

APPENDIX 8-A(ii)

Records (attendance, presentation, and videotape) of the Public Hearing

DVD of recording of the public hearing is on file with MWDOC Library

Public Hearing

Draft 2005 Urban Water Management Plan (UWMP)

November 3, 2005

Municipal Water District
of
Orange County



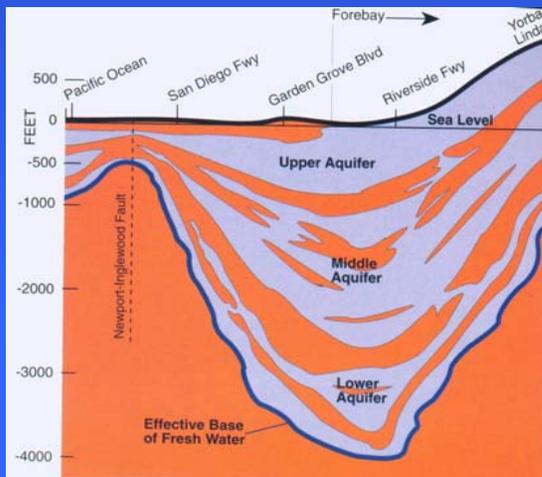
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Orange County's Water Sources



Imported Water

- From Northern CA, Colorado River
- Provided by Metropolitan Water District of Southern California
- Managed by Municipal Water District of Orange County
- Anaheim, Fullerton, Santa Ana



Groundwater

- O.C. basin managed by OCWD
 - Filled with Santa Ana River and surplus imported water
- San Juan Basin
- La Habra Basin



Municipal Water District of Orange County

- Imported water wholesaler, resource planning agency
- Member agency – Metropolitan Water District of Southern California
- 30 member agencies
- Serves 2.3 million people
- 600 sq. mile service area
- Governed by 7-member elected Board of Directors



Statewide Urban Water Management Planning

- Coordinated statewide effort conducted every five years (mandated by law);
- Quantifies statewide water demand, resources;
- Provides framework to better manage statewide water resources;
- Ensures water resources can accommodate planned statewide growth;
- Encourages public participation;
- Planning documents reviewed by Department of Water Resource.



Goals of the Plan

- Serve as a key component of an integrated regional water management planning
- Serve as a long-range planning document
- Closely tie land-use planning and water supply reliability (source document for General Plans)
- May be served as a foundation documents upon which water supply agencies complete:
 - Water supply assessments
 - Verification of water supply



Draft
*2005 Urban Water
Management Plan (UWMP)*

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Topics Addressed in MWDOC's Draft Plan

- Introduction to
 - **MWDOC Service Area**
 - **Urban Water Management Plan**
- Water Service
 - **Water Demand**
 - **Water Supply**
 - **Reliability Analysis**
- Water Quality Impacts on Reliability
- Programs to Maximize Water Service Reliability
- Water Demand Management Programs
- Wastewater and Water Recycling
- Water Shortage Contingency
- Plan Adoption and Implementation



Water Service

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Water Demand

Water Demand Projection

- Municipal & Industrial Use - Two approaches were considered
 - MWD-MAIN forecast model
 - MWDOC member agencies' projections
- Agriculture Use
 - MWDOC member agencies' projection

Water Demand

Approach 1 - MWD-MAIN

- Used by Metropolitan Water District of Southern California
- Econometric based
 - Statistical – incorporates demographic and economic variables from regional planning agencies - Southern California Association of Governments (SCAG) and San Diego Association of Governments (SANDAG)
 - End-use – Estimates of water use by sectors
- Update with new SCAG/SANDAG forecasts every few years



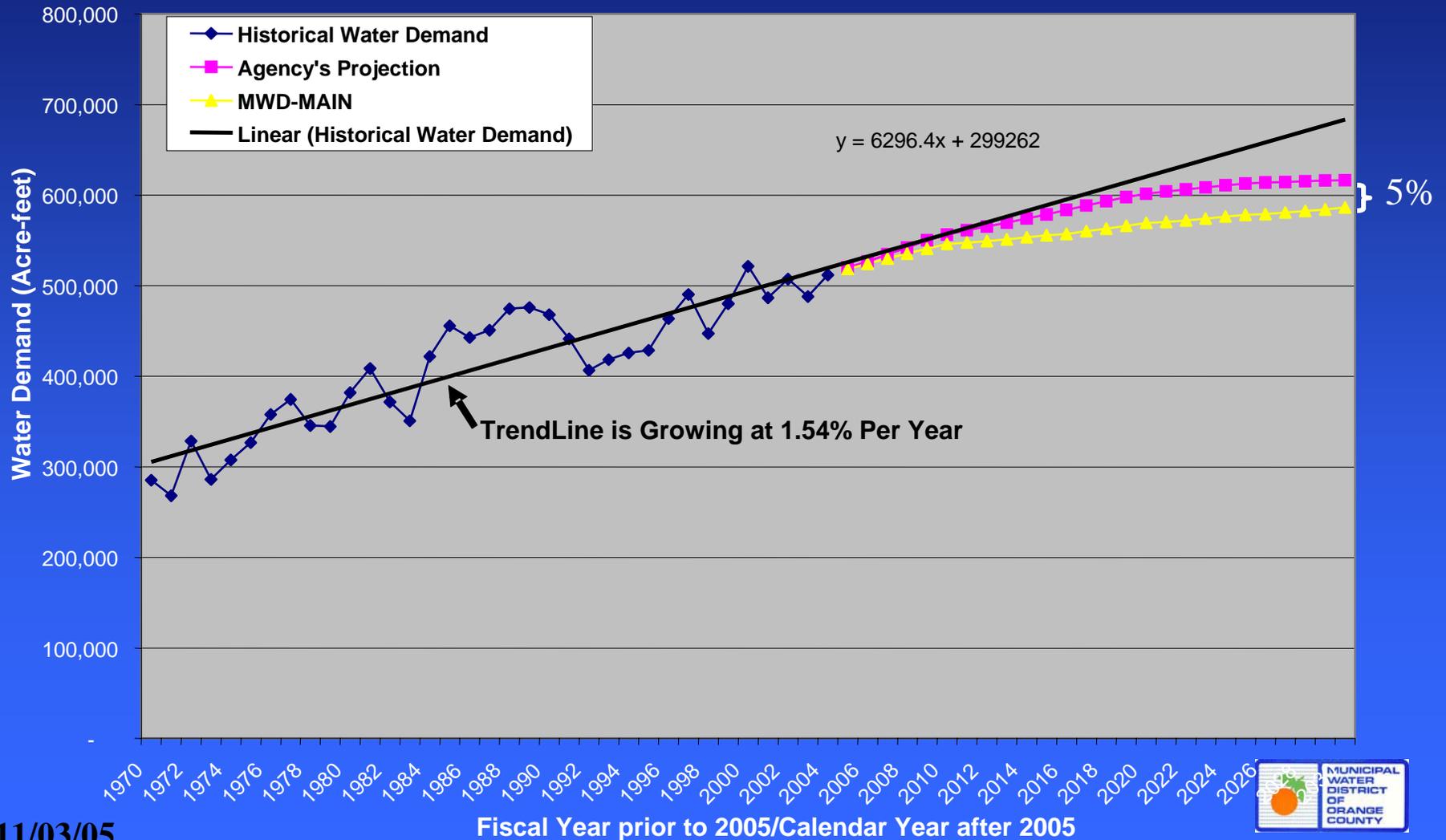
Water Demand

Approach 2 – Agency Projections

- Requested 25-year retail demand projections from MWDOC's 30 member agencies
- Methodologies, assumptions underlying projections vary from agency to agency, but all reflect an in-depth knowledge of the individual agency's service area
- Update annually

Water Demand

Compare M&I Demand Projection MWD-MAIN vs. Agencies' Projections



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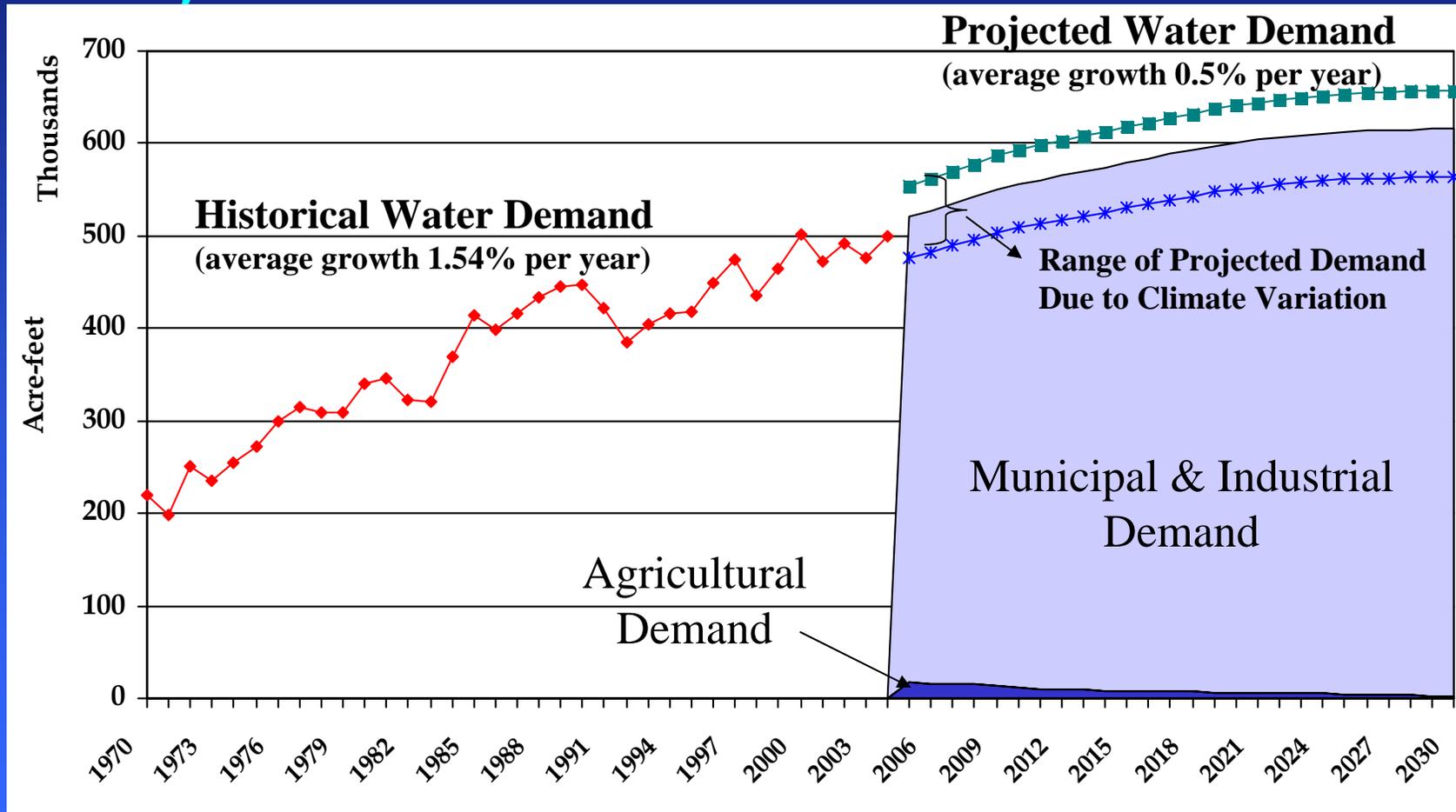
Water Demand

Deciding on M&I Demand Projection

- Results from the two approaches are close – approximately 5% difference
- MWDOC's Draft Plan uses **agencies' projections**
 - Yields to higher projection – more conservative
 - UWMP Act provides that a water wholesaler should quantify the reliability of water service based on projection done by its retail agency (Water Code Section 10631(k))
 - Maintain “consistency” in regional planning

Water Demand

Summary – Retail Water Demand Projection



Water Supply

Sources of Supply

- Imported
 - Metropolitan Water District of Southern California
- Local
 - Groundwater
 - Surface
 - Recycled Water
- Potential*
 - Transfer
 - Desalination

** Discussed in Draft Plan but not included in resource mix*

Water Supply

Projection of Imported Supplies from Metropolitan

Metropolitan demonstrated it can maintain 100% reliability through 2030 in its Draft 2005 Urban Water Management Plan (September 2005)

Water Supply

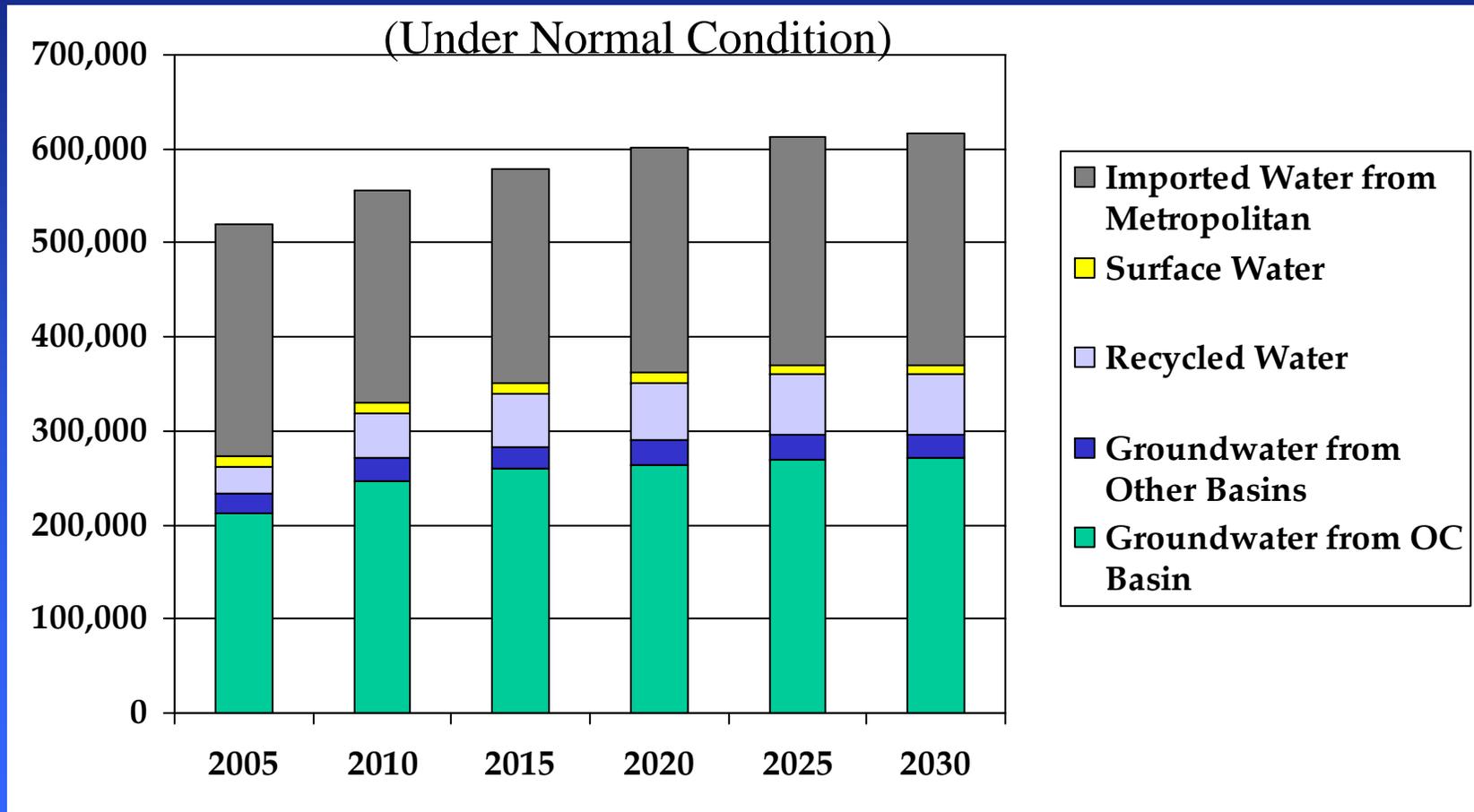
Projection of Local Supplies

- Groundwater from Orange County Groundwater Basin
 - Using “Water Balance” Model incorporating operation assumptions provided by OCWD
- Local Supplies such as groundwater from other basins, recycled water, and surface water
 - Agencies’ Projections



Water Supply

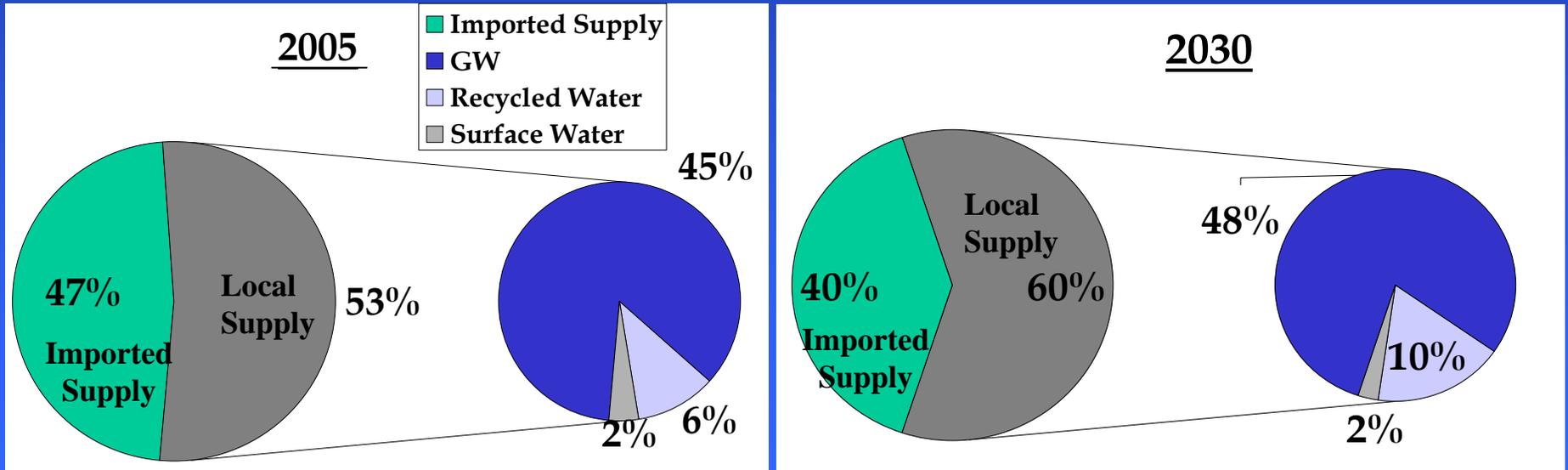
Current and Planned Water Supplies for Direct Consumption



Water Supply

Summary – Projected Water Supply

MWDOC and its member agencies are collectively working to improve water reliability by developing new local supplies, and thereby reducing the dependence on imported supply over time



Water Reliability Analysis

Service Reliability Analysis

Plan assesses the reliability of MWDOC's water service to its customers under three types of water year scenarios:

1. Normal water year
2. Single dry water year
3. Multiple dry water year



Water Reliability Analysis

Projected Water Service Reliability in MWDOC's Service Area

	2010	2015	2020	2025	2030
Normal Water Year	100%	100%	100%	100%	100%
Single-Dry Water Year	100%	100%	100%	100%	100%
Multiple-Dry Water Year	100%	100%	100%	100%	100%

Water Quality Impacts on Water Reliability

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Water Quality

Impacts on Reliability

- Water quality monitoring is conducted by
 - Orange County Water District - Orange County Groundwater Basin
 - Metropolitan Water District - imported water
 - Local agencies - other local supplies
- Evaluation includes
 - Primary Drinking Water Standard (health)
 - Secondary Drinking Water Standard (aesthetics)
 - Notification Levels (not yet regulated contaminants)



Water Quality

Conclusion

Any known water quality issue in the region has been addressed through the water management strategy. Therefore, the reliability of water service is not expected to be impacted.

Programs to Maximize Water Service Reliability

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Programs to Maximize Region's Water Service Reliability

- Integrated Regional Water Management Plan
- Water Use Efficiency Programs
- Orange County Water Reliability Plan
- South Orange County Water Reliability Study
- Assist MWDOC member agencies in Metropolitan's Incentive Program for Local Supply Development
- Cooperative Agreement with Orange County Water District
- Ocean Water Desalination Investigation
- Southern California Comprehensive Water Reclamation and Re-use study



Water Demand Management Programs

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Water Demand Management

MDWOC's Efforts in Facilitating Conservation Programs

- **Local program assistance**
 - Assist retail agencies in developing and implementing local programs within their individual service areas
- **Research and evaluation**
 - Research and evaluate potential and existing conservation programs
- **Regional program implementation**
 - Develop, obtain funding for, and implement regional Best Management Practice (BMP) programs

Water Demand Management

Regional Programs to Facilitate Best Management Practices (BMPs)

- SmarTimer Rebate Program (since 2004)
- Protector Del Agua Irrigation Management Training
- 2001 Orange County Saturation Study
- Annual Report - Orange County Water Agencies Water Rates, Water System, Financial Information
- Landscape Performance Certification Program
- High Efficiency Washing Machine Rebate Program
- Public Information Programs
- School Education Program – Partnership with Discovery Science Center
- “Save Water – Save a Buck” Program
- Development of Water Waste Prohibitions Menu
- Residential Ultra Low Flush Toilet Replacement Program

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Water Demand Management

Overview - Best Management Practices

BMP #	Efficiency Measures	Applies to:		MWDOC Regional Program
		Retailer	MWODC (Wholesaler)	
1	Home Water Surveys	✓		✓
2	Residential Plumbing Fixtures	75% Saturation Goal Achieved in 2001		
3	System Water Audits, Leak Detection and Repair	✓	✓	✓
4	Metering with Commodity Rates	✓		
5	Large Landscape Conservation Programs	✓		✓
6	High-Efficiency Washing Machine Rebate Program	✓		✓
7	Public Information Program	✓	✓	✓
8	School Information Programs	✓	✓	✓
9	Commercial, Industrial, and Institutional Programs	✓		✓
10	Wholesale Agency Assistance Programs		✓	✓
11	Conservation Pricing	✓	✓	✓
12	Conservation Coordinator	✓	✓	✓
13	Water Waste Prohibition	✓		✓
14	Residential ULFT Replacement Programs	✓		✓



Water Demand Management

Summary

Though water savings through future active programs are not quantified, MWDOC believes in the benefits of water use efficiency and is committed to continuing its sponsorship and participation in aggressive conservation programs

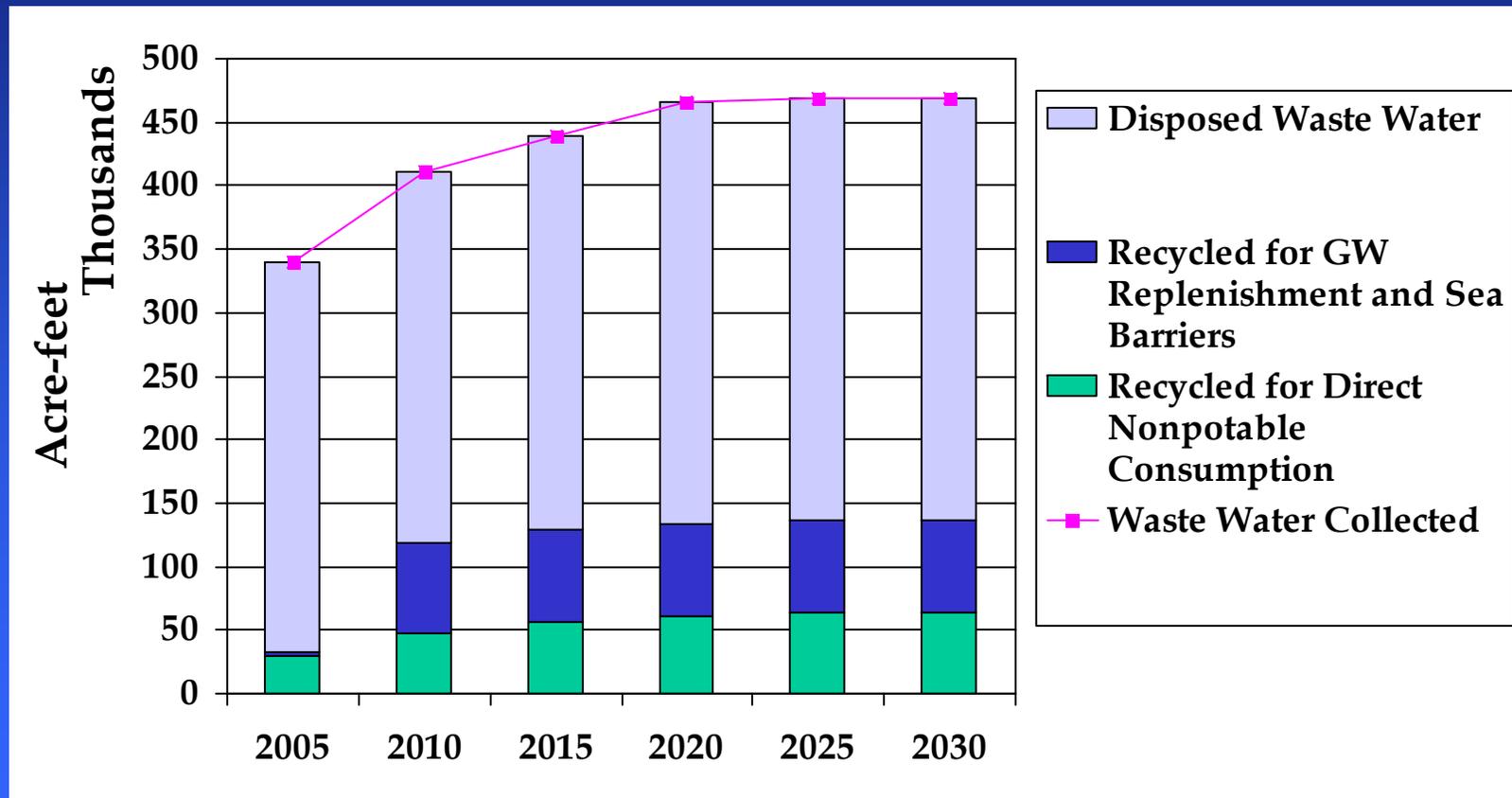
Wastewater and Water Recycling

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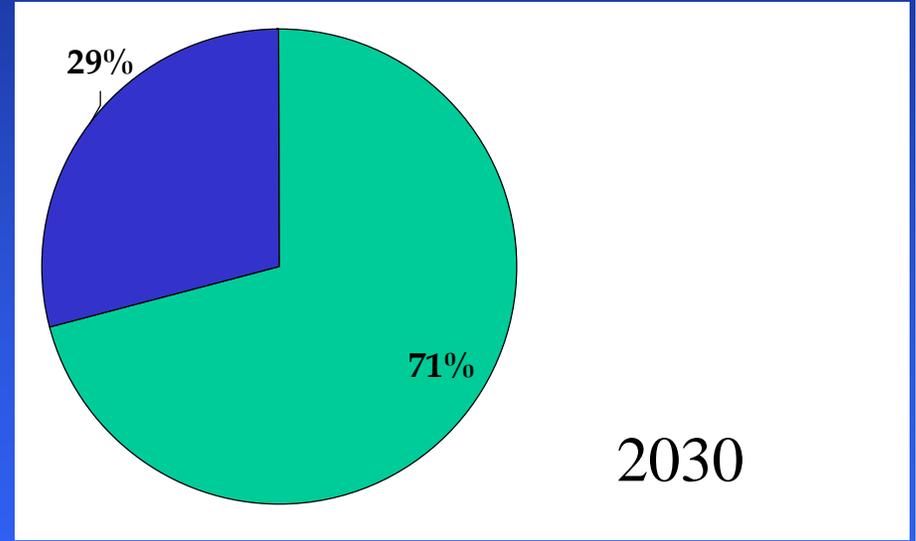
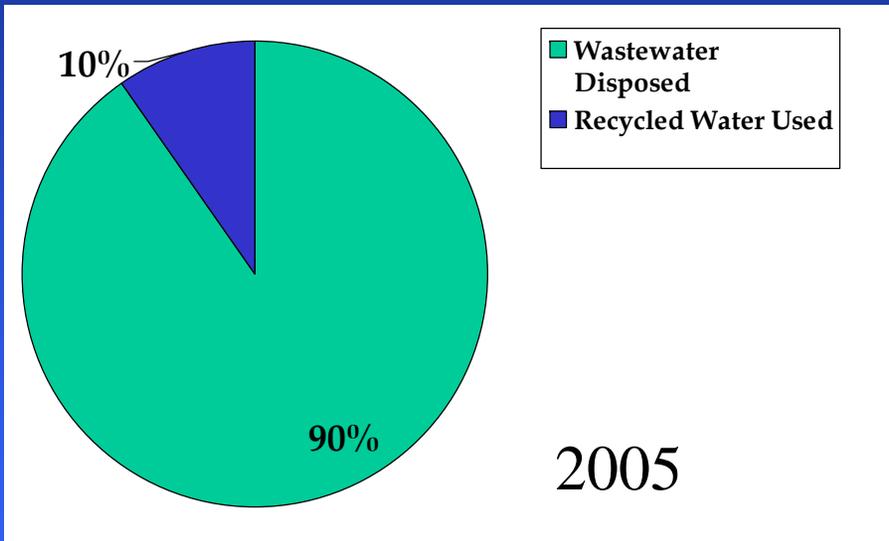
Water Recycling

Current and Projected Wastewater and Recycled Water



Water Recycling

Current, Projected Percent of Recycled, Disposed Wastewater



Water Recycling

Barriers to Expansion of Existing Recycled Water Uses

- Cost
 - Distribution network
 - Site retrofits
 - Operations and maintenance
- Public acceptance
- Water quality
 - Total Dissolved Solids (TDS)
 - Brine disposal
 - Health department regulation

Water Recycling

Encouraging Recycled Water Use

- **Funding**
 - Incentive programs and grants from local, state, and federal agencies
- **Partnerships**
 - Groundwater Replenishment System (OCWD, OCSD)
- **Regulatory**
 - Streamline regulatory requirements
- **Brine Line Construction**
 - State and federal assistance for the construction of brine lines
- **Research**
 - Address public concerns, develop new technology for cost reduction, and assess health effects to protect the public

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Water Recycling

Summary – Future of Recycled Water

- Recycled water will become an important source of supply over time
- Programs and funding on the federal, state, and local levels encourage the development of new recycling projects
- Cost and public acceptance are the two main stumbling blocks

Water Shortage Contingency Plan

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In the Event of a Shortage

- MWDOC would be responsible for allocating imported water
- MWDOC would use the same principles identified in Metropolitan's *Water Surplus and Drought Management Plan*, subject to locally developed principles or relevant adjustment, as adopted by MWDOC Board of Directors

Plan Adoption and Implementation

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MWDOC UWMP Schedule

Milestone	Revised Schedule
First Information Meeting	May 12
Technical Meetings with MET and Member Agencies	May & June
Report Writing	June & July
Second Information Meeting	Mid Aug
Internal Review Draft; DWR Pre-review	August
Present Draft Plan to MWDOC P&O Committee	Oct 3
Release Draft Plan for Public Review	Oct 12
Hold Public Hearing	Nov 3
End Comment Period	Nov 16
Present Final Draft Plan to MWDOC P&O Committee	Dec 5
Request MWDOC Board to Adopt Plan	Dec 21
Submit Plan to DWR	Dec 27

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Back-Up Slide

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Water Quality

Imported Water

- Primary Standard Issue - Total Organic Carbon and Bromide
 - Mainly from State Water Project (SWP), when combined with disinfectants, such as chlorine, creates disinfection byproducts (DBPs) – carcinogen
 - Management actions:
 - Replace current process with ozone treatment at two Metropolitan treatment plants that solely treat SWP
 - Blend the combination of SWP and Colorado River (CRA) water to reduce levels of DBPs below regulatory requirements at the other 3 plants
 - Metropolitan plans to install ozonation facilities at the remainder of its treatment plants by 2009



Water Quality

Imported Water

- Secondary Standard Issue - Total Dissolved Solids
 - CRA has high TDS levels (averaging 650 mg/L) and SWP has relatively lower TDS level (250 to 325 mg/L)
 - Management actions:
 - Metropolitan adopted a Salinity Management Plan
 - Goal – 500 mg/L
 - Blending its source of water to meet salinity goals
 - Salinity Source Control Measures

Water Quality

Imported Water

- Notification Level Issue - Perchlorate
 - Detected at low levels in CRA and was traced to its source at Henderson, Nevada
 - Management Actions:
 - Remediation is conducted by Nevada Department of Environmental Management
 - Actively advocate for and track remediation efforts in the Las Vegas Wash
 - Take proactive approach to ensuring no water supply losses

Water Quality

Orange County Groundwater Basin

- Primary Drinking Water Standard Issues
 - Nitrate
 - Out of 500 plus production wells in the basin, 5 were detected with nitrate concentration exceeding the maximum contaminant level (MCL) set by Department of Health
 - Restoration Projects
 - Garden Gove Nitrate Removal Project
 - Tustin Main Street Treatment Plant

Water Quality

Orange County Groundwater Basin

- Primary Drinking Water Standard Issues *(cont'd)*
 - Volatile Organic Compounds (VOC)
 - Localized plumes were found within Irvine, Fullerton, Santa Ana
 - Restoration projects
 - River View Golf Club (existing)
 - Irvine Desalter (under construction)
 - Anaheim and Fullerton VOC Cleanup (Under planning)
 - MTBE
 - 2 wells were found exceeding MCL and are closed
 - MTBE was phased out as a gasoline additive
 - OCWD continues the monitoring effort to prevent future contamination



Water Quality

Orange County Groundwater Basin

- Secondary Drinking Water Standard Issues
 - Total Dissolved Solids (TDS)
 - Water recharge to basin has TDS greater than water extracted, creating long-term salt imbalance
 - Salt management projects
 - Irvine Desalter
 - Tustin Desalter
 - Other efforts
 - OCWD and MWDOC are working with Metropolitan to provide a blend of SWP and Colorado River water that will result in lower TDS
 - GWRS will provide a source of low TDS recharge water
 - Work with upper Santa Ana River Watershed to reduce TDS levels in the river

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Water Quality

Orange County Groundwater Basin

- Secondary Drinking Water Standard Issues *(cont'd)*
 - Colored Groundwater
 - Located in deeper aquifer near the coast
 - Colored by the sediment of ancient redwood trees
 - Restoration projects
 - Mesa Consolidated Water District Colored Water Treatment
 - Irvine Ranch Water District Colored Water “Deep Aquifer Treatment System”

Water Quality

Orange County Groundwater Basin

- Unregulated “Notification Level” Issues
 - Pharmaceuticals, Personal Care Products, and Endocrine Disruptors
 - Impacts of traces of these compounds under research
 - OCWD is tracking potential regulations to determine impact on treatment process
 - GWRS treatment process removes these compounds
 - N-nitrosodimethylanmine (NDMA)
 - Found in one well – Mesa Consolidated Water District (MCWD)
 - MCWD operates an NDMA facility to remove the compound
 - Treatment process in GWRS removes NDMA



Water Quality

Other Local Supplies

- City of San Juan Capistrano
 - Extract groundwater from San Juan Basin; high manganese, iron, and TDS levels
 - Installed wells with treatment capabilities, recently completed a desalter plant to reduce these contaminants in the supply
- City of San Clemente
 - Installed treatment facilities to remove high iron, manganese concentrations from the groundwater extracted from local basin
- Irvine Ranch Water District
 - Poor quality of local groundwater outside of Orange County Groundwater Basin. Current management strategies have taken this into account; would not rely on this source to meet its supply reliability



Water Quality

Other Local Supplies (cont'd)

- City of La Habra
 - Required to treat its local groundwater to reduce iron and hydrogen sulfide
- Santiago County Water District
 - Closed one well as local groundwater requires additional treatment; current water management plan does not incorporate this portion of supply
- Moulton Niguel Water District
 - Occasionally has complaints re odor or debris in the recycled system
 - Condition usually is alleviated by flushing the system

