Project Update:
USG & RHR Sub Regional Steering Committee and Stakeholders Meeting

Ed Means
Area Manager

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Review

- Project Integration TM –
  - Plan Objectives, Targets, and Assumptions
  - Planning Tools
  - Water Management Strategy Elements
- Benefits and Costs TM –
  - Costs and Cost Assumptions
  - Benefits and Benefit Assumptions
  - Implementation Targets
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Plan Objectives, Targets, and Assumptions

Objective	Planning Target	Analysis Assumptions	Rationale
Improve Water Quality			
To comply with water quality standards by improving the quality of urban runoff, stormwater and wastewater	Dry Weather: Reduce, capture, infiltrate and/or treat the 40th to 90th percentile dry weather urban runoff flow, approximately 210 to 450 cubic feet per second (cfs), or 150,000 to 320,000 acre feet per year (AFY).	Reduce, capture, infiltrate and/or treat the 90th percentile dry weather urban runoff flow, approximately 320,000 AFY.	Reduces, recycles and/or treats 90 percent of dry and wet weather runoff to implement TMDLs.
	Wet Weather: Reduce, infiltrate or recycle 40 percent to 90 percent of the annual stormwater runoff from developed areas, approximately 218,000 to 490,000 AFY.	Reduce, infiltrate or recycle approximately 40 percent of the total stormwater runoff, or 100 percent of annual stormwater runoff from single-family residences, which is approximately 190,000 AFY.	
	Wet Weather: Capture and treat 40 percent to 90 percent of the annual stormwater runoff from developed areas, approximately 218,000 to 490,000 AFY.	Capture and treat approximately 50 percent of the annual stormwater runoff from developed areas, approximately 300,000 AFY.	
To protect and improve groundwater and drinking water quality	None		
Improve Water Supply			
To optimize local water resources to reduce the region's reliance on imported water	Increase water supply reliability and quality by providing between 580,000 and 1,870,000 AFY of additional water supply or demand reduction through conservation.	Increase water supply and/or reduce demand by 800,000 AFY	Based on Metropolitan Water Districts IRP targets with buffer against supply loss.
	Reuse or infiltrate between 120,000 and 250,000 AFY of reclaimed water.	Reuse or infiltrate 250,000 AFY of reclaimed water (130,000 increase).	Doubles current utilization to enhance water supply reliability.
Enhance Open Space, Recreation, and Habitat			
To increase watershed friendly recreation and open space for all communities	Develop and protect 30,000 acres of multiuse parkland and open space, focusing in under-served communities.	Develop 30,000 acres of multiuse parkland and open space.	Based on estimated population growth and 6.25 acres per 1,000 residents.
To protect, restore, and enhance natural processes and habitats	Restore 100 linear miles of riparian habitat and associated buffer habitat.	Restore 100 linear miles of riparian habitat and associated buffer habitat.	Would target restoration across entire region.
	Restore 1,400 acres of wetland habitat.	Restore 1,400 acres of wetland habitat.	Based on Coastal Conservancy estimate.
Sustain Local Communities and the Greater Los Angeles County Region			
To maintain and enhance flood protection	Repair and replace 40 percent of the aging infrastructure for flood protection.	Repair and replace 40 percent of flood protection infrastructure.	Repair or replace approximately 2 percent per year, or 40 percent over 20 years.
To maintain and enhance public infrastructure related to water resources and water quality	Repair and replace 40 percent of the aging infrastructure for water supply.	Repair and replace 40 percent of water supply infrastructure.	
	Repair and replace 40 percent of the aging infrastructure for wastewater.	Repair and replace 40 percent of wastewater infrastructure.	

Water Supply Gap

	Region's Current Supplies	Region's Year 2025 Water Supply	Region's Water Supply Gap (Year 2025 less current)
Type of Supply	**Current**	**Year 2025**	**Year 2025**
Conservation	410,000	520,000	110,000
Local Production (groundwater, surface water, Los Angeles Aqueduct) *	800,000	900,000	100,000
Local Projects (recycled water, groundwater recovery, desalination)	130,000	350,000	220,000
MWD Imported Water	1,210,000	1,580,000	370,000
Dry-Weather Runoff	--	--	--
Urban Stormwater Runoff	--	--	--
Total	**2,550,000**	**3,350,000**	**800,000**

Projects in Benefit Categories

Subregion	Number of Projects by Benefit Category			
	Water Supply	Water Quality	Open Space[1]	Other benefits[2]
North Santa Monica Bay Watersheds	14	2	5	16
Upper Los Angeles River Watershed	25	4	34	21
Upper San Gabriel River and Rio Hondo Watersheds	57	0	9	6
Lower San Gabriel and Los Angeles Watersheds	49	0	4	64
South Bay Watersheds	29	16	23	41
Regional Projects	29	2	2	5
TOTAL	**203**	**24**	**77**	**153**

(1) Includes public access, open space, habitat, and recreation benefit types.

(2) Flood control is included in this benefit type.

Quantified Benefits

Subregion	Water Supply (AFY)		Water Quality (MGD)		Open Space[1] (acres)	
	Benefit Quantity Total	Benefit Quantity Average	Benefit Quantity Total	Benefit Quantity Average	Benefit Quantity Total	Benefit Quantity Average
North Santa Monica Bay Watersheds	1,877	134	13	6.5	149	30
Upper Los Angeles River Watershed	41,270	1,651	7	1.75	2,748	81
Upper San Gabriel River and Rio Hondo Watersheds	48,815	856	No Projects	No Projects	89	10
Lower San Gabriel and Los Angeles Watersheds	36,398	743	No Projects	No Projects	164	41
South Bay Watersheds	86,088	2,969	312	19.5	681	30
Regional Projects	55,114	1,901	16	8	2	1
TOTAL	**269,561**	**1,327**	**348**	**14.5**	**3832**	**50**

(1) Includes public access, open space, habitat, and recreation benefits.

Project Costs

Benefit Type	Number of Projects	< 100k	100K-1M	1M-10M	>10M	UDR
WS	149	15	32	55	26	21
WQ	6	0	0	3	2	0
OS	54	0	16	15	23	0
OB	94	20	23	21	10	20
WS/WQ	7	0	0	0	7	0
WS/OS	3	0	0	3	0	0
WS/OB	40	7	8	18	7	0
WQ/OS	6	0	1	5	0	0
WQ/OB	2	0	0	1	1	0
OS/OB	12	1	8	3	0	0
WS/WQ/OS	0	0	0	0	0	0
WS/WQ/OB	3	0	1	1	1	0
WS/OS/OB	1	0	0	1	0	0
WQ/OS/OB	1	0	1	0	0	0
WS/WQ/OS/OB	0	0	0	0	0	0
TOTAL	**377**	**43**	**90**	**126**	**77**	**41**

WS = water supply
WQ = water quality
OS = open space, public access, habitat, or recreation
OB = other benefit (such as flood management)
UDR = Updated Data Required

Project Schedule

Project Benefit Type	Year of Implementation				
	2006 – 2008	2009 – 2012	2013 – 2017	2018 – 2026	UDR
	0-2 Years	3-6 Years	7-11 Years	12-20 Years	
WS	52	13	2	0	82
WQ	3	1	0	0	1
OS	30	5	0	0	19
OB	53	6	1	0	34
WS/WQ	1	4	2	0	0
WS/OS	1	1	0	0	1
WS/OB	17	5	1	0	17
WQ/OS	4	1	0	0	1
WQ/OB	2	0	0	0	0
OS/OB	7	2	0	0	3
WS/WQ/OS	0	0	0	0	0
WS/WQ/OB	1	2	0	0	0
WS/OS/OB	1	0	0	0	0
WQ/OS/OB	1	0	0	0	0
WS/WQ/OS/OB	0	0	0	0	0
TOTAL	**173**	**40**	**6**	**0**	**158**

WS = water supply
WQ = water quality
OS = open space, public access, habitat, or recreation
OB = other benefit (such as flood management)
UDR = Updated Data Required

Planning Tools - Purpose

- Explore new and existing integrated water management practices
- None of these tools are the answer for the Region
- Assist by providing information on benefits and costs using three distinct approaches for achieving the quantitative targets
  - Planning Tool 1: Site Scale
  - Planning Tool 2: Neighborhood Scale
  - Planning Tool 3: Regional Scale

Management Strategy Elements

Table 8. Regional Planning Tool Management Strategy Elements

	Analytical Target	Planning Tool 1 Site Scale	Planning Tool 2 Neighborhood Scale	Planning Tool 3 Regional Scale
Water Supply[1]	800,000		*Acre Feet/Year*	
Water Conservation / Demand Reduction		110,000	110,000	110,000
Expanded Local Water Production		100,000	100,000	100,000
Other Projects (desalination & groundwater recovery)		90,000	90,000	90,000
Additional Recycled Water		130,000	130,000	130,000
Additional Imported Water		370,000	240,000	120,000
Urban (Dry Weather) Runoff		0	130,000	130,000
Stormwater Runoff (from Urban Areas)		0	0	120,000
Total Water Supply		800,000	800,000	800,000
Surface Water Quality				
Urban (Dry Weather) Runoff	320,000			
Reduction of Runoff Volumes				
On-Site Residential BMPs[2]		124,000	0	0
Treatment[3]				
Traditional (Mechanical/Chemical)		196,000		
Natural (Treatment Wetlands)			320,000	320,000
Use of Treated Water				
Non-Potable Reuse		0	130,000	130,000
Discharge to Creeks and Rivers		196,000	190,000	190,000
Total Urban (Dry Weather) Runoff Treated		320,000	320,000	320,000
Stormwater Runoff (from Urban Areas)	490,000			
Reduction of Runoff Volumes				
On-Site Residential BMPs[2]		190,000	0	0
Short-Term Detention		300,125	490,000	490,000
Treatment				
Traditional (Tertiary)		300,125	0	0
Natural (Treatment Wetlands)				
Secondary Treatment[5]				120,000
Tertiary Treatment			490,000	370,000
Total Urban Stormwater Runoff Treated		490,000	490,000	490,000
Use of Treated Water				
Recharge via Groundwater Basins		0	0	120,000
Discharge to Creeks and Rivers		300,125	490,000	370,000
Open Space & Habitat				
Wetland restoration/creation (from water quality facilities) (acres)	1,400		4500 acres	8000 acres
Riparian habitat restoration (from water quality facilities) (miles)	100			100 miles
Parks and Open Space creation (from water quality facilities) (acres)	30,000	1550 acres	3500 acres	
Parks and Open Space creation (additional) (acres)		6450 acres		
Total Open Space and Habitat		8,000 acres	8,000 acres	8,000 acres
Infrastructure Repair & Replacement				
Flood Management	40%	40%	40%	40%
Water Supply	40%	40%	40%	40%
Wastewater	40%	40%	40%	40%

1: Estimated increase in water supply and/or demand reduction above current supplies/conservation
2: Equals approximately 39% of runoff, as that portion of urbanized area is single family homes
3: Assumes tertiary treatment, unless otherwise noted
4: Local distribution of treated urban runoff for irrigation and other uses (similar to reclaimed water)
5: Assumes secondary treatment for subsequent groundwater recharge via spreading basins

Water Supply Relationships
- Residential BMPs would reduce water demand (amount TBD)
- Non-potable reuse of treated Urban Runoff
- Recharge of treated stormwater runoff

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Water Supply Mix

	Regional Planning Tool		
Water Supply Type	Tool 1	Tool 2	Tool 3
Conservation/Demand Reduction	110,000	110,000	110,000
Expanded Local Groundwater Production	100,000	100,000	100,000
Desalination	55,000	55,000	55,000
Groundwater Recovery	35,000	35,000	35,000
Additional Recycled Water	130,000	130,000	130,000
Additional Imported Water	370,000	240,000	120,000
Dry Weather Urban Runoff	0	130,000	130,000
Storm Water Urban Runoff	0	0	120,000
Totals	800,000	800,000	800,000

Summary of Costs

	Regional Planning Tool		
	Tool 1	Tool 2	Tool 3
Water Supply Quantity (AFY)	800,000	800,000	800,000
Water Supply Costs (Tables 6 & 7)	$9,499	$8,487	$9,842,
Water Quality Quantity (AFY)	810,000	810,000	810,000
Water Quality Costs (Table 8)	$32,154	$45,580	$15,869
Open Space Quantity (acres)	8,000	8,000	8,000
Open Space Costs (Table 8)	$3,109	-	-
Total Costs	$44,762	$54,067	$25,711

(1) Costs are sum of present values discounted 50 years at 6 percent.

Note: Quantities are attained over 20 years.

Findings

- In general, larger multipurpose projects are able to provide water supply, water quality, and habitat creation benefits at a lower cost than an accumulation of smaller single-purpose projects

Assumptions - General

- All costs and benefits are discounted at 6 percent and summed over 50 years except construction
- Construction costs are discounted when included in total costs of the Regional Planning Tools

Assumptions – Water Supply

- Water supply development costs based on discussions with water agencies.

	Total New Supply Volume Increments		
Water Supply Type	First 25%	26% to 75%	Greater than 75%
Conservation	$600	$1,400	$2,000
Local Groundwater Production	$600	$1,100	$1,500
Local Surface Water	$250	$250	$250
Recycled Water	$775	$1,000	$1,450
Groundwater Recovery	$875	$1,125	$1,375
Ocean Desalination	$1,000	$1,000	$1,000
Dry Weather Runoff	$500	$1,000	$1,500
Urban Storm Water Runoff	$500	$1,000	$1,500

Source: Informal survey of local water agency personnel

Assumptions – Water Quality

- Urban stormwater runoff from a “design storm” of 0.75 inch rain in 24 hours.
- Only urban stormwater runoff captured for treatment. Upstream, pristine areas not considered.
- Volume of runoff per storm is 25,800 AF over the entire Region.
- 8400 MGD treatment facilities needed to capture and treat each storm event.

Assumptions – Water Quality

- Tool 1 BMPs capture 100% runoff from residential properties, Tools 2 & 3 require no residential BMPs.
- BMPs at $3,740 per single family household of about 1.57 million in Region.

Assumptions – Water Quality

	Tool 1		Tool 2		Tool 3	
Feature	Description	Cost	Description	Cost	Description	Cost
Total Treatment Capacity[1]	3,260 MGD (BMPs) + 5,140 MGD (plant)	$49,600	8,400 MGD (plant)	$61,600[1]	8,400 MGD (plant)	$17,100
Capacity/Plant	5 MGD 1,030 plants		5.25 MGD 1,600 plants		100 MGD 84 plants	
BMPs	Residential	$5,860	None		None	
Level 1	Screening/det basin	$13,700	Screening/det basin	$21,900	Screening/det basin	$6,750
Level 2	Sand Filter/Disinfect	$6,560	Wetland Filter/Disinfect	$2,060	Wetland Filter/Disinfect	$1,330
Level 3	Reverse Osmosis	$23,400	Reverse Osmosis	$37,500	Reverse Osmosis	$9,060
Land Acquisition	6,450 acres open space + 3,100 acres treatment	$9,680	8,000 acres	$13,200	8,000 acres	$8,800
Collection Sys	Existing		Existing		Existing	
Distribution	None	-	(1 mi. 16” dia. pipe, 1 Pump Station)/Plant	$1,600	(5 mi. 72” dia. pipe, 1 Pump Station)/Plant	$878
Total WQ Construction Costs		$59,300		$76,400		$26,800
Annual O&M Cost		$135		$188		$51

Note: All costs in millions of 2006 dollars

1. Total Treatment Capacity Costs are the sum costs for BMPs and Treatment Levels 1, 2, and 3.

Assumptions – Water Quality

- Land Value:
  - Tool 1 - $1,375,000 per acre
  - Tool 2 - $1,650,000 per acre
  - Tool 3 - $1,100,000 per acre
- Annual O&M costs calculated using percentages based on level of treatment

Assumptions – Water Quality

- Distribution System Costs
  - Tool 1 – no additional facilities needed
  - Tool 2 – 16” diameter pipe with one mile conveyance
  - Tool 3 – 72” diameter pipe with five mile conveyance
- $20/inch diameter/foot conveyance

Assumptions – Open Space

- No costs identified for open space creation under Tools 2 and 3 because land purchases assumed a requirement for construction of water quality facilities.
- Tool 1 land value of $840,000 if used for recreation only.

Regional Planning Tool Benefits

	Regional Planning Tool		
	Tool 1	Tool 2	Tool 3
Water Supply Quantity (AFY)	800,000	800,000	800,000
Water Supply Benefits	$1,992	$2,550	$3,066
Water Quality Quantity (AFY)	810,000	810,000	810,000
Water Quality Benefits	$3,626	$3,626	$3,626
Open Space Quantity (acres)	8,000	8,000	8,000
Open Space Benefits (recreation based)	$1,884	$1,884	$3,768
Open Space Benefits (recreation and habitat based)	-	-	$1,949
Total Benefits	$7,502	$8,060	$12,408

(1) Benefits are sum of present values discounted 50 years at 6 percent.

Note: Quantities are attained over 20 years.

Benefits – Water Supply

The sum of:

- The cost of reduced purchases from Metropolitan Water District, and
- The expected cost of shortage surcharges levied by Metropolitan Water District during drought conditions.

Should be considered a minimum since includes only expected avoided payments and not consumer's willingness to pay for improved local water supply

Benefits

- Water Quality - California resident's stated willingness-to-pay value for removing impairments to California water bodies
- Open Space & Parkland - Increases in property values for adjacent and nearby residential properties
- Recreation & wetland - improved recreational opportunities & on California resident's stated willingness-to-pay value for wetland restoration.
- Riparian habitat - assumed to be equivalent to the economic benefits of wetland habitat improvements.

Subregional IRWMP Implementation Opportunities

Subregion	Water Supply (AFY)	Dry-Weather (AFY)	Stormwater (AFY)	Wetlands (acres)	Riparian (miles)	Open Space (acres)
South Bay	227,583	76,684	117,423	392	28	8,400
North Santa Monica Bay	8,300	7,900	12,000	14	1	300
Upper San Gabriel and Rio Hondo	128,000	64,000	98,000	224	16	4,800
Upper Los Angeles River	184,000	80,000	122,500	322	23	6,900
Lower San Gabriel and Los Angeles	256,000	92,800	142,100	448	32	9,600
Totals	800,883	321,384	492,023	1,400	100	30,000

1. This table provides a preliminary allocation of possible contributions to Regional quantitative targets based on physical characteristics of the Subregions as mentioned above. It is intended to provide a preliminary basis for discussion and it is not intended to suggest Subregional quantitative targets at this time.

Based on population and land use. Further analysis needed to develop actual targets.

USG&RHR Estimated Targets

Region-wide Target Category	Upper San Gabriel and Rio Hondo Estimated Target Contribution
Water Supply	128,000 AFY [1]
Urban Dry Weather Runoff Capture	64,000 AFY [2]
Stormwater Capture	98,000 AFY [2]
Native Wetlands Restoration	224 acres [1]
Riparian Habitat/Buffer Restoration	16 miles [1]
Parks and Open Space Creation	4,800 acres [1]

1. *Calculated based on Upper San Gabriel and Rio Hondo percentage of total County-wide population (16 percent)*
2. *Calculated based on Upper San Gabriel and Rio Hondo percentage of total developed area (20 percent)*

USG&RHR Opportunities and Constraints

	Water Supply	Surface Water Quality	Open Space and Habitat	Infrastructure
Needs	• Reliance on imported water • Water reliability in drought years • Optimize storage capacity	• Impaired water quality • TMDLs • 303(d) listed waterways • Runoff quantity and quality • Volume of stormwater and dry-weather flows • Wastewater effluent • Abandoned and active gravel pits	• Stream modification • Equestrian uses • Protection of uplands	• Not available at this time
Opportunities	• Capture, treatment and reuse of stormwater runoff • Reclaimed water surplus • Conservation • Desalination • Water distribution system improvements • Safe Drinking Water Act Compliance projects • System interconnections for increased reliability • Expanded conjunctive use • Groundwater treatment facilities • Increase replenishment capacity • Gravel pits for storage	• Implementing TMDL, NPDES and AB 885 requirements • Natural treatment systems • Open Space • Habitat • Enhanced flood management • U.S. Army Corps of Engineers participation	• Promote/increase ecosystem restoration in Santa Fe dam • Preserve pristine waters of upper San Gabriel • Equestrian use • Integrate recreation into wetlands and watershed projects. • Provide for maintenance of parks, open space, and trails • Creation of habitat linkages and corridors	• Not available at this time
Constraints	• Funding • Pervasive groundwater contamination (VOC, nitrate and perchlorate) • Limited spreading capacity • No opportunities for ocean desalination • Institutional hurdles to water transfers	• Lack of Funding • Pervasive nature of impairments • Lack and expense of undeveloped land • Public safety • Liability • Impediments to cross-jurisdictional efforts	• Stream Modification • Equestrian Uses • Lack of Data • Protection of Uplands	• Integration with existing infrastructure systems

USG& RHR Water Supply - Opportunities

- Expand recycled water use, storm water & dry weather capture for groundwater recharge.
- Potential for gravel mining operations to store recycled water & capture storm water & dry weather flows.
- Stormwater &/or dry weather runoff could offset some imported water demands.
- Planned & existing stormwater runoff capture facilities can integrate treatment & reuse of urban runoff.

USG& RHR Water Supply - Opportunities

- Additional supply benefits through reuse of treated urban runoff.
- Recycled water expansion projects.
- Idle land next to the San Gabriel River could be used for retention & percolation of storm water.
- The use of recycled water to support riparian & wetland habitat.

USG&RHR Water Quality - Opportunities

- Potential for gravel mining operations to store recycled water & capture storm water & dry weather flows.
- Ecosystem restoration by creation of greenways, natural treatment wetlands & stormwater detention basins could be utilized for treatment of urban & storm runoff.
- Water conservation programs also provide water quality benefits by reducing urban runoff.

USG&RHR Water Quality - Opportunities

- Naturalization of creeks & streams would restore hydrologic function & provide improvements in water quality through sediment reduction.
- Development & implementation of on-site residential BMPs would reduce runoff volume & assist in meeting TMDLs.
- Sediment water quality issues can be combined with habitat restoration efforts that restore creek habitat & restore natural hydrologic function.

USG&RHR Open Space & Habitat - Opportunities

- Reclaimed water can be used to support wetland & riparian areas along the SG&R Rivers, creating habitat as well & supply benefits.
- Creation of greenways, recreation areas, treatment wetlands, stream naturalization & restoration of hydrologic connections.
- Restoration & creation of native habitats using native vegetation helps meet water quality goals.
- Modification of un-used flood control facilities to provide OSH&R benefits in addition to water supply & water quality.

USG&RHR Open Space & Habitat - Opportunities

- Utilization of utility easements & water spreading facilities as habitat & open space.
- Convert idle land next to San Gabriel River to provide open space, habitat & recreation benefits in addition to water supply & water quality.
- Regional geology allows projects that provide open space & habitat benefits to also provide water quality & quantity benefits.

USG&RHR Infrastructure Repair & Replacement - Opportunities

- Rehabilitation of trunk sewer lines, pump stations & associated infrastructure is needed to reduce inflow and infiltration.
- Treatment facility upgrades made to meet water quality requirements can be designed to also repair & replace existing infrastructure, extending their useful life.

Disadvantaged Community

- Approximately 43 percent (4.1 million) of IRWMP Region population lives within a DAC according to median income data identified in Year 2000 census.
  - Proportion of population in each Subregion within a DAC:
    - North Santa Monica Bay Watersheds, 0 percent;
    - Upper Los Angeles River Watershed, 43 percent;
    - Upper San Gabriel River and Rio Hondo Watersheds, 24 percent ;
    - Lower San Gabriel and Los Angeles Watersheds 49 percent; and
    - South Bay Watersheds, 50 percent

Implementation TM – Suggested Planning Scales

Water Management Strategy	Site or Parcel	Within Jurisdictional Boundary	Watershed	IRWMP Subregion	IRWMP Region
Asset Management		●		●	●
Desalination		●			●
Environmental and Habitat Protection/Improvement	●	●	●		●
Groundwater Management / Conjunctive Use		●	●		●
Import water		●			●
Improve and protect water quality	●	●	●	●	●
Integrated Planning	●	●	●	●	●
Land Use Planning		●			●
NPS Pollution Control	●	●	●	●	●
Recreation and Public Access		●			●
Restore Ecosystems		●	●		●
Stormwater Capture and Management	●	●		●	●
Surface Storage		●			●
Water and Wastewater Treatment		●		●	●
Water Conservation	●	●		●	●
Water Recycling		●		●	●
Water Supply Reliability		●			●
Water Transfers		●			●
Watershed Planning			●		●
Wetlands Creation and Enhancement	●	●	●		●

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Implementation TM – Annotated Planning Scales

ANNOTATED Planning Scales					
Water Management Strategy	Projects on Site or Parcel	Programs & Plans Within Jurisdictional Boundary	Watershed Plans	IRWMP Subregional Plans	IRWMP Regional Plans
Asset Management		○		◖ Water and Wastewater	◗ Flood Protection
Desalination		○			●
Environmental & Habitat Protection / Improvement	○	○	○		●
Groundwater Management / Conjunctive Use		○	○		●
Import water		○			●
Improve and protect (surface) water quality	○	○	○	●	○
Integrated Planning	○	○	○	○	●
Land Use Planning		◖ General Plans			◗ Model Ordinances
NPS Pollution Control	○	○	○	●	○
Recreation and Public Access		○			●
Restore Ecosystems		○	○		●
Stormwater Capture and Management	○	○		◖ Quality	◗ Quantity
Surface Storage		○			●
Water and Wastewater Treatment		○		●	○
Water Conservation	○	○		●	○
Water Recycling		○		●	○
Water Supply Reliability		○			●
Water Transfers		○			●
Watershed Planning			●		○
Wetlands Creation and Enhancement	○	○	○		●

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Implementation TM – Appropriate Scale for Subsequent Planning

What is the Appropriate Scale for Subsequent Planning?				
Water Management Strategy	Jurisdiction	Watershed	IRWMP Subregion	IRWMP Region
Asset Management	O	O	O	O
Desalination	O	O	O	O
Environmental & Habitat Protection / Improvement	O	O	O	O
Groundwater Management / Conjunctive Use	O	O	O	O
Import water	O	O	O	O
Improve and protect water quality	O	O	O	O
Integrated Planning	O	O	O	O
Land Use Planning	O	O	O	O
NPS Pollution Control	O	O	O	O
Recreation and Public Access	O	O	O	O
Restore Ecosystems	O	O	O	O
Stormwater Capture and Management	O	O	O	O
Surface Storage	O	O	O	O
Water and Wastewater Treatment	O	O	O	O
Water Conservation	O	O	O	O
Water Recycling	O	O	O	O
Water Supply Reliability	O	O	O	O
Water Transfers	O	O	O	O
Watershed Planning	O	O	O	O
Wetlands Creation and Enhancement	O	O	O	O

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Implementation TM – Suggested Planning Activities

Water Management Strategy	Scale	Activities
Asset Management	Jurisdiction	Implement asset management programs
	Subregion	Promote comprehensive assessment of infrastructure maintenance
	Region	Promote consistent regional approach to asset management
Desalination	Jurisdiction	Implement desalination projects where appropriate
	Region	Promote desalination as a component of a diversified water portfolio to enhance water supply reliability
Environmental & Habitat Protection / Improvement	Site	Inclusion of native habitat in all public sector projects
	Jurisdiction	Implement projects and programs to protect habitat and encourage native vegetation in public and private projects
	Watershed	Promote consistent watershed approach to habitat protection
	Region	Promote consistent regional approach to habitat protection
Groundwater Management / Conjunctive Use	Jurisdiction	Implementation of incentives by Cities and counties to protect and enhance groundwater recharge Water agencies projects and programs to protect and enhance groundwater recharge and utilization of groundwater as a water supply
	Watershed	Promote consistent watershed approach to protection and enhancement of groundwater recharge
	Region	Promote consistent regional approach to protection and enhancement of groundwater recharge
Import Water	Jurisdiction	Imported water as component of water agency's supply portfolio
	Regional	Promote imported water as a component of a diversified water portfolio that enhances water supply reliability

Handout pages 7-8

Implementation TM – Potential Sources of Funding

	Sources	Expected Contribution	Targeted Beneficiaries
Local	• Local sales tax • Bond and associated property tax • Utility fee or benefit assessment based on use of the property • Utility fee or benefit assessment based on total area and impervious area • Gasoline tax • Water sales • Parcel tax	High (>50%)	Region's residents, environment, and economy
State	• Competitive grants • Appropriations • State-wide Assessments	Moderate (10-50%)	Statewide environment and economy
Federal	• Appropriations • Competitive grants	Moderate (10-50%)	Areas of national environmental or economic significance
Others	• Individual and corporate donors • Foundations and other non-profit organizations	Low (<10%)	Particular communities or targeted interests in the Region

Handout page 9

Implementation TM – USG& RHR Subregion – **Phases of Implementation - Immediate Term**

- Continue support of Steering Committee
- Re-examine USG&RHR priorities for the next round of funding
- Continue outreach
- ID linkages and strengthen interactions between projects based on goals & objectives established in the IRWMP

Implementation TM – USG& RHR Subregion
Phases of Implementation – Near Term

- Continue support of Steering Committee
- Develop Subregional targets
- Re-examine call-for projects results to add additional projects by examining city/district CIPs
- Continue outreach
- Establish & support a process/forum to assess integration opportunities

Implementation TM – USG& RHR Subregion – **Phases of Implementation - Near Term**

- Conduct a conceptual study of gravel pit(s) for recharge/storage, open space, parks, habitat potential
- Study configuration for an expanded recycled water pipeline in the Subregion
- Conduct conceptual siting assessment of alternatives for spreading or retaining more stormwater runoff
- Preparation of grant proposal submittals
- Build integration directly into projects from an early stage.

Implementation TM – USG& RHR Subregion – **Phases of Implementation - Long Term**

- Continue support of Steering Committee
- Continue outreach
- Prepare grant proposal submittals
- Support a process/forum to assess integration opportunities
- Revisit IRWMP periodically to update targets
- Design projects to fit into established sets of projects.

Implementation TM – USG& RHR Subregion – **Coordination with Local Planning**

Immediate Term

- ID additional future planning efforts and when results are expected.
- ID projects from existing plans, as well as IRWMP project database that are appropriate for consideration in upcoming grant opportunities
- Develop a recommended set of projects through the Steering Committee to be included in the LA IRWMP Prop 50 Round 2 application.

Implementation TM – USG& RHR Subregion – **Coordination with Local Planning**

Near Term

- Establish coordination & communication procedures with ongoing local planning efforts.
- Establish quantifiable Subregional goals/targets for water supply, water quality and OSH&R.
- Further develop specific projects to achieve goals.
- Establish a process to actively integrate project efforts to achieve multiple benefits.
- Begin development of a Subregional Plan which IDs a comprehensive set of projects to address an appropriate subset of the IRWMP Regional Targets.

Implementation TM – USG& RHR Subregion – **Coordination with Local Planning**

Long Term

- Integrate IRWMP into General Plan and UWMP updates.
- Consider ordinances that require water savings devices or penalize water waste generation.
- Expand incentives for conservation.
- Consider assessing fines for runoff and providing public recognition for water conservation.
- Evaluate changing the Covenants, Conditions and Restrictions (CCR) in many homeowner associations that restrict native or water friendly landscaping.

Implementation TM – USG& RHR Subregion – **Coordination with Local Planning**

Long Term

- Establish a goal for water conservation directly tied to the Region's share of imported water.
- Reassess grey water use opportunities.
- Develop conservation master plans to integrate conservation efforts regionally.
- Finalize Subregional Plan and comprehensive set of projects in consultation with local agencies.
- Begin IDing local, state, and federal funding partners to assist with implementation of Subregional Plan.

Implementation TM – USG& RHR Subregion – **Institutional Structure**

Immediate Term

- Agree on structure & mechanism for future IRWMP governance.
- Consider continued use of the existing ad hoc structure of Subregional Steering Committees and Regional Leadership Committee.
- Cleary define representation, roles & responsibilities
- Clearly define decision making procedure

Near Term

- Form JPAs where appropriate.
- Form partnerships for combined development & implementation of projects with mutual benefits.

Long Term

- Utilize adaptive management to determine appropriate institutional structures for the USG&RHR Subregion on a project or issue specific basis.

Implementation TM – USG& RHR Subregion – **State and Federal Coordination**

- **Immediate Term**
  - ID further opportunities for coordination with state & federal agencies.
  - ID need for state or federal approval or assistance on existing projects.
- **Near Term**
  - Develop future projects with state &federal partners where mutually beneficial.
  - Pursue funding available through state & federal programs.
- **Long Term**
  - Determine how state &federal agencies will influence long term project concepts.

Implementation TM – USG& RHR Subregion – **Schedule**

- **Immediate Term**
  - ID schedules or deadlines in the USG&RHR Subregion.
- **Near Term**
  - Select projects that will help meet upcoming reg deadlines.
  - Select projects that are ready-to-proceed & are high priority.
- **Long Term**
  - Determine the optimal combination of projects to meet long range deadlines.
  - Establish Subregional funding priorities.
  - Monitor/update project schedules & continue to ID needs & opportunities.

Implementation TM – USG& RHR Subregion – **Funding**

- Current Grants and Loans Consolidated Grants
- Future Grants and Loans
  - Proposition 50 Funding
  - Potential Proposition 84 Funding
  - Bureau of Reclamation Funding
  - Other Grant Funding as it develops
- Local Fees Fees, Assessments & Revenue Bonds

Implementation TM – USG& RHR Subregion – **Funding**

Immediate Term

- **Provide information on local potential funding measures (fees, assessments etc.).**
- **Compile list of current grants being pursued.**

Near Term

- **Develop detailed estimates of capital & O&M costs for existing projects.**
- **Track all potential funding opportunities.**
- **Develop innovative, multi-benefit projects to maximize opportunities for competitive funding.**
- **Pursue special earmarks for specific projects.**

Long Term

- **Determine the most cost-effective combination of projects that can achieve Subregional objectives.**

Implementation TM – USG& RHR Subregion – **Data Management**

Immediate Term

- Document known data gaps & overlaps.
- Suggest opportunities for improved data sets.
- Develop subregional data management collection & dissemination system.

Near Term

- Use data to guide development of existing/future projects.
- Develop project monitoring plans that can also fill data gaps.

Long Term

- Maintain data & continue to collect information

Implementation TM – USG& RHR Subregion – **Performance Measures**

Category	Performance Measure	How Determined
Water Supply	# of water conservation devices distributed	Sales receipts/Distribution records
	AFY of recycled water distributed	Flow measurement device
	Additional local water produced	Flow measurement device
Water Quality	Reductions in pollutant concentrations observed in water quality data	Sample collection and testing
	Groundwater treated	Flow measurement device
Habitat and Open Space	Acres of exotic vegetation removed	Measurement of cleared area
	Miles of riparian habitat restored	Measurement of habitat restored

Implementation TM – USG& RHR Subregion – **Performance Measures**

Immediate Term

- Determine appropriate performance measures for targets.
- Determine appropriate performance measures for existing projects.
- ID potential project modifications.

Near Term

- Measure & report performance of multi-objective projects.

Long Term

- Develop Subregional monitoring system.
- ID opportunities for coordinated Subregional responses to performance data.

Questions & Comments

Next Steps

- Public Review of Administrative Draft – October 1, 2006
- October Steering Committee Meeting
- Adoption of LA IRWMP – December 13, 2006