, understandable, method Metropolitan can update and use regularly in the cost of service rate making process.
Presentation Outline

Review
Fundamentals of water service and essential role of demand management.

Examine
Why Metropolitan implements demand management programs.

Consider
How Metropolitan recovers the real $$ spent on demand management.

Present
Metropolitan’s historical functional assignment of demand management based on avoided costs.

Introduce
WaterDM project to update functional assignment.
“Water management is multidimensional.”


<table>
<thead>
<tr>
<th>Reliable water service includes:</th>
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</thead>
<tbody>
<tr>
<td>Source water management</td>
</tr>
<tr>
<td>Conveyance and distribution infrastructure</td>
</tr>
<tr>
<td>Storage</td>
</tr>
<tr>
<td>Water treatment and water quality</td>
</tr>
<tr>
<td>Demand management</td>
</tr>
<tr>
<td>Administration (planning, engineering, management, etc.)</td>
</tr>
<tr>
<td>And more…</td>
</tr>
</tbody>
</table>
Demand Management is Standard Utility Practice

Since the 1990s demand management has become an essential function for American water utilities.

Public water providers across the US (and around the globe) implement a wide variety of demand management programs.
Wholesale and Retail Utilities Across the US Implement Demand Management

Conservation and demand management plans Peter has prepared or reviewed:

- New York City, NY
- Atlanta, GA
- Metro N. GA Water Planning District
- Austin, TX,
- San Antonio, TX
- Denver, CO
- Boulder, CO
- Aurora, CO
- Louisville, CO
- Region of York, Can.
- Greeley, CO
- Fort Collins, CO

- Seattle Public Utilities, WA
- Tucson, AZ
- Los Angeles, CA
- East Bay Municipal Utility District, CA
- Glenwood Springs, CO
- Aspen, CO
- San Diego County Water Authority, CA
- S. Nevada Water Authority, NV
- Yonkers, NY
- SUEZ Westchester, NY
- Gilbert, AZ
- Hilton Head, SC
- Tacoma, WA
- New Paltz, NY
For Metropolitan, Demand Management is Both Preferred and Legislated

1996 IRP Preferred Resource Mix
Included demand management with the intent of reducing and avoiding infrastructure expansion and new construction.

Regional participation necessary to achieve success.

State conservation laws
SB 60 – Specifically directed Metropolitan to increase conservation and local resource development.

SB X7-7 – Metropolitan supports the regions compliance to reduce per capita water use by 20 percent by 12/31/2020.
Metropolitan’s flexible, interconnected system benefits all member agencies. Demand management* is a key component of Metropolitan’s Preferred Resource Mix to deliver least-cost, sustainable water supply into the future.

*Metropolitan Demand Management also includes the Future Supply Action Program, advertising, and labor.
## Documented Impacts

<table>
<thead>
<tr>
<th>Demand Management Program</th>
<th>Category</th>
<th>FY2017/18 (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservation</td>
<td>Water saved from Metropolitan Conservation Credits Program</td>
<td>223,000</td>
</tr>
<tr>
<td>LRP - Recycled Water</td>
<td>Water produced from projects receiving Metropolitan funding</td>
<td>165,000</td>
</tr>
<tr>
<td>LRP - Groundwater Recovery</td>
<td>Water produced from projects receiving Metropolitan funding</td>
<td>48,000</td>
</tr>
<tr>
<td>Total</td>
<td>Conservation + LRP</td>
<td>426,000</td>
</tr>
</tbody>
</table>

More than 5.4 million AF cumulative savings and LRP production since 1990.
Demand Management Costs

Metropolitan budgets $80 - $100 million per year to implement demand management programs.
Demand Management Costs are Recovered Through Rates

Metropolitan’s annual expenditures for demand management programs are a necessary and legislated expense for the provision of water service across the region.

Metropolitan, like its peers, recovers the costs of implementing demand management through its water rates and charges.
Metropolitan Cost of Service Process

Step 1: Develop of Revenue Requirements

Step 2: Functionalize Costs

Step 3: Allocate Costs

Step 4: Distribute Costs To Rate Elements
Functional Assignment of Demand Management Costs

Real Costs

Method of assignment to appropriate cost components in rate making process.

Functional Categories

- Supply %
- Aqueduct & Conveyance %
- Storage %
- Distribution %
- Treatment %
- Hydropower %
Functional assignment establishes the allocation of the real costs for demand management to the appropriate cost components, in the appropriate proportion.

Adapted from:


History of Metropolitan Functional Assignment for Demand Management

- **1996**: IRP establishes Demand Management in preferred resource mix. Forecast to impact facility requirements through FY19/20. Rates unbundled. Demand Management functionally assigned to Conveyance and Aqueduct based on expected avoided future infrastructure costs.

- **2001**: IRP Update focuses on Adaptive Management. “Climate change may prove to be the most significant challenge to water supply reliability for Southern California.”

- **2015**: Guide functional assignment project.

- **2018-19**: WaterDM project to review and update functional assignment approach.

- **2015**: IRP Update focuses on Adaptive Management. “Climate change may prove to be the most significant challenge to water supply reliability for Southern California.” Guide functional assignment project.

- **2018-19**: WaterDM project to review and update functional assignment approach.

- **2016, 2018**: Metropolitan retrospectively documents ~ $3 billion in avoided conveyance and aqueduct infrastructure construction and expansion.
“Avoided Cost is the marginal cost avoided or saved by choosing one option over another to achieve the same goal.” – AWWA M1, 7th ed.
EPA – Cases in Water Conservation

- Documents 17 water conservation program including Metropolitan.
- Describes avoided capital and O&M costs from conservation programs from California to New York.
- “Conservation efforts have considerably reduced the cost estimate of Metropolitan’s capital-improvement.”

What are Avoided Costs?

An avoided cost is a cost saving, but the savings anticipates future spending.

Examples:
Spending money for preventative maintenance on a car—such as regular oil changes—avoids the future cost of replacing an engine.

Metropolitan’s annual $80 – 100 million demand management expenditures across the Southern California — avoids higher future spending that would be associated with providing more water including capital and operations and maintenance costs.

Recent Avoided Cost Studies

- LADWP
- Westminster, CO
- Tucson, AZ
- Gilbert, AZ
“Avoided costs can be considered in establishing cost allocations.”

– AWWA M1, 7th ed.
Functional Assignment of Demand Management Costs

Real Costs

Method of assignment to functional categories through analysis of avoided costs.

Functional Categories

- Supply %
- Aqueduct & Conveyance %
- Storage %
- Distribution %
- Treatment %
- Hydropower %
Water DM Project Goals

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