Incorporating Carlsbad Seawater Desalination Project into SDCWA Rates and Charges

Special Meeting Water Planning Committee
April 19, 2012
Incorporating Carlsbad Desalination Project into Rates & Charges

1. Overview of Cost of Service and Water Authority rates and charges
2. Identifying Functional Benefits of Carlsbad Desalination
3. Alternatives for allocating Carlsbad Desalination Costs to rates and charges
4. Committee Discussion
5. Next Steps
Incorporating Carlsbad Desalination Project into Water Authority Rates and Charges

- Agreement represents long term financial commitment by Water Authority and its member agencies which results in a higher cost supply
  - Improves regional water supply reliability
  - 30 year term and >$100 M annually
  - Water Authority required to “take and pay if delivered”
- All member agencies benefit from access to a more reliable supply
  - Base load users receiving regular deliveries
  - Intermittent users receiving standby benefit of a new supply being available if needed
Benefits of the Carlsbad Desalination Project and Allocation of Costs

- Key question- how to allocate cost of Carlsbad desalination to ensure long-term fiscal sustainability for Water Authority and ratepayer equity for member agencies
  - What are the benefits of this new supply?
  - Who benefits from the new supply and how do they benefit?
    - Prevent free-ridership
- What are the options to collect revenue from beneficiaries?
  - Volumetric charges
  - Fixed charges
  - Growth Charges
  - Other?
Cost of Service Definition

- Cost of service (COS) is a “methodical process by which revenue requirements are used to generate a system of fair and equitable costs in proportion to the service received for each user class”\(^1\)
- “Costs are allocated in two steps: first to appropriate cost components and then to customers” \(^2\)
- Allocation of expenses to customers is based on a reasonable relationship to benefits the customers receive from each service function.

\(^1\) City of San Diego Cost of Service Study
\(^2\) AWWA M 1 Manual
Beneficiaries Pay Principle

- Identifies full range of beneficiaries, allocates benefits, and provides cost recovery mechanisms
- Inclusive of all beneficiaries
- A clear nexus between charges and benefits received
- Specificity, based on defined projects and costs
- Transparency of benefit and cost allocation decisions, understandable to beneficiaries
- Addresses the issue of free ridership

CUWA Public Investment White Paper (Oct. 2011)
3 Steps of Cost of Service

1. Determine revenue requirements
2. Allocated to service function
3. Allocated to customer, based on benefits received

- Cost per acre foot delivered over a specified period of time
- Based on potential to take water (meters)
- Land area
# Water Authority Rates and Charges

## Cost Allocation to Service Function

<table>
<thead>
<tr>
<th>Service Function</th>
<th>Cost Allocation</th>
<th>What makes up service category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply</td>
<td>Costs water purchases (MWD, IID, canal lining, <em>Desalination</em>)</td>
<td>Water purchase price, transportation charges, debt service capital facilities</td>
</tr>
<tr>
<td>Treatment</td>
<td>MWD, Twin Oaks WTP and other in-region treatment facility costs</td>
<td>MWD treatment surcharge, operational costs, debt service</td>
</tr>
<tr>
<td>Customer Service</td>
<td>Costs to support the functioning of the Water Authority and regional planning</td>
<td>Operating budget, debt service</td>
</tr>
<tr>
<td>Transportation</td>
<td>Costs associated with the backbone conveyance of water</td>
<td>Maintenance costs, debt service on capital</td>
</tr>
<tr>
<td>Storage</td>
<td>ESP, CSP and associated conveyance</td>
<td>Primarily debt service on capital facilities, minor operating costs</td>
</tr>
</tbody>
</table>
### Water Authority Rates and Charges

#### Allocation To Customers

<table>
<thead>
<tr>
<th>Charge</th>
<th>Method of Collection</th>
<th>Use of Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Non-Commodity Charges</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property tax</td>
<td>Share of County property tax assessment</td>
<td>Unrestricted</td>
</tr>
<tr>
<td>Stand-By Charges</td>
<td>$10 per acre or parcel</td>
<td>Capital facilities</td>
</tr>
<tr>
<td>Capacity Charges</td>
<td>New meter charges (System - $4,326/ME) (Treatment - $166/ME)</td>
<td>Capital facilities</td>
</tr>
<tr>
<td>IAC Charge</td>
<td>Fee per meter equivalent</td>
<td>Unrestricted</td>
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## Water Authority Rates and Charges Allocation To Customers

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<th>Method of Collection</th>
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<tr>
<td><strong>Water Sales Revenues</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melded Supply Charge</td>
<td>Per acre foot of water purchased</td>
<td>Purchase of water and related transportation, debt service</td>
</tr>
<tr>
<td>Transportation Charge</td>
<td>Per acre foot of water purchased</td>
<td>Operations, maintenance, debt service on pipelines</td>
</tr>
<tr>
<td>Customer Service</td>
<td>Fixed charge allocated based upon share of 3-year average deliveries</td>
<td>Operations and debt service</td>
</tr>
<tr>
<td>Storage</td>
<td>Fixed Charge based upon share of 3-year average M&amp;I deliveries</td>
<td>Debt service for ESP/CSP facilities, O&amp;M</td>
</tr>
<tr>
<td>Melded Treatment</td>
<td>Per acre foot of water purchased</td>
<td>Water treatment debt service, O&amp;M, MWD treatment charges</td>
</tr>
</tbody>
</table>
Desalination and Rates & Charges
Previous Board Direction

- Adoption of 2004 Master Plan and Member Agency Rate Impact Review Committee (MARIRC) Findings
- Approval of 2004 Long Range Financing Plan (LRFP)
  - Established that raw water customers not be charged the melded treated water surcharge as part of the supply cost of desalination
  - Monetized treatment benefit as equal to melded treatment surcharge
  - Identified beneficiaries as treated water customers
- Approval of 2005 Fixed Revenue Study
  - Established a *New Supply Development Charge* for desalination project
  - Consistent with Board policy that growth pays its fair share
  - Charge not imposed without Board approved project
Desalination and Rates & Charges

Previous Board Direction

• Adoption of Board Policies for Wheeling Local Supplies by Member Agencies (2009)
  • Established that new desalinated supplies were highly reliable and offset equivalent need for Water Authority service from storage
    • ESP/CSP
  • Established that desalinated water transported through the Water Authority’s system would not be subject to the storage charge
  • Set the monetary value of the storage benefit as the amount of storage charge paid by a member agency
  • Credit for storage benefit did not differentiate between emergency storage or carryover storage
Storage Benefit of Desalination

Emergency Water Service

- 75% level of service during 2mo/6mo emergency
- Maintain regional economy
- Complete or partial shut down of imported water system
- Sized assuming availability of reliable member agency supplies
- Planning assumption did not include seawater desalination

- Maximum Emergency Storage Pool = 90,000 AF
Storage Benefit of Desalination

Desalination Enhances Emergency Water Service

- 2 months of Desalinated Water = 10,000 AF
- 6 months of Desalinated Water = 30,000 AF
- Increases 2 month Emergency Water Service by 11%
- Increases 6 month Emergency Water Service by 33%
Storage Benefit of Desalination

Carryover Storage Service

- 100,000 AF utilized over 3 year period per 2010 UWMP
- 3 year production of desalinated water = 168,000 AF
- Increases effectiveness of Carryover Storage by 68%
- Reduces carry over storage demand by total desal production

Source: 2010 UWMP
### Allocating Carlsbad Desalination Project Costs into Water Authority Service Categories

<table>
<thead>
<tr>
<th>Service Category</th>
<th>Carlsbad Desalination</th>
<th>Cost of Service Benefit Provided</th>
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<tbody>
<tr>
<td>Supply</td>
<td>Yes</td>
<td>New highly reliable supply</td>
</tr>
<tr>
<td>Treatment</td>
<td>Yes</td>
<td>Process results in new supply that meets all federal and state drinking water requirements</td>
</tr>
<tr>
<td>Customer Service</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>Transportation</td>
<td>Yes</td>
<td>Uses facilities owned by Water Authority</td>
</tr>
<tr>
<td>Storage</td>
<td>Yes</td>
<td>Enhances Level of Service from ESP and CSP and offsets a need to provide storage service</td>
</tr>
</tbody>
</table>
3 Steps of Cost of Service Applied to Carlsbad Desalination

Determine revenue requirements

Allocated to service function

Allocated to customer, based on benefits received

Cost of:
- Poseidon water price
- P3 rehab
- Twin Oaks improvements
- Twin Oaks inefficiency

1. Supply
2. Treatment
3. Storage
4. Transportation
5. Other? (i.e. reliability)

- Water taken (per AF)
- Ability to take water (number of meters)
Key Considerations

In applying the principles of *Cost of Service and Beneficiaries Pay* to Carlsbad Desalination

- Multiple service categories benefit from the production of desalinated water
- Revenue requirements for each category should be collected through the current mix of fixed and commodity charges
  - Best reflects beneficiaries and avoids free ridership
- Reliability is a key driver of desalination and a primary benefit
  - Consider a potential service category for reliability
Next Steps

- Staff will continue to refine costs and allocation methodology
- Further refinements will be made to provide alternatives
- Staff will work with the Desalination Advisory Group and seek input from the Member Agency Managers
- Return to Water Planning Committee
  - Seek Board input on alternatives
- Request Board consideration of preferred alternative
  - Prior to consideration of a final agreement with Poseidon
Questions?