



Clean Water
C O A L I T I O N

*Solutions for
Clean Water
Management*

SCOP Update to the Lake Mead Water Quality Forum



*The "Clean
Water Team"*

**Clark County
Water Reclamation
DISTRICT**



A Place To Call Home



**CITY OF
NORTH LAS VEGAS**

Your Community of Choice

September 21, 2006

Current Discharge Program

City of Las Vegas
Water Pollution Control Facility

Clark County Water Reclamation District
Wastewater Treatment Facility

City of Henderson
Water Reclamation Facility

Las Vegas Wash

Las Vegas Bay

Boulder Basin
Lake Mead

Hoover
Dam



Systems Conveyance & Operations Program (SCOP)

City of Las Vegas
Water Pollution Control Facility

Clark County Water Reclamation District
Wastewater Treatment Facility

Effluent Interceptor Terminus

City of Henderson
Water Reclamation Facility

Boulder Islands North Alternative

Hydropower Generation Facility

Boulder Islands Outfall Diffuser

Effluent Interceptor

Lake Conveyance System

Project Cost Estimate: \$751 million

Project Drivers

- Water Quality in the Inner Bay of Las Vegas Bay and Las Vegas Wash
- Flexibility to provide for future capacity
- Relationship of effluent disposal area to drinking water intakes
- Effects of drought and lower lake levels
- Continued protection of return flow credits
- National Park Service recreational values
- Downstream users



Public Participation

Resources

Conservation

Recreation

Reclamation

Environment

Water Quality

Comparative Levels of Treatment

Cities

- Cincinnati
- Kansas City
- New York City
- Boston

Cities

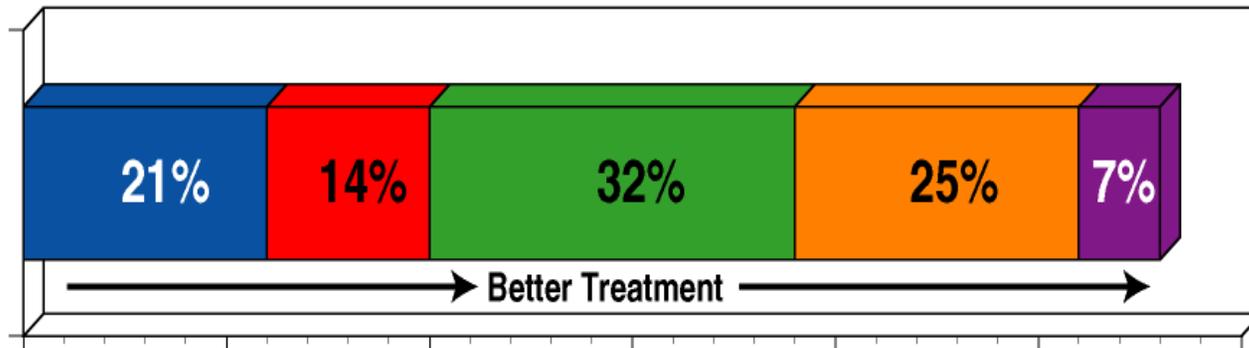
- Chicago
- Salt Lake City
- Dayton, OH
- Charlotte, NC

Cities

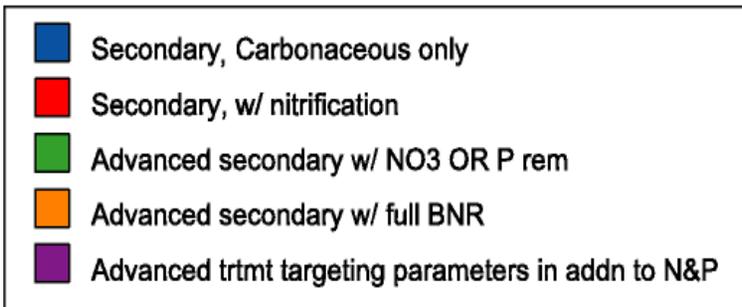
- Atlanta
- Denver
- Washington, DC
- Phoenix

Cities

- Minneapolis
- Greenville, SC
- Hagerstown, MD
- Escambia County, FL



Only 2 Areas
 → Las Vegas
 → Scottsdale, AZ



Public Participation

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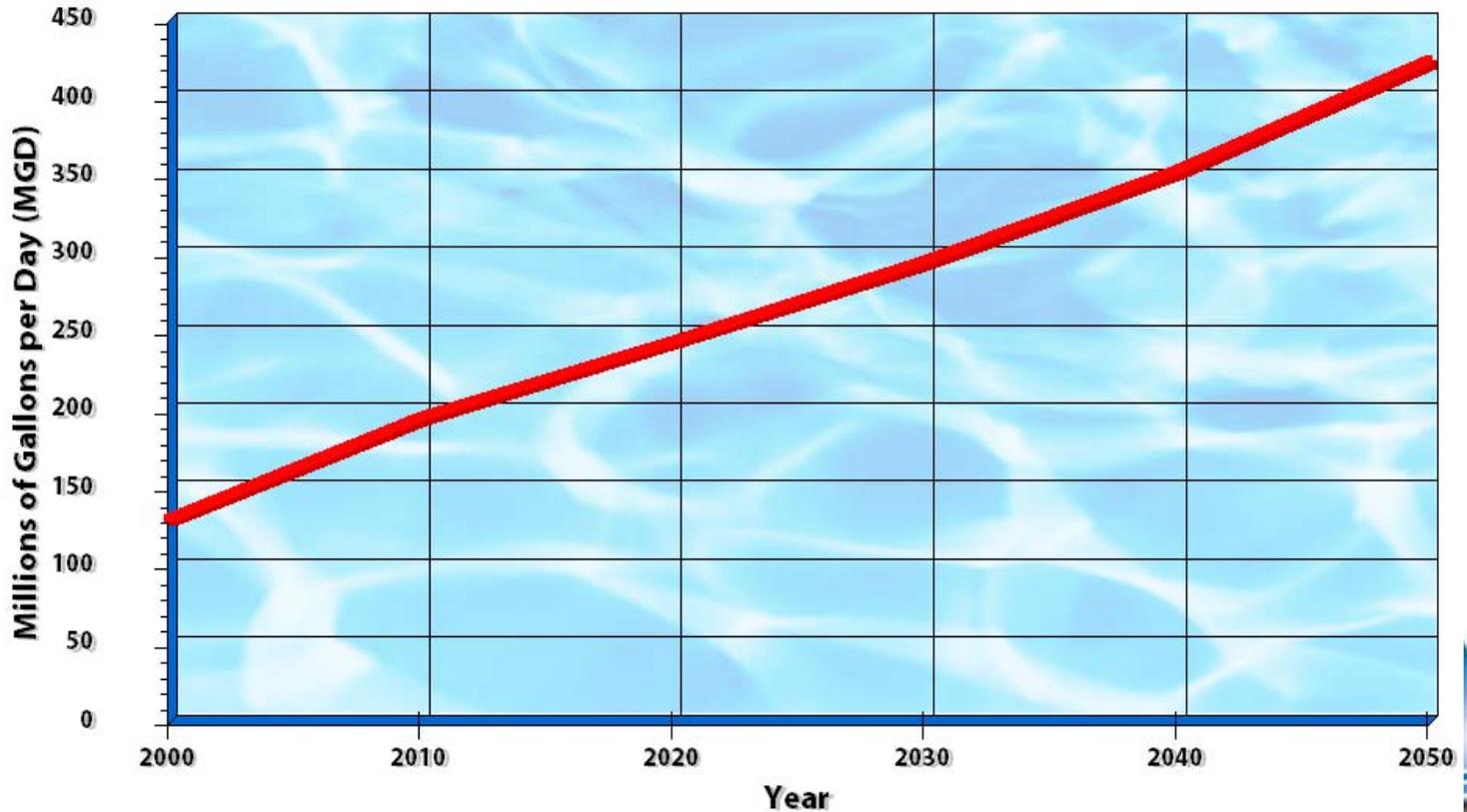
Reclamation

Environment

Water Quality

Water Demand and Wastewater Flow

More People = More Water = More Wastewater



Public Participation

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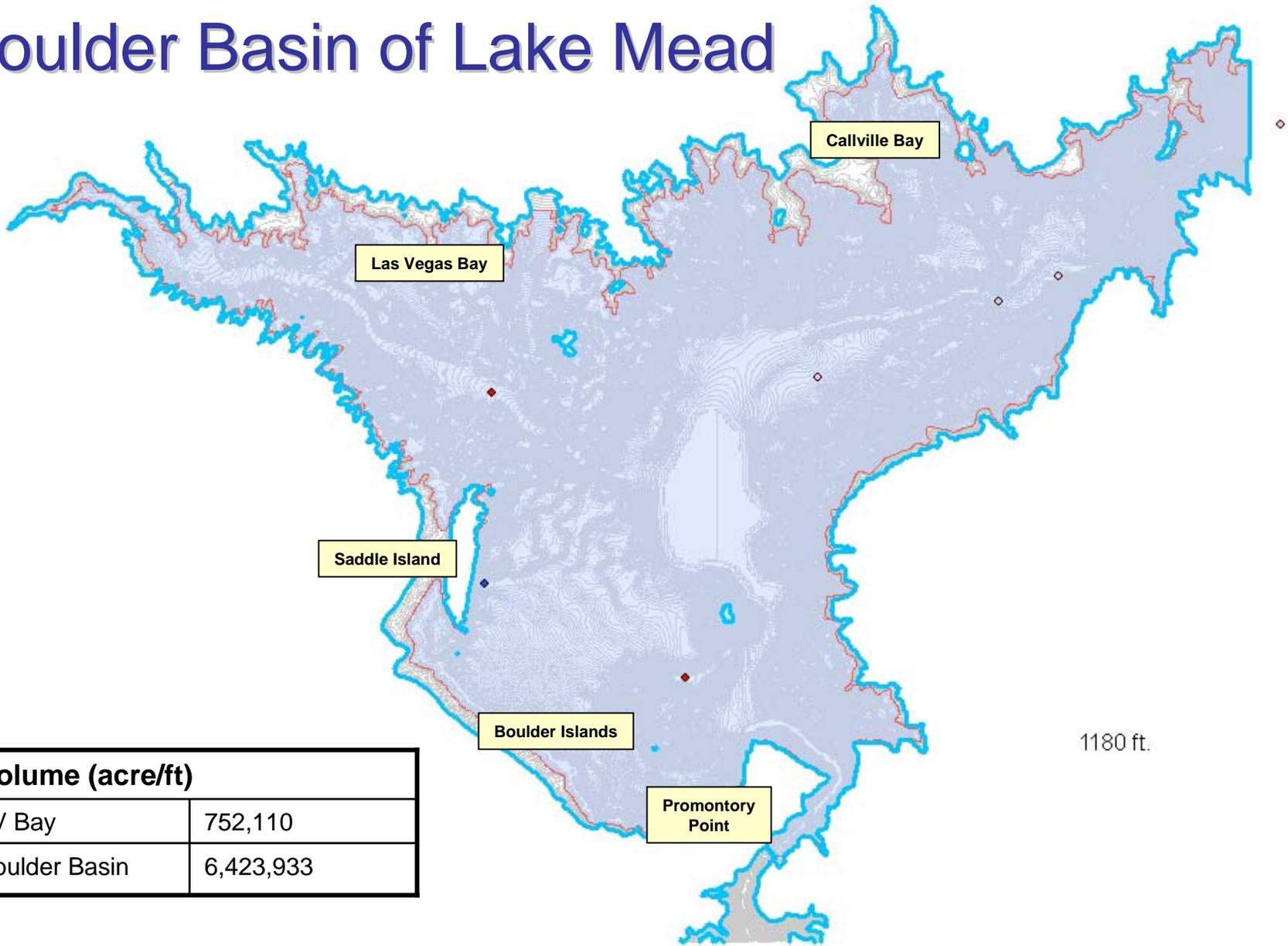
Recreation

Reclamation

Environment

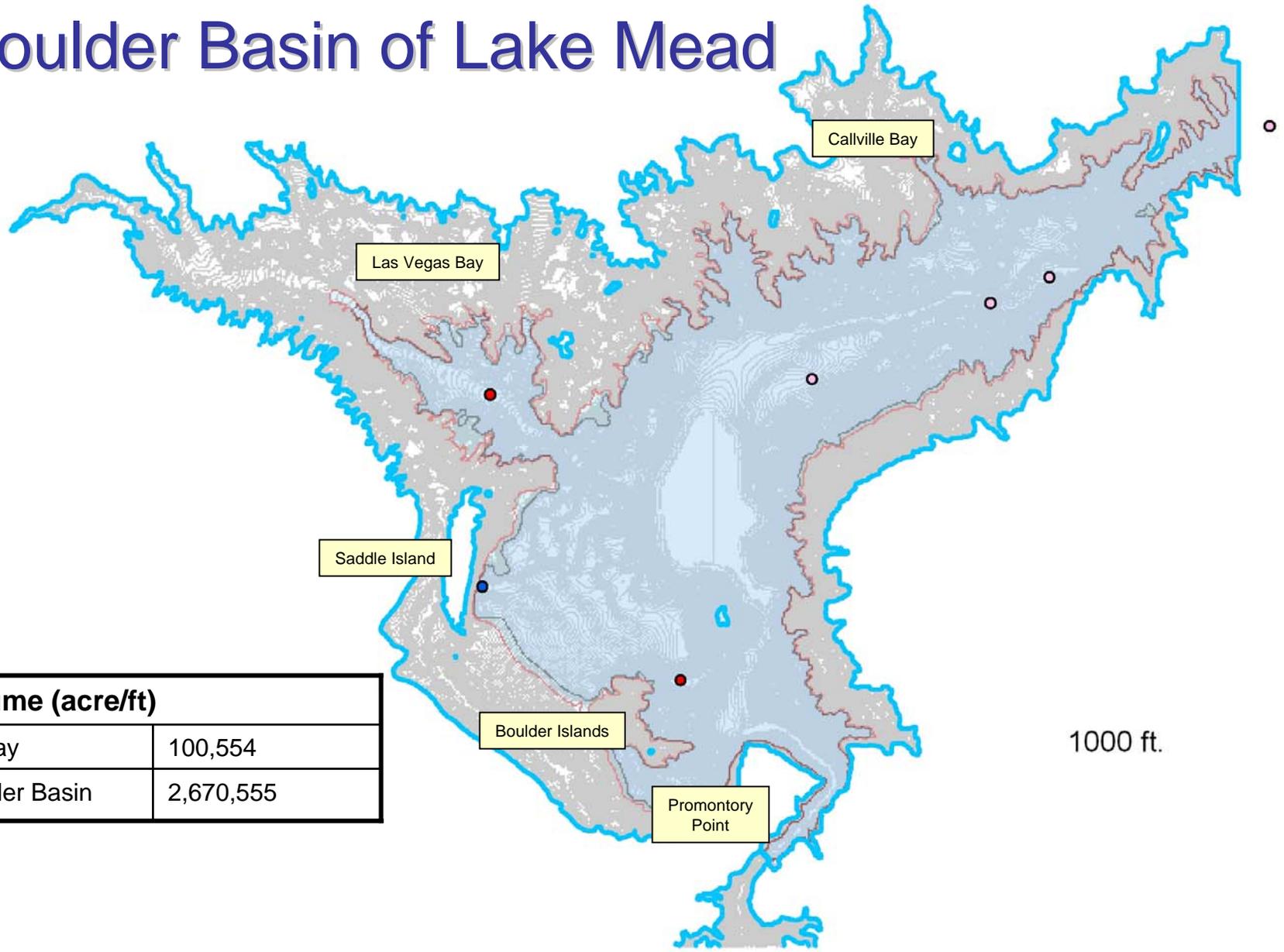
Water Quality

Boulder Basin of Lake Mead



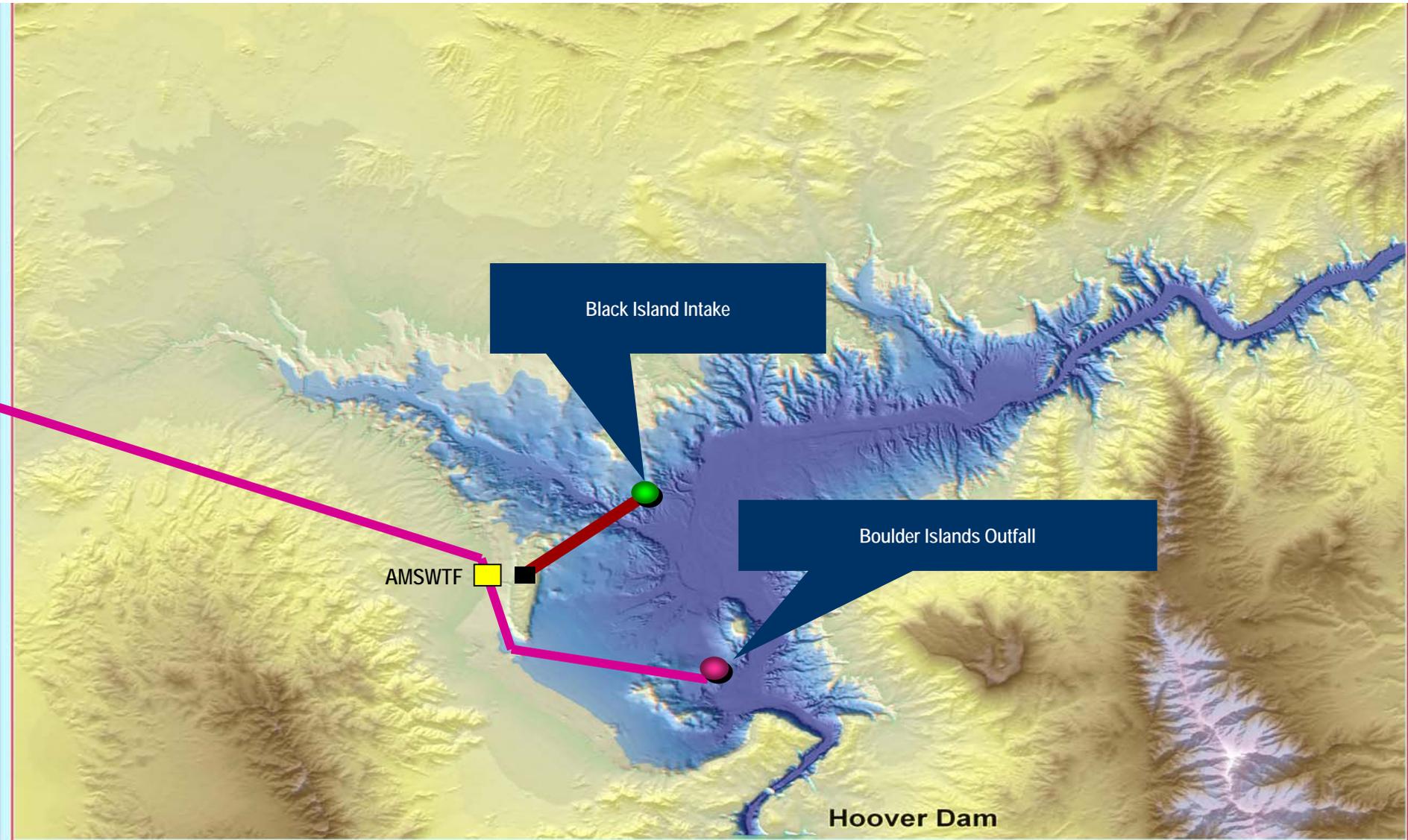
Volume (acre/ft)	
LV Bay	752,110
Boulder Basin	6,423,933

Boulder Basin of Lake Mead



Volume (acre/ft)	
LV Bay	100,554
Boulder Basin	2,670,555

Companion Projects



Implementation of Regional Rates

- Regional Connection Charge
 - \$800 per ERU (single-family residence)
 - (Proposed \$400/ERU Oct. 1, 2006)
 - (Proposed increase of \$412/ERU to total of \$812/ERU July 1, 2007)
- Usage fee (rates per ERU or equivalent)
 - \$0.65 per month
- Anticipate 2-3% per year increase



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How Do We Compare?

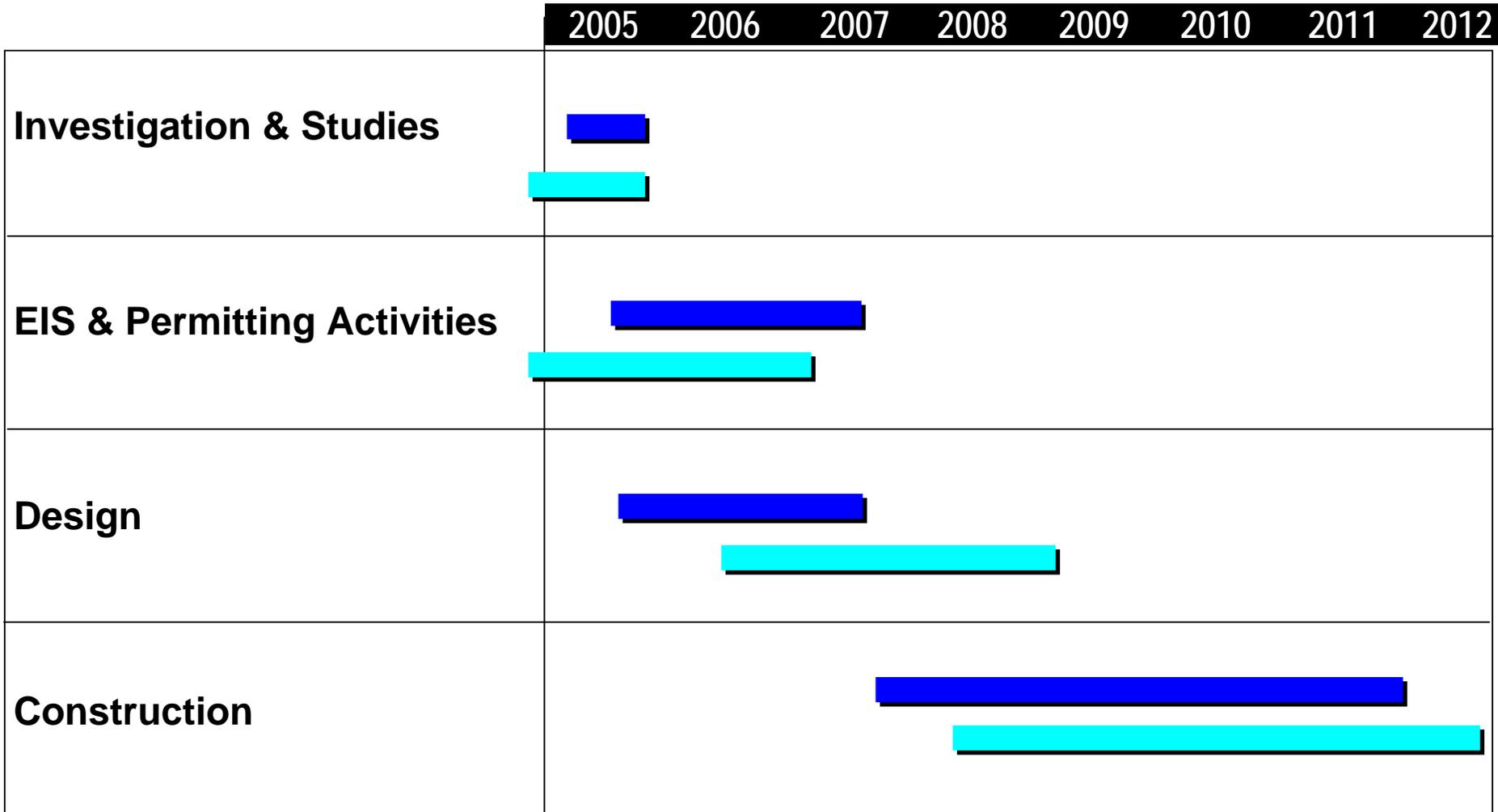
Area	Charge	Fee
Sacramento County, CA	\$6,500	\$322.80
Reno, NV	\$4,321	\$302.64
Livermore, CA (Bay Area)	\$4,000	\$465.00
San Diego, CA	\$3,710	\$556.92
San Bernardino, CA	\$3,500	\$215.40
Seattle, WA	\$3,240	\$421.80
Orange County, CA	\$2,890	\$146.89
Tucson, AZ	\$2,846	\$210.24
Portland, OR	\$2,995	\$543.00
CCWRD	\$2,400	\$179.52
Salt Lake City, UT	\$ 735	\$119.40



Project Schedule



-  SNWA - Intake
-  CWC - SCOP



Environmental Impact Statement

Co-lead agencies

- National Park Service
- Bureau of Reclamation



Cooperating Agencies

- Colorado River Commission
- Bureau of Land Management
- Corps of Engineers
- Metropolitan Water District of Southern California

Other Key Partners

- Clean Water Coalition
- Southern Nevada Water Authority
- US Fish and Wildlife Service
- Nevada Division of Environmental Protection
- U. S. Environmental Protection Agency, Region IX



Public Participation

Resources

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Reclamation

Environment

Water Quality

Permitting Schedule

- Publish Final EIS
 - Oct. 20, 2006
- Post Notice of Availability
 - Around Oct. 20, 2006
- Conclude Section 7 Process with USFWS
 - End of December 2006
- MOU's (BBAMP) (MWD)
 - Before the Record Of Decision
- EIS Record of Decision
 - End of December 2006
- NPDES Permitting
 - Middle of 2007



Public Participation

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Water Quality

Comments on Draft EIS

EPA, USFWS, NDOW, others

- Las Vegas Wash Effects
 - Effects to endangered species, sport fishery
 - Effects to terrestrial wildlife during construction
 - Endocrine Disruptors
 - Meeting Water Quality Standards
-
- Some comments addressed in the Final EIS, others through Section 7 consultation, others through Boulder Basin Adaptive Management



Public Participation
Plan

Resources

Conservation

Recreation

Reclamation

Environment

Water Quality

Biological Resource Issues

Desert Tortoise

- Construction Issues
 - Personnel Training
 - Biologist on Site
 - Fencing, litter control, speed limits
 - Post-construction restoration
 - Possible Mitigation fees



Public Participation

Resources

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Water Quality

Biological Resource Issues

Razorback Suckers

- EDC's and PPCP's
 - Plant Optimization, Flow adjustments
 - EDC monitoring and research (with SNWA)
 - 30 Compounds - Six locations – Quarterly
 - Research on removal technologies
 - Implementation of advanced technologies
 - Based on adverse affects
 - Based on feasible treatment technologies
- Triennial Review



Public Participation

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Water Quality

Endocrine Disruptors and Pharmaceuticals

“It is important to gain more information as to the toxicological impacts of trace levels of EDCs and PPCPs in water. Once these impacts are quantified, safe exposure limits can be established, that will allow the water industry to determine ‘good removal’ rates.”

Pharmaceuticals, Personal Care Products, and Endocrine Disruptors in Water: Implications for the Water Industry

Shane A. Snyder, Paul Westerhoff, Yeomin Yoon, and David L. Sedlak

Environmental Engineering Science, 2003, p. 461



Public Participation

Resources

Conservation

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Water Quality

Biological Resource Issues

Razorback Suckers

– Selenium

- Participation in establishing national criterion
- Selenium Management Plan (SMP)
 - Provide safe spawning for Razorback Suckers
 - Water Quality sampling in Las Vegas Bay
 - Speciation of Selenium
 - Coordination with the LMWQF
 - Coordination with the MAC, LV Wash Team



Public Participation

Resources

Conservation

Recreation

Reclamation

Environment

Water Quality

Boulder Basin Adaptive Management Plan (V 1.01)

- Core Management & Technical Teams
- Water Quality Monitoring
- Water Quality Analysis and Modeling
- Establishment of WQ Management Objectives and Indices
- **Develop SCOP Operational Plan**
- **Develop Appropriate Responses**
- **Bi-Annual Review and Update**



Public Participation

Resources

Conservation

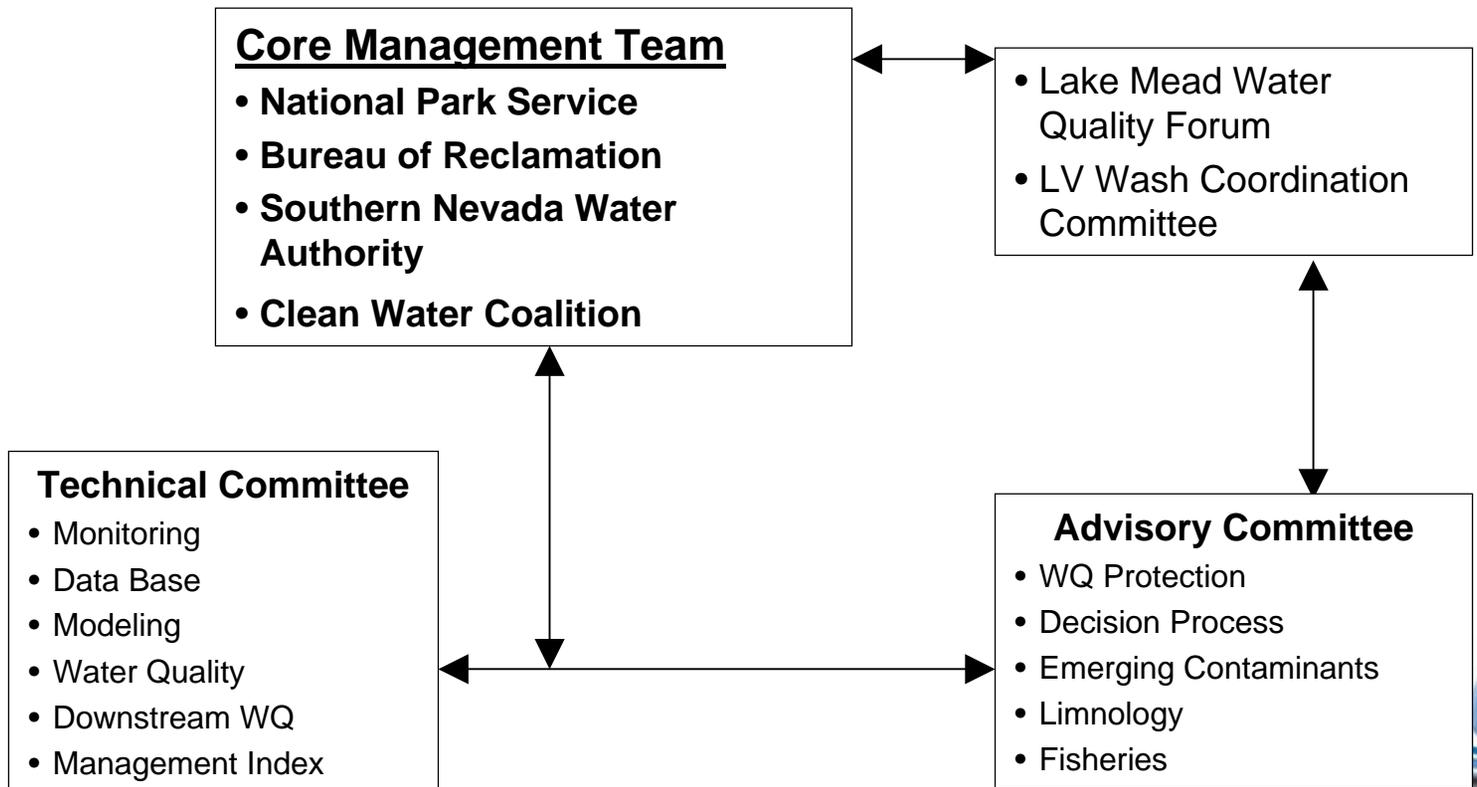
Recreation

Reclamation

Environment

Water Quality

Boulder Basin Adaptive Management Plan Structure



Public Participation

Resources

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Boulder Basin Adaptive Management Plan (V 1.01)

- Core Management Team (short term)
 - Establish and Define Basic Objectives
 - Meet NPDES and CWA Requirements
 - Meet NPS non-impairment guidelines
 - Protect Drinking Water
 - Protect Return Flow Credits
 - Protect recreational and resource values
 - Designate Advisory/Technical Teams
 - Monitor water quality and modeling



Public Participation

Resources

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Water Quality

Boulder Basin Adaptive Management Plan (V 1.01)

- Core Management Team (long term)
 - Oversee Operations, Monitoring, and Biannual Review of BBAMP
 - Re-evaluate the BBAMP and adjust as necessary
 - Adopt an Annual Operating Plan outlining the next year's activities



Public Participation

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Water Quality

Boulder Basin Adaptive Management Plan (V 1.01)

- Identify initial “items of concern”
 - Meeting current Requirements to Maintain Existing Higher Water Quality
 - Establish Management Indices
 - Meet water quality standards below Hoover Dam
 - Maintain SNWA intake water quality
 - Protect Boulder Beach and other high use recreation areas
 - Maintain viable fish and wildlife populations



Public Participation

Resources

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Environment

Water Quality

Boulder Basin Adaptive Management Plan (V 1.01)

- Water Quality
 - Baseline Monitoring
 - Emerging Contaminants of Concern Monitoring and Research
 - Long Term Water Quality Sampling
 - Boulder Basin Specific Relationships
 - Establishment of a data repository
 - Selenium Management Program
 - Data Interpretation and Modeling
 - Management Action Plans



Public Participation

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Conservation

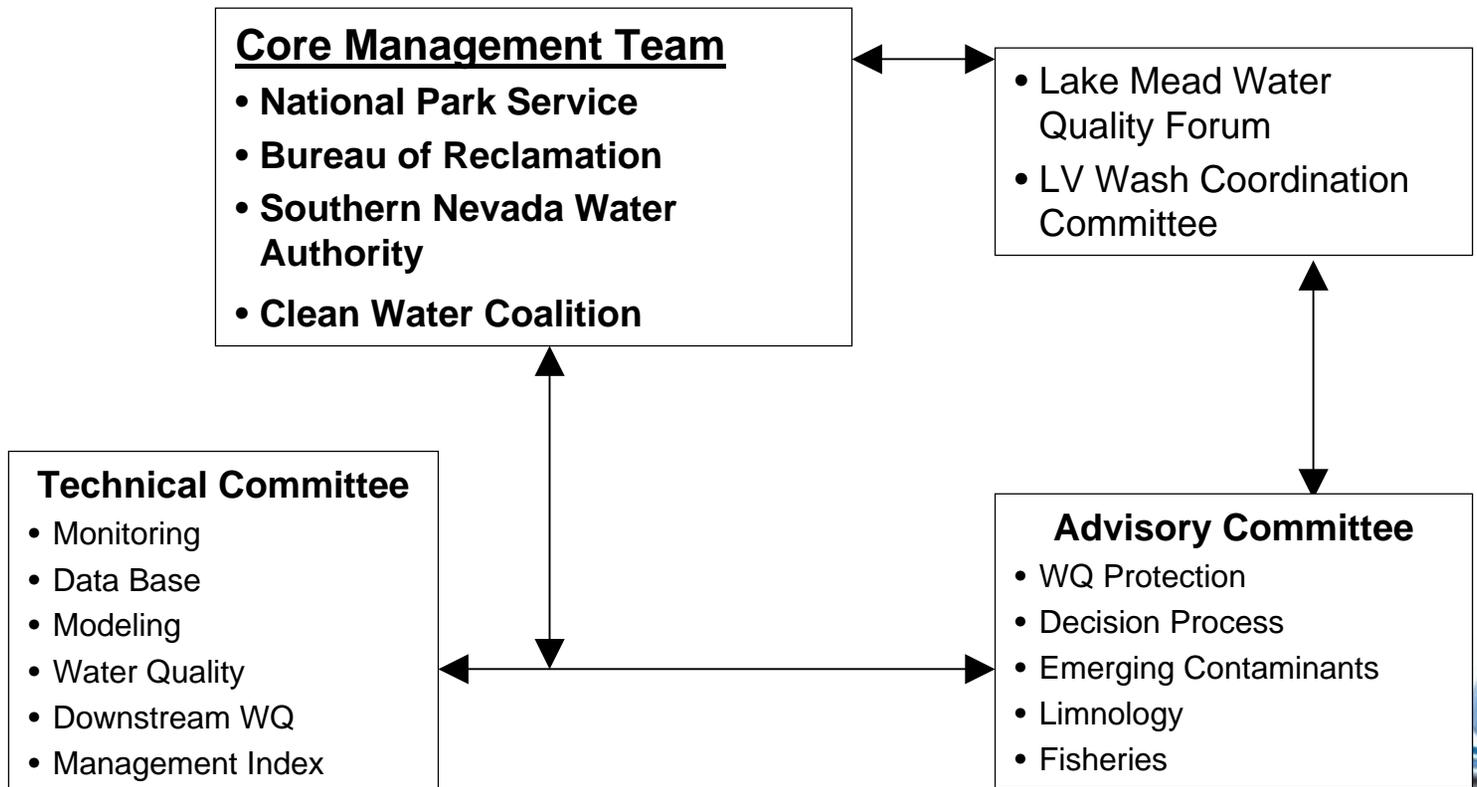
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Boulder Basin Adaptive Management Plan Structure



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Clean Water

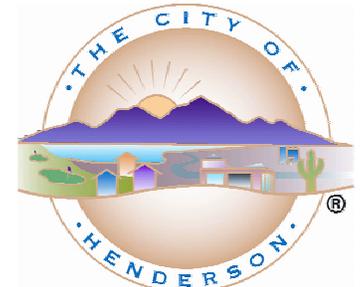
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