Groundwater Banking With Local Governance and Conflict Avoidance

California – European Union Joint Workshop

June 24, 2019
Presentation Agenda

1. Introduction to Irvine Ranch Water District
2. IRWD’s Water Banking Projects
3. Local Governance and Conflict Resolution Using Agreements
4. Compliance with Sustainable Groundwater Management Act
A California Special District Serving Central Orange County

- Independent, non-profit, local government agency
- Reliable high-quality water & sewer service
- Industry leaders in recycled water
- High level of customer satisfaction
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<th>IRWD Service Area</th>
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<tr>
<td><strong>422,000</strong></td>
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<td>Residential customers</td>
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<td><strong>599,000</strong></td>
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<td>District daytime population</td>
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<td><strong>469</strong> Square Kilometers</td>
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<td>20% of Orange County</td>
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<td><strong>6 Cities</strong></td>
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<td>Irvine, Tustin, Lake Forest, Orange, Newport Beach, Costa Mesa, unincorporated county</td>
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**IRWD Services**

### Drinking Water
- 5 water treatment plants
- 27 wells and 36 reservoirs
- 2,830 km of water pipeline

### Sewage Collection
- 1,720 km of collection pipeline

### Recycled Water
- 2 recycled water plants
- 845 km of recycled water pipeline

### Urban Runoff Treatment
- IRWD San Joaquin Marsh
- 27 wetland treatment sites
Primary Water Systems to Southern California

- **Groundwater & Recycling**
- **Local Supplies**
  - Los Angeles Aqueduct
  - Metropolitan Water District (MWD) Controls Imports
  - Groundwater Banking and Transfers
- **Imports**
  - From Colorado River
  - From Sacramento-San Joaquin River Delta (State Water Project)

Irvine Ranch Water District
IRWD Water Banking Projects
Water Banking Objective: Capture and store water available in wet years for use in droughts and periods of supply interruptions

✓ Emergency Supply
Banking Components and Facilities:

• Aquifer
  – 155,400,000 m³ of storage
• Land: 308 ha for recharge
  – 55,500,000 m³ per year
• Water Supply
  – Unbalanced exchanges, etc.
• Recovery: 13 wells
  – 2 m³/s; 35,800,000 m³ per year
• Conveyance: three turnouts
  – Access to major California water conveyance infrastructure
Water Banking – How Does it Work?
April 2017 Drone Video of Recharge at IRWD Water Banking Projects
What is Emergency Supply?

- During water supply shortages, MWD allows agencies less imported water
  - Penalties assessed for overuse
- **Emergency Supply** provides protection from MWD penalty rates
  - Improves water supply reliability
  - Cannot be a base loaded supply
  - Used only during major shortages or emergencies
  - Valuable source of supply
Local Governance and Conflict Avoidance Using Agreements
Long-Term Partnership Agreements Make it Work
Types of Agreements

- Securing sources of water
- Access to water conveyance facilities
- Facilitating operations
- Avoiding impacts to others
- Protecting the environment
- Compliance with Sustainable Groundwater Management Act (SGMA)
Agreements for Securing Water

**Water from State Water Project Contractors:**
- Unbalanced exchange agreements
  - IRWD retains 50%

**Water from Senior Water Right Holders:**
- Agreement with Rosedale allowing Kern River flood flow diversion
  - IRWD retains up to 50%
- Agreement with Buena Vista for Kern River from water rights that pre-exist California law
  - IRWD retains 50%
- Other wet-year exportable supplies, as available
Agreements with MWD for Conveying Water

Coordinated Exchange Agreement:
- Allows IRWD to secure SWP water;
- MWD delivers water by Exchange;
- MWD can borrow water from IRWD; and
- Water qualifies as Emergency Supply.

Template Wheeling Agreement:
- Allows IRWD access to MWD facilities to transport other water;
- Must be executed for each transaction; and
- Water qualifies water as Emergency Supply.
Agreements to Facilitate Project Operations

Project Operating Agreements:

- Executed with Rosedale
- Establish priorities for use of facilities
- Operations and maintenance
- Scheduling water deliveries
- Allocating costs
- Complying with agreements that avoid impacts to others
Agreements to Avoid Impacts to Others

Memorandums of Understanding:
- Established Monitoring Committee
  - Monitoring for impacts due to high water
  - Monitoring of groundwater levels
  - Monitoring water quality
- Establishing standards for losses
- Establishing leave behind requirements

Groundwater Recovery Mitigation Agreement:
- Established Joint Operations Committee;
- Using groundwater models to predict impacts;
- Contributing mitigation funds = $2 per 1,230 m³
  - Used to mitigate impacts to nearby wells
Commitments to the Environment

Mitigation, Monitoring and Reporting Plan:

• Prepared in compliance with California Environmental Quality Act (CEQA)

• Mitigates fish, wildlife and water supply impacts
  – During construction
  – While operating the projects
Compliance with SGMA

Landowner Agreement:
• Ensures IRWD water banking projects are included in the local Groundwater Sustainability Plan
  – Kern Groundwater Authority Groundwater Sustainability Agency
  – Recognizes that the water banking projects are neutral
  – No impact on native yield

Other Agreement:
• Protects IRWD from restrictions and fees
IRWD Contact Information

Paul Weghorst
Executive Director of Water Policy
Office: (949) 453-5632
weghorst@irwd.com