



THE CITY OF SAN DIEGO
PUBLIC UTILITIES
DEPARTMENT



City of San Diego's Recycled Water Study

Hawaii Water Environment Association Conference

March 16, 2010

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Brown and Caldwell





Presentation outline

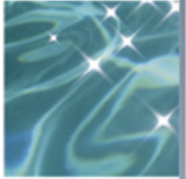
- Existing wastewater system
- Stakeholders
- Existing recycled water facilities
- Demand scenario approach
- Key issues for the Point Loma WWTP
- Recycled water supply
- Wastewater sources and characteristics
- Demand potential
- Final study report
- Questions



Metropolitan Sewerage System

- 2.2 M population served
- 16 Participating Agencies
- 83 pump stations
- 240 mgd at Point Loma WWTP and ocean outfall
- 30 mgd North City WRP
- 15 mgd South Bay WRP and ocean outfall
- Metropolitan Biosolids Center





Drivers

- Imported water supply reliability
- Long-standing community recycling focus
- NGO commitment to maximize recycling & reduce ocean discharge
- Long-term configuration for the Point Loma WWTP
- Maximize utilization of WRPs





Stakeholders

- City of San Diego
- San Diego Coastkeeper
- Surfrider Foundation
- Participating Agencies
- Independent Rates Oversight Committee
- Comprehensive stakeholder involvement



Existing recycled water system



North City Water Reclamation Plant



South Bay Water Reclamation Plant

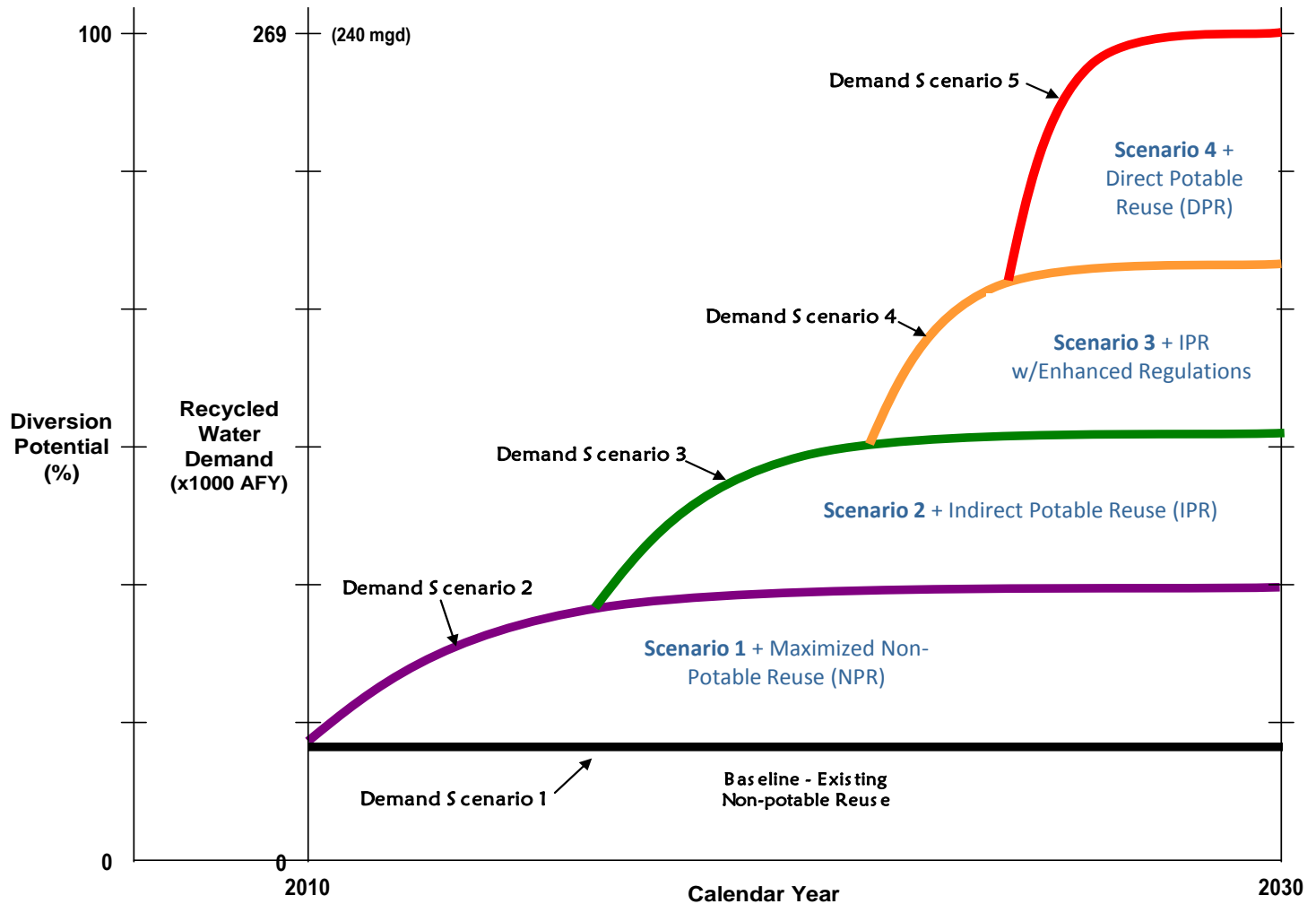


Pacific Ocean



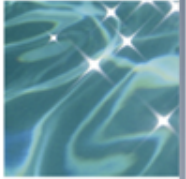


Demand scenario approach





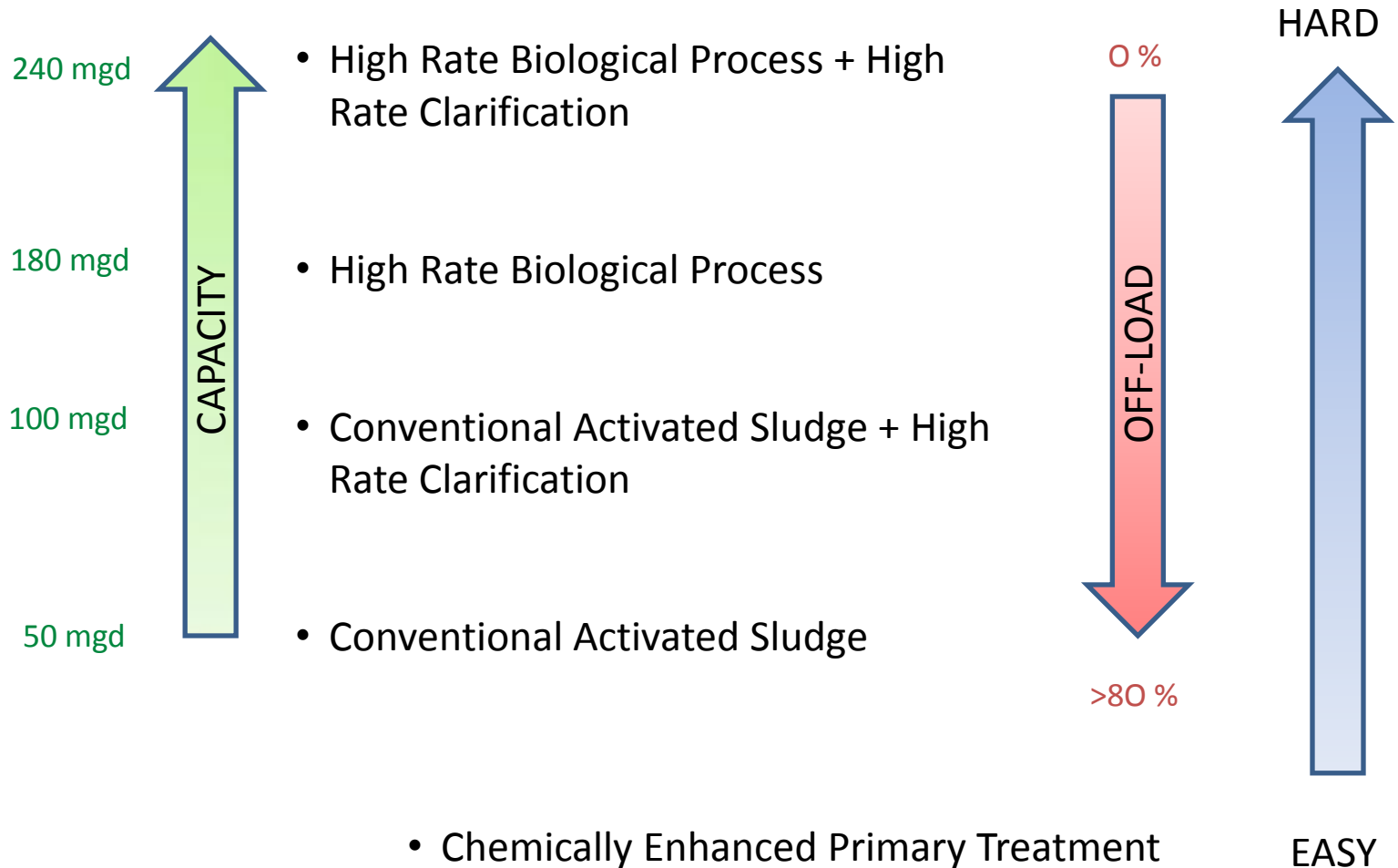
Key issues for Point Loma WWTP and Outfall



- Planning for eventual secondary treatment
- Capacity determined by amount of 'permanent' offloading upstream for producing recycled water
- Secondary process options governed by tight site constraints
- 'Excess' peak and wet weather flows (flows above upstream scalping flows)
- Maintaining 'Failsafe' flow relief for Metro System
- Potential brine impact

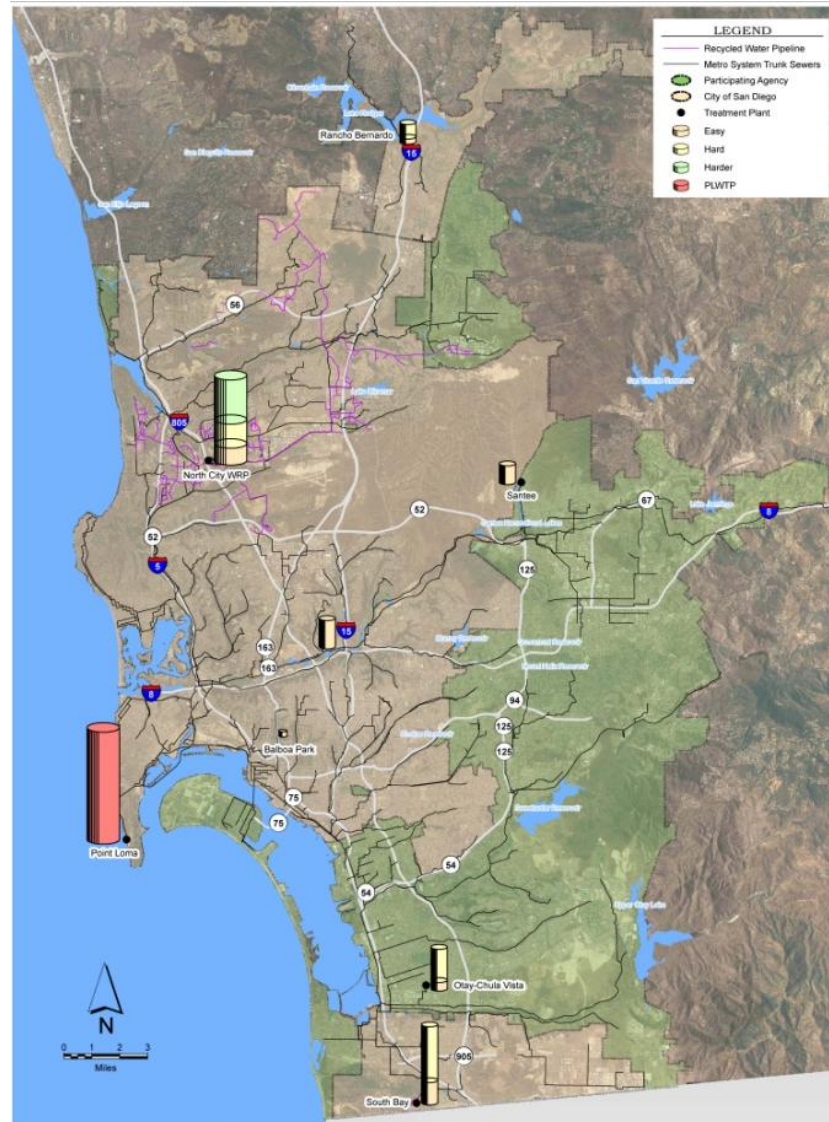


Treatment options governed by wet weather flows and tight site





Recycled water supply potential





Wastewater flow sources and characteristics

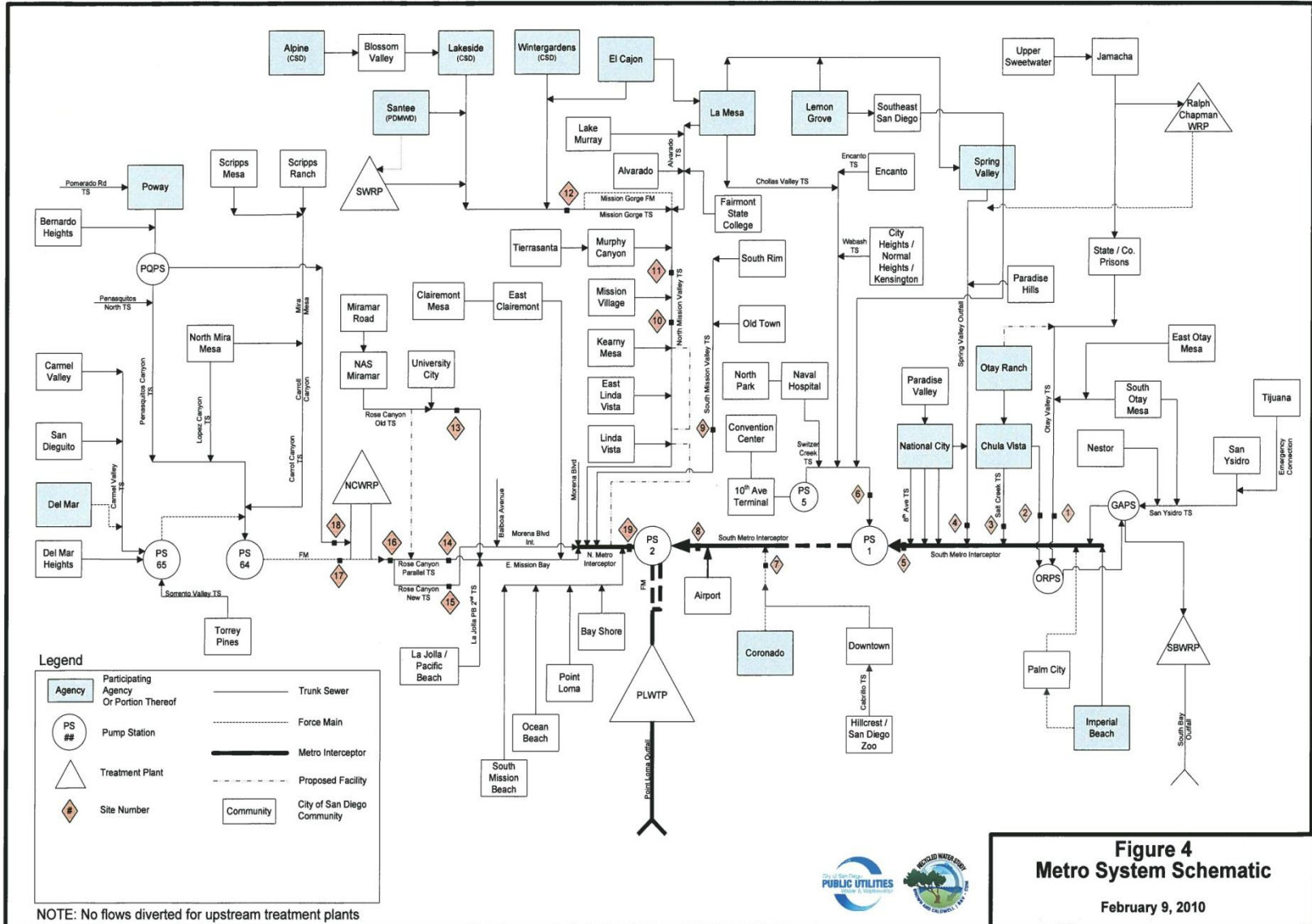
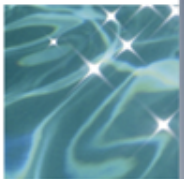


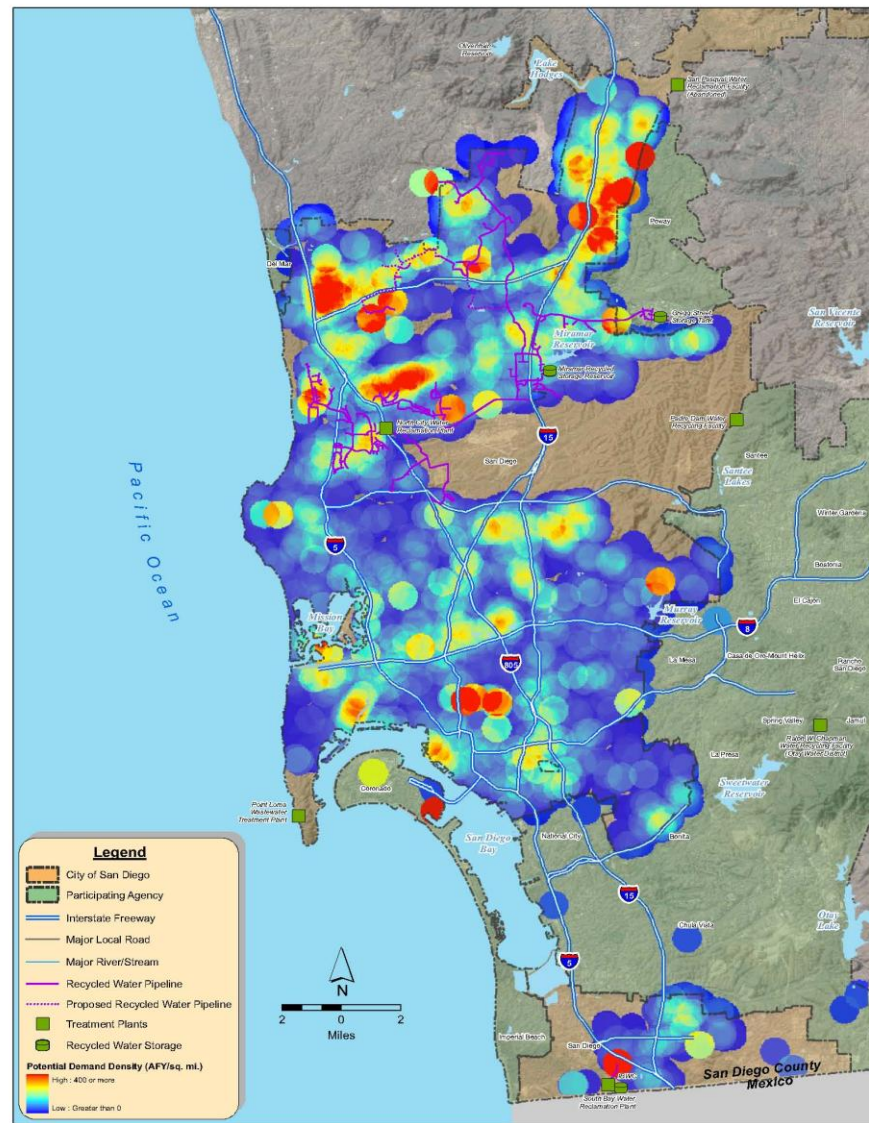
Figure 4
Metro System Schematic

February 9, 2010



Non-potable reuse market assessment

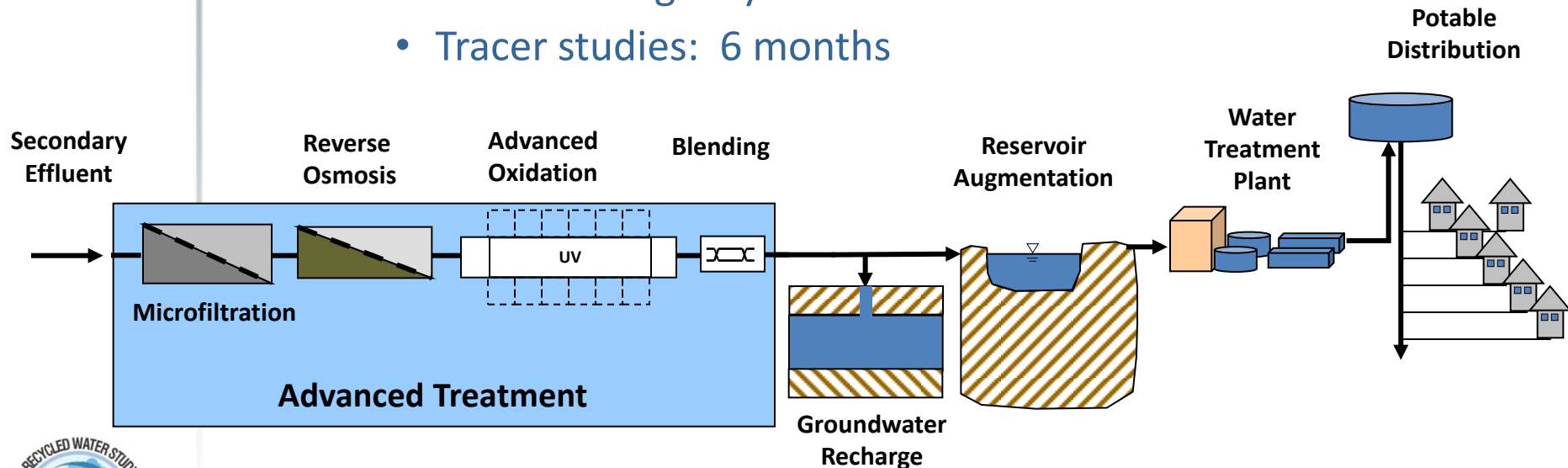
- Existing demands
 - 6 mgd retail
 - 5 mgd wholesale
- Potential 2035 demands
 - 25 mgd retail
 - 12 mgd wholesale
- Actual demand realized
 - Pricing
 - WRP locations
 - IPR impacts

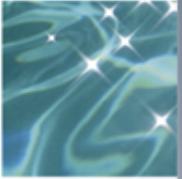




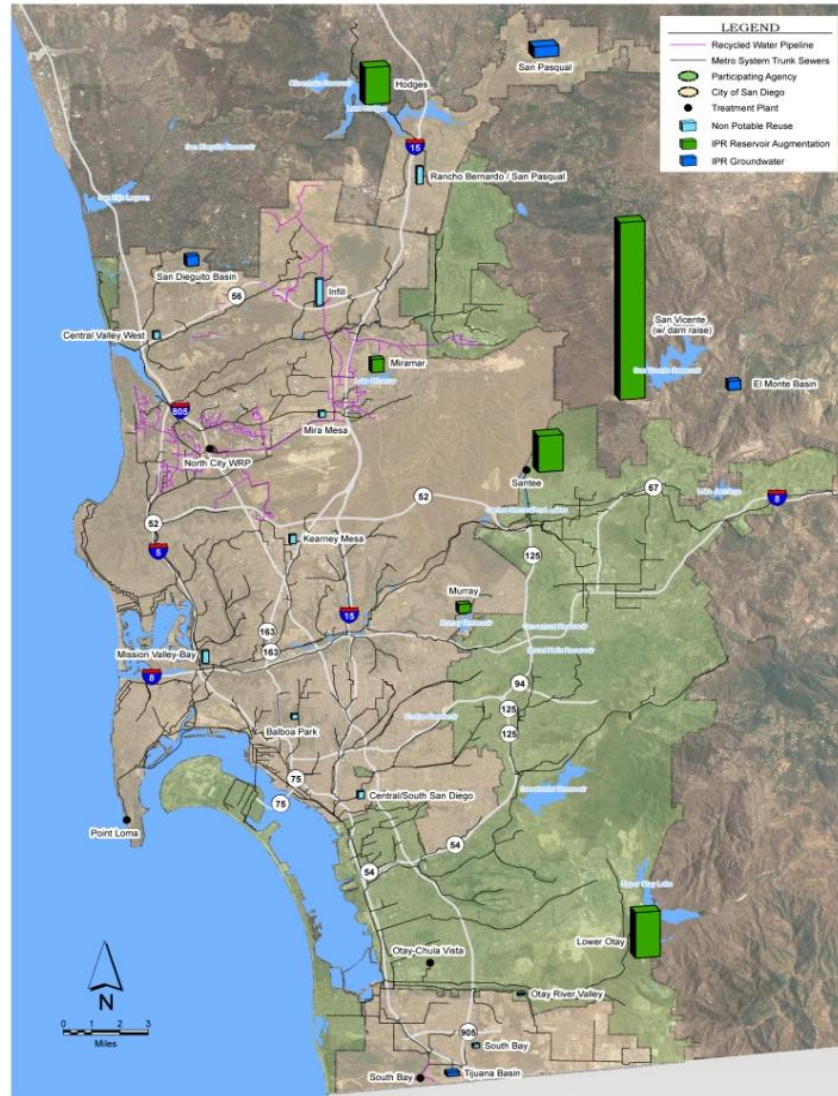
Indirect Potable Reuse –the key to maximizing recycled water use

- Department of Public Health
- Title 22 Regulations – Groundwater Recharge
Hydraulic Retention Time
 - Simple 2-D modeling: 2 yrs
 - 3-d modeling: 1 yr
 - Tracer studies: 6 months





Recycled water demand opportunities





Final Study Report

- Potential Reuse by Type
- Infrastructure needed to support demands
- Financial evaluation
 - New infrastructure costs
 - Water & wastewater infrastructure savings
- Beneficial impacts to imported water supply
- Program implementation plan
- June 2011 scheduled completion



Questions



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