



THE CITY OF SAN DIEGO
PUBLIC UTILITIES
DEPARTMENT



Presentation to the San Diego IRWM Regional Advisory Committee

City of San Diego's Recycled Water Study

February 6, 2013





Background

- 2010 Point Loma NPDES Permit Renewal Process
 - City entered Cooperative Agreement with local environmental groups (2009)
 - San Diego Coastkeeper and Surfrider Foundation gave their support to the USEPA's decision to grant the modified permit
 - City to fund and conduct the Recycled Water Study
- EPA Approval (June 2010, Permit Effective Aug 1, 2010)
- California Coastal Commission (CCC) consistency determination
 - Conditioned by requiring delivery of Recycled Water Study to CCC within two years (July 31, 2012)
- Current NPDES Permit expires July 31, 2015



Recycled Water Study Objectives

- Identify opportunities to increase recycling of wastewater for Indirect Potable Reuse (IPR) and Non-Potable Reuse (NPR) for a 2035 planning horizon
- Determine the extent recycling can reduce wastewater flows to the Point Loma Wastewater Treatment Plant
- Determine implementation costs



Stakeholders and Participation

- City of San Diego
- San Diego Coastkeeper
- Surfrider Foundation
- Metro Wastewater Participating Agencies
- Independent Rates Oversight Committee
- San Diego County Water Authority

Stakeholders:

- ✓ Provided input at bi-monthly status update meetings
- ✓ Participated in technical workshops to brainstorm and refine reuse alternatives
- ✓ Reviewed and commented on all technical memoranda and project report



Non-potable Reuse Opportunities

- Potential offload derived from expanding non-potable system into new service areas is small compared to Metro System
- Wide geographic distribution of new potential non-potable customers drives high cost of system expansion
- Total non-potable reuse carried forward in the reuse alternatives: **18 mgd**
 - ✓ 11 mgd of existing demand
 - ✓ 7 mgd of new infill demand (customers who can be served from existing infrastructure)



Indirect Potable Reuse Opportunities

Two Forms of IPR Evaluated:

- Groundwater Recharge
- Reservoir Augmentation

Findings:

- Groundwater basin size and data insufficient to determine potential recharge projects. Revisit when more data is available
- Two reservoirs deemed large enough to provide retention times within range required in draft groundwater recharge regulations
 - San Vicente Reservoir
 - Lower Otay Reservoir



Locating Advanced Treatment Facilities

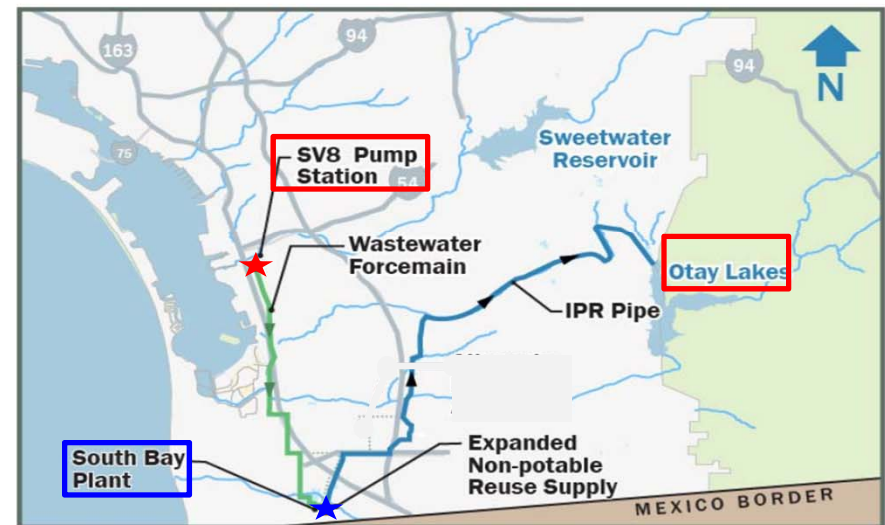
- Proximity to wastewater
- Proximity to IPR delivery points
- Land availability

Existing Facilities

- Available reclamation capacity
- Room for expansion
- Need more wastewater to maximize utilization

New Facilities

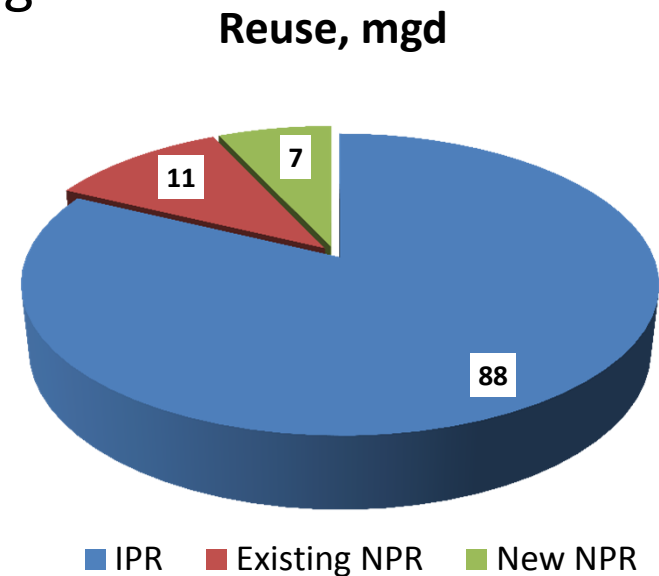
- Harbor Drive
- Mission Valley
- Mission Gorge





Reuse Alternatives

- All divert 135¹ mgd away from Point Loma to new and existing reuse facilities
- All alternatives would lead to 106² mgd of reuse
 - 18 mgd non-potable
 - 88 mgd indirect potable
- Results in average daily Point Loma flow of 143 mgd
- Differ only in how treatment capacity is distributed among existing and potential plants



¹Includes 62 mgd diverted to South Bay, 38 mgd of which to be discharged through the South Bay Outfall

²Includes future Helix Water District reuse project



Reuse Costs



- Cost to produce 96,000 acre-feet per year of new reuse
 - \$1700 to \$1900 per acre-foot
- Includes (in 2011 \$) for all new reuse facilities
 - Capital costs: \$2.0 - \$2.2 billion
 - Annual O&M costs: \$100 - \$110 million





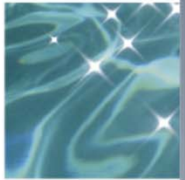
Reuse Benefits (common to all alternatives)

- Capital cost to upgrade Point Loma reduced by approximately 37%, from \$1.2 billion to \$710 million
- Annual O&M savings of \$28 million
- Creates local water resource
- Reduces water supply salinity
 - Water and wastewater treatment plant O&M savings estimated at \$100/ac-ft

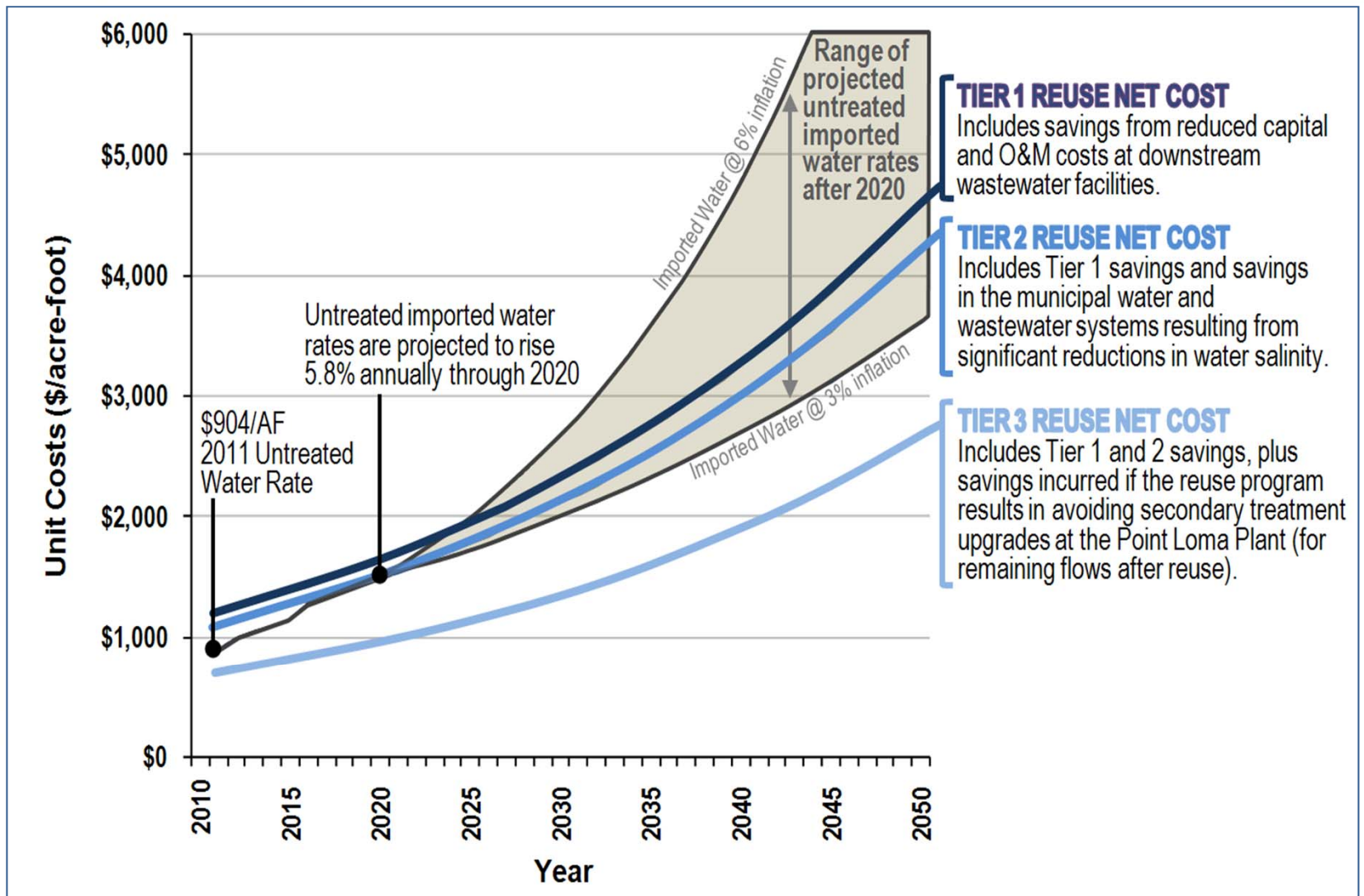


Factoring in the Savings

	\$ per ac-ft
Range of Alternative Costs	\$1700 - \$1900
<i>Tier 1 Savings due to reduced wastewater CIP and O&M costs</i>	<i>(\$600)</i>
<i>Tier 2 Savings due to reduced salinity</i>	<i>(\$100)</i>
<i>Tier 3 Savings due to avoiding Secondary upgrade at PLWTP and Maintaining it as Chemically Enhanced Primary Treatment Plant</i>	<i>(\$400)</i>
<i>Total potential savings</i>	<i>(\$1100)</i>
Net cost after all savings	<u>\$600-\$800</u>



Comparing the Cost of Water





Implementation Factors

- Water Purification Demonstration Project Results
- Potable Reuse Regulations
- How to integrate with Point Loma 2015 NPDES Permit Strategy
- Approval by Elected Officials
- Rate Impacts
- Agreement on Cost Allocation



Recycled Water Study

Roll-Out Schedule



- Metropolitan Wastewater JPA - May/June 2012
- Independent Rates Oversight Committee – May 21, 2012
- Natural Resources and Culture Committee – May 23, 2012
- City Council – July 17, 2012 (approved unanimously)
- Submit Study Report to Coastal Commission – July 2012
- Coastal Commission - to be determined



Questions